Technical Report on the Hemco Property, Región Autónoma de la Costa Caribe Norte, Nicaragua Report for NI 43-101

Mineros S.A.

SLR Project No: 233.03653.R0000

Effective Date:
December 31, 2022

Signature Date:
March 24, 2023

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CONTENTS

TABLES

FIGURES

1.0 SUMMARY

1.1 Executive Summary

SLR Consulting (Canada) Ltd (SLR) was retained by Mineros S.A. (Mineros) to prepare an updated Technical Report on the Hemco Property, located in northeast Nicaragua and operated by Hemco Nicaragua S.A. (Hemco), a 99.9975% owned subsidiary of Mineros. The purpose of this Technical Report is to support the disclosure of the December 31, 2022 Mineral Resource and Mineral Reserve estimates for the Hemco Property, including an initial Mineral Reserve estimate and the results of a Prefeasibility Study for the Porvenir Project. This Technical Report conforms to National Instrument 43-101 Standards of Disclosure for Mineral Projects (NI 43-101) as published by the Canadian Securities Administrators (the umbrella organization of Canada's provincial and territorial securities regulators). SLR visited the Hemco Property in 2017 and 2018, and most recently on August 4, 2021.

Mineros is a Medellín-headquartered, publicly traded, Colombian-incorporated mining company, with gold properties in Colombia, Nicaragua, and Argentina. Mineros' other operating assets include:

- The Nechí alluvial gold mining operations (the Nechí Property) in Antioquia, Colombia,
- The Gualcamayo gold mine, located at the Gualcamayo gold property (Gualcamayo Property) in San Juan and La Rioja Provinces, Argentina.

The Hemco Property consists of the producing Panama gold mine (Panama Mine or Panama, including Panama, Elefante, Toboba, Tesoro, Neblina, Pluto SW, Neptuno, and Capitan veins), the producing Pioneer gold mine (Pioneer Mine or Pioneer, including the Lone Star, Northeast, Pioneer Northeast Extension, and Pioneer 3 veins), the pre-development-stage Porvenir polymetallic deposit (Porvenir Project or Porvenir), the Luna Roja gold deposit (Luna Roja), the Leticia and San Antonio polymetallic deposits (Leticia and San Antonio), several exploration targets, and a large number of artisanal operations (artisanal areas).

The Hemco Property also hosts three processing plants with a combined capacity of 2,000 tonnes per day (tpd)—the Hemco Plant, the La Curva Plant, and the Vesmisa Plant (together, the Processing Plants)—which process ore mined from the Hemco Property and locally purchased artisanal feeds, in addition to other project infrastructure.

1.1.1 Conclusions

SLR's conclusions by area are summarized as follows.

1.1.1.1 Geology and Mineral Resources

- Mineral Resources at the Hemco Property conform to Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Definition Standards for Mineral Resources and Mineral Reserves dated May 10, 2014 (CIM (2014) definitions).
- Mineral Resources have been estimated for the Panama deposit (gold only), Pioneer deposit (gold and silver), Porvenir deposit (gold, silver, and zinc), Luna Roja (gold only), and Leticia and San Antonio deposits (gold, silver, and zinc).
- As at December 31, 2022, Measured and Indicated Mineral Resources totalling 4,567.2 thousand tonnes (kt) averaging 3.13 g/t Au and containing 458.9 thousand ounces (koz) Au, exclusive of

Mineral Reserves, have been estimated for the Hemco Property. In addition, the Hemco Property contains 425.1 koz Ag for Pioneer and Porvenir and 57.7 million pounds (Mlb) Zn for Porvenir:

- **Panama deposit** – 1,876.9 kt at a grade of 3.85 g/t Au, containing 232.2 koz Au at a 2.0 g/t Au cut-off grade.
- **Pioneer deposit** – 492.7 kt at a grade of 3.60 g/t Au and 9.8 g/t Ag, containing 57.0 koz Au and 155.0 koz Ag at a 2.0 g/t Au cut-off grade.
- **Porvenir deposit** – 1,033.4 kt at a grade of 2.35 g/t Au, 8.13 g/t Ag, and 2.53% Zn, containing 78.2 koz Au, 270.1 koz Ag, and 57.7 Mlb Zn at a US$82.30/t cut-off value.
- **Luna Roja deposit – Open Pit** - 1,139.6 kt at a grade of 2.39 g/t Au, containing 87.6 koz Au at a 0.87 g/t Au cut-off grade.
- **Luna Roja deposit – Underground** - 24.6 kt at a grade of 5.10 g/t Au, containing 4.0 koz Au at a 2.0 g/t Au cut-off grade.

- As at December 31, 2022, Inferred Mineral Resources totalling 7,057.9 kt averaging 3.59 g/t Au, and containing 813.9 Moz Au, 1,360.6 Moz Ag, and 165.6 Mlb Zn were estimated to be as follows:
    - **Panama deposit** – 2,222.2 kt at a grade of 4.60 g/t Au, containing 328.7 koz Au at a 2.0 g/t Au cut-off.
    - **Pioneer deposit** – 916.3 kt at a grade of 3.99 g/t Au and 8.1 g/t Ag, containing 117.5 koz Au and 239.7 koz Ag at a 2.0 g/t Au cut-off grade.
    - **Porvenir deposit** – 1,693.9 kt at a grade of 2.42 g/t Au, 12.05 g/t Ag, and 3.64% Zn, containing 132.1 koz Au, 656.3 koz Ag, and 135.9 Mlb Zn at a US$82.30/t cut-off value.
    - **Luna Roja deposit – Open Pit** - 313.8 kt at a grade of 2.30 g/t Au, containing 23.2 koz Au at a 0.87 g/t Au cut-off grade.
    - **Luna Roja deposit – Underground** – 185.8 kt at a grade of 2.37 g/t Au, containing 14.1 koz Au at a 2.0 g/t Au cut-off grade.
    - **Leticia** – 586.3 kt at a grade of 4.19 g/t Au, 7.10 g/t Ag, and 1.15% Zn, containing 78.9 koz Au, 133.8 koz Ag, and 14.8 Mlb Zn at a US$73.3/t cut-off value.
    - **San Antonio** – 1,139.6 kt at a grade of 3.26 g/t Au, 9.0 g/t Ag, and 0.59% Zn, containing 119.3 koz Au, 330.8 koz Ag, and 14.9 Mlb Zn at a US$73.3/t cut-off value.
- The sample preparation, analysis, and security procedures at the Hemco Property are adequate, and the quality assurance/quality control (QA/QC) results are sufficient to support Mineral Resource estimation.
- The data exclusion measures taken by Mineros have ensured that the data used is of sufficient quality to support Mineral Resource and Mineral Reserve estimation.
- The Mineral Resources are reasonable and suitable to support the estimation of Mineral Reserves.

1.1.1.2 Mining and Mineral Reserves

- Mineral Reserves at the Hemco Property conform to CIM (2014) definitions and include the Panama and Pioneer underground mines and the initial Mineral Reserve estimate for the Porvenir Project.

- Mineral Reserves are based on mine designs, sufficient to support the life of mine (LOM) plan and estimation of reserves. The mine design and development and production scheduling have been undertaken to a sufficient level of detail to support the Mineral Reserve estimate.
- Reasonable allowances fo7r dilution and losses have been applied.
- As at December 31, 2022, Proven and Probable Mineral Reserves for the Hemco Property (Panama, Pioneer, and Porvenir) are estimated to total 7,362 kt at a grade of 3.33 g/t Au, containing 789 koz Au. In addition, the Porvenir Project also contains 5.794 kt of silver and zinc Mineral Reserves at a grade of 10.32 g/t Ag and 2.96% Zn for 1,922 koz of silver and 3790 Mlb of zinc. SLR prepared a cash flow analysis to demonstrate positive economics to support the disclosure of Mineral Reserves.

1.1.1.2.1 Panama and Pioneer Mines

- As of December 31, 2022, the Panama and Pioneer Proven and Probable Mineral Reserves are estimated at 1,568 kt at a grade of 4.30 g/t Au, containing 217 koz of gold.
- The Panama Mine has two distinct production areas, informally divided by the 850 Level, with production above the 850 Level derived from non-mechanized shrinkage stoping and production below the 850 Level derived mainly from mechanized long hole stoping with a few areas planned to be mined using shrinkage stoping. While Mineros will continue to mine shrinkage stopes above the 850 Level and identify new mining areas, they were not included in the current Mineral Reserve estimates as their tonnage is not significant.
- Production at the Pioneer Mine started in 2021 and development and stoping activities at the Lone Star vein is currently well advanced. Development to a few sublevels the Pioneer Northeast vein has been completed and production is expected to start in 2024.
- Panama and Pioneer are both mined using sub-level open stoping, with a few areas at Panama mined using shrinkage stoping.
- The Panama and Pioneer mines are projected to supply approximately 50% to 60% of the Hemco Plant mill feed and the remaining feed will be from artisanal mining and remaining shrinkage stopes.
- The Mineral Reserves estimated at Panama and Pioneer support a LOM of 4.75 years.
- Production at Panama will be undertaken by Mineros personnel and haulage by a contractor, while all mine development and production at Pioneer is assumed to be completed by contractors. Mineros will investigate the possibility of undertaking part or all the mining and development activities in the future.

1.1.1.2.2 Porvenir Project

- The Porvenir Mineral Reserves are based upon a Prefeasibility Study (PFS) completed by BISA Ingeniería de Proyectos S.A. (BISA) and Mineros in 2022 and reviewed by SLR. The Mineral Reserves total 5,794 kt grading 3.07 g/t Au, 10.32 g/t Ag and 2.96% Zn containing 572 koz of gold, 1,922 koz of silver, and 379 Mlb of zinc.
    - Proven Mineral Reserves at Porvenir consist of 270 kt grading 2.70 g/t Au, 13.61 g/t Ag, and 3.14% Zn containing 23 koz of gold, 118 koz of silver, and 19 Mlb of zinc.
    - Probable Mineral Reserves at Porvenir consist of 5,524 kt grading 3.09 g/t Au, 10.16 g/t Ag, and 2.96% Zn containing 549 koz of gold,1,804 koz of silver, and 360 Mlb of zinc.

- Porvenir Mineral Reserves are based upon the Real McKoy vein and two zones of multiple close spaced veins, Porvenir Norte and Porvenir Sur.
- There are other veins in the Mineral Resource which did not meet the criteria for Mineral Reserves.
- Mining widths at Porvenir vary from 1.55 m in Real McKoy to 30 m in Porvenir Norte.
- Mining at Porvenir is planned to be underground mechanized mining using bench and fill and transverse sub-level stoping.
- Ground conditions are good, however, dilution estimates may not include sufficient allowance for mining practices or unexpected variations in the orebody widths or attitudes.
- Mining is planned to commence in the higher grade Real McKoy zone and then move into Porvenir Norte, followed by Porvenir Sur.
- The Porvenir deposit is planned to be mined over a nine year period after two years of preproduction development.
- All mine development and production will be carried out by contractors.
- The mining rate will be 1,000 tpd initially, increasing to 2,000 tpd in year 3 of operations.
- The level of engineering in the PFS is sufficient to support the estimation of Mineral Reserves.

1.1.1.3 Mineral Processing

1.1.1.3.1 Panama and Pioneer Mines

- The Processing Plants are operating well, considering the age of equipment.
- Throughput has increased over time, and ongoing optimization projects are continuing.
- There are three sources of feed for the Hemco Plant, the main processing plant servicing the Hemco Property: artisanal mining and the Panama and Pioneer underground mines, while feed for the Vesmisa and La Curva plants is exclusively from artisanal mining. Overall gold recovery for the Hemco Plant in 2022 was 91.1% gold, while overall recovery from all three Processing Plants was 89.3% gold. It is expected that similar recoveries will be achieved in the future.
- More than 50% of the ore being milled at the Hemco Plant and 100% of the ore being milled at the Vesmisa and La Curva plants is purchased from artisanal mining cooperatives under contracts. Total production (from Mineral Reserves and from artisanal sources) has been over 120,000 oz Au per year since 2019.
- LOM gold production is planned to increase to approximately 60,000 oz Au per year from Mineral Reserves, with mill feed percentage from artisanal sources expected to decrease from 50% to 40% as reserve feed takes a larger proportion of available capacity.
- The power facilities are being run well and producing electricity in an economic and consistent fashion.
- The marketing and gold sales contracts are within mineral industry norms.

1.1.1.3.2 Porvenir Project

- Porvenir Project test work completed to date appears to be comprehensive. The results indicate that good gold and silver recovery is achievable at acceptable recovery rates by direct cyanidation.

- While the production of commercial grade copper and zinc concentrates requires further test work, it appears that a commercial zinc concentrate may be more achievable than a copper concentrate, due to low copper grades and high zinc content in the copper concentrate produced in test work undertaken to date.
- Metallurgical testing supports the proposed process flowsheet and expected capacity.

1.1.1.4 Infrastructure

1.1.1.4.1 Panama and Pioneer Mines

- Panama has been in operation for many decades and the surface infrastructure is well established. The site consists of a camp, administrative and technical buildings, a clinic, mechanical maintenance and wash bays, warehouses, and various miscellaneous buildings.
- Pioneer, as a satellite mine with ore processed at the Hemco Plant, has a relatively small surface footprint. The established surface facilities are, however, sufficient to support the operation and include a mechanical maintenance building with an adjacent open air wash bay sump facility, a project office building, a site storage building, an electrical transformer station, miscellaneous tanks and piping, a mine portal gatehouse, a laydown pad, and water drainage ditches.

1.1.1.4.2 Porvenir Project

- Porvenir will be operated as a separate mine with its own infrastructure including:
  - Approximately 6.4 km of access roads required to and around the site
  - Diesel generators for backup power
  - A connection to the local 24.9 kV distribution system
  - Camp accommodation for 216 persons (employees, staff, and contractors)
  - Processing facilities
  - Tailings storage facility for the Porvenir tailings
- Considering the haulage of concentrates and supplies, the planned 7 m wide roads with a maximum 12% gradient are steep and narrow and will need to be reconsidered in future studies.
- In the future, Porvenir may be connected to a planned 138 kV power line connected to the national grid at Rosita.

1.1.1.5 Environmental, Permitting, Social/Community/Artisanal Relations

1.1.1.5.1 Panama and Pioneer Mines

- Hemco is committed to pro-active environmental management and local and regional corporate social responsibility, as well as the building of long-term sustainable relationships with artisanal and small-scale miners in the region.
- Hemco has a sound understanding of the regulatory regime and requirements within which it works and has all appropriate and applicable permits for its operations.

- Hemco is committed to ongoing improvements of its operations to minimize its impacts on the environment and maximize its contributions to the sustainability of the region. Examples of this are as illustrated below:
  - 2017 construction of state-of-the-art tailings facility and cyanide destruction plant for excess tailings water.
  - In 2018, a two Phase plan was developed to treat domestic and sewage waters at the Hemco Plant complex from approximately 600 personnel on site. Phase 1 of the plan was carried out in 2018 and Phase 2, in 2019. The system consists of a grease trap, an activated sludge system, a disinfection system, and drying beds. Data indicated that occasional discharges in 2018 and 2019 were not always in compliance with permit requirements, however, Hemco addressed the major cause of these issues in 2020 and the system is currently meeting regulatory requirements.
  - During 2018, a second tailings line from the Hemco Plant to the San José tailings dam was constructed. This was a positive step as it allows for routine and emergency maintenance and repairs without disruption of plant operations.
  - A series of other projects were identified, initiated, and carried out between 2018 and 2021 at the Hemco Property to improve environment and health and safety of the operation including: design and initiation of construction for a new excess tailings water detoxification system; construction of a new state-of-the-art chemical laboratory; construction of artisanal ore collection, sampling and storage facilities; upgrading of the existing diesel power plant facility; construction and operation of a new solid waste management facility; and a new fuel storage and filling station, among others.
  - Progressive reclamation has been underway and continues to be practiced with respect to former open pit mines and tailings management facilities at the Hemco Property. In addition, rehabilitation of historical artisanal and small-scale mine openings in the area continues to be carried out.
  - A broad range of corporate sustainability and socio-economic activities are underway in the immediate vicinity of operations and on a regional basis in association with local and regional agencies, mayors, and governments. A significant recent addition was construction of the Ring Road which dramatically reduces Hemco and artisanal miner traffic through the town of Bonanza.
  - Extensive efforts have been expended to support formalization and collaboration with artisanal and small-scale miners to improve environmental, health and safety, and socio-economic benefits associated with their activities and the region in general. These efforts have been very successful in contributing to both the revenue of the Hemco operations as well as to the environmental and socio-economic well-being and improved prosperity in the region.
- Aspects of the Panama and Pioneer Mine operation that provide opportunities for improvement include:
  - Low pH and elevated metals in Hemco mine infiltration water from old workings used for water supply may be indications of acid rock drainage (ARD). Significant efforts have been carried out to recirculate and reuse this water and minimize treated discharge to the local

environment. Data indicates that discharge is not always in compliance with permit requirements.

- Cyanide handling at the Hemco and Vesmisa plants, particularly various activities related to cyanide addition to the mill process circuit, is manual and as such presents elevated worker health and safety risks. Hemco is assessing its practices against the requirements of the International Cyanide Code, but no changes in practice have been undertaken to date.
- Cyanide destruction at the Hemco Plant is not done prior to discharge to tailings and as such tailings lines carry cyanide solution which exacerbates the potential risk associated with pipeline failure. Cyanide destruction of excess tailings waters ensures compliant discharge from the tailings systems.
- There is minimal to no secondary containment of the tailings pipeline from the Hemco Plant to the San José tailings dam.
- There are areas where the pipeline is exposed to physical risk due to limited use of physical barriers.
- Third party tailings dam hazard assessments study for the Concha Urrutia, Aguas Claras, and Vesmisa I tailings dams were initiated 2021. Independent assessment of these structures is critical to ensuring that these structures are functioning as designed and ensuring that risks are managed. Draft reports including emergency response plans were received in 2022 and are under review by Hemco.
- The draft Knight Piésold (KP) Closure Report notes that surface water quality around the Hemco facility has been impacted by mine operations. KP recommends that ARD/metal leaching (ML) assessments be carried out to provide additional information to support closure designs.

1.1.1.5.2 Porvenir Project

- Review of the technical and environmental information available to date for the proposed Porvenir underground mine and mill project did not find any environmental or social fatal flaws.
- Commitments for development of Porvenir are in keeping with existing Hemco corporate policies and practices respecting environmental, social, and small-scale/artisanal mining.
- Appropriate baselines studies in support of the environmental assessment have been completed and PFS level designs and engineering are underway.
- Engineering concepts and designs, as developed are generally reasonable and appropriate to minimize impacts on the environment for the nature and setting of the proposed operation.
- Environmental assessments will be submitted in 2023 for project approval. From the information reviewed, it is reasonable to expect that the Porvenir Project will be approved.
- Construction, operation and closure of the project will result in benefits to local and regional communities and improvements to the local environment which has been impacted by many years of artisanal and small-scale mining activities.
- Aspects of the Porvenir Project that provide opportunities for improvement include:
    - Carrying out ARD/ML assessments to ensure no acid generating materials are used for construction and to assist in closure planning.

- Independent third party geotechnical review of tailings dams, with a focus on post-closure long-term stability.
- Studies to assess the viability of flooding the mine workings to inhibit ARD/ML and thereby avoid need for post-closure water treatment.
- Extending the post-closure monitoring period beyond the current period of four years.

1.1.1.6 Costs and Economic Analysis

- Panama and Pioneer are active operations; therefore, sustaining capital and operating cost estimates were prepared based on 2021 and 2022 actual costs.
- Mineros staff also continues to assess operating efficiencies and approaches in efforts to improve operating costs in the different cost centres.
- Mineros has recently adopted the Enterprise Resource Planning (ERP) cost system to improve cost tracking and allocation.
- The Panama and Pioneer operating costs over the LOM total US$161 million ($102.68/t milled).
- SLR considers the capital and operating cost estimates to be reasonable, provided the production targets are realized.
- Porvenir capital and operating cost estimates are based on the 2022 PFS prepared by BISA and Mineros and reviewed by SLR. Capital and operating cost estimates are considered to meet the requirements of an American Association of Cost Engineers (AACE) Class 4 estimate.
- The total initial capital cost is estimated to amount to US$177.9 million including a US$19.5 million contingency and represents the initial capital for the development of the Project and an expansion phase in years 1 and 2 of operation.
- Sustaining capital for Porvenir totals US$53.55 million over the Project life mainly for mine development and tailings dam construction.
- The Porvenir Project LOM operating costs are estimated to be US$482 million ($83.12/t milled).
- The economic analyses of the Hemco Property operations (Panama Mine, the Pioneer Mine, and the Porvenir Project) demonstrates that the Hemco Property Mineral Reserves are economically viable at the Mineral Reserve prices of US$1,500/oz Au, US$19.00/oz Ag, and US$1.27/lb Zn over the LOM. The pre-tax net present value (NPV) at a 10% discount rate is US$68million and the after-tax NPV at a 10% discount is US$42 million.
- To support the first-time disclosure of Porvenir Mineral Reserves, SLR prepared a discounted cash flow for the Porvenir Project on a stand-alone basis, based on the engineering in the Project PFS.
- The economic analysis of the Porvenir Project demonstrates that the Mineral Reserves are economically viable at flat prices of US$1,500/oz Au, US$19.00/oz Ag, and US$1.27/lb Zn over the LOM. The Porvenir Project PFS base case economics result an after-tax NPV at a 10% discount rate of approximately US$42 million, an after-tax internal rate of return (IRR) of approximately 16%, and a payback period of approximately four years from start of production.

1.1.2 Recommendations

SLR offers the following recommendations.

1.1.2.1 Geology and Mineral Resources

Overall, SLR considers the Mineral Resource estimation procedures to be acceptable, however, SLR recommends that for future estimates Mineros implement the following:

1. Incorporate minimum thickness as a modelling and reporting criterion at Leticia and San Antonio.
2. Perform additional validation on the property wide database to realize the full value of the data excluded from the Mineral Resource estimate.
3. Investigate the poor performance of fine and coarse duplicates of channel samples prepared by the Hemco and Vesmisa laboratories and implement check assays for drill hole samples to Pioneer, Panama and Porvenir.
4. While the use of grade domains to control the influence of high grade samples is considered to be acceptable, additional steps could be taken to smooth the edges of the domains and remove isolated small volumes of high grade domain within the low grade domain, and vice versa.
5. Evaluate the application of a soft boundary between the nested domains.
6. While the Panama block model resource classification is acceptable, the QP recommends that in future updates the classification criteria of the Mineral Resources be consistent over the Project.

1.1.2.2 Mining and Mineral Reserves

1.1.2.2.1 Panama and Pioneer

1. As Mineros is preparing to consolidate all mine designs and LOM production schedules under a single platform (Deswik), develop a standard operating procedure package for the Mineral Reserve estimation process.
2. Apply dilution within the designed stope shapes so that dilution grades can be estimated from the resource model.
3. Evaluate and schedule mine development and the recovery of any pillars using scheduling software.
4. Review reconciliation data along with stope survey data to gain a better understanding of dilution and mining recovery factors.
5. Further monitor near term long hole stoping production to refine the mining plans and determine more accurate operating parameters and costs.
6. Consolidate the resource models for the Pioneer, Pioneer Northeast Extension, and Pioneer 3 orebodies to avoid overlapping and simplify stope optimization processes.
7. Plan upgrading the Pioneer 4 deposit to Mineral Reserves in the short term. The deposit can be accessed from Lone Star development.

1.1.2.2.2 Porvenir Project

1. Review the planned equipment dimensions for all equipment to ensure adequate clearance for safe operation in the headings.
2. Prepare more detailed plans for stope development considering the narrow width of the Real McKoy and other veins.
3. Develop grade control and Mineral Reserve reconciliation procedures.

4. Review the dilution assumptions in the next stage of study, including consideration of orebody irregularities and mining practices.
5. Review mine dewatering requirements considering the suspended solids in the mine water and the time required for water clarification.

1.1.2.3 Mineral Processing

1.1.2.3.1 Panama and Pioneer Mines

1. Complete further test work to determine if the ore from the Panama and Pioneer veins will have an adverse effect on the grind characteristics of the Hemco Plant, as the Bond Work Indices for the samples appear to be much higher than those for ore being presently treated.

1.1.2.3.2 Porvenir Project

1. Complete further test work for the Porvenir Project to optimize the flotation flowsheet and reagent combinations.

1.1.2.4 Infrastructure

1.1.2.4.1 Panama and Pioneer

1. As the Pioneer mine production increase ramps up, reassess the equipment workshop and maintenance facilities on site.

1.1.2.4.2 Porvenir Project

1. Reassess the road designs for the site considering haul truck widths, maximum gradients, and road side safety berms.
2. Review and reassess the parameters for the tailings dam designs.
3. Review the tailings dam design criteria which reflect those of an extreme dam classification to determine the appropriate dam classification

1.1.2.5 Environmental, Permitting, Social/Community/Artisanal Relations

1.1.2.5.1 Panama and Pioneer Mines

1. Assess ARD potential and extent of potential impacts on mine water releases to the environment. If mine rock is disposed of on surface, ARD assessments would indicate if mitigation and management measures are needed.
2. Audit performance of all water management systems to determine if the systems are performing as planned and discharges meet requirements. For any non-performing systems, identify and address root causes and undertake corrective measures.
3. Consider secondary containment of the tailings pipelines from the Hemco Plant to the San José tailings dam.
4. Assess physical risks to the tailings pipeline along its route from the plant to the San José tailings dam.

5. Assess opportunities to improve cyanide management practices. SLR understands that a project has been initiated to investigate the applicability of the Cyanide Code to Hemco's operation.
6. Closure cost estimates do not include allowance for potential treatment of underground mine water. SLR recommends Hemco assess potential needs for ongoing post-closure underground mine water treatment.
7. A total of US$33.1 million dollars has been estimated for final closure of the Hemco operations (including Vesmisa). This does not include allowances for potential post closure ARD water treatment. SLR recommends that a specific allowance be carried for ARD mitigation or post closure water treatment until such time that ARD assessments have been carried out and the Conceptual Closure Plan is up date to specifically address ARD management.
8. Post closure monitoring costs are based on four years. It is recommended that Hemco consider a longer post closure monitoring period.

1.1.2.5.2 Porvenir Project

1. Update/finalize preliminary designs for the tailings discharge and process water reclaim systems, fresh water supply, and process water treatment.
2. Carry out sampling and analysis for ARD/ML potential of underground development rock and ore, mill tailings, surface rocks from quarry areas, and general surface excavations associated with development of the mill/mine and tailings storage area.
3. Update the BISA PFS closure concepts and closure estimate to reduce uncertainty in the estimate. In this respect, SLR also recommends that Mineros consider:
   - carrying out studies to assess the feasibility of sealing the mine to achieve flooding of the working to mitigate ARD/ML generation to avoid long term water treatment,
   - carrying out an independent expert review of tailings dam slope designs for long term dam slope stability and erosion protection,
   - extending the long term maintenance and monitoring period beyond the six years.

1.1.2.6 Costs and Economic Analysis

1. Consider renegotiating the gold sales contracts at the end of 2023 to take current market conditions into consideration. While the forward sales contract mitigates the risk of low spot prices, ensuring revenue at prices above the Mineral Reserve price of US$1,500/oz Au, this limits upside potential in the current market of high spot prices.
2. Adjust the costs allocation setup to include operational support costs to the respective mine and plant cost centres instead of grouping support costs and general and administrative (G&A) costs.
3. For Porvenir Project production, determine the planned sales process for the zinc concentrates whether direct to smelter or through a trader.
4. Negotiate contracts for concentrate sales, transportation, storage at the port and ocean shipping as required.

1.2 Economic Analysis

The economic analysis contained in this Technical Report is based on the Hemco Property Mineral Reserves. There are gold Mineral Reserves in the Panama and Pioneer mines and gold, silver, and zinc

Mineral Reserves in the Porvenir deposit. For the Panama and Pioneer mines, the economic assumptions, and capital and operating costs used for the economic analysis were provided by Mineros. For the Porvenir Project, the economic assumptions were provided by Mineros and the capital and operating costs were developed for the Project PFS by BISA and Mineros and reviewed and accepted by SLR. All costs are in Q3 2022 US dollars with no allowance for inflation.

A summary of the key criteria is provided below.

1.2.1 Economic Criteria

1.2.1.1 Physicals

- Hemco Property mine life: 13 years (between years 2023 and 2035):
  - Panama and Pioneer mines: 4.8 years (between years 2023 and 2027).
  - Porvenir Project: 9 years (between years 2027 and 2035).
- Hemco Underground operations
  - Total underground tonnes mined: 7,363 kt at 3.34 g/t Au

Production by Mine	Ore (kt)	Grade (g/t Au)	Grade (g/t Ag)	Grade (% Zn)
Panama Mine (Mechanized)	934	4.00	-	-
Panama Mine (Shrinkage)	97	4.21	-	-
Pioneer Mine (Mechanized)	537	4.84	-	-
Porvenir Project	5,795	3.08	10.29	2.97%
Total LOM Underground Combined Production	**7,363**	**3.34**		

  - The Porvenir Mineral Reserves represent 79% of the total tonnes of Proven and Probable Mineral Reserves on the Hemco Property.
- Processing LOM tonnes:
  - Hemco Plant (Panama and Pioneer mines)
    - Total Ore Feed to Plant: 1,568 kt at 4.30 g/t Au
    - Contained Gold: 216,672 oz Au
    - Average LOM Plant Recovery 90%
    - Recovered Gold: 195,005 oz Au
  - Porvenir Plant
    - Total Ore Feed to Plant: 5,795 kt at 3.08 g/t Au, 10.29 g/t Ag, and 2.97% Zn
    - Contained Metal:
      - Au: 574,657 oz

        - Ag: 1,917,801 oz
        - Zn: 172,363 t (380 Mlb Zn)
    - Average LOM Plant Recovery
        - Au recovery in doré: 85.6%
        - Ag recovery in doré: 52.8%
        - Zn grade in concentrate: 50.0%
        - Au recovery in Zn concentrate: 3.3%
        - Zn recovery in Zn concentrate: 91.1%
    - Recovered Metal:
        - Au: 510,423 oz
        - Ag: 1,011,235 oz
        - Zn: 157,038 t (346 Mlb Zn)
        - Au Equivalent (AuEq): 816,370 oz AuEq

1.2.1.2 Revenue

- Revenue is estimated based on:
    - Mineral Reserve metal prices: A gold price of US$1,500/oz Au for ounces not under the forward sales contract, a silver price of US$19.00/oz Ag and a zinc price of US$1.27/lb Zn
    - A forward sales contract of 1,000 oz Au/month for year 2023, which Mineros will review at the end of 2023 and determine whether to renew the contract for year 2024 and thereafter. This contract mitigates the risk of low spot prices, but limits upside of high spot prices.
- Gold production: doré bars containing gold and silver are sent to two refineries, with a split of 75% (Argor Heraeus, Switzerland) and 25% (Asahi, USA) of production by refinery. Silver was not included in the economic analysis for Panama and Pioneer mines, as it is not included in the Mineral Reserves. Past production from the Panama and Pioneer mines indicates that the production of silver in the doré and its revenue could represent an addition of approximately 1% to 2% additional contribution to the revenue presented in the cash flow.
- Gold and Silver Transportation and Doré Refining Charges are estimated at a LOM average of US$1.24/oz of doré production (including transportation, shipment and treatment charges).
- For zinc production, the assumed smelter terms are based on typical zinc smelter contracts. There is a small amount of payable gold within the Porvenir zinc concentrate. The sale of zinc concentrate and the precise terms are a function of the concentrate quality and the level of impurities in the concentrate.
- Logistics, treatment, and refining charges for the zinc concentrate from Porvenir are assumed at:
    - Transportation to Port: US$76.20/wet metric tonnes (wmt)
    - Ocean freight to China: US$26.00/wmt
    - Treatment charges of US$265/dry metric tonnes (dmt) Zn concentrate

- Net smelter return (NSR) royalty of 1% payable to Auric Resources Corporation (Auric).
- LOM net revenue is US$1,292 million (after Royalty and Treatment Charges)

1.2.1.3 Capital Costs

- Panama and Pioneer mines
  - Hemco Plant Expansion (from 1,750 tpd to 2,200 tpd) capital of US$18.4 million
  - LOM sustaining capital costs of US$52.6 million.
  - Concurrent reclamation and closure costs of US$32.7 million included in the analysis over the LOM. Concurrent reclamation activities occur between 2023 and 2035, and closure and post-closure activities occur between 2036 and 2041.
- Porvenir Project
  - The total initial capital cost for the Porvenir Project is estimated to total US$177.9 million, including a US$19.5 million contingency, and covers the initial capital expenditure and an expansion phase in years 1 and 2 of operation at Porvenir.
  - The Porvenir Project LOM sustaining capital cost is estimated to total US$53.6 million, including contingency of US$2.6 million (or 5%), and represents the sustaining capital required in years 2 to 9 of Porvenir Project operation.
  - Porvenir Conceptual Closure Plan is estimated at US$17.1 million.

1.2.1.4 Operating Costs

- Panama and Pioneer LOM average unit operating costs :
  - Panama SLS mining: US$32.31/ore tonne mined
  - Panama shrinkage mining: US$77.73/ore tonne mined
  - Pioneer SLS mining: US$32.31/ore tonne mined
  - Processing: US$39.41/ore tonne milled
  - Support and G&A US$28.15/ore tonne milled (US$9.85 million per year)
- Porvenir LOM average unit operating costs:
  - Underground mining: US$41.42/tonne mined
  - Processing: US$36.90/ore tonne milled
  - Tailings: US$2.84/ore tonne milled
  - Support and G&A: US$1.95/ore tonnes milled
- Total Hemco Property unit operating costs of US$87.28/ore tonne milled.
- Hemco Property LOM total operating costs of US$643 million.
- Total Hemco Property operating cash cost of US$819/oz AuEq.
- Hemco Property All-In Sustaining Cost (AISC) of US$921/oz AuEq.

1.2.1.5 Taxation and Royalties

- Corporate income tax rate in Nicaragua is 30%. The tax calculation used in the cashflow model is based on a tax model for the Hemco Property developed by BISA for the Porvenir PFS, reviewed and approved by Mineros for use in the cash flow analysis. This model includes depreciation and tax losses. SLR has relied on the tax model provided by Mineros.
- Production from Old Mining Law concessions are subject to an ad valorem tax, equal to 3% of the on-site value of the minerals extracted, less freight costs from the production site to its destination. Production from Mining Law concessions are subject to a 3% legal royalty (extraction right) on the gross sales price of minerals. Such taxes and royalties are deductible from income tax.
- There is a contractual 1% NSR on production from the Bonanza concession, including the Panama and Pioneer mines, payable to Auric (see Taxes and Royalties in Section 4.4.2 of this Technical Report).

1.2.2 Cash Flow

An unlevered after-tax cash flow model has been developed by SLR for the Hemco Property, consolidating physicals, costs, and revenues for the Panama Mine, Pioneer Mine, and Porvenir Project. The inputs for the cash flow model, such as capital and operating costs, were provided for the Panama and Pioneer mines by Mineros' corporate and mine site technical teams, and for the Porvenir Project by BISA and Mineros. All costs are in Q3 2022 US dollars with no allowance for inflation.

SLR notes that the tax model used in the after-tax cash flow model was developed by BISA and approved by Mineros, and has been relied on by SLR. An after-tax cash flow summary for the Hemco Property (consolidated) is presented in Table 1-1.

In addition to the Hemco Property consolidated model, SLR has developed an unlevered after-tax cash flow model for the Porvenir Project on a stand-alone basis, as it is the first-time disclosure of Porvenir Mineral Reserves. SLR's Porvenir Project cash flow model is based on BISA's PFS study financial model. All costs are in Q3 2022 US dollars with no allowance for inflation.

Both cash flow models do not consider the following components:

- Financing costs
- Insurance
- Overhead cost for a corporate office
- Revenue from processing and sale of artisanal mining feeds

Table 1-1: After-Tax Cash Flow Summary (Consolidated)
Mineros S.A. - Hemco Propoerty

	Analysis Type	YE2022 MRMR Audit and NI 43-101 TR		2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Project Timeline in Years				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Commercial Production Timeline in Years				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Time Until Closure In Years		US$ & Metric Units	LoM Avg / Total	13	12	11	10	9	8	7	6	5	4	3	2	1	-1	-2	-3	-4	-5	-6	-7
Market Prices																							
Gold		US$/oz	**$1,500**	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	-	-	-	-	-	-	-
Gold Forward Contract - Stonex (INTL FCStone)		US$/oz	**$1,700**	1,700	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Silver		US$/oz	**$19.00**	-	-	-	-	19.00	19.00	19.00	19.00	19.00	19.00	19.00	19.00	19.00	-	-	-	-	-	-	-
Zinc		US$/tonne	**$2,800**	-	-	-	-	2,800	2,800	2,800	2,800	2,800	2,800	2,800	2,800	2,800	-	-	-	-	-	-	-
Physicals																							
Underground Ore Mined		**kt**	**7,363**	**283**	**380**	**377**	**361**	**527**	**540**	**720**	**720**	**720**	**720**	**720**	**720**	**576**	-	-	-	-	-	-	-
Au Grade Mined		**g/t**	**3.34**	**4.31**	**4.43**	**4.24**	**4.29**	**3.99**	**3.13**	**3.48**	**3.39**	**2.77**	**2.56**	**2.86**	**3.00**	**3.07**	-	-	-	-	-	-	-
Ag Grade Mined		**g/t**	**8.36**	-	-	-	-	**11.62**	**10.99**	**11.35**	**11.71**	**10.29**	**8.51**	**9.12**	**8.91**	**11.16**	-	-	-	-	-	-	-
Zn Grade Mined		**%**	**2.40%**	-	-	-	-	**2.60%**	**3.44%**	**3.23%**	**2.98%**	**3.19%**	**0.03**	**0.02**	**0.03**	**0.03**	-	-	-	-	-	-	-
Waste		**kt**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Material Mined		**kt**	**7,363**	**283**	**380**	**377**	**361**	**527**	**540**	**720**	**720**	**720**	**720**	**720**	**720**	**576**	-	-	-	-	-	-	-
Total Ore Processed		kt	7,363	283	380	377	361	527	540	720	720	720	720	720	720	576	-	-	-	-	-	-	-
Gold Grade, Processed		g/t	3,342.83	4.31	4.43	4.24	4.29	3.99	3.13	3.48	3.39	2.77	2.56	2.86	3.00	3.07	-	-	-	-	-	-	-
Silver Grade, Processed		g/t	8,101.41	-	-	-	-	11.62	10.99	11.35	11.71	10.29	8.51	9.12	8.91	11.16	-	-	-	-	-	-	-
Zn Grade Mined		%	2.40%	-	-	-	-	2.60%	3.44%	3.23%	2.98%	3.19%	2.88%	2.48%	2.92%	2.98%	-	-	-	-	-	-	-
Contained Gold, Processed		koz	791,328	39,224	54,151	51,435	49,750	67,481	54,360	80,618	78,471	64,190	59,267	66,274	69,345	56,763	-	-	-	-	-	-	-
Contained Silver, Processed		koz	1,917,801	-	-	-	-	134,437	190,718	262,741	271,036	238,103	196,965	211,019	206,188	206,594	-	-	-	-	-	-	-
Contained Zinc, Processed		tonnes	172,363	-	-	-	-	9,363	18,555	23,282	21,476	22,947	20,714	17,845	21,016	17,166	-	-	-	-	-	-	-
Average Recovery, Gold		%	89.1%	90%	90%	90%	90%	87%	93%	91%	85%	87%	91%	90%	92%	85%	-	-	-	-	-	-	-
Average Recovery, Silver		%	52.7%	0%	0%	0%	0%	55%	54%	53%	51%	50%	53%	55%	55%	51%	-	-	-	-	-	-	-
Average Recovery, Zinc		%	91.1%	0%	0%	0%	0%	90%	91%	92%	92%	92%	92%	90%	91%	92%	-	-	-	-	-	-	-
Recovered Gold		koz	705,427	35,302	48,736	46,292	44,775	58,983	50,594	73,615	66,358	55,596	53,879.28	59,736.15	63,517.69	48,042.82	-	-	-	-	-	-	-
Recovered Silver		koz	1,011,235	-	-	-	-	74,275	103,669	139,947	137,580	117,945	104,264	115,204	113,127	105,226	-	-	-	-	-	-	-
Recovered Zinc		tonnes	157,038	-	-	-	-	8,406	16,801	21,316	19,653	21,083	18,969	15,974	19,057	15,781	-	-	-	-	-	-	-
Payable Gold	0.0%	koz	201,148	35,277	48,701.8	46,259.2	44,744.0	20,560.9	507	913	938	543	523	820	753	608	-	-	-	-	-	-	-
Payable Silver		koz	490,983	-	-	-	-	37,550	48,754	70,886	63,706	53,425	51,874	57,494	61,171	46,124	-	-	-	-	-	-	-
Payable Zinc		tonnes	1,132,640	-	-	-	-	80,572	116,702	156,398	152,663	134,422	119,107	127,430	127,955	117,390	-	-	-	-	-	-	-
Payable Gold Equivalent		**Eq koz**	**950,309**	**35,277**	**48,702**	**46,259**	**44,744**	**72,183**	**76,825**	**106,877**	**97,092**	**88,406**	**83,358**	**84,731**	**93,133**	**72,723**	-	-	-	-	-	-	-
Cash Flow																							
Gold Revenue - Reserve price		$000s	1,040,596	55,316	73,053	69,389	67,116	87,166	73,891	107,699	96,966	80,952	78,595	87,471	92,885	70,099	-	-	-	-	-	-	-
Silver Revenue - Reserves Price		$000s	19,021	-	-	-	-	1,397	1,950	2,632	2,588	2,219	1,961	2,167	2,128	1,979	-	-	-	-	-	-	-
Zinc Revenue - Reserves Price		$000s	368,246	-	-	-	-	19,711	39,397	49,984	46,085	49,438	44,481	37,458	44,686	37,007	-	-	-	-	-	-	-
Total Gross Revenue		**$000s**	**1,427,864**	**55,316**	**73,053**	**69,389**	**67,116**	**108,274**	**115,238**	**160,315**	**145,639**	**132,609**	**125,037**	**127,096**	**139,700**	**109,085**	-	-	-	-	-	-	-
Underground Mining Cost		$000s	(295,115)	(9,157)	(12,278)	(12,372)	(14,406)	(28,192)	(25,238)	(29,031)	(29,421)	(27,398)	(29,124)	(29,478)	(29,258)	(19,762)	-	-	-	-	-	-	-
Process Cost		$000s	(275,649)	(11,167)	(14,972)	(14,860)	(14,207)	(21,326)	(19,026)	(26,470)	(26,469)	(26,470)	(26,469)	(26,470)	(26,471)	(21,272)	-	-	-	-	-	-	-
Tailings Costs		$000s	(16,474)	-	-	-	-	(1,023)	(1,535)	(2,047)	(2,047)	(2,047)	(2,047)	(2,047)	(2,047)	(1,636)	-	-	-	-	-	-	-
Suport + G&A Cost		$000s	(55,423)	(9,851)	(9,851)	(9,851)	(9,851)	(5,730)	(1,209)	(1,337)	(1,337)	(1,337)	(1,337)	(1,337)	(1,337)	(1,060)	-	-	-	-	-	-	-
Offsite Treatment Cost		$000s	(121,512)	(55)	(76)	(72)	(70)	(6,568)	(12,954)	(16,463)	(15,189)	(16,225)	(14,601)	(12,360)	(14,696)	(12,181)	-	-	-	-	-	-	-
Royalty NSR - Auric Resources Corp.	1.0%	$000s	(14,279)	(553)	(731)	(694)	(671)	(1,083)	(1,152)	(1,603)	(1,456)	(1,326)	(1,250)	(1,271)	(1,397)	(1,091)	-	-	-	-	-	-	-
Total Cash Costs After By-Product Credits		**$000s**	**(778,452)**	**(30,783)**	**(37,907)**	**(37,849)**	**(39,206)**	**(63,923)**	**(61,115)**	**(76,951)**	**(75,919)**	**(74,802)**	**(74,828)**	**(72,962)**	**(75,205)**	**(57,002)**	-	-	-	-	-	-	-
Operating Margin	**45%**	**$000s**	**649,412**	**24,532**	**35,146**	**31,540**	**27,910**	**44,351**	**54,123**	**83,364**	**69,719**	**57,807**	**50,209**	**54,133**	**64,495**	**52,082**	-	-	-	-	-	-	-
EBITDA		**$000s**	**649,412**	**24,532**	**35,146**	**31,540**	**27,910**	**44,351**	**54,123**	**83,364**	**69,719**	**57,807**	**50,209**	**54,133**	**64,495**	**52,082**	-	-	-	-	-	-	-
Depreciation/Amortization Allowance		$000s	(304,604)	(6,465)	(10,389)	(16,207)	(20,031)	(39,230)	(20,522)	(21,589)	(22,594)	(24,559)	(26,654)	(29,559)	(32,952)	(33,852)	-	-	-	-	-	-	-
Earnings Before Taxes		**$000s**	**344,807**	**18,067**	**24,757**	**15,332**	**7,880**	**5,121**	**33,601**	**61,775**	**47,125**	**33,248**	**23,555**	**24,574**	**31,543**	**18,230**	-	-	-	-	-	-	-
Gov. Ad-Valorem Tax - NSR	3.0%	$000s	(42,836)	(1,659)	(2,192)	(2,082)	(2,013)	(3,248)	(3,457)	(4,809)	(4,369)	(3,978)	(3,751)	(3,813)	(4,191)	(3,273)	-	-	-	-	-	-	-
Corp. Income Tax @ Effective Rate of:	9.4%	$000s	(61,338)	(3,263)	(4,578)	(2,082)	(2,013)	(3,248)	(5,586)	(12,280)	(8,458)	(4,803)	(3,751)	(3,813)	(4,191)	(3,273)	-	-	-	-	-	-	-
Net Income		**$000s**	**240,633**	**13,145**	**17,987**	**11,169**	**3,853**	**(1,376)**	**24,558**	**44,685**	**34,298**	**24,467**	**16,053**	**16,949**	**23,161**	**11,685**	-	-	-	-	-	-	-
Non-Cash Add Back - Depreciation/Amortization		$000s	304,604	6,465	10,389	16,207	20,031	39,230	20,522	21,589	22,594	24,559	26,654	29,559	32,952	33,852	-	-	-	-	-	-	-
Working Capital		$000s	-	(2,025)	-	-	-	(534)	-	-	-	-	-	-	-	2,559	-	-	-	-	-	-	-
Operating Cash Flow		**$000s**	**545,238**	**17,585**	**28,376**	**27,376**	**23,883**	**37,321**	**45,080**	**66,275**	**56,893**	**49,026**	**42,707**	**46,508**	**56,113**	**48,096**	-	-	-	-	-	-	-
Hemco Plant Expansion Capital		$000s	(18,370)	(4,818)	(7,172)	(5,500)	(880)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hemco Sustaining Capital		$000s	(52,547)	(16,479)	(17,346)	(11,956)	(6,767)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Porvenir Initial Capital		$000s	(160,708)	-	-	(81,499)	(79,210)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Porvenir Expansion Capital		$000s	(17,223)	-	-	-	-	(12,088)	(5,134)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Porvenir Sustaining Capital		$000s	(53,550)	-	-	-	-	-	(5,446)	(7,470)	(6,031)	(9,823)	(8,379)	(8,715)	(6,785)	(900)	-	-	-	-	-	-	-
Hemco Closure/Reclamation Capital		$000s	(32,657)	(2,697)	(2,324)	(2,310)	(1,535)	(1,533)	(1,292)	(908)	(1,241)	(1,101)	(1,048)	(1,048)	(492)	(787)	(5,277)	(6,605)	(614)	(614)	(614)	(614)	-
Porvenir Closure/Reclamation Capital		$000s	(17,125)	-	-	-	-	-	-	-	-	-	-	-	-	-	(17,125)	-	-	-	-	-	-
Total Capital		**$000s**	**(352,180)**	**(23,994)**	**(26,842)**	**(101,264)**	**(88,391)**	**(13,622)**	**(11,872)**	**(8,378)**	**(7,272)**	**(10,925)**	**(9,428)**	**(9,764)**	**(7,278)**	**(1,687)**	**(22,402)**	**(6,605)**	**(614)**	**(614)**	**(614)**	**(614)**	-
Cash Flow Adj./Reimbursements		**$000s**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

	Analysis Type	YE2022 MRMR Audit and NI 43-101 TR		2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Project Timeline in Years				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Commercial Production Timeline in Years				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Time Until Closure In Years		US$ & Metric Units	LoM Avg / Total	13	12	11	10	9	8	7	6	5	4	3	2	1	-1	-2	-3	-4	-5	-6	-7
LoM Metrics																							
Economic Metrics																							
a) Pre-Tax																							
Free Cash Flow		$000s	**254,395**	(3,147)	6,113	(71,806)	(62,494)	26,947	38,793	70,176	58,078	42,904	37,030	40,557	53,026	49,682	(22,402)	(6,605)	(614)	(614)	(614)	(614)	-
Cumulative Free Cash Flow		$000s		(3,147)	2,966	(68,840)	(131,335)	(104,388)	(65,594)	4,582	62,660	105,564	142,594	183,151	236,178	285,859	263,458	256,853	256,238	255,624	255,010	254,395	254,395
IRR		**%**	**25.4%**																				
NPV @ 5%	5.0%	$000s	142,786																				
NPV @ 10%	**10.0%**	**$000s**	**77,320**																				
NPV @ 15%	15.0%	$000s	38,336																				
b) After-Tax																							
Free Cash Flow		$000s	**193,058**	(6,410)	1,535	(73,888)	(64,508)	23,699	33,207	57,896	49,621	38,101	33,279	36,744	48,835	46,409	(22,402)	(6,605)	(614)	(614)	(614)	(614)	-
Cumulative Free Cash Flow		$000s		(6,410)	(4,875)	(78,763)	(143,271)	(119,572)	(86,364)	(28,468)	21,153	59,254	92,533	129,277	178,112	224,521	202,120	195,515	194,901	194,286	193,672	193,058	193,058
IRR		**%**	**18.5%**																				
NPV @ 5%	5.0%	$000s	99,210																				
NPV @ 10%	**10.0%**	**$000s**	**45,112**																				
NPV @ 15%	15.0%	$000s	13,679																				

1.2.3 Cash Flow Analysis

1.2.3.1 Hemco Property (Consolidated)

SLR prepared a LOM unlevered after-tax cash flow model to confirm the economics of the Hemco Property over the LOM (between 2023 and 2035). Economics have been evaluated using the discounted cash flow method by considering annual processed tonnages and gold, silver, and zinc grades. The associated process recovery, metal prices, operating costs, refining and transportation charges, royalties, and capital expenditures were also considered.

To support the disclosure of Mineral Reserves, the economic analysis demonstrates that the Mineral Reserves are economically viable at a flat gold price of US$1,500/oz Au, a silver price of US$19.00/oz Ag, and a zinc price of US$1.27/lb Zn over the LOM. The pre-tax NPV at a 10% discount rate is US$77 million, and the pre-tax IRR is 25.4%. The after-tax NPV at a 10% discount is US$45 million, and the after-tax IRR is 18.5%.

A summary of the results of the cash flow analysis for the Hemco Property (consolidated) is presented in Table 1-2.

Table 1-2: Cash Flow Analysis (Consolidated)
Mineros S.A. – Hemco Property

Item	Discount Rate	Units	Value
Pre-Tax IRR		**%**	**25.4%**
Pre-tax NPV at 5% discount	5%	US$000	142,786
Pre-tax NPV at 10% discount	**10%**	**US$000**	**77,320**
Pre-tax NPV at 15% discount	15%	US$000	38,336
After-Tax IRR		**%**	**18.5%**
After-Tax NPV at 5% discount	5%	US$000	99,210
After-Tax NPV at 10% discount	**10%**	**US$000**	**45,112**
After-tax NPV at 15% discount	15%	US$000	13,679

The undiscounted pre-tax cash flow is US$254 million, and the undiscounted after-tax cash flow is US$193 million.

The World Gold Council Adjusted Operating Cost (AOC) is US$819/oz Au Equivalent. The mine life sustaining capital cost is US$101/oz AuEq, for an AISC of US$921/oz AuEq. Mine average annual gold production during the LOM is approximately 54,300 oz per year between 2023 and 2035, silver production is 112,400 oz per year between 2027 and 2035, and zinc production is 38.5 Mlb per year between 2027 and 2035.

1.2.3.2 Porvenir Project

Economics for the Porvenir Project on a stand-alone basis have been evaluated over a LOM of nine years, using the discounted cash flow method by considering annual processed tonnages and gold, silver, and zinc grades of ore. The associated process recovery, metal prices, operating costs, refining and transportation charges, royalties, and capital expenditures were also considered. All production, revenue, and cost information are based on BISA's PFS for the Porvenir Project.

The economic analysis demonstrates that the Mineral Reserves are economically viable at a flat gold price of US$1,500/oz Au, a silver price of US$19.00/oz Ag, and a zinc price of US$1.27/lb Zn over the LOM. The Porvenir Project PFS base case economics include an after-tax NPV at a 10% discount rate of approximately US$42 million, an after-tax IRR of approximately 16%, and a payback period of approximately four years from start of production.

The summary of the results of the Porvenir Project PFS cash flow analysis is presented in Table 1-3.

Table 1-3: Porvenir Project PFS Cash Flow Analysis
Mineros S.A. – Hemco Property

Item	Discount Rate	Units	Value
Pre-Tax IRR		**%**	**19.3%**
Pre-tax NPV at 5% discount	5%	US$000	133,996
Pre-tax NPV at 10% discount	**10%**	**US$000**	68,328
Pre-tax NPV at 15% discount	15%	US$000	25,359
Pre-Tax Payback		**years**	**3.6**
After-Tax IRR		**%**	**15.9%**
After-Tax NPV at 5% discount	5%	US$000	98,537
After-Tax NPV at 10% discount	**10%**	**US$000**	41,750
After-tax NPV at 15% discount	15%	US$000	5,000
After-Tax payback		**years**	**4.1**

The undiscounted pre-tax cash flow is US$236 million, and the undiscounted after-tax cash flow is US$188 million.

The World Gold Council AOC is US$813/oz AuEq. The mine life sustaining capital cost is US$116/oz AuEq, for an AISC of US$929/oz AuEq. The Porvenir Project will add average annual production over the nine-year mine life of 56,700 oz Au, along with 112,300 oz Ag and 38.5 Mlb Zn to the Hemco Property.

1.2.4 Sensitivity Analysis

Project risks can be identified in both economic and non-economic terms. Key economic risks were examined by running cash flow sensitivities on after-tax NPV at a 10% discount rate. The following items were examined:

- Metal prices
- Head grade
- Metallurgical recovery
- Operating costs
- Capital costs (Development, Sustaining, and Closure)

After-tax sensitivity over the base case has been calculated for -20% to +20% for head grade, -5% to +5% for metallurgical recovery, -20% to +20% for metal prices, and -15% to +35% for operating and capital cost variations to determine the most sensitive parameter of the Hemco Property.

1.2.4.1 Hemco Property (Consolidated)

The sensitivities for the Hemco Property (consolidated) are shown in Table 1-4 and Figure 1-1.

Table 1-4: Hemco Property After-Tax Sensitivity Analysis
Mineros S.A. – Hemco Property

	Head Grade (g/t Au)	NPV at 10% (US$000)
80%	2.69	-64,151
90%	3.01	-9,095
100%	**3.34**	**45,112**
110%	3.68	95,923
120%	4.01	144,311
	Recovery (% Au)	**NPV at 10% (US$000)**
95%	84.4%	18,214
98%	86.6%	31,757
100%	**88.8%**	**45,112**
103%	91.0%	58,149
105%	93.3%	70,988
	Metal Prices (US$/oz Au)	**NPV at 10% (US$000)**
80%	$1,200	-74,027
90%	$1,350	-12,696
100%	**$1,500**	**45,112**
110%	$1,650	98,552
120%	$1,800	149,565
	Operating Costs (US$/t)	**NPV at 10% (US$000)**
85%	$74.19	84,468
93%	$80.74	65,322
100%	**$87.28**	**45,112**
118%	$102.56	-5,154
135%	$117.83	-60,637

	Capital Costs (US$000)	NPV at 10% (US$000)
85%	$299,353	79,188
93%	$325,767	62,150
100%	**$352,180**	**45,112**
118%	$413,812	5,356
135%	$475,444	-34,400

Note: For head grade, metallurgical recovery, and metal price sensitivities, the table shows only gold units as a reference, given gold is the major commodity for the Hemco Property, while the NPV sensitivity analysis considers variation for all metals produced (gold, silver and zinc).

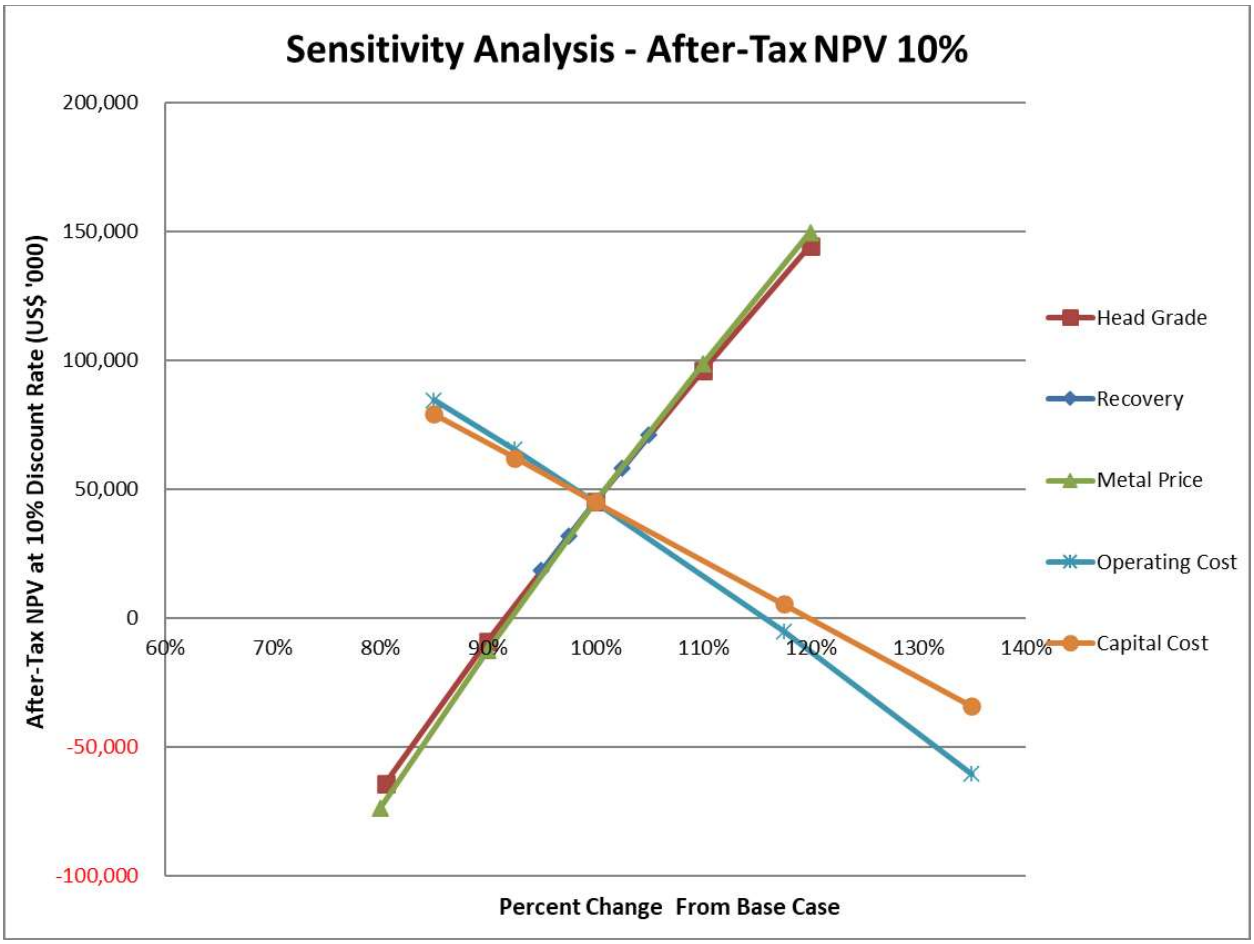


Figure 1-1: $NPV_{10\%}$ Sensitivity Graph

The after-tax NPV is most sensitive to gold price, then head grade and metallurgical recovery, followed by operating and capital costs.

1.2.4.2 Porvenir Project

The sensitivities for the Porvenir Project are shown in Table 1-5 and Figure 1-2.

Table 1-5: Porvenir Project PFS After-Tax Sensitivity Analysis
Mineros S.A. – Hemco Property

	Head Grade (g/t Au)	NPV at 10% (US$'000)	NPV at 5% (US$'000)
80%	2.00	-45,297	-20,850
90%	2.50	-1,541	39,025
100%	**3.08**	**41,750**	**98,537**
110%	3.73	81,959	153,547
120%	4.44	119,101	204,189
	Recovery (% Au)	**NPV at 10% (US$'000)**	**NPV at 5% (US$'000)**
95%	84.5%	20,354	69,119
98%	86.7%	31,166	83,985
100%	**88.9%**	**41,750**	**98,537**
103%	91.1%	52,138	112,775
105%	93.4%	62,458	126,905
	Metal Prices (US$/oz Au)	**NPV at 10% (US$'000)**	**NPV at 5% (US$'000)**
80%	$1,200	-59,595	-40,486
90%	$1,350	-7,263	31,147
100%	**$1,500**	**41,750**	**98,537**
110%	$1,650	86,359	159,571
120%	$1,800	127,902	216,236
	Operating Costs (US$/t)	**NPV at 10% (US$'000)**	**NPV at 5% (US$'000)**
85%	$70.65	71,135	138,835
93%	$76.88	57,167	119,711
100%	**$83.12**	**41,750**	**98,537**
118%	$97.66	3,388	45,648
135%	$112.21	-38,057	-11,171

	Capital Costs (US$000)	NPV at 10% (US$'000)	NPV at 5% (US$'000)
85%	$211,315	69,645	130,363
93%	$229,960	55,697	114,450
100%	**$248,606**	**41,750**	**98,537**
118%	$292,112	9,207	61,406
135%	$335,618	-23,337	24,275

Note: For head grade, metallurgical recovery and metal price sensitivities the table shows only gold units as a reference, given gold is the major commodity for the Porvenir Project, while the NPV sensitivity analysis considers variation for all metals produced (gold, silver, and zinc).

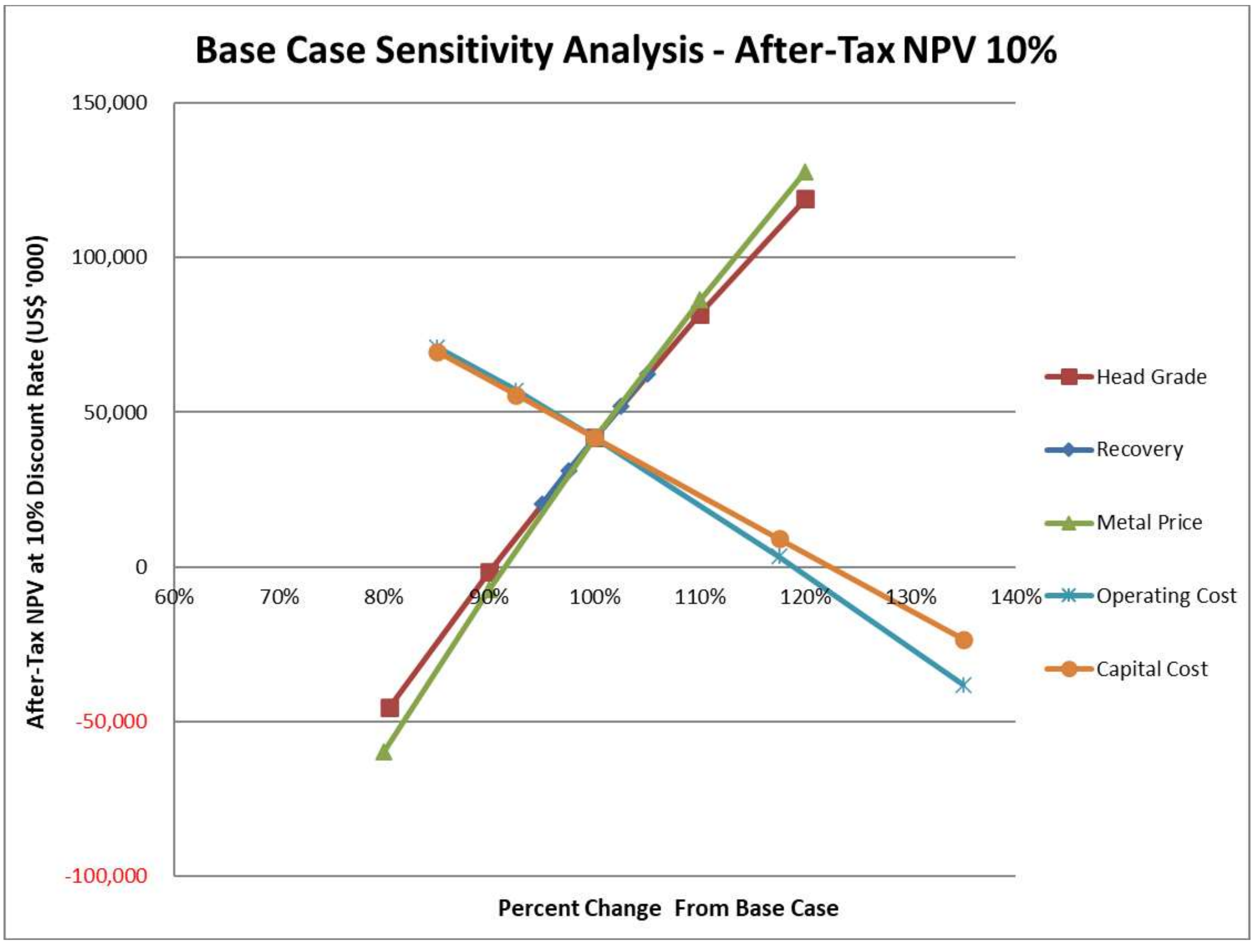


Figure 1-2: NPV$_{10\%}$ Sensitivity Graph

The after-tax NPV is most sensitive to gold price, then head grade and metallurgical recovery, followed by operating costs and capital costs.

1.3 Technical Summary

1.3.1 Property Description and Location

The Hemco Property is located in northeastern Nicaragua near the west central border of Región Autónoma de la Costa Caribe Norte (RACCN), in the vicinity of the town of Bonanza, approximately 230 km northeast of the capital of Managua. The Hemco Property consists of two non-contiguous, irregularly shaped blocks of mining concessions that extend for approximately 70 km in an east-west direction and approximately 100 km in a north-south direction. The centre of the Hemco Property is located at approximately 1,553,116mN and 760,885mE (WGS84 Zone 16).

1.3.2 Land Tenure

The Hemco Property consists of two non-contiguous blocks comprising 25 concessions and one concession application which cover a combined area of 165,452.69 ha. The majority of the mining assets, including the Panama Mine, the Pioneer Mine, the Porvenir Project, and the Processing Plants are located on the Bonanza concession. All concessions are variously located in the municipalities of Bonanza, Siuna, and Rosita, all within the RACCN. Individual concessions expire at various times ranging from June 2027 to June 2044. Concessions that are subject to the current Mining Law are renewable for an additional 25 year term. Concessions that are subject to the Old Mining Law may be entitled to be renewed. There is one contractual royalty and one government royalty associated with the Hemco Property.

Mineros holds a 99.9975% interest in the Hemco Property through its interest in its subsidiary, Hemco. Mineros holds a 99.995% interest in Hemco directly, and a further 0.0025% interest indirectly through Mineros Aluvial S.A.S. BIC (Mineros Aluvial), a wholly owned subsidiary of Mineros. The remaining 0.0025% interest in Hemco is held by Mercantil Colpatria S.A. (Colpatria), a major shareholder of Mineros. Hemco holds a 100% interest in the majority of the concessions that constitute the Hemco Property. Additionally, Mineros holds an ownership interest in three non-material Hemco Property concessions through the following subsidiaries of Hemco: New Castle Gold Mining, S.A. (69.9% held by Hemco), and Vesubio Mining, S.A. (100% held by Hemco).

Hemco and Royal Road Minerals Limited (Royal Road) have entered into a strategic alliance agreement dated September 1, 2017, as amended on May 21, 2021 (the Royal Road Alliance Agreement) to explore, develop, market, and exploit gold and other metal resources within their respective concessions and any additional licences acquired in Nicaragua. The Royal Road Alliance Agreement covers the entirety of the Hemco Property, excluding all Hemco mining operations comprised by the Panama Mine, the Pioneer Mine, the Porvenir Project, the Luna Roja deposit, the Hemco Plant, the La Curva Plant and the Vesmisa Plant (the Hemco Mining Operations), and an area of 1.5 km in all directions of the Hemco mining rights in which the Hemco Mining Operations are now being or will be conducted in the future, with the purpose of identifying new gold and metal deposits within the Hemco Property, other than the Hemco Mining Operations.

New target areas or specified areas of interest are agreed upon by both parties through a joint management committee which must approve all activities undertaken on properties subject to the Royal Road Alliance Agreement. All activities conducted under the Royal Road Alliance Agreement are funded in equal proportions unless otherwise specifically stated. Under the Royal Road Alliance Agreement, at such point as a project, within the area covered by the Royal Road Alliance Agreement, which is deemed to be of interest to both parties, is identified, but in any case no earlier than when the joint management committee has authorized sufficient activities to secure the permits required for drill-testing and drilling has in fact commenced on such project, either party may elect to designate a specified area of interest as a "designated project area" (DPA) resulting in the formation of a joint venture with each of the parties initially holding an equal 50% equity interest. According to the Royal Road Alliance Agreement Royal Road is designated as the operator under the alliance and under any such joint venture, with certain decisions of the operator being subject to the approval of a joint management committee. On October 26, 2022, a DPA was declared by Royal Road in respect of Hemco Rosita VI and the Hemco Rosita VII application.

1.3.3 History

Mining has been a principal economic activity in the municipality of Bonanza since 1880, when the first gold deposits were discovered in the Panama district. Underground mine production commenced from the Constancia vein in 1889. Formal gold production has been carried out in the Hemco Property since 1939. Informal production has probably been carried out over the past 120 years. Since 1993, 1.49 Moz Au have been mined on the Hemco Property through a combination of artisanal and commercial scale mining.

1.3.4 Geology and Mineralization

Bonanza is part of the Bonanza-Siuna-Rosita district, also known as the Mining Triangle, located in the eastern extension of the North Interior Highlands of northeast Nicaragua. Gold and copper mineralization of the Bonanza-Siuna-Rosita district is interpreted to be related to a Late Cretaceous to Paleocene island arc.

At the Hemco Property, the majority of mineralization consists of volcanic hosted gold-silver + copper, lead, and zinc epithermal quartz veins of intermediate sulphidation type. Three groups of mineralized, northeast trending veins, called the Panama Group, Pioneer Group, and Constancia Group, respectively, occur within andesitic and agglomerate units. Each group hosts up to 70 principal veins or vein segments, which collectively define a 20 km long mineralized corridor and host the Panama gold and Pioneer gold and silver deposits. The Porvenir polymetallic deposit is hosted within adjacent volcanic rocks. Gold mineralization at the Luna Roja deposit is hosted by skarns associated primarily with selective replacement of carbonate rocks.

1.3.5 Exploration Potential

The Hemco Property covers an extensive area containing very prospective ground for gold mineralization in the Mining Triangle district of Nicaragua. SLR is of the opinion that there is excellent exploration potential on the Hemco Property and that there is a good opportunity to increase Mineral Resources with more drilling and resource modelling.

The small portions of the areas outlined in artisanal mining that were included in the Mineral Resources in the 2021 Technical Report have been downgraded to exploration targets. This includes seven veins at Panama, Leticia, Silba, four veins at Rosita I, California-Bonancita, Limones, Nueva America, and Wasponona-Poderosa. The exploration potential of these veins is based on diamond drill holes and trenches which outlined a total of 20 mineralized structures spread over different parts of the property. Raw assay intercepts were composited to either 0.5 m lengths or full vein width and then capped. The grade for veins outside of Panama were interpolated into blocks using Inverse Distance to the fourth or third power (ID^4 or ID^3) and grades for Panama veins were estimated using a polygonal estimation methodology. Block grade estimates were validated using industry standard validation techniques.

The total artisanal geological potential for the 20 veins ranges from 330 kt to 540 kt at grades from 4 g/t Au to 7 g/t Au for 60 koz to 100 koz Au.

Artisanal geological potential was estimated for 40 vein groups from the Bonanza concession and four vein groups from the Rosita I concession. Vein groups from the Bonanza concession range from less than 100 m to greater than 1,000 m in estimated strike length and have been projected down dip from approximately 30 m to 60 m, with vein widths ranging from 0.1 m to 1.5 m. Estimated gold grades range from 2 g/t Au to greater than 25 g/t Au. Vein groups from the Rosita I concession range from approximately 300 m to greater than 4,000 m in estimated strike length and have been projected down dip from approximately 30 m to 50 m, with vein widths ranging from less than 0.1 m to greater than 4.0 m. Estimated gold grades range from 2 g/t Au to greater than 20 g/t Au.

The total artisanal geological potential for both the Bonanza and Rosita I concessions ranges between 2.7 Mt and 5.0 Mt at grades from 3 g/t Au to 9 g/t Au for 0.3 Moz Au to 1.5 Moz Au.

The potential quantity and grade of the exploration targets is conceptual in nature, and there has been insufficient exploration to define a Mineral Resource in these areas. It is uncertain if further exploration will result in the targets being delineated as a Mineral Resource.

1.3.6 Mineral Resources

The Mineral Resource estimates for the Hemco Property used conventional block model methods for Panama, Pioneer, Porvenir, Luna Roja and Leticia and San Antonio. All of the deposits are primarily gold deposits, with or without minor silver, except for Porvenir, Leticia, and San Antonio, for which gold, silver, and zinc have reasonable expectations for eventual economic extraction. Parts of the Panama, Pioneer, and Porvenir Mineral Resources have been converted to Mineral Reserves. Mineral Resources are reported outside of mined out areas and design shapes used to report Mineral Reserves.

The term “artisanal areas” in this Technical Report refers to near-surface material from various mineralized structures across the Hemco Property which has been specifically allocated for mining by artisanal miners. Mineros does not intend to extract this material using commercial scale mining.

Material within 30 m of the topographic surface has been excluded from the Pioneer and Porvenir Mineral Resources to allow for artisanal mining.

The Porvenir and Luna Roja deposit estimates were completed by SLR; the Pioneer, Panama block models were completed by either SLR in 2018 or 2019, or by GeoEstima and Mineros in 2019 to 2022. Wireframes for Porvenir, Leticia, and San Antonio were completed by Mineros and wireframes for Pioneer, Panama, and Luna Roja were completed by either SLR in 2018 and 2022, by GeoEstima in 2019, and Mineros in 2019 through 2022. Block estimates were completed using either Datamine, Leapfrog Edge, or Surpac. Estimates were completed using Inverse Distance raised to the second or third exponents (ID^2 or ID^3). Blocks were classified as Measured, Indicated, and Inferred using distance-based criterion in conjunction with grade continuity and vein thickness. SLR validated the estimates using industry standard validation techniques. SLR has reviewed and adopted the Mineral Resource estimates completed by Mineros and GeoEstima.

The Panama deposit resource models are in feet except for Cleopatra, Tigre Blanco, and Independencia, whereas all other deposits are in metres.

The QP is of the opinion that the Mineral Resources are reasonable and suitable to support the estimation of Mineral Reserves.

The Hemco Property Mineral Resource statement, by deposit and exclusive of Mineral Reserves, as of December 31, 2022, is summarized in Table 1-6. Mineral Resources conform to CIM (2014) definitions.

As at December 31, 2022, Measured and Indicated Mineral Resources, exclusive of Mineral Reserves, are estimated to total 4,567.2 kt averaging 3.13 g/t Au and containing 458.9 koz Au, 425.1 koz Ag, and 57.7 Mlb Zn. In addition, Inferred Mineral Resources are estimated to total 7,057.9 kt averaging 3.59 g/t Au and containing 813.9 Moz Au, 1,360.6 Moz Ag, and 165.6 Mlb Zn.

Table 1-6: Mineral Resources by Deposit – December 31, 2022
Mineros S.A. – Hemco Property

Deposit	Cut-Off Grade/Value	Tonnes (kt)	Grade			Contained Metal		
			(g/t Au)	(g/t Ag)	(%Zn)	(koz Au)	(koz Ag)	(Mlb Zn)
Measured Resources								
Panama	2.0 g/t Au	28.2	3.85			3.5		
Pioneer	2.0 g/t Au	12.1	2.59	11.3		1.0	4.4	
Porvenir	US$82.3/t	59.1	1.75	8.08	2.11	3.3	15.4	2.7
Total		**99.4**	**2.45**			**7.8**	**19.8**	**2.7**
Indicated Resources								
Panama	2.0 g/t Au	1,848.7	3.85			228.7		
Pioneer	2.0 g/t Au	480.6	3.62	9.7		56.0	150.5	
Porvenir	US$82.30/t	974.3	2.39	8.13	2.56	74.9	254.8	55.0
Luna Roja (open pit)	0.87 g/t Au	1,139.6	2.39			87.6		
Luna Roja (underground)	2.0 g/t Au	24.6	5.10			4.0		
Total		**4,467.8**	**3.14**			**451.1**	**405.3**	**55.0**
Measured and Indicated Resources								
Panama	2.0 g/t Au	1,876.9	3.85			232.2		
Pioneer	2.0 g/t Au	492.7	3.60	9.8		57.0	155.0	
Porvenir	US$82.30/t	1,033.4	2.35	8.13	2.53	78.2	270.1	57.7
Luna Roja (open pit)	0.87 g/t Au	1,139.6	2.39			87.6		
Luna Roja (underground)	2.0 g/t Au	24.6	5.10			4.0		
Total		**4,567.2**	**3.13**			**458.9**	**425.1**	**57.7**
Inferred Resources								
Panama	2.0 g/t Au	2,222.2	4.60			328.7		
Pioneer	2.0 g/t Au	916.3	3.99	8.1		117.5	239.7	
Porvenir	US$82.30/t	1,693.9	2.42	12.1	3.64	132.1	656.3	135.9
Luna Roja (open pit)	0.87 g/t Au	313.8	2.30			23.2		
Luna Roja (underground)	2.0 g/t Au	185.8	2.37			14.1		
Leticia	US$73.30/t	586.3	4.19	7.1	1.15	78.9	133.8	14.8

Deposit	Cut-Off Grade/Value	Tonnes (kt)	Grade			Contained Metal		
			(g/t Au)	(g/t Ag)	(%Zn)	(koz Au)	(koz Ag)	(Mlb Zn)
San Antonio	US$73.30/t	1,139.6	3.26	9.0	0.59	119.3	330.8	14.9
Total		**7,057.9**	**3.59**			**813.9**	**1,360.6**	**165.6**

Notes:

1. CIM (2014) definitions were followed for Mineral Resources.
2. The effective date for the Mineral Resources is December 31, 2022 excepting the Luna Roja Mineral Resources, which is June 17, 2022.
3. Mineral Resources are estimated at a cut-off grade of 2.0 g/t Au for long hole stoping resource shapes, an NSR cut-off value of US$82.30/t for Porvenir (sub-level stoping), and an NSR cut-off value of US$73.30/t for Leticia and San Antonio. Open pit material at Luna Roja was estimated using a cut-off grade of 0.87 g/t Au.
4. Mineral Resources are estimated using a long term gold price of US$1,700/oz Au, a silver price of US$20/oz Ag, and a zinc price of US$1.36/lb Zn for Panama, Pioneer, Porvenir, and Luna Roja. Mineral Resources are estimated using a long term gold price of US$1,700/oz Au, a silver price of US$20/oz Ag, and a zinc price of US$1.22/lb Zn for Leticia and San Antonio.
5. A minimum mining width of 0.9 m was used at Panama, at Cruzada and Elefante, underground reporting shapes were used to demonstrate Reasonable Prospects for Eventual Economic Extraction. For Pioneer, a minimum mining width of 1.0 m was used for all veins except Lone Star, Pioneer, Pioneer Northeast Extension, Pioneer 3, and Pioneer 4 which used underground reporting shapes to demonstrate Reasonable Prospects for Eventual Economic Extraction. A minimum mining width of 0.8 m was used at Porvenir and 2.0 m at Luna Roja to create underground reporting shapes to demonstrate Reasonable Prospects for Eventual Economic Extraction. At Leticia and San Antonio, grade, continuity, and thickness were used to demonstrate Reasonable Prospects for Eventual Economic Extraction.
6. Bulk density is between 2.66 t/m^3 and 2.68 t/m^3 for Panama, 2.68 t/m^3 for Pioneer, between 2.65 t/m^3 and 2.92 t/m^3 for Porvenir, 2.96 t/m^3 for Luna Roja, 2.72 t/m^3 for Leticia, and 2.75 t/m^3 for San Antonio.
7. Mineral Resources are exclusive of Mineral Reserves.
8. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
9. Material within 30 m of the topographic surface has been excluded from the Pioneer and Porvenir Mineral Resources to allow for artisanal mining.
10. Numbers may not add due to rounding.

There are no open pits in the current mine plan, however, the Hemco Property Mineral Resource estimate includes open pit material at Luna Roja. The open pit material was reported at a cut-off grade of 0.87 g/t Au. All other Mineral Resources are based on an underground mining scenario and are reported using cut-off grades corresponding to underground mining methods.

The QP is not aware of any environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other relevant factors that could materially affect the Mineral Resource estimate.

1.3.7 Mineral Reserves

Hemco Property Mineral Reserves have been estimated for the Panama and Pioneer mines and for the Porvenir Project. The Porvenir Mineral Reserves are an initial estimate and are based upon a PFS level mine design prepared by BISA. SLR has reviewed and accepted the BISA estimate.

The majority of ore production currently comes from the Panama Mine. The Panama Mine has two distinct production areas, informally divided by the 850 Level, with production above the 850 Level derived from non-mechanized shrinkage stoping and production below the 850 Level derived mainly from mechanized long hole stoping with a few areas planned to be mined using shrinkage stoping. While Mineros will continue to mine shrinkage stopes above the 850 Level and identify new mining areas, they were not included in the current Mineral Reserve estimates as there are no adequate resource models and mine designs prepared for those areas. There is an opportunity for Mineros to add these shrinkage stopes to future Mineral reserve estimates once resource models and mine designs have been completed. .

The Lone Star vein at the Pioneer Mine has been extensively developed and mined and development is currently progressing to the Pioneer and Pioneer Extension veins. Pioneer is located 5.5 km from Panama, and all production from Pioneer is processed at the Hemco Plant.

Artisanal production, which has been excluded from the Mineral Reserves, has supplied a large portion of the ore processed currently and historically.

The current LOM for the Panama and Pioneer operations is 4.75 years. Mineros intends to expand the current Panama and Pioneer Mineral Reserves and develop and mine the Porvenir deposits as an underground operation. The current LOM for the Porvenir Project based on BISA's PFS is nine years.

The Panama Mine uses two mining methods for production, shrinkage and mechanized stoping. Mechanized stoping methods consist of sub-level open stoping (SLOS) with pillars and bench and fill mining methods. Shrinkage stoping has historically been the only mining method used at Panama and related mining factors are well understood. The Mineral Reserve estimate is based on industry norms under the expected conditions in the Panama and Pioneer mines.

The Porvenir Project will use two mining methods for production, cut and fill and sub-level stoping (SLS).

Mineral Reserves for the Panama Mine were prepared jointly by Mineros and SLR, Pioneer Mineral Reserves were prepared by SLR with input from Mineros, and the Porvenir Mineral Reserves were estimated by BISA and reviewed by SLR. The Hemco Property Mineral Reserve estimates are based on the development of mine designs, LOM plans, and economic analysis.

Table 1-7 summarizes the Mineral Reserve estimate for the Panama and Pioneer mines, and the Porvenir Project as of December 31, 2022.

Table 1-7: Summary of Mineral Reserves – December 31, 2022
Mineros S.A. – Hemco Property

Category	Deposit	Tonnes	Grade			Contained Metal			
		(kt)	(g/t Au)	(g/t Ag)	(% Zn)	(koz Au)	(koz Ag)	(t Zn)	(Mlb Zn)
Proven	Panama	47	3.36	-	-	5	-	-	-
	Pioneer	110	6.06	-	-	21	-	-	-
	Porvenir	270	2.70	13.61	3.14	23	118	8	19
	Total	**428**	**3.64**			**50**	**118**	**8**	**19**
Probable	Panama	983	4.05	-	-	128	-	-	-
	Pioneer	427	4.53	-	-	62	-	-	-
	Porvenir	5,524	3.09	10.16	2.96	549	1,804	164	360
	Total	**6,934**	**3.31**			**739**	**1,804**	**164**	**360**
Proven + Probable	Panama	1,031	4.02	-	-	133	-	-	-
	Pioneer	537	4.84	-	-	84	-	-	-
	Porvenir	5,794	3.07	10.32	2.96	572	1,922	172	379
	Total	**7,362**	**3.33**			**789**	**1,922**	**172**	**379**

Notes:

1. Mineral Reserves for the Panama orebodies were depleted for production with mined out wireframes to September 30, 2022 and planned production to December 31, 2022. Pioneer orebodies were depleted for production with mined out wireframes to November 30, 2022 and planned stope wireframes to December 31, 2022.
2. CIM (2014) definitions were followed for Mineral Reserves.
3. Mining method:
    a. Panama and Pioneer: shrinkage stoping, sub-level open stoping (SLOS), and bench and fill.
    b. Porvenir: cut-and-fill stoping and sub-level stoping (SLS).
4. Minimum mining width:
    a. Panama and Pioneer: 0.90 m for shrinkage stoping and 1.80 m for mechanized mining methods.
    b. Porvenir: 1.55 m.
5. Cut-off grades and values:
    a. Panama and Pioneer: marginal and break-even cut-off grades of 2.80 g/t Au and 3.56 g/t Au, 2.12 g/t Au and 2.31 g/t Au, and 2.45 g/t Au and 2.78 g/t Au were applied to shrinkage, SLOS, and bench and fill mining methods respectively.
    b. Porvenir: based on NSR value per tonne determinations using metal prices, metal recoveries, and smelter terms, breakeven NSR cut-off values vary from $81.34/t to $83.10/t depending on the mining method.
6. Metallurgical recoveries:
    a. Panama and Pioneer: 90% for gold.
    b. Porvenir: were applied on a block-by-block basis and average 85.6% for gold, 52.8% for silver, and 91.1% for zinc.
7. Dilution:
    a. Panama and Pioneer: dilution skins of 0.25 m were applied to shrinkage stopes and between 0.6 m and 0.8 m to mechanized stopes.
    b. Porvenir: dilution skins 0.25 m thick on stope footwalls and 0.5 m thick on hanging walls.
8. Mining Extraction:
    a. Panama and Pioneer: a factor of 70% was applied to shrinkage stopes and between 75% and 95% to mechanized stopes.
    b. Porvenir: cut-and-fill - 78% to 90% and SLS - 90%.
9. Mineral Reserves estimated using an average long term metal prices of US$1,500/oz Au, $19.00/oz Ag, and $1.27/lb Zn.
10. Total silver and zinc grades were not calculated because it is not representative considering the total tonnage.
11. Totals may appear different from the sum of their components due to rounding.

The QP is not aware of any mining, metallurgical, infrastructure, permitting, or other relevant factors that could materially affect the Mineral Reserve estimate.

1.3.8 Mining Method

1.3.8.1 Panama and Pioneer Mines

Mining is currently carried out solely at Panama and Pioneer.

The Panama Mine is a shallow operation comprised of the extraction of several veins, accessed by an adit. Production areas are informally divided by the 850 Level, with production above the 850 Level derived from non-mechanized shrinkage stoping and production below the 850 Level derived mainly from mechanized long hole stoping with a few areas planned to be mined using shrinkage stoping. While Mineros will continue to mine shrinkage stopes above the 850 Level and identify new mining areas, they were not included in the current Mineral Reserve estimates as their tonnage is not significant.

The area below the 850 Level has been extensively developed with the intention of mining using long hole stoping methods, however, a few stopes have been planned to be mined using shrinkage methods primarily due to the narrow thickness of the orebody.

Blasted material will be loaded by load-haul-dump (LHD) trucks and either directly tipped into a mine truck or into a remuck bay, from where it will be rehandled into a truck. Loading points are planned where cross cuts intersect the ore drives. Trucks will haul the material out of the Panama Mine to the ore stockpile near the Hemco Plant, where it will be rehandled by a front end loader as required for blending purposes.

Where planned, unconsolidated fill from waste rock dumps on surface will be trucked into the cross cuts and loaded and delivered into the stopes by LHDs. SLR notes that raise bored waste passes are being considered but have not been included in the current plan.

The Pioneer Mine consists of four mineralized veins that are spread over a strike length of approximately 1,900 m and have a maximum depth of 250 m below surface. The Pioneer Mine is currently accessed via a single adit. The production approach for the Pioneer Mine is similar to that of the mechanized areas of the Panama Mine. The mineralized veins will be mined using Sub-level Open Stoping (SLOS) and will include permanent rib pillars. Stopes will be accessed via an undercut drift and will be mined in a retreat fashion towards the central access. Mining will commence on the uppermost level and progress down. Mineros does not envisage using backfill at Pioneer.

Production holes will be drilled using a long hole drill rig, and stopes will be drilled from the bottom access. Broken ore will be loaded on LHDs and then loaded onto a truck. Trucks will be loaded on the same level as the production level. The material will then be hauled to the stockpile yard and rehandled accordingly to feed the Hemco Plant.

Since Mineros' acquisition of the Hemco Property in 2013, the Panama Mine has produced a total of 2,002 kt of ore at an average grade of 3.24 g/t Au. Production in 2022 amounted to 213 kt of ore at 3.98 g/t Au. Mining operations at the Pioneer Mine started in 2019 with ore production from development until stoping operations started in 2021. Pioneer has so far produced 196 kt of ore at an average grade of 4.27 g/t Au.

1.3.8.2 Porvenir Project

The Porvenir Project is envisaged to be a stand-alone mining operation with its own processing plant and infrastructure.

Recently, BISA was engaged to prepare a PFS with optimized planning and cost estimation. The deposit is considered able to support a production rate of 2,000 tpd and the PFS is based upon underground trackless mechanized mining and truck haulage from the mine to a plant to be built at Porvenir. Following Mineros' practice at the other Hemco mines, mine development, drilling, blasting, loading, and haulage will be done by contractors.

The Porvenir Project has been split into three zones:

- Porvenir Norte is the largest zone by tonnage; the zone is up to 1,000 m along strike and 3.3 m to 30 m thick (14.2 m average) extending from the 0 m level to the 370 m level.
- Porvenir Sur is the second largest zone and is up to 600 m long on strike and 4.4 m to 15.9 m thick (10.7 m average) extending from the 150 level to the 430 m level.
- Real McKoy is the smallest tonnage but highest gold grade and highest NSR/t zone. It is up to 600 m long on strike and 0.5 m to 3.1 m thick (1.7 m average) extending from the 170 level to the 415 m level.

Mining will be by bench and fill in the narrower zones and by transverse SLOS in the wider portions of the zones. Backfill will consist of rock fill from development, cemented rock fill from surface, and hydraulic fill from the mill tailings.

1.3.9 Mineral Processing

Overall gold recovery for the Hemco Plant in 2022 was 91.1% gold, while overall recovery from all three Processing Plants (Hemco, La Curva, and Vesmisa) was 89.3% gold. The Hemco Plant treats underground and artisanal feeds, while the La Curva and Vesmisa plants treat artisanally mined material only.

1.3.9.1 Hemco Plant

Prior to 2011, the Hemco processing plant had a rated capacity of 750 tpd, which, through various upgrades and changes in operating procedures, has since increased to the current 1,750 tpd.

The milling process consists conventional crushing, grinding, cyanidation, Merrill-Crowe processing, and refining to produce doré bars.

1.3.9.2 La Curva

The La Curva Plant consists of crushing, grinding, gravity recovery, and flotation and thickening unit operations. The concentrates are sent to the Hemco Plant for further processing.

1.3.9.3 Vesmisa

The Vesmisa Plant has a capacity of up to 140 tpd of artisanal ore and consists of crushing, grinding, alkaline agitation cyanide leaching, Merrill-Crowe processing, and refining.

1.3.9.4 Porvenir Project

The material from the Porvenir underground mine will be treated in a new stand-alone 2,000 tpd plant with several unit operations, including: crushing, grinding, cyanidation, Counter Current Decantation (CCD), Merrill-Crowe processing, refining, and flotation. These metallurgical processes will allow two products to be obtained:

1. Doré bars produced by refining
2. Zinc concentrate containing copper, gold, and silver produced by flotation.

The zinc concentrate will be sold on the open market. The process tailings will be treated via a cyanide destruction step before being sent to the Porvenir tailings dam for disposal.

1.3.10 Project Infrastructure

1.3.10.1 Panama and Pioneer Mines

The Panama and Pioneer Mine infrastructure is well developed and includes the following:

- An adit to access mining areas at Panama.
- Three Processing Plants, with the Hemco Plant treating underground, and artisanal feeds, while the La Curva and Vesmisa plants treat artisanally mined material only.
- Power supply from the Hemco Property's own hydroelectric power generation and distribution system, consisting of two hydro plants operating in series and generating up to 5.3 MW. The second source of energy supply comes from a main diesel power plant and a number of generators, which have a capacity of approximately 8.6 MW, and the purchase of energy from the commercial network, which is intended to reach a supply capacity of 1.2 MW.

- Roads to the Hemco Property facilities including the hydroelectric facilities and open pits totalling approximately 50 km.
- Potable water supply from the Neblina reservoir, located in the La Mars gallery, capturing approximately 300 m^3/d of which 20 m^3/d is potable.
- Maintenance shops, as follows:
  - An automotive workshop for maintenance of the diesel and gasoline equipment, as well as welding, electrical repair, tire repair, bodywork, and painting.
  - An industrial workshop for maintenance of the underground equipment, the water-driven turbines of the hydroelectric power generators, and water pumps.
  - An electrical workshop for maintenance of all electrical equipment for the process plant and other facilities.
  - A mine maintenance workshop for repair and maintenance of the electric underground locomotives.
  - A carpentry workshop for the construction and repair of wooden structures.
- Sewage treatment system and Waste Management Complex.
- Approved powder magazine.
- 25,000 m^2 of warehousing and inventory storage, an on-site medical clinic, dining hall, a single employee residence with six rooms, 13 employee houses, a 495 m^2 administration building, and a 315 m^2 engineering office.
- Landline communications, cell phone service, and high speed internet access. Portable radios are also used throughout the Panama and Pioneer mines.
- An approved fuel storage facility for 30,000 gallons of diesel fuel at the Panama Mine.
- An automated sampling plant used to sample ore from artisanal mining operations prior to being sent to the assay laboratory. The sampling plant can accommodate approximately 100 trucks per day (eight working hours) and consists of four sampling stations.

1.3.10.2 Porvenir Project

For Porvenir, approximately 6.4 km of access roads and haul roads will be constructed. All the site roads are designed to be 7 m wide and with a maximum gradient of 12%. The terrain in the area has led to design road cuts up to 25 m high and a net 228,000 m^3 spoil surplus from road construction.

SLR notes that the access road and the roads connecting the portals to the crushing plant will be haul roads and the width and gradient and planned safety berms at 7 m wide do not meet usual guidelines of three times the haul truck width for two way traffic.

Electrical power will be supplied to the Porvenir Project from the local distribution line at 24.9 kV and distributed from a 24.9/4.16 kV main transformer as required on the project. Backup generators to supply critical plant loads will be included in the system; similarly two backup generators will be installed to supply mine power as needed. Additionally there is a project underway, the Rosita Line, to allow interconnection with the 138 kV national grid system from Rosita via Bonanza.

Camp accommodations for 216 persons (employees, staff, and contractors) plus recreation facilities and a dining room will be constructed.

The tailings will be stored in a new tailings storage facility (TSF) located to the southeast of the proposed plant at an elevation of 454 m. The TSF will have the capacity to store 6.99 Mt (4.51 Mm^3), which is considered sufficient for the Porvenir Project life.

1.3.11 Market Studies

The principal commodity for the Panama and Pioneer mines is gold, which is freely traded, at prices that are widely known, so that prospects for the sale of Mineros' gold production are virtually assured. Part of the gold production from the Hemco Property for 2023 is sold under a forward contract with Auramet International LLC. This contract is in place until year 2023. Mineros intends to review the contract at the end of 2023 to decide whether the contract should be renewed for year 2024 and thereafter. The assumption for this Technical Report is that remaining gold production after year 2023 will be sold at the gold price of US$1,500/oz used to estimate the Mineral Reserves.

Gold, silver, and zinc are the principal commodities for the Porvenir mine. The gold and silver produced will be doré similar to the product from Hemco but richer in silver. As above, the prospects for the sale of gold and silver from Porvenir are virtually assured.

Zinc demand is mainly driven by the production of galvanized steel, which is extensively used in numerous sectors from construction, infrastructure, and automobiles to home appliances, machinery, and shipbuilding.

Zinc from Porvenir will be sold in concentrates. Those sales could be through offtake agreements with traders such as Trafigura or Glencore or through direct sale to zinc smelters. In either case, the concentrates will have to be transported from the site and then by sea to their final destination. China, South Korea, and Japan are considered likely to remain as the key undersupplied regions.

The sale of zinc concentrate and the precise terms are a function of the concentrate quality and the level of impurities in the concentrate.

1.3.12 Environmental and Social Considerations

1.3.12.1 Panama and Pioneer Mines

Hemco first assumed responsibility for the environmental impacts associated with the operation of the mine in 1995. The first major environmental measure implemented was to eliminate the dumping of tailings from the Hemco Plant into the Tunki River, which had been polluted by more than 50 years of tailings discharge and sediments contaminated with cyanide and other metals and pollutants. As a result of the measures undertaken by Hemco, aquatic life has returned to the Tunki River. Up to 2016, the environmental compliance framework within which Hemco operated was complicated with extensive and multiplicative reporting requirements as permits/approvals were required on an activity specific basis rather than by primary business processes.

Starting in 2017, Hemco worked with the Secretary of Natural Resources (SERENA) to rationalize the permitting and reporting process into a more holistic approach based on the four kinds of regulated activities at the Hemco Property including Exploration, Exploitation (Mining), Beneficiation (Milling), and Energy. The general goal was to harmonize and standardize legal compliance instruments with the objective of ensuring effective control by the responsible authorities and the company in each of its business processes. Working in co-operation with the environmental authorities, Hemco developed the "Harmonization and Standardization Legal Strategy", through which environmental compliance reporting was decreased from 157 annual environmental compliance reports to four biannual environmental compliance reports, one for each kind of regulated activity.

Currently, Hemco has four Environmental Management Plans (EMP) that focus on preventing, mitigating, monitoring, and compensating environmental impacts through appropriate environmental management during operation, followed by reclamation of impacted areas and reforestation of areas unrelated to mining activities. A key operational aspect is the education of employees on environmental matters, monitoring the soil, water and air quality, in addition to biodiversity, and ensuring compliance with all legal and administrative requirements as imposed by national, regional, and municipal authorities.

Hemco currently operates under a range of environmental permits distributed across the four primary operational units including : exploration permits, mining permits, milling permits, and environmental supply chain permits.

The Hemco Environmental Sustainability Reports provide information on a range of positive environmental sustainability initiatives that minimize the environmental footprint of the Hemco Property. Considerations include power generation, consumption, conservation and climate change, material management, use, reuse/recycle, and waste minimization/disposal, water management, protection, conservation, recycle, treatment and discharge, biodiversity, habitat protection, and improvement.

Hemco has a number of forestry projects underway, the goal of which is to re-establish forests on disturbed lands. Among others, Hemco has 1,676 ha of private land for conservation, located in the buffer zone of Bosawás Biosphere Reserve. This area forms the headwaters of the Pis Pis River, a valuable resource in the region and a tributary of the Coco River, which is one of the main North Caribbean Coast Rivers and serves as the natural border between Nicaragua and Honduras.

There is a very long history of artisanal and industrial mining in the northeastern region of Nicaragua. Since acquiring Hemco, Hemco has made significant strides in developing a positive working relationship with local artisanal and small-scale miners. This includes providing numerous social and economic benefits to individuals and communities in the region directly and indirectly, while advancing safe work practices and reducing environmental impacts associated with mineral extraction and processing.

A total of US$ 33,104,944 (including a 30% contingency) has been allocated to the progressive and final closure of the Hemco (US$32,657,385) and Vesmisa (US$447,559) operations.

1.3.12.2 Porvenir Project

Porvenir environmental management will be carried out in accordance with existing Hemco Corporate EMPs. If any new requirements are identified as the project evolves, additional EMPs would be developed as appropriate. Activities to date have been carried out under an exploration permit. Applications for construction, mining, milling, and other project related permits will be made after the project moves through the environmental assessment process and as feasibility and engineering designs allow. Through this process, environmental impacts will be mitigated, managed and monitored in keeping with corporate, local, and regional requirements and good industry practice.

The Porvenir Project does not currently have a community development plan. However, the development of a plan that will be integrated into the "Plan de Ordenamiento y Desarrollo Urbano de Bonanza" (PODUB) is projected to serve the affected communities and those surrounding the Porvenir Project. Likewise, it is contemplated to implement the Artisanal Mining Management Plan (PODMA), established in the Bonanza project, to work with artisanal miners in association with local and regional government authorities.

It is worth mentioning that the results obtained during the socio-economic baseline study (2022) provide information on the concerns and needs of the surrounding communities, fundamental resources for the incorporation, and approach in the projected community development plan. In general, Porvenir will provide local employment and this will improve the local economy. At the same time, as part of the "Training and capacity building plan", Hemco offers training at its "Escuelita Minera" to both employees and residents of local communities interested in joining the company. Another benefit that Hemco provides is access to a health care clinic, with free beds and medicines, available to employees and their families. The clinic has general practitioners, a surgeon, and specialties such as gynecology, obstetrics, and dental care. Likewise, the company has an ambulance service and provides transportation to hospitals when required.

Ongoing regional development and expansion of Hemco's operations in the region will contribute to improving social and economic opportunities in the region and will provide assistance to local communities and institutions. Continued and expanded interaction with artisanal and small-scale mining will provide further opportunities to encourage changes to improve health and safety and environmental practices.

To date, baseline data collection and assessments have been completed and submission of the Environmental Assessment Report as part of the project approval application will likely occur in mid-2023.

A total of US$17.124.632 (including a 70% contingency) according to Knight Piésold Report for Porvenir has been estimated for the final closure of the Porvenir Project to ensure that the site is returned to a stable and safe condition for future land use. The closure plan includes funds for environmental restoration and monitoring, while no funds are included for post-closure social programs.

1.3.13 Capital and Operating Cost Estimates

1.3.13.1 Panama and Pioneer Mines

The capital and operating costs presented in this section include only the costs required for mining and processing Mineral Reserves from Panama and Pioneer between 2023 and 2027. These costs were supplied to SLR by Mineros corporate and mine site technical teams. The capital and operating cost estimates were prepared based on recent operating performance for years 2021 and 2022 and the current operating budget for year 2023. SLR considers these cost estimates to be reasonable, as long as the production targets are realized.

All costs in this section are expressed in Q3 2022 US dollars and assume an exchange rate of Nicaraguan Cordoba (NIO) 36.24 per US dollar.

Mineros is planning various operational upgrades between 2023 and 2026 to increase Hemco Plant nominal capacity from 1,750 tpd to 2,200 tpd. These Expansion Capital costs for the Hemco Plant have been estimated by Mineros to be US$18.4 million.

Sustaining capital costs for the Panama and Pioneer mines are estimated to be approximately US$53 million. A summary of the LOM sustaining capital costs is provided in Table 1-8.

Table 1-8: Panama and Pioneer Life of Mine Capital Costs
Mineros S.A. – Hemco Property

Item	Total (US$ million)
Sustaining Capital	41.35
Brownfield Exploration	11.20
Total Sustaining Capital Costs	**52.55**

Concurrent reclamation and closure costs for the Hemco Property are currently estimated to be US$32.7 million over the LOM. Concurrent reclamation activities occur between 2023 and 2035, and closure and post-closure activities occur between 2036 and 2041.

The operating cost estimates for Mineros' Panama and Pioneer underground operations were prepared based on recent operating performance for 2021 and 2022.

The operating costs to mine and process an estimated 1,568 kt ore over the LOM total US$160 million. Table 1-9 summarizes the Panama and Pioneer LOM unit operating costs.

Table 1-9: Panama and Pioneer Life of Mine Unit Operating Costs
Mineros S.A. – Hemco Property

Item	Total (US$/t)
Underground Mining	35.12
Processing	39.41
Support and G&A	28.15
Total Operating Cost	**102.68**

1.3.13.2 Porvenir Project

The capital cost estimates for the Porvenir Project total $177.9 million, including a $19.5 million contingency for the initial construction and $17.2 million for an expansion in the first two years of operation.

The initial capital cost is the estimated cost required for Stage 1 of project construction enabling a processing capacity of 1,000 tpd and the Stage 2 expansion capital cost enabling an increase in processing capacity to 2,000 tpd.

The costs are stated on a Q3 2022 basis and there is no allowance for inflation, as summarized in Table 1-10.

Table 1-10: Porvenir Capital Costs
Mineros S.A. – Hemco Property

Item	Initial Capital Cost (US$ million)	Expansion Capital Cost (US$ million)	Total (US$ million)
Mining	21.25	5.06	26.31
Processing	67.28	9.34	76.62
Power	9.05		9.05
Infrastructure	7.04		7.04
Tailings	10.48		10.48
Sub-total Direct Cost	**115.11**	**14.40**	**129.51**
Indirect Costs	21.31	1.26	22.57
Owner's Costs	4.77		4.77
Sub-total Indirects & Owners Cost	**26.08**	**1.26**	**27.34**
Total excluding Contingency	**141.19**	**15.66**	**156.85**
Contingency	19.52	1.57	21.08
Total Capital Costs	**160.71**	**17.22**	**177.93**

The sustaining capital cost are estimated to be $53.6 million including a $2.6 million (or 5%) contingency and represents the sustaining capital required in years 2 to 9 of operation.

The operating costs by area are summarized in Table 1-11 and Table 1-12.

Table 1-11: Porvenir Annual Operating Costs
Mineros S.A. – Hemco Property

(US$ million)	Total LOM	Years								
		1	2	3	4	5	6	7	8	9
Mine	240.06	21.35	25.24	29.03	29.42	27.40	29.12	29.48	29.26	19.76
Plant	213.88	14.76	19.03	26.47	26.47	26.47	26.47	26.47	26.47	21.27
Administration	11.29	1.00	1.21	1.34	1.34	1.34	1.34	1.34	1.34	1.06
Tailings	16.47	1.02	1.53	2.05	2.05	2.05	2.05	2.05	2.05	1.64
Total	**481.70**	**38.01**	**47.14**	**58.88**	**59.27**	**57.25**	**58.98**	**59.33**	**59.11**	**43.73**

Table 1-12: Porvenir Annual Unit Operating Costs
Mineros S.A. – Hemco Property

(US$/t)	Total LOM	Years								
		1	2	3	4	5	6	7	8	9
Mine	41.42	59.30	46.74	40.32	40.87	38.05	40.45	40.94	40.64	34.33
Plant	36.90	41,00	35.24	36.77	36.77	36.77	36.77	36.77	36.76	36.95
Administration	1.95	2.78	2.24	1.86	1.86	1.86	1.86	1.86	1.86	1.84
Tailings	2.84	2.84	2.84	2.84	2.84	2.84	2.84	2.84	2.84	2.84
Total	**83.12**	**105.93**	**87.06**	**81.79**	**82.33**	**79.52**	**81.92**	**82.41**	**82.10**	**75.97**

The Porvenir manpower is estimated to be 345 in the first year of operations, rising to 406 persons in year 5 of operations. The total includes 180 contractors in year 5 of operations.

2.0 INTRODUCTION

SLR Consulting (Canada) Ltd (SLR) was retained by Mineros S.A. (Mineros) to prepare this updated Technical Report on the Hemco Property, located in northeast Nicaragua, and operated by Hemco Nicaragua S.A. (Hemco), a 99.9975% owned subsidiary of Mineros. The purpose of this Technical Report is to support the disclosure of the December 31, 2022 Mineral Resource and Mineral Reserve estimate for the Hemco Property, including an initial Mineral Reserve estimate and the results of a Prefeasibility Study for the Porvenir Project. This Technical Report conforms to National Instrument 43-101 Standards of Disclosure for Mineral Projects (NI 43-101) as published by the Canadian Securities Administrators (the umbrella organization of Canada's provincial and territorial securities regulators).

Mineros is a Medellín-headquartered, publicly traded, Colombian-incorporated mining company, with gold properties in Colombia, Nicaragua, and Argentina. Mineros' other operating assets include:

- The Nechí alluvial gold mining operations (the Nechí Property) in Antioquia, Colombia,
- The Gualcamayo gold mine, located at the Gualcamayo gold property (Gualcamayo Property) in San Juan and La Rioja Provinces, Argentina.

The Hemco Property consists of the producing Panama gold mine (Panama Mine or Panama, including Panama, Elefante, Toboba, Tesoro, Neblina, Pluto, Neptuno, and Capitan veins), the producing Pioneer gold mine (Pioneer Mine or Pioneer, including the Lone Star, Northeast, Pioneer Northeast Extension, and Pioneer 3 veins), the pre-development-stage Porvenir polymetallic deposit (Porvenir Project or Porvenir), the Luna Roja gold deposit (Luna Roja), the Leticia and San Antonio polymetallic deposits (Leticia and San Antonio), and a large number of artisanal operations (artisanal areas).

The Hemco Property also hosts three processing plants with a combined capacity of 2,000 tonnes per day (tpd)—the Hemco Plant, the La Curva Plant, and the Vesmisa Plant (together, the Processing Plants)—which process ore mined from the Hemco Property and locally purchased artisanal feeds, in addition to other project infrastructure.

2.1 Sources of Information

The Qualified Persons (QP) for this Technical Report are Sean Horan, P.Geo., SLR Technical Manager – Geology and Mineral Resources, and Principal Geologist and Geostatistician, Varun Bhundhoo, ing., SLR Project Mining Engineer, R. Dennis Bergen, P.Eng., SLR Associate Principal Mining Engineer, Brenna J.Y. Scholey, P.Eng., SLR Principal Metallurgist, and Gerd Wiatzka, P.Eng., Consulting Civil/Environmental Engineer and Principal, Vice President and Director Mining of Arcadis Canada Inc. The SLR QPs have visited the Hemco Property on several occasions, with the most recent site visit by Messrs. Bhundhoo and Wiatzka on August 4, 2021.

Discussions were held with personnel from Mineros and Hemco, Mineros' principal operating subsidiary in Nicaragua:

- Martin Parra, Manager of Mine Planning – Hemco
- Jorge Andrés Rubio, Superintendent of Mine Planning - Hemco
- Gerardo Downs, Superintendent of Mine Exploration – Hemco
- Edwing Diaz, GIS Leader – Hemco
- Daniela Gómez, GIS Geologist – Hemco

- Franklin Morales Gomez, Mining Engineer - Associate
- Nataly Betancur, Metallurgist Manager, Hemco
- Miguel Vallejo, Process Manager, Hemco (Porvenir Project)
- José Díaz, Exploration Senior Manager – Hemco (Greenfield Exploration)
- Carlos Velasquez, Exploration Manager – Hemco (Greenfield Exploration)
- Norman Altamirano, Exploration Resource Geologist - Hemco (Greenfield Exploration)
- Sandra Sánchez, GIS Geologist Coordinator – Hemco (Greenfield Exploration)
- Diana Lopera, Superintendent of Mine Exploration – Hemco (Artisanal Mining)
- Melvin Miranda, Hemco Environmental Manager
- Diana Sernaitis, Hemco, Environmental Superintendent
- Irene Chow, Environmental Superintendent – Hemco (Porvenir Project)
- Belen Guevara, Knight Piésold, Project Manager (Porvenir Project)
- Angelica Ramirez Barcenas, Planning and Control Leader – Hemco (Porvenir Project)
- Roman Henao Giraldo, project leader – Hemco (Porvenir Project)
- Jorge Orlando Aceituno, Project Manager – Hemco (Porvenir Project)
- Luis Fernando Ferreira de Oliveira, Resources and Reserves Manager - Mineros
- Claudia Patricia Castaño, Resources and Reserves Leader – Mineros
- Adriana Castro Ramirez, Gis Geologist Coordinator - Mineros
- Rafael Castilla Rueda, Corporate Currency & Commodities Trader – Mineros
- Clifford Ramirez Barreto, Financial and Administrative Manager, Hemco
- Erika Arias Garces, Corporate Investment Banking Analyst – Mineros
- Gerardo Magaña, Legal Superintendent – Hemco
- Azaria Espinoza, Legal Analyst - Hemco
- Ana Isabel Gaviria, Legal Vice President – Mineros
- Ana María Ríos Puerta, Mining Business Vice President - Mineros

All authors of this Technical Report are independent QPs as defined in NI 43-101. Table 2-1 lists the QPs and their responsibilities for this Technical Report.

Table 2-1: Qualified Persons and Responsibilities
Mineros S.A. – Hemco Property

QP, Designation, Title	Responsible for:
Sean Horan, P.Geo., Technical Manager Geology	Sections 1.1.1.1, 1.1.2.1, 1.3.1 to 1.3.6; 2 to 12, 14; 23; 25,1; and 26.1
Varun Bhundhoo, ing., Senior Mining Engineer	Sections 1.1.1.2.1, 1.1.1.4.1, 1.1.2.2.1, 1.1.2.4.1, 1.3.7 (Panama and Pioneer), 1.3.8.1; 15 and 16 (Panama and Pioneer); 18.1; 25.2.1; 25.4.1, 26.2.1, and 26.4.1

QP, Designation, Title	Responsible for:
R. Dennis Bergen, P.Eng., Associate Principal Mining Engineer	Sections 1.1.1.2.2, 1.1.1.4.2, 1.1.1.6, 1.1.2.2.2, 1.1.2.4.2, 1.1.2.6, 1.2, 1.3.7 (Porvenir), 1.3.8.2, 1.3.11, 1.3.13; 15 and 16 (Porvenir); 18.2; 19; 21; 22; 24; 25.2.2; 25.4.2, 26.2.2, and 26.4.2
Brenna J.Y. Scholey, P.Eng., Principal Metallurgist	Sections 1.1.1.3, 1.1.2.3, 1.3.9; 13; 17; 25.3; and 26.3
Gerd Wiatzka, P.Eng., National Expert Civil/Environmental Engineer, Vice President and Director Mining of Arcadis Canada Inc.	Sections 1.1.1.5, 1.1.2.5, 1.3.12; 20, 25.5; 26.5

The documentation reviewed, and other sources of information, are listed at the end of this Technical Report in Section 27 References.

2.2 Cautionary Note Regarding Forward-Looking Information

This Technical Report contains "forward looking information" within the meaning of applicable securities laws. Forward looking information includes statements that use forward looking terminology such as "may", "could", "would", "will", "should", "intend", "target", "plan", "expect", "budget", "estimate", "forecast", "schedule", "anticipate", "believe", "continue", "potential", "view" or the negative or grammatical variation thereof or other variations thereof or comparable terminology. Such forward looking information includes, without limitation, statements with respect to estimates and expectations for production, production costs of sales, AISC and capital costs, cost savings, project economics (including NPV and IRR) and other information regarding the PFS; references to the future price of gold, silver and zinc; the estimation of Mineral Reserves and Mineral Resources; the realization of Mineral Reserve and Mineral Resource estimates; the timing and amount of estimated future production, costs of production, and capital expenditures; costs and timing of the development of the Porvenir Project and mining and processing activities; planned exploration, development and production activities at the Hemco Property, including at Porvenir; the supply and processing of mineralized material from artisanal mining; and any other statement that may predict, forecast, indicate or imply future plans, intentions, levels of activity, results, performance or achievements.

Forward looking information is based upon the assumptions discussed in the Technical Report, and other reasonable assumptions, estimates, analysis and opinions of the authors of the Technical Report made in light of their respective and perception of trends, current conditions and expected developments, and other factors that they believes are relevant and reasonable in the circumstances at the date such statements are made. Many of these assumptions are based on factors and events that are not within the control of the Company and there is no assurance they will prove to be correct. The assumptions are inherently subject to significant business, social, economic, political, regulatory, competitive and other risks and uncertainties, contingencies and other factors that could cause actual actions, events, conditions, results, performance or achievements to be materially different from those projected in the forward looking information. These risk factors specifically include, without limitation: risks relating to variations in the mineral content within the material identified as Mineral Resources and Mineral Reserves from that predicted; variations in rates of recovery and extraction; developments in world metals markets; exchange rate fluctuations; inflation; increases in the estimated capital and operating costs or unanticipated costs; difficulties attracting the necessary work force; increases in financing costs or adverse changes to the terms of available financing, if any; changes in tax rates or royalties; changes in development or mining plans due to changes in logistical, technical or other factors; changes in project parameters as plans continue to be refined; risks relating to receipt of regulatory approvals; delays in stakeholder negotiations; changes in regulations applicable to the development, operation, and closure of mining operations; the effects of competition in the markets in which the Company operates; operational and infrastructure risks; ability to obtain the timely supply of the services, equipment and materials necessary for operation, and the development and construction of the Porvenir Project; and the additional risks described in this Technical Report, and the ''Risk Factors" sections of the Company's annual information form and management's discussion and analysis ("MD&A"), available on SEDAR at www.sedar.com. The Company cautions that the foregoing lists of important assumptions and factors that may affect future results are not exhaustive. Other events or circumstances could cause actual results to differ materially from those estimated or projected and expressed in, or implied by, the forward looking information contained herein. There can be no assurance that forward looking information will prove to be accurate, as actual results and future events could differ materially from those anticipated in such information. Accordingly, readers should not place undue reliance on forward looking information.

Forward looking information contained herein is made as of the date of this Technical Report and the Company disclaims any obligation to update or revise any forward looking information, whether as a result of new information, future events or results or otherwise, except as and to the extent required by applicable securities laws.

2.3 Non-IFRS Financial Measures

This Technical Report contains certain forward-looking non-IFRS financial measures. Operating cash cost per ounce of AuEq and AISC per ounce of AuEq included in this Technical Report are non-IFRS financial ratios based on cash cost and AISC, respectively, which are non-IFRS financial measures. Management believes that non-IFRS financial measures and non-IFRS ratios, when supplementing measures determined in accordance with IFRS, provide investors with an improved ability to evaluate the underlying performance of the Company. Non-IFRS financial measures and non-IFRS ratios do not have any standardized meaning prescribed under IFRS, and therefore they may not be comparable to similar measures employed by other companies. This data is intended to provide additional information and should not be considered in isolation or as a substitute for measures of performance prepared in accordance with IFRS. For a discussion of the use of non-IFRS financial measures and reconciliations thereof to the most directly comparable IFRS measures, please refer to Section 10 – Non-IFRS and Other Financial Measures in the Company's MD&A for the year ended December 31, 2022, which is available on the Company's SEDAR profile at www.sedar.com, and which is incorporated herein by reference.

For the year ended December 31, 2022, the following historical non-IFRS financial measures were reported in the Company's MD&A for the year ended December 31, 2022: Cash cost – US$313,117,000; Cash cost per ounce of gold sold – US$1,178; AISC – US$392,648,000; and AISC per ounce of gold sold – US$1,365.

Please note that in this Technical Report, operating cash cost, operating cash cost per ounce of AuEq, AISC and AISC per ounce of AuEq differ from the equivalent historical non-IFRS financial measures reported in the Company's MD&A, being cash cost, cash cost per ounce of gold sold, AISC and AISC per ounce of gold sold, respectively, because, as used in this Technical Report: (a) AISC is calculated as cost of sales, less administrative expenses, sustaining capital expenditures, and royalties; (b) cost of sales excludes costs associated with production from artisanal mining; (c) ounces of AuEq sold excludes production from artisanal mining; and (d) operating cash cost per ounce of AuEq and AISC per ounce of AuEq are reported on a gold equivalent basis, not on a by-product basis, and accordingly, cost of sales is not adjusted for sales of silver.

2.4 List of Abbreviations

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

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

3.0 RELIANCE ON OTHER EXPERTS

This Technical Report has been prepared by SLR for Mineros. The information, conclusions, opinions, and estimates contained herein are based on:

- Information available to SLR at the time of preparation of this Technical Report,
- Assumptions, conditions, and qualifications as set forth in this Technical Report.

SLR has relied on information provided by Mineros by email on February 16, 2023, pertaining to certain legal matters, including mineral tenure and surface rights, contained in Section 1 and Section 4. SLR has relied on a legal opinion of BLP entitled "Title Opinion - Mining Concessions and corporate aspects in Nicaragua," dated September 15, 2021, for the description of mining rights in Nicaragua contained in Section 4. SLR has not researched property title or mineral rights for the Hemco Property, and expresses no independent opinion as to the ownership status of the property.

SLR has relied on Mineros for information regarding environmental permits and their status. This information was relied on in Section 1 and Section 20.

SLR has relied on Mineros for guidance on applicable taxes, royalties, and other Nicaraguan government levies or interests, applicable to revenue or income from the Hemco. This information was relied on in Section 1, Section 20, and Section 22.

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

4.0 PROPERTY DESCRIPTION AND LOCATION

The Hemco Property is located in northeastern Nicaragua near the west central border of Región Autónoma de la Costa Caribe Norte (RACCN), in the vicinity of the town of Bonanza, approximately 230 km northeast of the capital of Managua (Figure 4-1). The Hemco Property consists of two non-contiguous, irregularly shaped blocks of mining concessions that extend for approximately 70 km in an east-west direction and approximately 100 km in a north-south direction. The centre of the Hemco Property is located at approximately 1,553,116mN and 760,885mE (WGS84 Zone 16).

4.1 Mineral Rights in Nicaragua

4.1.1 Legal Regime

Mineral exploration and exploitation of mineral deposits in Nicaragua are governed by a legal framework that includes the Nicaraguan Political Constitution, Law No. 387 "Special Law for the Exploration and Exploitation of Mines (Mining Law) which has been in effect since 2001. Decree No. 119-2001, Decree No. 9-96 "Regulations to the Environmental Law", Decree No. 20-2017 "Environmental Assessment System for Permits and Authorizations for the Sustainable Use of Natural Resources" (EAS), Law No. 316 "General Law on the Exploitation of Natural Wealth" (Law 316), Decree No. 1067 "Special Law on Exploration and Exploitation of Mines and Quarries" (Old Mining Law), and Ministerial Resolutions (as defined below), in each case as amended, and supervised principally by the Minister of Energy and Mines (Ministerio de Energía y Minas, MEM) of the Government of Nicaragua and the Directorate-General of Mines (Dirección General de Minas, DGM), a division of MEM.

Mining concessions are granted by a Ministerial Resolution and may be subject to the Old Mining Law or the Mining Law. The Hemco Property includes concessions under both the Old Mining Law and the Mining Law.

The Old Mining Law was in effect from 1965 until it was repealed in 2001 by the Mining Law. Art. 113 of the Regulations to the Mining Law, as published in Volume No. 4, of January 7, 2002, of "La Gaceta" Official Diary, the official newspaper of the Government of Nicaragua, granted to concession holders the right to transition their concessions under the new Mining Law for a period of 180 business days following the publication of the Regulations to the Mining Law, failing which the concessions would remain subject to the Old Mining Law. On September 18, 2012, an amended Regulation to the Mining Law was published in Volume No. 177 of "La Gaceta", Official Diary, which repealed Art. 113. It is unclear whether concessions that were not transitioned under the new Mining Law within 180 business days of January 7, 2002, became entitled to be transitioned under the new Mining Law as a result of the 2012 amendments.

4.1.2 Nature of a Mining Concession

A mining concession is a right in-rem different from the ownership of land, even though both the concession holder and the landowner may be the same person or entity. Concessions grant to the holder the exclusive right (subject to the rights of artisanal miners) to explore and/or exploit, refine, store, transport, sell, and export metallic and non-metallic substances located within the concession, to an indefinite depth. Exploitation concessions that are subject to the Old Mining Law authorize the holder to exploit specific minerals but may be amended to include additional minerals upon application by the concession holder to the Ministry of the Economy. Concessions granted under the new Mining Law authorize the holder to explore for and exploit all metallic substances, non-metallic substances, minerals, and rocks, including salt.

A concession grants rights that are enforceable against third parties and may also be transferred to third parties. Concessions may be mortgaged and subject to any other contract (e.g., assignment, lease, merger with other mining concessions, the constitution of royalty rights or any other liens affecting the concession). A concession may be divided, assigned, or transferred to third parties, subject to the prior authorization of MEM upon application by the concession holder. Once granted, MEM´s authorization must be copied in full in the public deed where the division, assignment, or transfer is formalized.

In order to be legally effective as against third parties, all legal instruments affecting mining rights and obligations granted by a concession, including the Ministerial Resolution granting the concession, and any other agreements, contracts, covenants, easements, mortgages, liens, assignments, judicial orders, pre-emptive measures, changes in the concession holder's by-laws, and others, must be further recorded within the Central Registry of Mining Concessions maintained by MEM (Central Registry), as well as with the local public registry of immovable property (Public Registry) in the jurisdiction(s) where the concession is located. Certain acts, such as transfers of concessions and rights derived therefrom, and promises, liens and covenants affecting concessions, must also be published in "La Gaceta", Official Diary, to be legally effective as against third parties.

4.1.3 Grant of Mining Concessions

To conduct mining exploration and exploitation activities in Nicaragua, a concession must be granted by the State of Nicaragua through the MEM. The applicant for a concession files a written request with MEM, following which MEM confirms the availability of a concession in the requested area. The grant of a concession by MEM is subject to acceptance by the municipal and/or regional authorities in the locale where the proposed concession is located. If such acceptance is granted, MEM issues a Ministerial Resolution granting the concession. The concession must be further published in "La Gaceta", and recorded with the Central Registry), as well as within the local Public Registry in each jurisdiction where the concession is located.

4.1.4 Terms of Concessions

Under the current Mining Law, a concession is granted by MEM for a maximum area of 50,000 ha and for a 25-year term, which may be extended one time for an additional 25-year term. Under the current Mining Law, a concession allows the holder to conduct both exploration and exploitation activities.

Under the Old Mining Law, a concession was granted by the General Directorate for Natural Resources, a dependency of the Ministry of Economy, the former governmental regulator for mines. Concessions were granted either for exploration or exploitation activities, and in order to obtain an exploitation concession, an applicant would have to hold a previously granted exploration concession over the relevant area. Exploration concessions were granted for areas ranging from 100 km^2 up to 5,000 km^2, and exploitation concessions were granted within the area of an exploration concession, subject to a maximum area of 120 km^2. An exploration concession was granted for a term of between two and five years, depending on the area covered, as follows:

Area of Concession	Term of Concession
100 km^2 – 500 km^2	2 years
500 km^2 – 1,500 km^2	3 years

Area of Concession	Term of Concession
1,500 km^2 – 3,000 km^2	4 years
3,000 km^2 – 5,000 km^2	5 years

The term of an exploration concession granted under the Old Mining Law could be extended once, for one or two years, subject to the renunciation of 50% of the initial surface area of the concession.

An exploitation concession could have been granted for different terms under the Old Mining Law. A long term concession could have been granted for a term of 30 to 50 years, depending on the deposit's dimensions, with no legal entitlement to extension. A short-term concession could have been granted for an initial term of 10 years and could have been extended for two additional consecutive periods of five years each, for a maximum total term of 20 years.

Each concession granted by a resolution (*Acuerdo Ministerial*, Ministerial Resolution) issued by the Government of Nicaragua through MEM, which provides for the merger, division, reduction, assignment, mortgage, encumbrance and relinquishment of the concession, among other things.

4.1.5 Legal Obligations of a Concession Holder Surface Rights Payments

Under the current Mining Law, the following surface rights payments must be paid to the State of Nicaragua on a semi-annual basis, in January and July of each year:

Amount in hectare (US$)	Year of Concession
0.25	First
0.75	Second
1.50	Third and Fourth
3.00	Fifth and Sixth
4.00	Seventh and Eighth
8.00	Ninth and Tenth
12.00	Eleventh onwards

Concessions under the Old Mining Law are subject to an annual surface right payment based on the size of the concession (measured in hectares) and the number of years held, as set out in the applicable concession agreement.

4.1.6 Royalties and Tax

Under the current Mining Law, the State of Nicaragua is entitled to receive a 3% legal royalty (extraction right) on the gross sales price of minerals produced from a concession, payable monthly. Royalty payments are a deductible expense for income tax purposes. According to the Mining Law, the legal royalty (extraction right) is conceptualized as a royalty but is in fact a special tax on mineral production applicable to the mining industry.

Under the Old Mining Law, an ad valorem tax is established as a variable tax, calculated on the on-site value of the minerals extracted, less freight costs from the production site to its destination. The ad valorem tax rate is established as a 5% rate, however, the Old Mining Law granted the National

Commission of Mining the right to fix a different rate between 0.1% and 10%. The final rate is established in each concession agreement. Under the Old Mining Law, the State of Nicaragua is entitled to a 30% right over the industrial and commercial benefits of the concession, defined as the difference between the net assets at the opening of each fiscal period and the net assets at the closing of such fiscal period according to the official certified financial balance. In general, this participation is payable within six months following the year when the benefit is produced, though in practice each Ministerial Resolution may set forth the specific rules regarding the form and term of payment of this participation in respect of each concession. The concession holder may deduct the ad valorem tax at the applicable rate for purposes of calculating and paying the State of Nicaragua's 30% participation right. This participation right has been terminated under the Mining Law and replaced with an income tax.

In order to calculate royalty payments, holders of concessions, under both the Mining Law and the Old Mining Law, file with MEM a monthly production report within 15 days after the end of each month.

The Old Mining Law and Law 316, provide concession holders an exemption from (i) customs, import and export taxes, including consular fees, for all materials, machinery, instruments, and supplies that they need to import, so long as they are directly or immediately related to their exploration or exploitation works and that such materials or supplies are not produced in Nicaragua in sufficient amounts and at reasonably competitive prices; and (ii) taxes on their movable and real estate properties.

The current Mining Law allows concession holders to apply for a temporary customs admission regime to exempt or suspend import duties or taxes on materials, machinery, instruments, and supplies. Concession holders are also exempted from real estate municipal taxes applicable to their real estate properties located within their concessions.

4.1.7 Inspections

Concession holders must allow MEM and the Ministry or Environment and Natural Resources (MARENA) personnel to inspect the concessions and comply with their recommendations.

4.1.8 Surface Rights

Concession holders must request and obtain permit from the owners of the land where a concession is located before performing any mining activities, including the negotiation of terms and conditions of compensation due for the use of soil and infrastructure of private property. Typically, concession holders and landowners execute lease or permit agreements to allow the concession holders to conduct their mining activities in a specific area owned by such third party. This agreement may be registered in the Public Registry where the concession is located, but failure to register does not invalidate the authorization to use the area granted by the landowner.

Under both the Old Mining Law and the current Mining Law, concession holders are allowed to conduct their mining activities and occupy nationally owned public land within the concession area, for which they typically execute lease agreements, or the concession title serves as sufficient title to allow the concession holder to occupy such lands. Permitted activities include the performance of basic works in normal economic conditions, including the transportation of supplies, equipment and extracted substances, surveys or drilling activities, and necessary works for the supply of water to personnel and facilities, as well as to clear trees to enable mining activities, subject to applicable environmental laws, without the need for applying for a separate concession for forest exploitation or deforestation permits.

4.1.9 Reporting

In addition to the reports referred to in "Royalties and Tax", above, concession holders must file with MEM an annual report on mining activities to be performed during the year, including the project's phases such as exploration, exploitation, processing, and commercialization. The information includes personnel hired, industrial safety, geological activities performed and results, mining production, financial statements, information on the organization of the company and any amendments thereof, investments and expenses on the mining concession.

4.1.10 Artisanal and Small-Scale Miners

"Artisanal mining" refers to the exploitation of mineral resources by individuals, either on an individual basis or through organized groups, using manual techniques. Artisanal miners require permits issued by MEM. Concession holders must allow artisanal miners to conduct mining activities within 1% of the concession area and submit annual reports to MEM on the activities of, and their cooperation and agreements with, artisanal miners. In turn, artisanal miners must coordinate their activities with the concession holder, and such activities cannot interfere with the concession holder's mining operations or support facilities. Concession holders are responsible for compliance with environmental obligations within the concession area. This obligation extends to the activities of artisanal miners within their concessions.

"Small-scale mining" refers to the exploitation of mineral resources by individuals or legal entities not exceeding an extraction or processing capacity of 15 tpd. Small-scale mining requires a special licence granted by MEM, valid for a three-year term. A small-scale mining licence does not grant exclusive rights over the licensed area. In order to obtain a special licence, small-scale miners must submit a request to MEM, including a topographic survey describing the location and area requested, which must be available for reservation pursuant to a concession, detailing the activities to be conducted and the mineral to be exploited. After the expiry of a small-scale mining licence, the area that was previously reserved for small-scale mining activity becomes subject to the general mining regime, requiring the small-scale miners to apply for a concession. Any such application has priority over concession applications submitted by third parties.

4.1.11 Termination of Concessions

Concessions may be terminated upon expiry of the original term or any extended term. Concessions may also be relinquished by the concession holder by filing a request with MEM, provided that the holder is up-to-date and in full compliance with its obligations, including the economic, technical, and environmental obligations. After reviewing and confirming that the concession holder is in compliance, MEM authorizes the relinquishment. Concessions may also be terminated by decree of MEM due to recurring serious infractions of the Mining Law by the concession holder. A concession may be cancelled on the third recurrence of a serious infraction such as the extraction of minerals or substances not authorized by MEM, providing a false declaration for the location of landmarks in the mining concession area, or a false declaration to obtain a mining concession, the destruction or illegal modification of landmarks, the counterfeiting of registration and records of mining concessions, executing mining activities that endanger existing infrastructure, and the breach of any technical norm issued by competent authorities.

4.2 Land Tenure

The Hemco Property consists of two non-contiguous blocks comprising 25 concessions and one concession application which cover a combined area of 165,452.69 ha (Figure 4-2). The majority of the mining assets including the Panama Mine, the Processing Plants, the Pioneer Mine, and the Porvenir Project are located on the Bonanza concession. All concessions are variously located in the municipalities of Bonanza, Siuna, and Rosita, all within the RACCN. Individual concessions expire at various times ranging from June 2027 to June 2044. Concessions that are subject to the Mining Law are renewable for additional 25 year term. Concessions that are subject to the Old Mining Law may be entitled to be renewed.

Mineros holds a 99.9975% interest in the Hemco Property through interest in its subsidiary, Hemco. Mineros holds a 99.995% interest in Hemco directly, and a further 0.0025% interest indirectly through Mineros Aluvial S.A.S. BIC (Mineros Aluvial), a wholly owned subsidiary of Mineros. The remaining 0.0025% interest in Hemco is held by Mercantil Colpatria S.A. (Colpatria), a major shareholder of Mineros. Hemco holds a 100% interest in the majority of the concessions that constitute the Hemco Property. Additionally, Mineros holds an ownership interest in three non-material Hemco Property concessions through the following subsidiaries of Hemco: New Castle Gold Mining, S.A. (69.9% held by Hemco), and Vesubio Mining, S.A. (100% held by Hemco).

Table 4-1 lists all of the Hemco Property concessions and relevant ownership and tenure information.

Since May 2008, Hemco has maintained relationships with artisanal miners, most of whom belong to one of several artisanal mining cooperatives that exist in the area. Since acquiring Hemco, Mineros has built upon and expanded on these relationships. Hemco is party to indefinite term agreements with 13 artisanal mining cooperatives to make available between 3% and 4% in the aggregate of the Hemco Property, designated by Hemco, for mining by artisanal miners, and to purchase ore that they produce. In addition, the contracts provide for tax, environmental protection, safety, and anti-corruption obligations matters with respect to the cooperatives' activities. The cooperatives are independent, formal entitles licensed by the Nicaraguan Ministry of Cooperatives (MEFCCA). Some of the contracts are renewed periodically, and others have an indefinite term. Hemco and the artisanal mining cooperatives are members of the Municipal Artisanal Mining Commission (CMMA), an inter-institutional organization that functions as the governing body for the sector.

The Hemco Plant and La Curva Plant are 100% owned by Hemco. The Vesmisa Plant is 100% owned by Vesubio Mining, S.A. (100% held by Hemco). All of the Vesmisa Plant and La Curva Plant feeds, and a portion of the Hemco Plant feeds, are purchased from artisanal mining cooperatives pursuant to these agreements.

Under its Old Mining Law concessions that are subject to Ministerial Resolution No. 018-RN-MC-1994, including the Bonanza, Monte Carmelo II, and Monte Fresco II concessions, Hemco is authorized to mine gold, silver, lead, zinc, copper, cadmium, bismuth, platinum, iron, manganese, tungsten, precious stones, chromium, titanium, sandstones, limestone, clays, and marble.

Table 4-1: Land Tenure
Mineros S.A. – Hemco Property

Name	Municipality	Area (ha)	Ministerial Resolution	Ministerial Resolution Modified	Date Granted	Expiry Date
			Hemco			
Bonanza	RACCN	12,269.75	018-RN-MC/1994		10-Jun-94	9-Jun-44
Bonanza H-I	Bonanza	16,184.25	AM 221-RN-MC/2002	085-DM-387-2012 (transfer)	29-Jul-02	28-Jul-27
Hemco Bonanza II	Bonanza	5,105.43	44-DM-292-2011		5-Sep-11	5-Sep-36
Hemco Bonanza III	Bonanza, Siuna	2,624.99	47-DM-232-2010		30-Aug-10	30-Aug-35
Hemco Bonanza IV	Bonanza, Rosita	6,121.70	49-DM-234-2010	009-DM-601-2015 (partial renunciation)	28-Jul-10	28-Jul-35
Hemco Bonanza V	Bonanza	2,996.50	48-DM-233-2010		28-Jul-10	27-Jul-35
Hemco Bonanza VI	Bonanza, Siuna	7,737.03	50-DM-235-2010		28-Jul-10	27-Jul-35
Hemco Rosita I	Rosita	9,750.00	45-DM-293-2011		5-Sep-11	4-Sep-36
Hemco Rosita IV	Rosita	8,300.00	35-DM-220-2010	005-DM-597-2015 (partial renunciation)	30-Aug-10	29-Aug-35
Hemco Rosita V	Rosita, Siuna	24,684.76	37-DM-222-2010	004-DM-596-2015 (partial renunciation)	4-Aug-10	4-Aug-35
Hemco Rosita VI	Rosita	3,000.00	51-DM-236-2010	006-DM-598-2015 (partial renunciation)	28-Jul-10	26-Jul-35
Hemco Siuna I	Siuna	10,056.12	38-DM-223-2010	008-DM-600-2015 (partial renunciation)	4-Aug-10	3-Aug-35
Hemco Siuna II	Siuna	6,173.71	39-DM-224-2010		4-Aug-10	3-Aug-35
Hemco Siuna III	Siuna	15,925.00	40-DM-225-2010	010-DM-602-2015 (partial renunciation)	4-Aug-10	8-Aug-35
Hemco RB-I	Rosita	10,271.44	42-DM-290-2011	007-DM-599-2015 (partial renunciation)	2-Sep-11	1-Sep-35
Hemco RB-II	Bonanza, Rosita	6,700.00	46-DM-231-2010		9-Aug-10	8-Aug-35
Hemco HB-V	Bonanza	2,800.00	45-DM-230-2010		9-Aug-10	8-Aug-35
Hemco HB-VI	Bonanza	300.00	44-DM-229-2010		9-Aug-10	8-Aug-35
Monte Carmelo I	Rosita	51.55	664-RN-MC/2006		29-Jul-02	28-Jul-27
Monte Carmelo II	Rosita	103.10	669-RN-MC/2006		10-Jun-94	9-Jun-44
Monte Fresco I	Rosita	64.00	667-RN-MC/2006		29-Jul-02	28-Jul-27
Monte Fresco II	Rosita	40.00	668-RN-MC/2006	065-DM-170-2009 (location correction)	10-Jun-94	9-Jun-44

Name	Municipality	Area (ha)	Ministerial Resolution	Ministerial Resolution Modified	Date Granted	Expiry Date
Rosita VII	Rosita	14,063.10	pending		Pending	
			Vesubio Mining, S.A.			
El Mayo	Bonanza	78.00	140-RN-MC/2000 (authorized)	071-DM-250-2010 (transfer)	31-May-07	30-May-32
			New Castle Gold Mining, S.A.			
Magdalena	Bonanza	19.25	10-DM-05-2007 (authorized)	069-DM-249-2010 (transfer)	29-Mar-07	28-Mar-37
Roca Larga	Bonanza	33.00	018-DM-08-2007 (authorized)	072-DM-251-2010 (transfer)	5-Jun-07	4-Jun-37
	Total	**165,452.68**				

Figure 4-1

Mineros S.A.

Hemco Property

Región Autónoma de la Costa Caribe Norte

Location Map

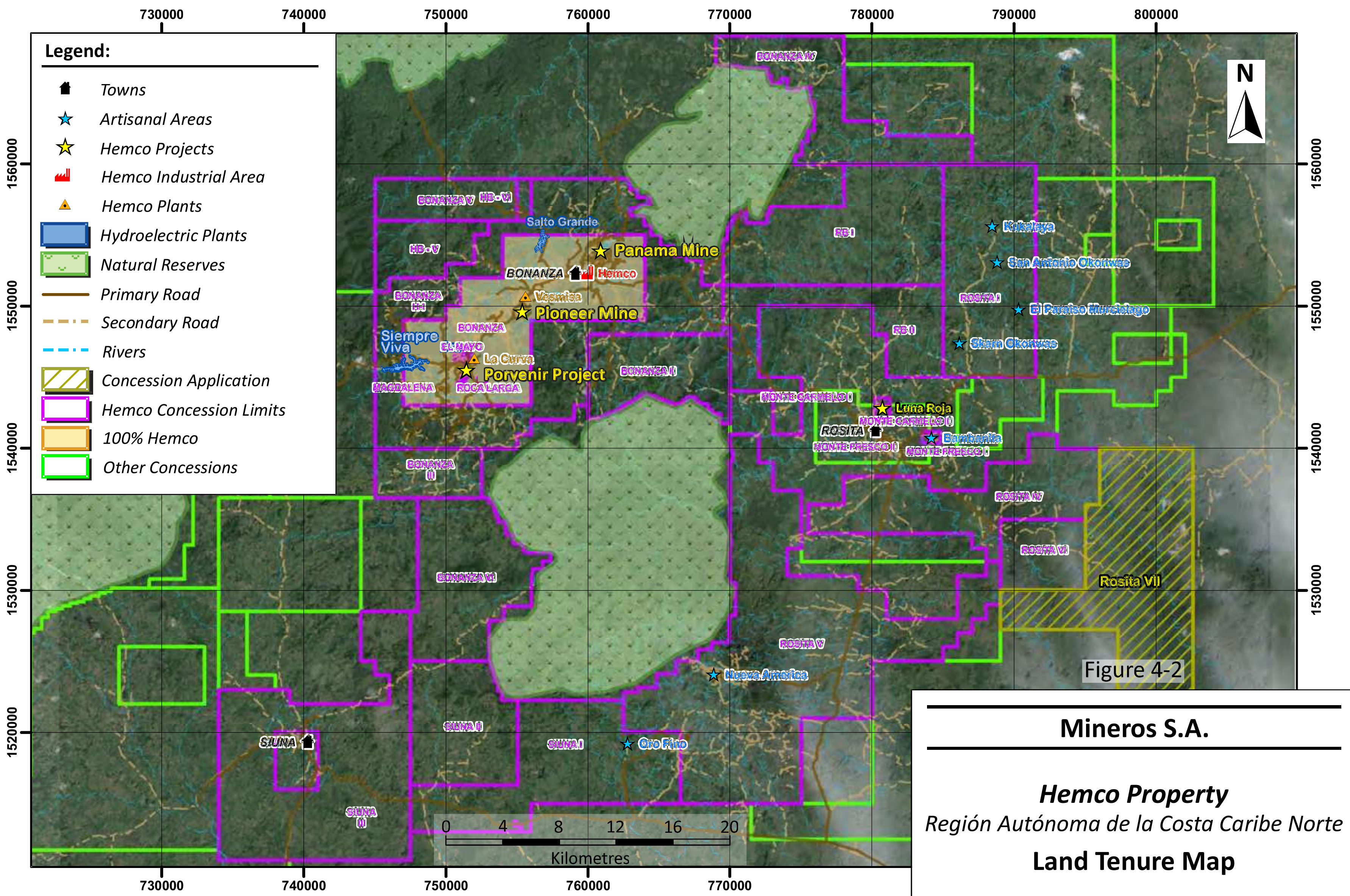


Figure 4-2

Mineros S.A.

Hemco Property

Región Autónoma de la Costa Caribe Norte

Land Tenure Map

March 2023

Source: SLR, 2023.

4.3 Surface Rights

Hemco's surface rights include: owned properties totalling 1,106.1 ha, of which 628.2 ha are held pursuant to publicly registered instruments and 476.1 ha are held pursuant to unregistered instruments; possession rights agreements in respect of properties totalling 815.9 ha; and leases with the State of Nicaragua covering 808.5 ha. Such surface rights encompass the Hemco Property industrial area, administrative buildings, workshops and warehouses, camp facilities, and access portals to the underground mine, Venus and Neptuno and the Pioneer Mine development area for open pit mining. Hemco also enters into temporary easements from time to time when required in connection with local exploration activities. Hemco's surface rights are sufficient to support Hemco's mining operation.

4.4 Agreements, Taxes, and Royalties

4.4.1 Agreements

Hemco and Royal Road Minerals Limited (Royal Road) have entered into a strategic alliance agreement dated September 1, 2017, as amended on May 21, 2021 (the Royal Road Alliance Agreement) to explore, develop, market, and exploit gold and other metal resources within their respective concessions and any additional licences acquired in Nicaragua. The Royal Road Alliance Agreement covers the entirety of the Hemco Property, excluding all Hemco mining operations comprised by the Panama Mine, the Pioneer Mine, the Porvenir Project, the Luna Roja deposit, the Hemco Plant, the La Curva Plant and the Vesmisa Plant (the Hemco Mining Operations), and an area of 1.5 km in all directions of the Hemco mining rights in which the Hemco Mining Operations are now being or will be conducted in the future, with the purpose of identifying new gold and metal deposits within the Hemco Property, other than the Hemco Mining Operations. It also gives Hemco the ability to identify and acquire an interest in new gold and other metal deposits at all of Royal Road's concessions in Nicaragua, and any additional licenses acquired in Nicaragua by either party.

New target areas or specified areas of interest are agreed upon by both parties through a joint management committee which must approve all activities undertaken on properties subject to the Royal Road Alliance Agreement. All activities conducted under the Royal Road Alliance Agreement are funded in equal proportions unless otherwise specifically stated. Under the Royal Road Alliance Agreement, at such point as a project, within the area covered by the Royal Road Alliance Agreement, which is deemed to be of interest to both parties, is identified, but in any case no earlier than when the joint management committee has authorized sufficient activities to secure the permits required for drill-testing and drilling has in fact commenced on such project, either party may elect to designate a specified area of interest as a "designated project area" (DPA) resulting in the formation of a joint venture with each of the parties initially holding an equal 50% equity interest. According to the Royal Road Alliance Agreement, Royal Road was designated as the operator under any joint ventures formed thereunder, with certain decisions of the operator being subject to the approval of a management committee consisting of two representatives of each of Hemco and Royal Road. All project costs of any such joint venture will be co-funded by the parties based on their respective ownership of the joint venture, which will be subject to dilution in the event funds are not contributed as required. If a party's interest in a joint venture is diluted below 15% of the total interest, such party's interest automatically converts to a 1.5% Net Smelter Return (NSR) royalty. Neither Hemco nor Royal Road may abandon, surrender, or transfer any of the concessions named in the Royal Road Alliance Agreement without first complying with a right of first refusal in favour of the other party.

The Royal Road Alliance Agreement affects the Bonanza, Bonanza H-I, Bonanza II, Bonanza III, Bonanza IV, Bonanza V, Bonanza VI, Rosita I, Rosita IV, Rosita V, Rosita VI, Siuna I, Siuna II, Siuna III, RB I, RB II, HB V, HB VI, Monte Fresco I, and Monte Fresco II concessions, but excludes all the Hemco Mining Operations and an area of 1.5 in all directions of the Hemco mining rights in which the Hemco Mining Operations are being now or in the future conducted. Each of Hemco and Royal Road has a right of first refusal to cause any exploration concession acquired in Nicaragua by the other party to become subject to the Royal Road Alliance Agreement. If a party acquires concessions, surface rights, real property, environmental rights, and/or other rights within a DPA, it must give notice to the other party, who may elect to have those rights added to the DPA.

As of the date of this Technical Report, there was one project area designated for exploration on the Hemco Property: the Caribe exploration target (Caribe), located on the Rosita VI concession and the Rosita VII concession application. Hemco and Royal Road each hold a 50% interest in Caribe. On September 3, 2019, Royal Road declared Luna Roja a DPA under the Royal Road Alliance Agreement, constituting it a joint venture. On May 21, 2021, Hemco acquired all of Royal Road's interest in Luna Roja, and the Royal Road Alliance Agreement was amended to remove the concessions that comprise Luna Roja from the area of interest under that agreement. On October 26, 2022, a DPA was declared by Royal Road in respect of Hemco Rosita VI and the Hemco Rosita VII application. In the fourth quarter of 2022, Mineros and Royal Road suspended all activities under the Royal Road Nicaragua Alliance Agreement. The next steps moving forward are under discussion between the companies.

4.4.2 Taxes and Royalties

The Bonanza, Monte Fresco II, and Monte Carmelo II concessions, which are subject to the Old Mining Law, are subject to surface rights payment obligations of US$8.00/ha per year. Such concessions are subject to Ministerial Resolution No. 018-RN-MC-1994, which did not include the fiscal treatment of the ad valorem tax imposed under the Old Mining Law. On October 3, 2012, the text was corrected by Ministerial Resolution No. 060-DM-364-2012, which fixes the ad valorem tax applicable to these concessions at 3% of the value of substances produced after beneficiation. Ministerial Resolution No. 060-DM-364-2012 has not been duly recorded at the Central Registry/Public Registry and accordingly may not be enforceable.

The remaining Hemco Property concessions, which are subject to the Mining Law, are subject to surface rights payment obligations of US$12.00/ha per year and a 3% legal royalty on the gross sales price of minerals produced.

The surface right payments and ad valorem tax or legal royalty paid, as applicable, are deductible expenses for income tax purposes.

Production from the Bonanza concession, including the Panama and Pioneer mines, is subject to a contractual 1% NSR royalty, and production from the Monte Carmelo II and Monte Fresco concessions is subject to a contractual 0.5% NSR royalty, in each case payable to Auric Resources Corporation (Auric) in perpetuity.

4.5 Permits

EAS establishes five categories of activities requiring an Environmental Permit. The evaluation, control, and monitoring of environmental legal obligations in Nicaragua for projects located in the RACCN is carried out by the regional environmental commissions (GRAAN - CRACCN) in conjunction with Secretary of Natural Resources (SERENA) in coordination with MARENA. The Hemco Property is also regulated by the

RACCN Council. Permits for forest exploitation and the use and discharge of wastewater are granted and managed by the National Forest Institute (INAFOR) and National Water Authority (ANA) respectively.

Metallic mining activities, including the exploration with platforms, surveys or drilling activities, trenches, wells and galleries; exploitation exceeding 15 tpd of extraction; the establishment of exploitation plants and the installation of facilities for the use of explosive materials, are classified as Category II of EAS, projects with High Potential Environmental Impact.

In order to obtain a Category II Environmental Permit, a concession holder must complete MARENA's Environmental Permit application form, submit to preliminary review and inspection by MARENA of the concession area that is subject to the application. MARENA prepares and delivers terms of reference for the project to the concession holder, after which the concession holder prepares and submits an EIA for review by MARENA. A public consultation process is conducted by local municipalities, with the exception of the RACCN and the neighbouring region, Región Autónoma de la Costa Caribe Sur, where consultations are conducted by the local SERENA. Following the public consultations, MARENA issues a technical opinion on the project, and if approved, an administrative resolution granting the requested Environmental Permit. According to EAS, the above procedure is carried out within 45 business days. Once the Environmental Permit is granted, the concession holder can conduct the activities authorized by the permit for a period of 18 months. If it is not possible for the activities authorized by an Environmental Permit to be completed within 18 months, the concession holder may request a permit renewal for an additional 30 day period prior to the permit´s expiration, failing which the Environmental Permit will expire and a new permit must be requested.

Category III, IV, and V environmental permits are required for projects, facilities, or activities that can cause moderate environmental impacts and these are granted on application to SERENA. The process for Category III, IV, and V permits also requires submitting technical information and the issuance of an Environmental Permit or authorization by SERENA.

The Old Mining Law provides that a concession holder is subject to the regulations issued for the rational exploitation of the mineral deposits, being the current environmental regulations contained in both the Environmental Law and the EAS, which apply equally to all concessions, whether they are subject to Old Mining Law or the current Mining Law. Hemco has all required permits to conduct work as presently conducted on the Hemco Property. For more information regarding the permits and their status, see Section 20.

4.6 General

A portion of the Hemco Property (just under 2,000 km^2) is within the buffer zone of the BOSAWAS (Bocay-Saslaya-Waspuk) natural reserve. Accordingly, Hemco has developed an extensive forestry conservation, offset, and reclamation program to mitigate impacts of past mining in the region and protect and enhance regional forests going forward.

The QP is not aware of any environmental liabilities on the Hemco Property. The QP is not aware of any other significant factors and risks that may affect access, title, or the right or ability to perform the work on the Hemco Property as presently conducted.

5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 Accessibility

The Hemco Property is located in northeast Nicaragua, near the town of Bonanza. The road, from Managua through to Boaco, Río Blanco, Rosita, and ultimately to Puerto Cabezas on the Caribbean coast, provides access to the majority of the RACCN. The total distance by road from Managua to Bonanza is 420 km, of which the segment from Managua to Rio Blanco (220 km) is paved. Access to Bonanza from the nearby town of Rosita (30 km) is by gravel road.

There is a functioning commercial airport in Bonanza, the San Pedro airport (BZA), which is approximately 5.2 km by road west-northwest from the Panama Mine offices. The dirt, unlighted airstrip at San Pedro is 1,400 m in length and is only suitable for short take-off and landing (STOL) fixed wing aircraft or helicopter. Nicaraguan domestic airline, La Costeňa, makes three flights per week to and from Managua using 12-passenger Cessna Caravan aircraft.

5.2 Climate

The Hemco Property area has a wet tropical climate, with heavy precipitation during most of the year and a relatively short dry season. Annual average precipitation is 2,800 mm. The average temperature during the rainy season from May to October ranges from 27°C to 32°C, and in the dry season from November through April is 35°C. Operations may be carried out year-round.

5.3 Local Resources

The community of Bonanza has a population of approximately 27,000 people. Various services including temporary accommodations and medical services, including a 30-bed hospital, are available in Bonanza. The community is connected to the national hydroelectric grid system.

The most important economic activities in Bonanza are artisanal and industrial mining, followed by primary activities such as agriculture, ranching, and forestry. Regional agriculture has yet to match local market demands; therefore, a considerable amount of produce is imported from the Pacific region.

5.4 Infrastructure

The reader is referred to Section 18 of this Technical Report.

5.5 Physiography

The municipality of Bonanza is located in the interior highlands where the topography is characterized by gentle to steep-sided mountains that are incised by numerous rivers and densely forested. Relief in the highlands range from 100 MASL to 1,000 MASL. The average elevation of Bonanza is 250 MASL and the local terrain is hilly, having slopes ranging from 15° to 70°.

Bonanza is located in a zone classified as a low seismic threat by the Instituto Nacional de Estudios Territoriales (INETER). The seismic events that infrequently affect the area have deep epicentres and are associated with the subduction of the Cocos plate. The depth of these events is generally between 70 km and 300 km and their magnitude varies from 1 to 7 on the Richter Scale. Numerous faults or fracture zones are known in the area, some of which are believed to be active and could generate seismic events. There are no studies detailing either probabilities or possible magnitudes. No history pertaining to significant earthquakes damaging local infrastructure has been recorded.

6.0 HISTORY

6.1 Prior Ownership

In 1880, the first gold deposits were discovered in the Panama district, and by 1889, underground mine production had commenced from the Constancia vein. In 1902, the Panama Mining Company started operations at the Lone Star deposit. In 1905, a cyanide plant and mill were installed in the Pis-Pis (Bonanza) region. In 1915, the Edén Mining Company, a subsidiary of the Tonopah Mining Company of Nevada, was established to work the Siempre Viva, Constancia, Lone Star, Bonanza, and Concordia mines. The Constancia Consolidated Company was established in 1916 to mine the Siempre Viva and Constancia properties, and the Nicaragua Mining Company of Philadelphia was formed in 1919 to acquire the Lone Star, Bonanza, Mars, and Concordia mines.

In the period from 1922 to 1925, the Edén Mining Company was destroyed by rebel factions involved in national political conflicts. In 1937, the mining operations resumed and were consolidated under the Neptune Gold Mining Company (Neptune), a joint venture subsidiary of American Smelting and Refining Company (ASARCO) and the New York and Honduras Rosario Mining Company (Rosario Resources Corp.). Numerous vein deposits were mined including Venus, Tesoro, Culebra, Neptuno, La Mar, Neblina, Tigre Negro, Comal, Edén, Nugget, Highland Mary, Pioneer, Colorado, Porvenir, San Joaquín, San Antonio, and the La Deseada.

In the period from 1972 to 1978, a flotation plant was operated to process lead, copper, and zinc. In 1979, the Sandinista government nationalized the mines of Nicaragua, creating the Nicaraguan Mining Institute (INMINE). In 1984, INMINE, in partnership with the nation of Bulgaria, exploited the polymetallic ores from the Porvenir Mine until the civil war of the 1980s disrupted operations.

In 1994, through the privatization open bidding process, Hemco, a joint venture between Hunt Exploration & Mining Company (Hunt) and Donald J. McGregor and Technica McGregor S.A. (together, the McGregor Family) of Nicaragua, bought all the assets of the Bonanza, Rosita, and Siuna mines. The assets consisted of a land package, buildings, equipment and facilities, machinery, and six mining concessions granted for a 50-year term. At the time of purchase, only the Panama Mine (then referred to as the Bonanza Mine) was in operation; Rosita and Siuna were inactive.

In July 1996, Greenstone Resources Ltd. (then TSX and NASDAQ listed) acquired an 80% interest in Hemco from Hunt, and almost immediately transferred its entire ownership interest to its subsidiary, Greenstone de Nicaragua S.A., which carried out exploration mostly around the Panama Mine from 1996 to 1998. In August 1996, Auric acquired the remaining 20% interest from the McGregor Family. Greenstone Resources Canada Ltd. (GRE) acquired 100% of Hemco shares in March 1997, and immediately transferred 0.02% to two individuals, retaining a 99.98% interest.

GRE fell into insolvency in 1999 and suspended its mining operations. Central America Gold Mine, S.A. acquired GRE's entire 99.98% interest in Hemco, while Auric, owned by the McGregor Family, acquired 0.01%. James R. Martin retained his 0.01% interest.

In February 2002, RNC Resources Limited, a Belize company indirectly owned by RNC Gold Inc. (then TSX listed) (RNC), acquired a 50% interest in Hemco, and, on the same date, Auric purchased a 39.9% interest. By June 2004, RNC, through an affiliate, acquired an aggregate share of 99.98% in Hemco, including Auric's entire 39.9% interest.

In 2006, RNC sold to Desarrollo Minero de Nicaragua S.A. (DESMINIC), then a Yamana Gold Inc. (Yamana) subsidiary, certain concessions then belonging to the Hemco Property and granted to Sociedad DESMINIC an option to acquire the Bonanza concession and the Panama Mine. Such option expired unexercised.

In March 2013, Mineros LLC, an American subsidiary of Mineros, through Bonanza Holdings, S.A., purchased a 90% interest in Hemco from an affiliate of RNC and two additional minority stakeholders. Effective as of October 22, 2013, RNC indirectly sold its remaining 10% interest in Hemco to MLR (Mining) Limited (MLR).

In October 2014, Mineros acquired a 5% interest in Hemco from MLR. In March 2015, Mineros acquired Mineros LLC's entire 90% interest in Hemco, and immediately transferred 0.0025% of its interest in Hemco to Colpatria, an indirect controlling shareholder of Mineros. In August 2016, Mineros acquired a further 4.9975% interest in Hemco from MLR, reducing MLR's interest in Hemco to 0.0025%. In January 2021, Mineros Aluvial acquired MLR's remaining 0.0025% interest in Hemco.

Mineros now holds 99.995% of the equity in Hemco directly, and a further 0.0025% interest indirectly through Mineros Aluvial, its subsidiary. Colpatria holds the remaining 0.0025% interest in Hemco.

Table 6-1 summarizes the historical ownership of the Hemco Property.

Table 6-1: Historical Ownership
Mineros S.A. – Hemco Property

Year	Ownership
1889-1915	Discovery and gold rush, many small companies
1902	Panama Mining Company
1915	Edén Mining Company (Tonopah Mining Company)
1916	Constancia Consolidated
1919	Nicaragua Mining Company, Philadelphia
1934	Neptune Gold Mining Company (ASARCO)
1979	INMINE (Nicaraguan Government)
1984	INMINE and Bulgaria
1994	Hemco Nicaragua S.A. (Hunt Exploration & Mining Company and McGregor Family)
1996	Hemco Nicaragua S.A. (Greenstone Resources Ltd. (80%) and McGregor Family (20%))
1996	Hemco Nicaragua S.A. (Greenstone de Nicaragua S.A Ltd. (80%) and McGregor Family (20%))
1996	Hemco Nicaragua S.A. (Greenstone de Nicaragua S.A Ltd. (80%) and Auric (20%))
1997	Greenstone Resources Canada Ltd. (99.98%)
1999	Hemco Nicaragua S.A. (Central American Gold Mine (99.98%))
2002	Hemco Nicaragua S.A. (RNC Resources Limited (50%) and Auric (39.9%))
2004	Hemco Nicaragua S.A. (RNC (HEMCO) Limited (99.98%))
2013	Hemco Nicaragua S.A. (Bonanza Holdings S.A. (90%), RNC (Hemco) Limited (10%)) Hemco Nicaragua S.A. (Bonanza Holdings S.A. (90%), MLR (Mining) Limited (10%))

Year	Ownership
2014	Hemco Nicaragua S.A. (Bonanza Holdings S.A. (90%), Mineros S.A. (5%), MLR (Mining) Limited (5%))
2015	Hemco Nicaragua S.A. (Mineros S.A. (95%), MLR (Mining) Limited (5%))
2015	Hemco Nicaragua S.A. (Mineros S.A. (94.9975%), MLR (Mining) Limited (5%), Mercantil Colaptria, S.A. (0.0025%))
2018	Hemco Nicaragua S.A. (Mineros S.A. (99.995%), MLR (Mining) Limited (0.0025%), Mercantil Colaptria, S.A. (0.0025%))
2022	Hemco Nicaragua S.A. (Mineros S.A. (99.995%), Mineros Aluvial (0.0025%), Mercantil Colaptria, S.A. (0.0025%)

6.2 Exploration and Development History

Prior to Mineros' involvement in the Hemco Property, a number of regional geochemical soil surveys were carried out on the Bonanza concession (018-RN-MC-1994). The first survey was carried out by Neptune when grids were established along strike of the Porvenir vein. Samples were analyzed for Pb, Cu, and Zn. The anomalies generated were followed up by trenching, which extended the vein strike. Results from this survey are not available (Arengi, Francoeur, and Bybee, 2003).

The most important geochemical survey was a district scale soil survey carried out by R.G. Burn from 1967 to 1969 (Arengi, Francoeur, and Bybee, 2003). This survey was carried out over an area of 190 km². Lines were spaced at 1,000 ft (305 m) and samples collected at 100 ft (30 m) and 50 ft (15 m) intervals, the latter chiefly for follow-up grids. Samples were collected at a depth of 2.0 ft (0.6 m). The –80 mesh fraction was analyzed for Pb, Zn, and Cu using colorimetric technique and gold was analyzed using one assay-ton fire assay method on –200 mesh samples produced from the +80 mesh rejects. The survey was designed to account for narrow vein targets in a zone of deeply weathered and oxidized bedrock with little or no outcrop. Orientation work showed that quartz float from the veins accumulates short distances downslope from a vein and generally forms a blanket 2.5 ft (76 cm) deep. Results of the survey showed that Pb and Au were the best indicators for mineralized veins whereas Zn, owing to high geochemical mobility, was not useful. Quartz float together with Pb and Cu adequately located dispersion anomalies. In general, the anomaly width was approximately 10 times greater than the vein width and gold anomaly values were often within 75% of the gold value of the vein.

Several important anomalies were generated during the initial survey but only maps for Pb and Cu are available for the entire grid. Predictably, most of the Pb and Cu anomalies were located in the Constancia Group where base metal mineralization is more common than at Pioneer. No significant anomalies were generated over a large area northwest of the Pis Pis River or southeast of the Pioneer Group and the town of Bonanza.

A 6,000 m trenching program was carried out in the Panama Group exploring potentially bulk mineable gold deposits in 2004-2005 by Hemco. This campaign was followed by drilling 50 reverse circulation (RC) drill holes to test whether sufficient gold-bearing veinlets existed between the principal veins to support a low-grade open pit mining operation. The samples were analyzed primarily for Au, Ag, Cu, Pb, and Zn by multi-element inductively coupled plasma (ICP) at Acme Labs (a Bureau Veritas Minerals (BVM) company), and this was the only multi-element dataset available for Bonanza prior to the initiation of a regional exploration program in 2010. The surface geochemistry showed wide intervals of anomalous gold, while drilling showed that gold grades are restricted to veins. The surface gold anomalies were interpreted to be lateritic dispersion or down-slope transport from the veins.

6.3 Regional Exploration

Two regional airborne geophysical surveys have been carried out over the Mining Triangle district defined by the towns of Bonanza, Rosita, and Siuna and this included the Bonanza concession (Arengi et al., 2003). In 1963-1965, Hunting Survey Corp. Ltd. carried out a fixed-wing magnetic and radiometric survey over a large part of northeastern Nicaragua including Bonanza. The survey was flown over 21,581 linear km. Lines were flown east-west at 0.5 km spacing at an altitude of 150 m. In addition, 402 linear km of aerial photography were completed. This information is only available in a few hard copy drawings at the Bonanza Mine and at the AdGeo library in Managua.

In 1998, a low level airborne radiometric and magnetic surveying was carried out by Terraquest Inc. under contract to GRE. The surveys were carried out over approximately 4,500 km^2 to complete coverage to the concession boundaries. Lines were flown northwest-southeast (140°) on 400 m line spacings, as well as at 200 m spacing over 50% of this area, at an altitude of 100 m. A preliminary interpretation was completed by Jack Corbett, Consulting Geophysicist. No ground geophysical surveys have been carried out at Bonanza.

In June 2009, Hemco applied for 23 different mining concessions covering 253,571 ha within both the Mining Triangle district of the RACCN and the La India district of the Central Pacific region of Nicaragua. Historically, the Mining Triangle district has produced over 5.0 million ounces (Moz) Au. All 23 concessions were eventually granted to Hemco by the MEM by August 2011.

In 2010, a regional interpretation of the Mining Triangle district was undertaken using satellite data (Landsat and ASTER), aerial photographs, and previously existing geochemical and drilling results in order to define targets for initial field investigations. Geologic mapping and rock chip sampling were initiated in February 2010. A total of 2,381 rock chip and soil samples were collected, fire assayed for gold and analyzed by 30-element ICP. Geologic mapping at a scale of 1:10,000 was completed over an area of approximately 39,000 ha. Soil samples were collected along a total of 70 line km within the Nueva America prospect area. Approximately US$1.3 million was spent on exploration and drilling activities in 2010.

Drill testing of targets began during the first quarter of 2011 with a man-portable diamond drill purchased in 2010. A total of 4,633.1 m of core was drilled in 2011 at three different regional exploration targets, the Lone Star and Highland Mary veins at the Bonanza Pioneer sector and the Guillermina and Colorado veins. Approximately US$2.8 million was spent for regional exploration and drilling activities in 2011.

Mineros no longer holds the Matuzalen concession.

The majority of the budget was planned for core drilling with 17,900 m being distributed between the Pioneer-Constancia vein systems (Bonanza), the Nueva America disseminated gold project (Rosita), and the NE Rosita Epithermal vein district. In 2012, drilling was carried out at the Pioneer-Constancia vein systems (Bonanza), the Nueva America disseminated gold project (Rosita), and the NE Rosita Epithermal vein district. Drilling was carried out by two company-owned and operated Hydracore Gopher man-portable drill rigs and one Longyear 38 drill rig. A third Hydracore Gopher drill and a second Longyear (LF-70) were purchased by the third quarter of 2012. Reconnaissance mapping and sampling were continued in the Siuna and Rosita districts to identify additional prospects. Geophysical surveys (ground magnetometer and/or induced polarization (IP)) were carried out at the Nueva America zone (Rosita V) concession. A 163 km² Light imaging Detection and Ranging (LiDAR) laser topographic survey was completed in February 2012 by Airborne Solutions over the entire Bonanza as well as the Nueva America project area on the Rosita V concession. The survey provided both bare earth (free of vegetation and buildings) and full cover images for detailed remote sensing work. One metre contour control can also be produced from the LiDAR data and grid files can be generated for exploration drill hole planning and plotting. Hemco combined the high precision LiDAR results with vein mapping and Neptune maps in GIS software to locate the re-vegetated Neptune open pits, shafts, adits, and the numerous guiriseros (artisanal) workings. A strong correlation was noted between vein locations and ridge crests confirming quartz vein resistance to erosion. Hemco undertook a systematic review of historical documents and maps, and carried out site visits and mapping, together with rock sampling and trenching and diamond drilling to confirm and expand on historical drilling.

The compilation and regional interpretation of data in the Bonanza district, part of the Mining Triangle, began during the first quarter of 2010 using past Bonanza exploration and mine data. Utilizing the Landsat, ASTER satellite data and a Digital Elevation Model (DEM), a structural model was developed related to known mineralized zones to assist in the regional identification of favourable structural environments which may host similar mineralized zones.

Exploration field work in 2010, principally within the Bonanza district, included exploration for southwest extensions of the Panama/Pioneer/Constancia vein systems as well as sub-parallel systems to the northwest and southeast. Thirteen different, sub-parallel northwest-southeast trends throughout the Bonanza district corresponding to topographic lineaments were defined. Individual vein structures associated with these trends range up to 10.0 m wide and strike lengths were greater than four kilometres (Colorado/Guillermina vein). Vein structures are generally sub-vertical or steeply dipping to the northwest.

In late 2010, a 20,450 m diamond drilling program was budgeted to test the principal epithermal quartz veins and vein systems within the Pioneer and Constancia sub-districts of the South Bonanza district. A total of 3,310.6 m of core drilling tested the Lone Star/Highland Mary (Pioneer sub-district), Guillermina/Colorado, and Concordia/Siempre Viva (Concordia sub-district) vein systems. Drilling was undertaken using Hemco drill equipment. Phase 1 of the program began in March 2011 at the Lone Star/Highland Mary epithermal vein system in the Pioneer sub-district. As of February 2012, 12 holes were completed in the Lone Star/Highland Mary vein zone for a total of 2,648 m.

A total of 12,279 m was drilled in the Porvenir system veins up to 2010.

Royal Road systematically explored Luna Roja using a combination of soil, grab, chip channel sampling, ground based geophysics, and diamond drilling. A 17-hole diamond drill program totalling 2,474 m from 2017 to 2019 identified broad zones of auriferous skarn.

6.4 Past Production

Total production to the end of December 2022 is taken from documents provided by Mineros personnel and has not been verified by SLR.

Formal gold production has been carried out at the Hemco Property since 1939. Informal production has probably been carried out over the past 120 years. Since 1993, 1.49 Moz Au have been mined through a combination of artisanal and commercial scale mining. Figure 6-1 shows Hemco Property gold production from 1993 to end of December 2022.

In 2013, there was a significant change in the percentage of artisanal gold production, due to increased artisanal ore feed. Since 2013, the average percentage is 76%. Figure 6-2 shows the percentage of artisanal gold production relative to total gold production.

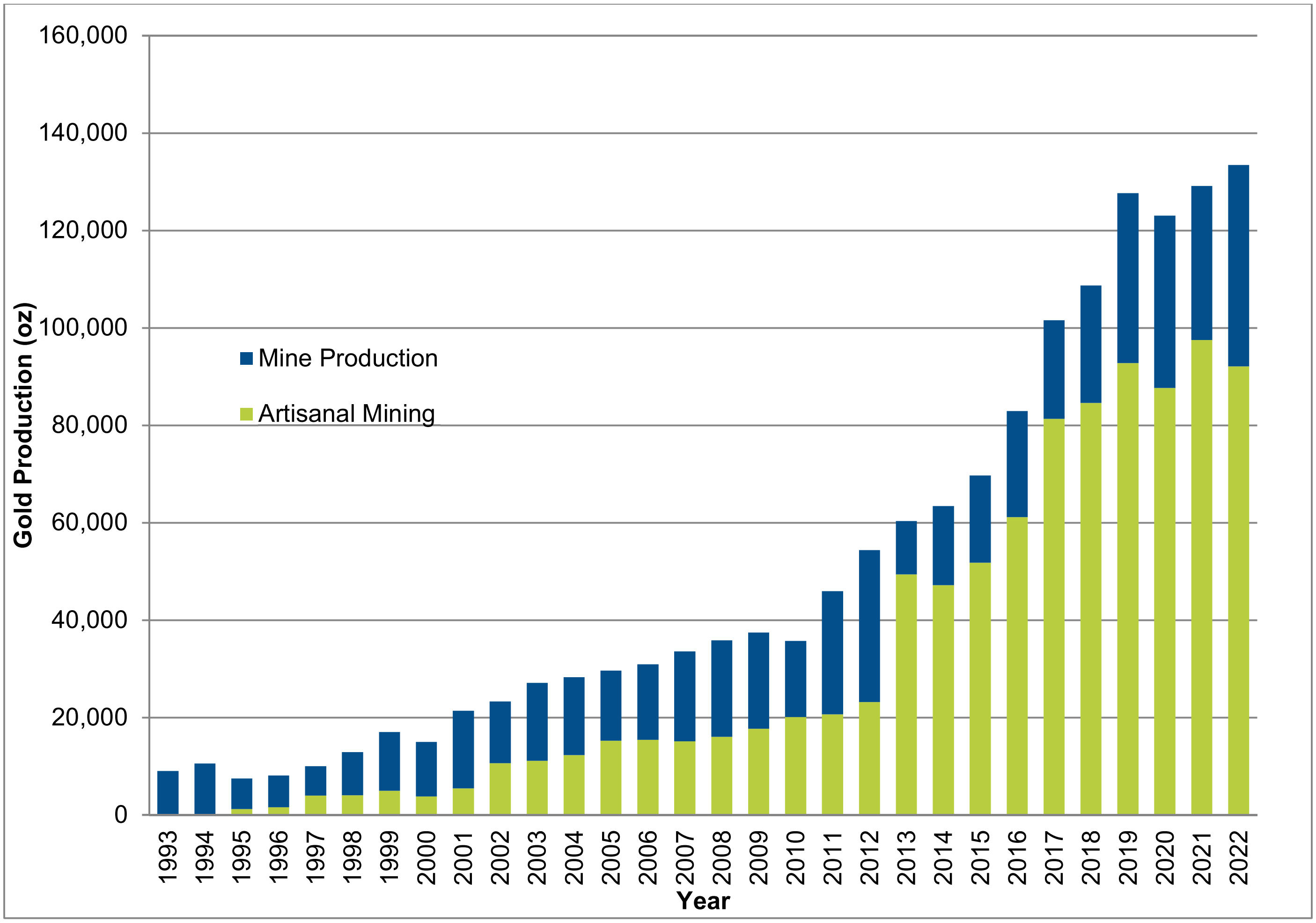


Figure 6-1: Hemco Property Gold Production History

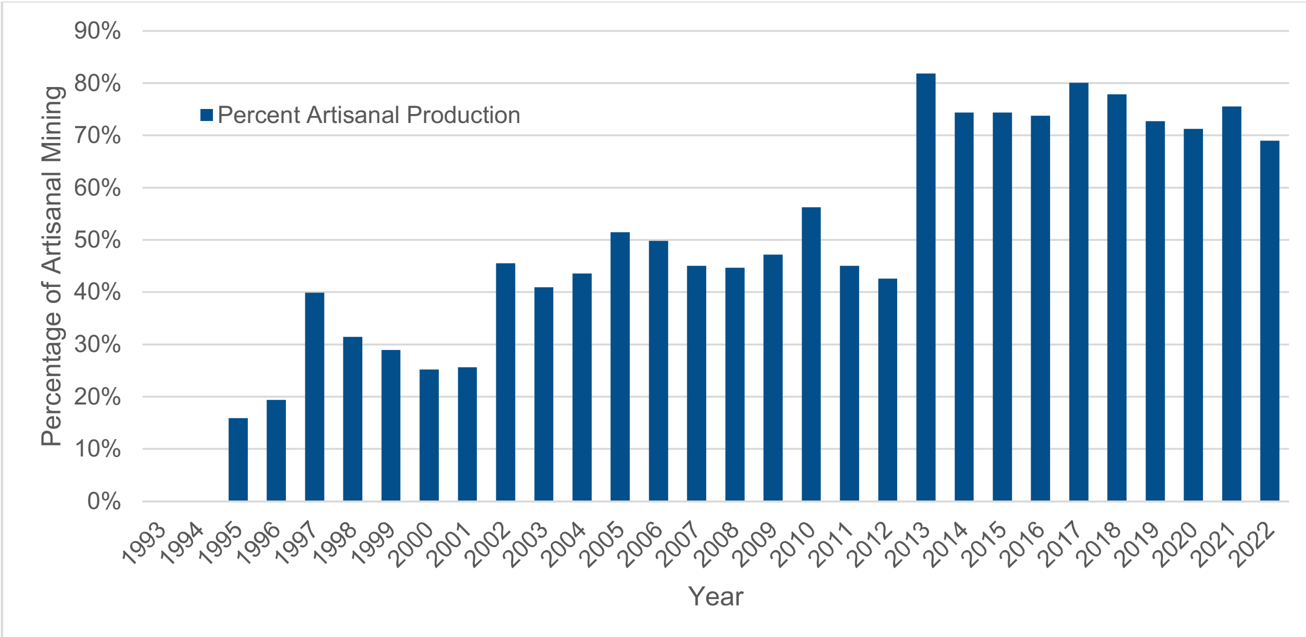


Figure 6-2: Hemco Property Percentage Artisanal Gold Production

7.0 GEOLOGICAL SETTING AND MINERALIZATION

Figure 7-1 illustrates the geology of Nicaragua and the location of the Hemco Property.

7.1 Regional Geology

The Hemco Property is located in the southern half of the Chortis Block in the Mesquito Composite Oceanic Terrane of Late Triassic to Early Cretaceous age (Venable, 2001; Baumgartner et al., 2008). The northern part of the Chortis Block is a continental fragment. The north-south trending Siuna Serpentinite Melange of Mid Jurassic age lies south of Siuna and southwest of Bonanza (Venable, 2001; Baumgartner et al., 2008). Bonanza is located in a Latest Cretaceous to Paleocene volcanic arc (Baumgartner et al., 2008).

Venable (2001) interprets that the Hemco Property located within the Bonanza district (Bonanza) lies on the southern boundary of the Chortis Block, on the basis of a different tectonic block and less radiogenic lead isotope signature at the Siuna Mine 40 km to the south. The so-called Siuna Province is a calc-alkaline volcanic island arc and back-arc or inter-arc basin underlain by oceanic crust, which was accreted to the south margin of the Chortis Block in the Late Cretaceous (Venable, 2001).

Gold and copper mineralization of the Bonanza-Siuna-Rosita district is interpreted to be related to a Late Cretaceous to Paleocene island arc on oceanic (Siuna) to continental crust (Bonanza) that was part of the Caribbean arc. The details of the arc history are preliminary due to the lack of mapping, age dating and exposed basement rocks, and it is expected that existing tectonic models will be modified as more data become available.

Bonanza is part of the Bonanza-Siuna-Rosita district, also known as the Mining Triangle, located in the eastern extension of the North Interior Highlands of northeast Nicaragua. This lies on the east side of the northeast-trending LIyas-Bocay Graben.

The oldest rocks in the district are sediments of the Early Cretaceous Todos Santos Formation which comprise an interbedded sequence of limestone, mudstone, greywacke, and calcareous mudstone. They are locally interbedded with andesite tuffs and flows and cut by andesite sills and dikes also of Cretaceous age. It is overlain by volcanic rocks which are mainly andesite and include fine grained and porphyritic andesite flows, fine grained andesite tuff, andesite agglomerate and fine-grained basalt flows, as well as intrusive rhyolites to dacites. These are assigned to the Pre-Matagalpa Group volcanic rocks of Upper Cretaceous to Paleocene age. These rocks are widely distributed throughout eastern Nicaragua and represent a nearly continuous period of volcanic activity from the Late Cretaceous to mid-Tertiary period. There is no hard evidence for submarine extrusion and all of these rocks are interpreted to have been deposited in non-marine conditions. A diorite intrusion cutting the andesites at Bonanza has been dated by K-Ar at 61.1 +/- 2.3 Ma (Early Paleocene; Venable, 1994, 2001), indicating that the volcanic rocks are Cretaceous to earliest Paleogene in age.

There are a variety of intrusive rocks in northeast Nicaragua. Limited age dating indicates ages between Cretaceous and Eocene. The intrusives consist of fine to medium grained diorite, granodiorite, syenite, monzonite and alaskite stocks, plugs, and dikes.

One of the earliest structural elements observed in the Siuna area is a north trending anticline- syncline in the Cretaceous sediments. Ages in the Siuna area indicate this folding as well as emplacement of mineralization occurred in the Cretaceous. Several episodes of Tertiary-age extension tectonics are manifest in the Lyas-Bocay graben and numerous northeast trending magnetic and topographic lineaments. A prominent magnetic low referred to as the Bonanza Lineament passes through the Panama Mine area in a northeast direction parallel to the Lyas-Bocay Graben. These features define the *Bonanza Corridor* where many geologic prospects occur. The Bonanza Lineament, which has a total length of 75 km, is interpreted to be a major crustal discontinuity and may define the western edge of a stable crustal block (Leyton, 1994). This lineament may in fact be related to strike-slip faulting along regional scale northeast transcurrent faults. To the south the lineament trends north-south through Siuna and Tadasna and may mark the boundary of an obducted slice of oceanic crust comprising serpentinite and dunite with podiform chromite (Venable, 1994). Collectively these tectonic features, along with numerous geologic prospects, define the Siuna Corridor.

The northeast lineaments appear to be older than, and offset by, other major northwest trending faults and lineaments derived from aeromagnetic data and Landsat imagery. Collectively, the northeast and northwest fault and fracture patterns define conjugate structures mentioned above. In the Bonanza area, these northwest faults displace the three groups of vein systems. Smaller scale east-west lineaments occur southeast of Bonanza. In addition to these lineaments, there are a series of circular and semi-circular features of one or two kilometres to 25 km in diameter in the Bonanza-Siuna-Rosita district. These features are interpreted to be calderas, dome structures, or intrusive stocks and plugs.

There are a variety of intrusive rocks in northeast Nicaragua. Limited age dating suggests the oldest of these are Cretaceous; however, there is field evidence that some of them are Tertiary in age. The intrusives consist of fine to medium grained diorite, granodiorite, syenite, monzonite and alaskite stocks, plugs, and dikes. The relation between age and composition of the intrusives has not been clearly defined. Most of these intrusives occur along a northeast trend similar to the distribution of the sedimentary rocks. In the Rosita area, there is evidence for magmatic differentiation resulting in sequential intrusion of mafic to felsic magmas. The Rosita copper mineralization was spatially related to an alaskite plug, which is very felsic in composition. The intrusive rocks are important features in the mineralization process. Where they cut Todos Santos sediments, Cu-Au, Au-Cu and Fe skarn deposits may develop as, for example, in Siuna and Rosita.

Bonanza lies on the northwest side of a 40 km diameter pseudo-gravity high (modeled from the magnetite component of the aeromagnetic survey) interpreted as a pluton. The Siuna and Rosita copper-gold deposits are also on the edges of this interpreted pluton and a genetic link may be inferred for the mineralization.

Figure 7-1

Mineros S.A.

Hemco Property

Región Autónoma de la Costa Caribe Norte

Geology of Nicaragua Showing the Hemco Property

March 2023

Source: SLR, 2023.

7.2 Local Geology

The Bonanza district is underlain by two broad parallel northeast trending sequences of andesitic volcanic rocks on either side of a central sequence of andesite to dacite pyroclastic flows and agglomerates. To the northeast, these pyroclastics become more felsic in composition. These more felsic units also occur adjacent to the andesite volcanics along the northwest contact of the northern sequence. This area is in contact with a felsic intrusive. Three groups of mineralized, northeast trending and generally northwest dipping veins occur within the andesite and agglomerate units. From northeast to southwest they include the Panama Group, Pioneer Group, and Constancia Group.

All sequences are displaced by a series of parallel to sub parallel northwest to east-west trending faults that are interpreted to have undergone both dextral and sinistral displacement. Displacement is shown to be up to one kilometre on some of the faults. These faults also truncate many of the veins and historically have been the bounding structures for the three groups of veins.

The Panama Group and much of the Pioneer Group are hosted in the agglomerate sequence and the Constancia Group is hosted in both andesite agglomerate and porphyry volcanics. The Constancia Group's Porvenir and Siempre Viva (Constancia Mine) veins are in volcanics, and the San Antonio and San Joaquin veins are in agglomerates.

The Panama Group of veins is the most northeasterly of the three groups of veins in the Bonanza district. Collectively, the three groups define a 20 km long mineralized corridor. The Panama Group comprises 70 principal veins or vein segments. They have a predominant northeast strike and subordinate northwest strike. The former has a moderate to steep northwest dip, although several veins such as Washington and Atlas have a moderate to steep southeast dip. The northwest striking veins are vertical to steeply southwest dipping. The veins occur over strike lengths of up to 3,000 m (Neblina) and vary in width from 0.3 m to greater than 24 m (Elefante Blanco).

The Panama Group is bordered to the north by the east-west striking Tunkey Bin Fault and to the south by the east-west striking Mulera Fault. Both of these bounding faults are post mineralization. Other post-mineralization faults include northwest trending right lateral faults with several metres of displacement as well as strike parallel faults manifest as fault gouge along the vein walls and within the veins. The former has displaced the veins along strike locally requiring shifts in mine workings. The latter has increased mineable vein widths considerably in places.

The geology of the Bonanza district is shown in Figure 7-2.

The Rosita area is composed predominantly by Early Cretaceous carbonate and siliceous sediments of the Metapán Formation, which are locally interbedded with andesitic flows and tuffs also of Cretaceous age. This unit is overlain by andesitic flows and tuffs, basaltic flows, and also was intruded by late stage mafic dikes and tonalitic to granodioritic bodies. The volcanic rocks represent a nearly continuous period of volcanic activity from the Late Cretaceous to mid-Tertiary period. Hydrothermal alteration associated with the emplacement of some of the intrusives has resulted in the development of skarn and hydrothermally altered rock. The sedimentary sequence has a northeast trend and is dipping towards the west.

At Luna Roja the deposit sequence consists of bleached massive or dark grey-weakly layered marble, siltstone and basaltic and andesitic flows, followed by a gold mineralized skarn of several types and colour depending on its garnet-pyroxene ratio, and a gold mineralized, hematite-magnetite-carbonate vein and breccia-related skarn. Marble is the main unit hosting the calc-silicate alteration, and outcrops mostly towards the western area of Monte Carmelo I and Monte Carmelo II mining titles. At least two levels of marble have been identified at depth, each approximately 125 m thick, separated by a layer of siltstone.

The Luna Roja skarn can be divided into at least two bodies, one of which is called “pit principal” due to the activity of the local artisanal miners, outcrops towards the northwest of the area, and is hosted mostly by marbles. The second body outcrops towards the southeast of the area, and is hosted in silicoclastic and calcareous rocks. The skarn sequence also includes marble with a local calc-silicate alteration with retrograde minerals, such as bustamite, vesuvianite, alabandite and wollastonite, and several massive coarse grained wollastonite lenses.

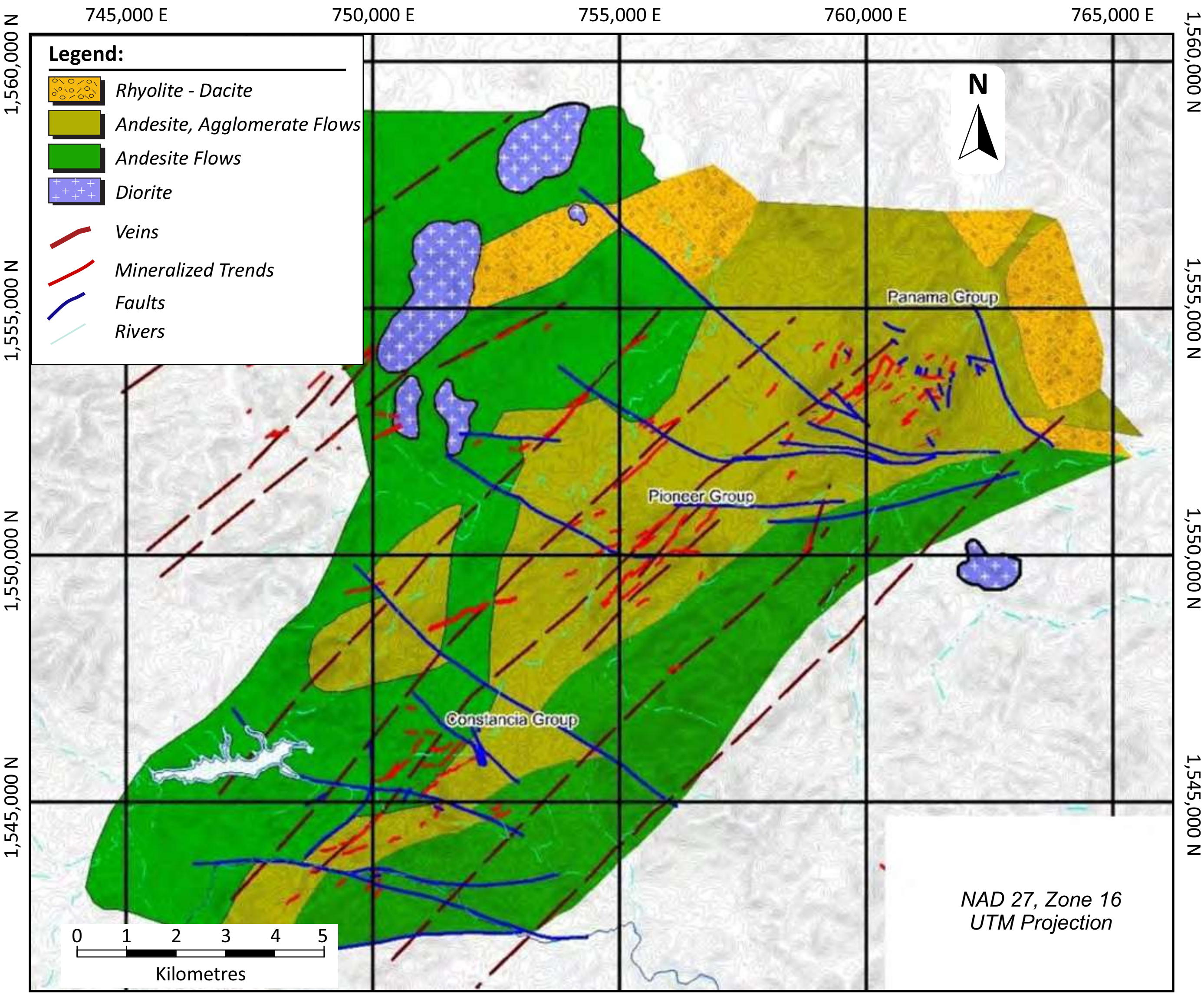


Figure 7-2

Mineros S.A.

Hemco Property

Región Autónoma de la Costa Caribe Norte

Geology of the Bonanza District

March 2023

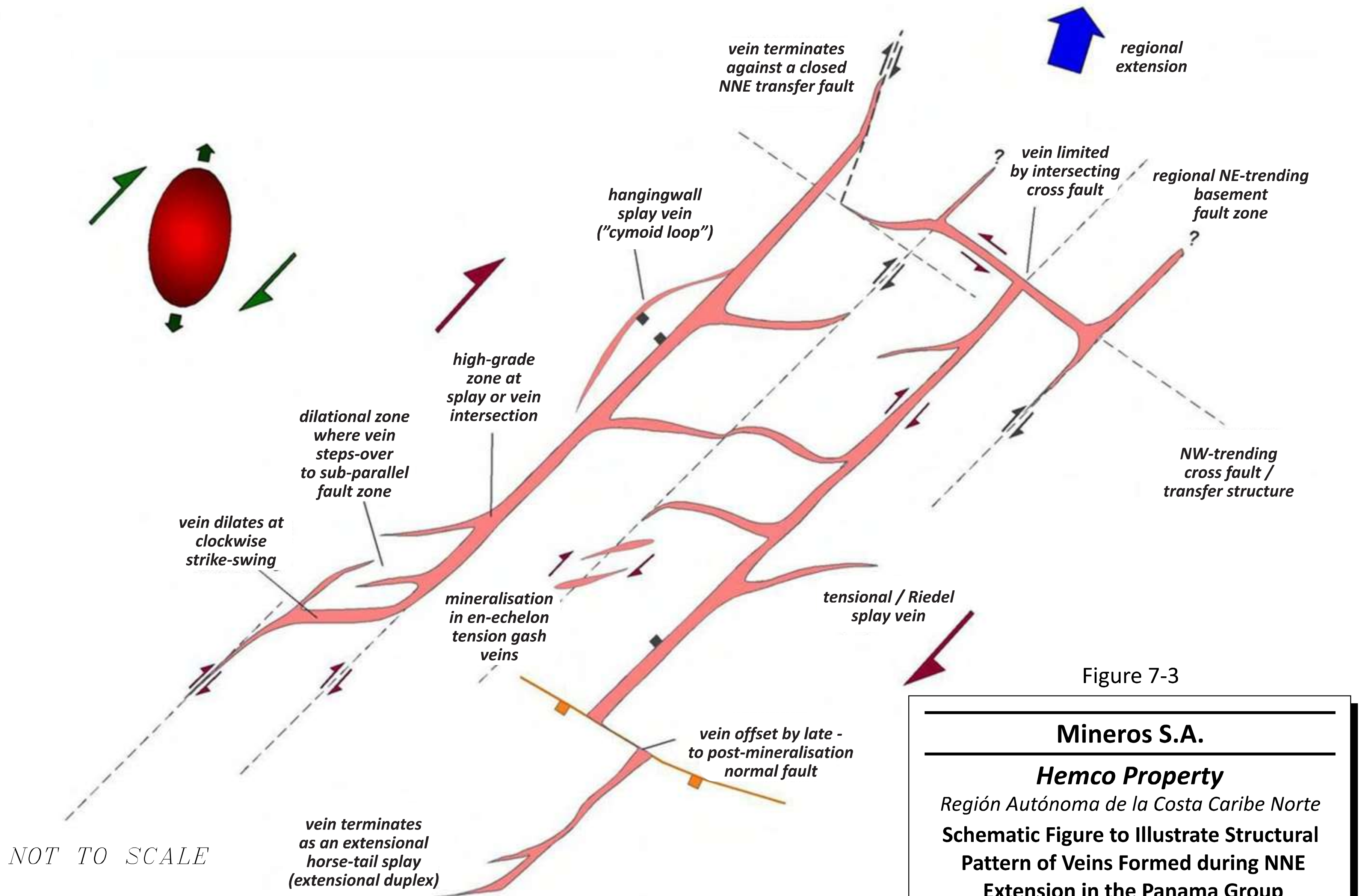
Source: SLR, 2021.

7.3 Property Geology

A structural review of the Bonanza district was completed by Telluris Consulting Ltd., in 2010 and updated in 2016 (Starling, 2010, 2016). The following conclusions were drawn:

- Mineralization is associated with the north-northeast (NNE) extension (Figure 7-3). Fault movement was strike-slip and resulted in relatively steep dips for the majority of the veins, although there is little down-dip displacement.
- The above reactivated existing conjugate northeast and northwest fault trends which are interpreted to be older structures that have propagated from the basement through younger volcanic rocks.
- Changes in dip of the steep veins can cause wide dilational veins to pinch out at depth, but they may re-open again. Dip changes can be caused by fault refraction through a change in lithology.
- The principal structure is the northeast trending fault corridor (e.g., Capitan-Venus, Neptuno, and Atlas veins) which shows dextral trans-tensional (Figure 7-4) movement (right lateral strike-slip faults with a component of extension).
- The northeast trending structural corridor intersects an orthogonal west-northwest to northwest trending fault zone (e.g., Nugget, Gary, and Adan veins) with sinistral trans-tensional shear. These structures could either be a second order (Riedel prime) shear within a dextral shear zone system, or a reactivated basement structure. Their localization at Bonanza suggests a basement structure.
- The major fault zones have strong brecciation with shearing, foliation, and propylitic alteration (e.g., Capitan and Gary veins) and are primary feeder structures. Other veins are second order structures and show more passive processes of simple dilation and veining, and often have lower temperature mineral assemblages. In cross section, the northwest dipping primary structures such as Capitan and Neptuno control hanging wall antithetic structures that splay from the principal structure.
- High grade mineralization occurs at structural intersections and splays, and can also flow laterally and asymmetrically, constrained by fault dip and cross structures, to form inverted L-shaped mineralized shoots.
- There is post-mineralization deformation and reactivation of northeast trending vein margins and formation of northwest trending conjugate faults (e.g., Mill Fault) with sinistral offset.
- Post-mineralization vein reactivation caused supergene enrichment of gold along some vein margins, where they are exploited by contract miners.

From SLR's observations of stope outlines and locations at Bonanza and historical mining in the area by Neptune, it is clear that there is a periodicity of mineralized shoots and un-mineralized zones along the veins. Gold grades are higher in areas of increased fracture density and permeability of the host structures such as flexures in strike and dip as well as at vein intersections. In general, northwest dipping mineralized shoots typically have a southwest plunge and southeast dipping shoots, a vertical to steep northeast plunge. Shoots tend to contract and form roots at depth (Entwistle, 1975). This indicates that there have been tectonic controls on the gold mineralization and that only a portion of the vein lengths can be expected to have mining potential.



March 2023

Source: Telluris, 2010B.

Figure 7-3

Mineros S.A.

Hemco Property

Región Autónoma de la Costa Caribe Norte

Schematic Figure to Illustrate Structural Pattern of Veins Formed during NNE Extension in the Panama Group

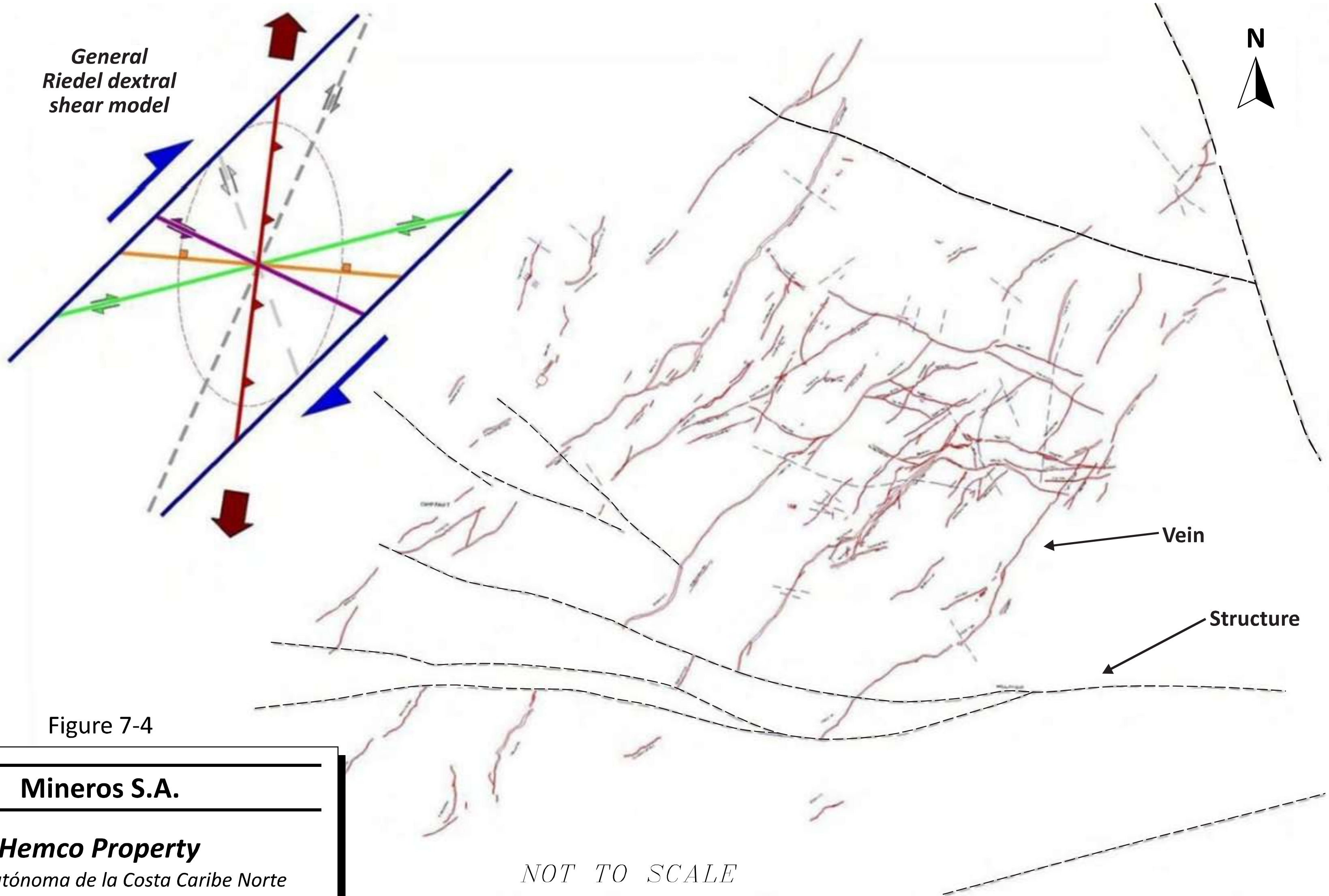


Figure 7-4

Mineros S.A.

Hemco Property

Región Autónoma de la Costa Caribe Norte

Dextral Trans-Tensional Model for the Panama Group

March 2023

Source: SLR, 2021.

7.4 Alteration and Mineralogy

The host rock andesite volcanics show weak to moderate pervasive propylitic alteration, with alteration of the mafic minerals and groundmass to pyrite, epidote and calcite, and argillic alteration and silicification nearest to the veins. Argillic alteration ranges from weak bleaching to complete alteration to clay (± illite). Silicification ranges from complete quartz flooding to discrete replacement. Occasionally, there are small zones of silicification and argillic alteration within the andesite that can be mineralized.

Most of the veins in the Panama Group are a form of quartz breccia containing fragments of silicified wallrock, early vein rock, and altered andesite. The veins occupy fissures in faults that show repeated minor to moderate movement during and after mineralization. The quartz is chiefly white to grey with minor amounts of pale green chloritic quartz. Textures include bladed quartz after calcite, cockscomb, sucrose, granular, and drusy. Accessory minerals include calcite, amethyst, rhodochrosite, and pyromorphite (Pb-phosphate). Pyromorphite is considered a high-grade indicator and is present in the pits at the Washington, Guatuza, and Atlas veins.

Pyrite occurs as disseminated specks and blebs in amounts greater than 2%. This relation changes with depth at approximately the 850 level where pyrite, galena, sphalerite, and chalcopyrite become more abundant. This transition from sulphide-poor to sulphide-rich mineralization is also apparent to the southwest at Pioneer, as well as at some of the veins in the Constancia Group. A paragenetic sequence modified from Burn (1969) includes:

- White to grey quartz + pyrite + gold
- Faulting and brecciation
- Base metals + gold
- Faulting and brecciation
- Massive white quartz
- Amethyst + calcite + rhodochrosite

Banded grey sulphide-rich zones are present locally in the Neblina, Neptuno, Foundling, and Atlas veins and contain abundant gold as electrum as well as native silver and copper.

The level of oxidation is irregular but generally occurs at a depth of 200 ft (61 m) below surface. It is considerably deeper where the vein is cut by post-mineralization faults. For example, at Neblina, oxide mineralization occurs to a vertical depth of 600 ft (183 m) below original topographic surface and sulphide mineralization, to within 400 ft (122 m) of surface. Hematite, limonite, and jarosite are common iron oxide minerals, and massive to dendritic pyrolusite is the common manganese oxide.

There are three types of primary gold mineralization based on sulphide content:

- Gold mineralization (“aurifera”) generally contains less than 1% pyrite and minor base metal sulphides. This contains both oxidized and unoxidized types.
- Gold sulphide mineralization (“aurifera sulfuros”) contains pyrite in quantities greater than 1% but minor base metals. This contains both oxidized and unoxidized types.
- Sulphide mineralization (“sufurosa”) contains significant quantities of pyrite and base metal sulphides.

A high content of cyanide soluble copper species (>0.5% Cu) poses a challenge for processing plants as it significantly increases cyanide consumption and overall production costs. In the future, if ores with high levels of base metal sulphides are processed, then a flotation circuit will be required. A flotation plant was operated by Neptune during the period of 1972-1978 to process ores containing economic levels of lead, copper, and zinc. In general, the combined base metal content is less than 0.2% above the 850 level.

7.5 Mineralization

Mineralization at the Hemco Property is hosted in the Panama, Pioneer, and Constancia groups. The Porvenir, Leticia, and San Antonio deposits are within the Constancia Group. Gold mineralization at Luna Roja is hosted within skarns associated primarily with selective replacement of carbonate rocks of the Cretaceous Metapán Formation.

The majority of mineralization within the concession area consists of volcanic hosted gold-silver ± copper, lead, and zinc epithermal quartz veins of intermediate sulphidation type.

7.5.1 Vein Deposits

The majority of mineralization within the concession area consists of volcanic hosted gold-silver ± copper, lead, and zinc epithermal quartz veins of intermediate sulphidation type. There is a vertical zonation of metals, and base metal contents are higher at depth, although, in general, gold grades appear to stay constant except in those areas near surface where residual gold has been liberated by the oxidation of pyrite and weathering/disintegration of host rock.

The epithermal veins at Bonanza are characterized by moderate to intense propylitic alteration of the andesite wall rocks locally accompanied by argillic alteration and silicification. There are several variations in style of mineralization among the veins.

Veins in the southwest part of the district are characterized by gold mineralization associated with quartz, chalcopyrite, and hematite enriched in base metal sulphides. Gold mineralization in veins toward the northeast, i.e., the Pioneer and Panama groups, is associated with quartz and chlorite and generally lower base metals content. The difference in gold and base metal tenor between the Panama, Pioneer, and Constancia groups may be a function of the spatial relation with the intrusive heat source. Shallow epithermal veins are characterized by low grades but wider zones resulting from bifurcations and quartz stockwork zones. Base metal contents are generally lower at the shallow depths than what has been encountered in deeper parts of the system and trace elements such as strontium and barium are higher. Alteration is characterized by zonation from propylitization of country rocks to argillic alteration as the vein is approached. Silicification can be widespread and intense. Phreatic breccias are common as are boiling textures such as bladed quartz after calcite. Deeper portions of epithermal systems are typically enriched in base metals and have higher gold grades. The veins are more discrete, and alteration is characterized by moderate to strong propylitization of the wall rocks. In the Bonanza district, all of the veins are interpreted to lie in the middle to deeper levels of an epithermal system. On the basis of base metal content, the Porvenir, Leticia and San Antonio veins in the Constancia Group are interpreted to be deeper relative to the Pioneer and Panama groups.

Byington (1996) noted that quartz veins are controlled by strike-slip faulting with both sinistral and dextral displacement and mineralized shoots are controlled by gold deposition introduced during dextral strike-slip movement resulting from wrench tectonics. Gold grades are higher in areas of increased fracture density and permeability such as flexures in strike and dip. This may also account for the observed periodicity of mineralized shoots and non-mineralized portions of the structures. In a very general sense northwest dipping mineralized shoots more often have southwest plunges and southeast dipping shoots have a vertical to steep northeast plunge.

The Bonanza epithermal gold mineralization may be related to a 40 km diameter pluton on the southeast side modeled from pseudo-gravity high. The Siuna and Rosita copper-gold deposits are also on the edges of this interpreted pluton.

Recent petrographic studies by Miller (2016) of the Tesoro, Cruzada, and Northeast vein systems concluded that the three epithermal systems record hydrothermal events with similar silicate-sulphide assemblages. A paragenetic sequence was established that can be used as a working model for identifying textures and timing within the complex vein networks. The study documented four textural stages of quartz vein filling termed Q1 to Q4 and corresponding sulphide assemblages termed S1 to S4 which are combined as Q1/S1 to identify the earliest quartz-sulphide event and similarly for younger vein episodes. Mineros geologists are employing the concepts as an exploration tool within the mine and applying the various paragenetic fingerprints to underground mapping and vein evaluation. The gold grades of the vein phases are predictable and drill core logging and assay interval selection are now based on identifying the vein phases.

The following is paraphrased and/or excerpted from Miller (2016).

7.5.1.1 Q1/S1 Quartz+Sulphide Episode

This vein episode is only present as fragments encapsulated in Q2 quartz. The Q1 fragments have two silicate-sulphide forms: 1) massive sulphide fragments and 2) irregular-shaped very fine-grained quartz+sulphide. The massive sulphide fragments are up to several centimetres and occur as angular discreet fragments enclosed in Q2 quartz and as angular slightly dismembered, brecciated fragments veined by Q2 quartz. The quartz+sulphide vein fragments have both equally fine-grained quartz and sulphide. The very fine- to ultrafine-grained abundantly disseminated sulphide occurs interstitial to and as inclusions in equally ultrafine-grained quartz. These two textural features impart a black hue to these Q1/S1 vein fragments making them distinctive when embedded in Q2 quartz. The sulphide assemblage in the Q1/S1 vein episode is dominated by sphalerite which hosts microscopic exsolution blebs of chalcopyrite. Sphalerite is accompanied by subordinate galena. Free grains of chalcopyrite+pyrite are present but are rare, essentially making this S1 assemblage bi-mineralic: sphalerite+galena.

7.5.1.2 Q2/S2 Quartz+Sulphide Episode

This Q2/S2 vein episode is the most important event across all three vein sets because gold/electrum is consistently linking to this silicate-sulphide episode. There are three criteria that can be used at the vein-scale within the mine to identify the Q2/S2 episode in the three vein sets. These features are quartz grain size, distinctive sulphide assemblage and the associated hydrothermal silicate. The Q2 quartz is anhedral equigranular, relatively coarser grained than the very fine-grained Q1 quartz and would display a fine sugary texture in hand specimen. The sulphide assemblage is fine- to medium-grained and represented by the assemblage sphalerite+galena+chalcopyrite+pyrite. This assemblage is present as disseminations and as clotted aggregates in Q2 quartz. Because of the fine-grain size of S1 sulphide, the Q1/S1 quartz+sulphide fragments have a dark to black hue. The disseminated S2 sulphide commonly does not form the dark to black hues because of sulphide grain size. The identification of anhedral to subhedral disseminated pyrite with the other three associated sulphides is an unequivocal observation that the Q2/S2 hydrothermal episode is present in a particular vein. In addition, the recognition of clotted sulphide aggregates, pyrite hosted in a mat of chalcopyrite, pyrite in a mat of galena and less commonly pyrite in a sphalerite mat is the most universally diagnostic sulphide texture in Q2/S2 and categorically was not observed in any other stage of vein development. This sulphide assemblage and its distinctive textures is coeval with gold/electrum deposition and carries high gold grades. Gold is present: 1) as free gold interstitial to quartz but near to the S2 sulphide assemblage, 2) intergranular to and 3) as inclusions in S2 sulphides. Chlorite is universally associated with the Q2/S2 episode. Chlorite is fine grained and is interstitial to a fine grained anhedral equigranular mosaic of quartz+sulphide and can host the S2 sulphide assemblage. Alternating bands of variably recrystallized colloform silica/quartz with delicate colloform-textured chlorite bands with or without sulphide is a second textural feature of the Q2/S2+gold stage in a vein. Chlorite can also mantle older vein fragments indicating the Q2 episode.

7.5.1.3 Q3/S3 Quartz+Sulphide Episode

This quartz episode is coarser grained compared to Q1 and Q2 quartz, fills irregular volumes in the latter quartz stages, and forms comb textured veins. Quartz is commonly zoned, with trace amounts of chlorite, carbonate, and sparsely disseminated sulphide interstitial to Q3 quartz. Even though there is chlorite and the same sulphide assemblage as the S2 sulphide episode, the modal amount of these minerals is considered diagnostic so that not to misinterpret this episode as Q2/S2.

7.5.1.4 Q4 Quartz Episode

This quartz episode is characterized by zoned fine to medium grained quartz which fills cavities and forms comb-textured veins. At the macro-scale, this quartz is milky and can vary from a drab pale grey purple to amethyst. This is clearly an end stage hydrothermal episode, i.e., no crosscutting quartz events have been observed based on the sample suite selected for the Tesoro, Cruzada, and Northeast vein systems. Gold grades hosted by Q4 quartz are characteristically low.

From the underground visit and core examinations, SLR noted vugs in the Q3 phase and that the Q4 phase is commonly drusy which has implications for lowered vein bulk density where these phases dominate the vein.

In the Neblina, Neptuno, Foundling, and Atlas veins, gold occurs as electrum as well as native silver and copper associated with sulphide-rich zones.

7.5.2 Skarn Deposits

The Luna Roja deposit is hosted within skarns associated primarily with selective replacement of carbonate rocks of the Cretaceous Metapán Formation. The Luna Roja skarn shows prograde and retrograde calc-silicate alteration, hosted mostly in carbonate rocks, which led to the formation of red-brown-yellow garnet, green-yellow garnet-pyroxene, and wollastonite.

The skarn in Luna Roja shows different types according to its mineral assemblage and colour: a) a yellow-brown skarn which consists of brown-yellow medium-coarse size grained garnet, with poor presence or absent pyroxene; b) a dark green skarn with pyroxenes with a ratio of 3:1 over garnets, accompanied by amphibole and magnetite; c) a yellow-green skarn, where garnets of this colour are predominant over pyroxenes in a ratio of 6:1 to 9:1; d) a red-brown skarn, which can be found adjacent to igneous subvolcanic bodies, as alteration in veins, layers and patches of red and brown garnet.

Also, a structurally controlled late mineralization system, placed in subvertical structures which are possibly related to northwest regional faulting, is overprinting the skarn deposit. The most important unit of this system consists of a red quartz-calcite hydrothermal breccia, ± hematite ± magnetite ± adularia ± pyrite ± chlorite. The host rock of this system was affected by these oxidized fluids, hence the marble and skarns adjacent show red patches. The nature and timing of this event has not been determined yet.

7.5.3 Alluvial Deposits

The presence of alluvial gold has been identified in several of the rivers and alluvial flats in the Bonanza district. The only alluvial occurrence that has been evaluated is the Salto Grande hydroelectric reservoir. The dam has silted up with alluvial sediments which are gold bearing. Mineros has carried out some programs of sediment sampling and drilling. Preliminary exploration target estimates are reported in Wilson (2012). SLR has not reviewed Mineros' historical alluvial gold estimate.

None of the other placers have been evaluated. The placer deposits include (Diduck, 1996; Wilson, 2012):

- Waspanona Creek, an extensive alluvial flat located south of Concordia at the southwest end of the Bonanza district. The pay gravel is covered by red clay one metre to three metres thick. The pay gravel below this is estimated to be 12 m to 30 m thick.
- Panama Tunkey Bin, located east of the Panama sector.
- River Tunkey, located east of the Panama sector, with a width of 23 m to 90 m. The pay gravel is one metre to two metres below a red clay cover and is one metre to nine metres thick.

8.0 DEPOSIT TYPES

The majority of mineralization within the concession area consists of volcanic hosted gold-silver ± copper, lead, and zinc epithermal quartz veins of intermediate sulphidation type. There is a vertical zonation of metals and base metal grades are higher at depth, although, in general, gold grades appear to stay constant.

In addition to these epithermal quartz veins, there are several alluvial gold deposits derived from weathering of the mineralized veins and gold mineralization is also hosted within skarns associated primarily with selective replacement of carbonate rocks.

Epithermal gold and silver deposits of both vein and bulk-tonnage styles are classified as high-sulphidation (HS), intermediate-sulphidation (IS), and low-sulphidation (LS) types based on the sulphidation states of their hypogene sulphide assemblages (Hedenquist et al., 2004). The sulphidation state describes the sulphur activity (logfS2). The HS and LS terms were introduced in the 1980s, and the IS term was defined more recently. HS deposits are also called "acid sulphate", and LS deposits "adularia-sericite". IS deposits were often previously included with LS deposits, and sometimes called a "high sulphide plus high base metal" subtype. HS deposits contain sulphide-rich assemblages of high sulphidation state, typically pyrite with enargite, luzonite, famatinite, and covellite, hosted by leached silicic rock with a halo of advanced argillic minerals. In contrast, LS deposits contain the low sulphidation pair pyrite-arsenopyrite. The latter sulphide mineralization is typically present only in relatively minor quantities, within banded veins of quartz, chalcedony, and adularia plus subordinate calcite. Very minor amounts of copper (usually less than 100 ppm to 200 ppm) are present as chalcopyrite or, less commonly, tetrahedrite-tennantite. Pyrrhotite is present in trace amounts in only some LS deposits. As the name implies, IS deposits possess sulphidation states between those of HS and LS types, typically with stability of chalcopyrite, tetrahedrite-tennantite, and iron-poor sphalerite, but lacking appreciable arsenopyrite and pyrrhotite.

Gold mineralization at Luna Roja is hosted within skarns associated primarily with selective replacement of carbonate rocks of the Cretaceous Metapán Formation. Luna Roja mineralization is hosted in red-brown-yellow garnet, magnetite and hematite skarn, green-yellow garnet-pyroxene skarn. Bleached or grey marble and hornfels also occur in the deposit and several intrusive phases have been delineated.

Exploration has also been underway within the Hemco exploration concessions in the Rosita and Siuna sub-districts for gold-copper "porphyry style" mineralization within potassically altered intermediate volcanic and intrusive rocks. Skarn mineralization (gold-copper and copper-gold) is also present in the Siuna and Rosita sub-districts where intrusive rocks have intruded Cretaceous age calcareous sedimentary rocks. The La Luz Mine (Siuna) and Santa Rita Mine (Rosita) are both skarn hosted deposits.

9.0 EXPLORATION

9.1 Regional Targeting

As part of the grassroots exploration process, Mineros continues to compile existing historical exploration and production data from previous work completed in the Mining Triangle district. This information is being used to expand the overall geologic knowledge of the district and to search for similar prospective zones. Information is compiled using ArcGIS 10.6.1, Target 9.1, Leapfrog Geo, Vulcan, and Fusion software. A regional structural interpretation has been completed using Landsat imagery for the definition of primary and secondary lineaments throughout the district.

In summary, the regional exploration strategy currently being employed by Mineros consists of the following:

- Compilation of historical exploration and production data (mapping and geochemical) into an organized database using GIS software (ArcGIS/Target/Fusion).
- Regional structural interpretation using Landsat radar images in order to identify favourable trends and structural intersections.
- Utilization of orthorectified ASTER satellite imagery with filters for iron, silica, hydroxyls, and clay (sericite-kaolinite-alunite) to identify potential alterations related to mineralization.
- Utilization of airborne and ground magnetic geophysical data to identify intrusive rock units and their contacts with the surrounding volcanic and sedimentary lithologies (favourable mineralization environments).
- The combination and resulting interpretation of the above information to identify regional targets.
- Field testing of identified targets with geologic mapping and soil, sediment, and rock chip sampling.
- Continuing with more detailed evaluation of prospects using additional geologic mapping, trenching, and rock chip sampling to advance prospects to drill-ready stage; and
- Diamond drilling to test prospects.

9.2 Brownfield Exploration

Near mine exploration is focused on the current mining operations, the Panama and Pioneer mines. Mineralization is related to an epithermal gold system associated with multiple quartz veins. A diamond drill program totalling 33,601 m in 118 holes was completed in 2022. The objective of this campaign was to increase the Mineral Resources and Mineral Reserves at the Panama and Pioneer mines.

9.3 Greenfield Exploration

As part of the independent greenfield exploration campaign, Mineros advanced its program in several targets through rock sampling, soil sampling, mapping, and exploration drilling at Guillermina and Luna Roja.

9.3.1 Luna Roja Deposit

The Luna Roja deposit, formerly the Luna Roja exploration target, is a skarn gold system, located 2.5 km north of the municipality of Rosita and consists of two mineral concessions: Monte Carmelo I (51.55 ha) and Monte Carmelo II (103.1 ha) (Figure 9-1). On January 1, 2021, Hemco assumed operation of the Luna Roja deposit from Royal Road. On May 21, 2021, Hemco acquired all of Royal Road's interest in Luna Roja, and the Royal Road Alliance Agreement was amended to remove the Monte Carmelo I and Monte Carmelo II concessions from the area of interest under that agreement, bringing Hemco's interest in Luna Roja to 100%.

The following summary of the exploration activities on Luna Roja.

Artisanal miners have been active in the Luna Roja area for approximately five years and have developed small pits in the oxidized skarn mineralization at surface to a depth of 40 m.

Royal Road has systematically explored Luna Roja using a combination of soil, grab, chip channel sampling, ground based geophysics, and diamond drilling.

A contiguous gold in soil anomaly (>200 Au ppb) extends approximately 750 m northwest-southeast, which includes the area exploited by artisanal miners. Subsequent grab and chip channel sampling confirmed in-situ gold mineralization at Luna Roja and spatially related to the gold in soil anomaly.

In 2019, Royal Road and Hemco completed a drilling program of 17 diamond drill holes totalling 2,472 m. Drilling identified broad zones of auriferous skarn to 150 m depth and extending 400 m northwest-southeast in artisanal mining activity area.

Subsequent to the 2019 diamond drilling program, Royal Road commissioned ground based magnetic and microgravity surveys covering the entire Luna Roja area, which was completed in early 2020. The gold in soil anomaly is characterized by a "grainy" magnetic (TMI RTP) signature with punctual highs and lows. Three dimensional inverted gravity density data highlighted a discrete density low surrounded by a density high in the south portion of the property area, which is interpreted as a possible deeper, downthrown endoskarn and adjacent exoskarn bodies worthy of drill testing.

In 2020, Royal Road completed ground-based magnetic and microgravity surveys over the entire Luna Roja deposit, which further defined targets drilled with a campaign of 3,095 m in 19 holes.

In 2021, Mineros completed 6,700 m drilling program in 40 holes to expand mineralization at depth and laterally.

In 2022, Mineros announced an initial Mineral Resource estimate for the Luna Roja deposit on July 7, 2022 (publicly disclosed in Mineros' July 7, 2022, press release entitled "Mineros Announces Initial Mineral Resource Estimate for the Luna Roja Deposit, Nicaragua"). In addition, Mineros completed 2,918 m of diamond drilling in 20 holes, including 538 m in nine near surface, short holes with the objective of expanding the actual Mineral Resources and 2,380 m in 11 holes to test geophysical anomalies around the main deposit.

Luna Roja initial Mineral Resources are disclosed in this Technical Report.

9.3.2 Guillermina Target

The Guillermina Target is located four kilometres west of the Pioneer deposit and consists of a 1.8 km long and 245° azimuth vein system with gold, silver, lead, and zinc anomalies, in an assemblage of up to 20 m thick hydrothermal breccias, stockwork and veinlets, with a crustiform to colloform-banded quartz-chalcedony-adularia matrix. Galena, sphalerite, and hematite are also common in patches and bands within the breccia.

The Guillermina Target is located in the southwest part of the Colorado/Guillermina vein system, separated from Colorado by the northwest-southeast trending New York fault. The Colorado/Guillermina vein system is a 3.8 km long structure, which has been historically mined in two small pits, and is currently exploited on a small scale by artisanal miners.

Following results from holes drilled by Neptuno during the 1970s, Hemco executed a drilling campaign in 2011 and 2012, completing 1,070 m in seven holes, which show strong zinc and lead anomalies, and low grade gold and silver anomalies.

A reconnaissance diamond drilling campaign was completed in 2022 for a total of 887 m in seven holes. These holes confirmed the continuity in depth and towards the centre of the target, of a galena-sphalerite-chalcopyrite mineralized structure that ranges from two metres to 15 m in thickness.

9.4 Strategic Alliance with Royal Road

Hemco and Royal Road have completed exploration work at the Hemco Property under the Royal Road Nicaragua Alliance Agreement including at Caribe. See Item 4.4.1.

Prior to the fourth quarter of 2022, Mineros and Royal Road were pursuing regional exploration drilling on the Hemco Property within the area of interest under the Royal Road Nicaragua Alliance Agreement. This included drilling at Caribe, Murciélago, and Nueva América. In the fourth quarter of 2022, Mineros and Royal Road suspended all activities under the Royal Road Nicaragua Alliance Agreement, which included terminated the 2022 drilling campaign at Caribe. The next steps moving forward are under discussion between the companies.

9.4.1 Caribe Exploration Target

Caribe is an exploration target located in the vicinity of the municipality of Rosita, approximately 42 km southeast of the Panama Mine and 26 km southeast of Luna Roja, mineralization is associated with sulphide-hydrothermal breccias. Caribe consists of one mineral concession (Rosita VI) and one mineral concession application (Rosita VII).

The Rosita VI concession measures approximately 3,000 ha and the Rosita VII concession application covers an area of 14,063 ha.

The following summary of exploration activities on Caribe is taken from Chapman (2020a).

In 1998, Hemco flew a regional airborne magnetic survey over an area including Caribe. The survey data was reprocessed in 2018 and a 500 m diameter magnetic high anomaly at Caribe was identified. Royal Road geologists explored parts of the Rosita VI licence with grab sampling and systematic deep auger soil sampling through saprolite and identified an approximately 600 m x 400 m gold anomaly. Vertical pits were excavated through saprolite and the gold anomaly to facilitate channel sampling and confirmed in-situ gold mineralization related to quartz-carbonate-adularia pyrite veinlets hosted in volcanic breccia units. Royal Road commissioned ground based magnetic and micro gravity surveys over the Caribe area. These surveys were completed in March 2020. The surveys successfully ground-truthed the magnetic high anomaly detected by the airborne survey and also identified a magnetic low and coincident gravity gradient structure at the intersection of northwest and east-northeast linear features, coincident with gold anomalies identified in soil, channel, and drill core samples.

Between 2019 and 2022, a total of 8,934 m of diamond drilling in 51 holes was completed at the Caribe Exploration Target, as summarized in Table 9-1.

Table 9-1: Caribe Drilling Summary – 2019 to 2022
Mineros S.A. – Hemco Property

Exploration Target	Time Period	DDH	
		No. Holes	Metres (m)
Caribe	2019	4	413
	2020	13	1,903
	2021	21	3,916
	2022	13	2,702
Total		**51**	**8,934**

In addition to the diamond drilling program, a Rotary Air Blast (RAB)/RC campaign was also completed between 2021 and 2022. This campaign focused on soil/laterite sampling, with a total of 8,689 m in 453 RAB/RC holes. Scout RC results imply that the gold mineralized system at Caribe has a general northeast-southwest trend and remains open along a total strike length of approximately 2.5 km.

On October 26, 2022, a DPA was declared by Royal Road in respect of Hemco Rosita VI and the application made by Hemco known as Application Hemco Rosita VII.

Mineros and Royal Road suspended all exploration at the DPA, excluding those related to desktop geologic modelling and the estimation of an internal resource and select social and environmental activities, and have agreed that as soon as reasonably practicable, they will determine the appropriate structure and timing for the transfer of interests in the DPA with a view to maximizing organizational and operational efficiencies and other related legal concerns in concluding on the best structure for holding the DPA.

9.4.2 Murcielago Exploration Target

The Murcielago Target is located nine kilometres northeast of Rosita. The target was initially identified by Hemco, which obtained high gold grades in channel samples collected in small scale pits from artisanal miners of this area. Gold mineralization is related to a 20° NE main strike fault breccia zone. The zone has a thickness between three metres and five metres, and according to field observations, it is possible that the altered host rock also contains high gold grades. Analysis and interpretation of these results are in process. A total of 1,418 m in six diamond drill holes were drilled in 2022.

9.4.3 Nueva America Exploration Target

The interest in the Nueva America area began in 1939 when Neptune (ASARCO and Rosario Resources Corp. joint venture) carried out preliminary studies. There is currently a small amount of artisanal mining activity at the two main pits and surrounding areas, but the area remains largely unexplored.

At Nueva America, the geology is represented by dacite to rhyodacite composition lava domes with multiple intrusion events and development of porphyry-style alteration and veining overprinted by epithermal veins. Royal Road's drilling program was focused on two types of targets: high grade vein Au-Ag-Zn polymetallic mineralization probably related to the epithermal phase in zones of sheeted veins and veinlets and/or breccias and disseminated Cu-Au-Mo in a large porphyry system with potential for bulk mining. A total of 2,271 m in seven diamond drill holes were completed in 2022.

Drilling completed is summarized in Section 10.2.

9.5 Other Exploration Activities

In addition to the regional exploration work currently being undertaken on the Hemco Property, other acquisitions or joint ventures with contract miner cooperatives and other exploration companies in Nicaragua are being considered to expand Mineros' exploration and production portfolio.

9.6 Exploration Potential

The Hemco Property covers an extensive area containing very prospective ground for gold mineralization in the Mining Triangle district of Nicaragua. SLR is of the opinion that there is excellent exploration potential on the Hemco Property and that there is a good opportunity to increase the Mineral Resources with more drilling and resource modelling. The following discussion relates to the near surface artisanal exploration potential. Mineros has advised SLR that it intends to discuss the exploration potential in other areas of the Hemco Property in future technical reports.

Since 2013, mill feed from artisanal mining has formed most of the production at the Hemco Property. In order to account for the contribution of this material to the Hemco Property, Mineros has an ongoing program of outlining geological potential strictly allocated to artisanal mining. This material is defined in areas where:

- Drill hole, surface trench, and/or surface samples return assay values above 3 g/t Au,
- Surface mapping and or artisanal development outlines sufficient geological continuity,
- Material is located within 30 m of the surface,
- Material is located within areas not amenable to commercial scale mining or allocated to artisanal mining through agreements with contract miners.

The small portions of the areas outlined in artisanal mining that were included in the Mineral Resources in the previous Technical Report (SLR, 2021) have been downgraded to exploration targets. This includes seven veins at Panama, Leticia, Silba, four veins at Rosita I, California-Bonancita, Limones, Nueva America, and Wasponona-Poderosa. The exploration potential of these veins is based on diamond drill holes and trenches which outlined a total of 20 mineralized structures spread over different parts of the property (Figure 9-1).

The total artisanal geological potential for the 20 veins ranges from 330 kt to 540 kt at grades from 4 g/t Au to 7 g/t Au for 60 koz to 100 koz Au.

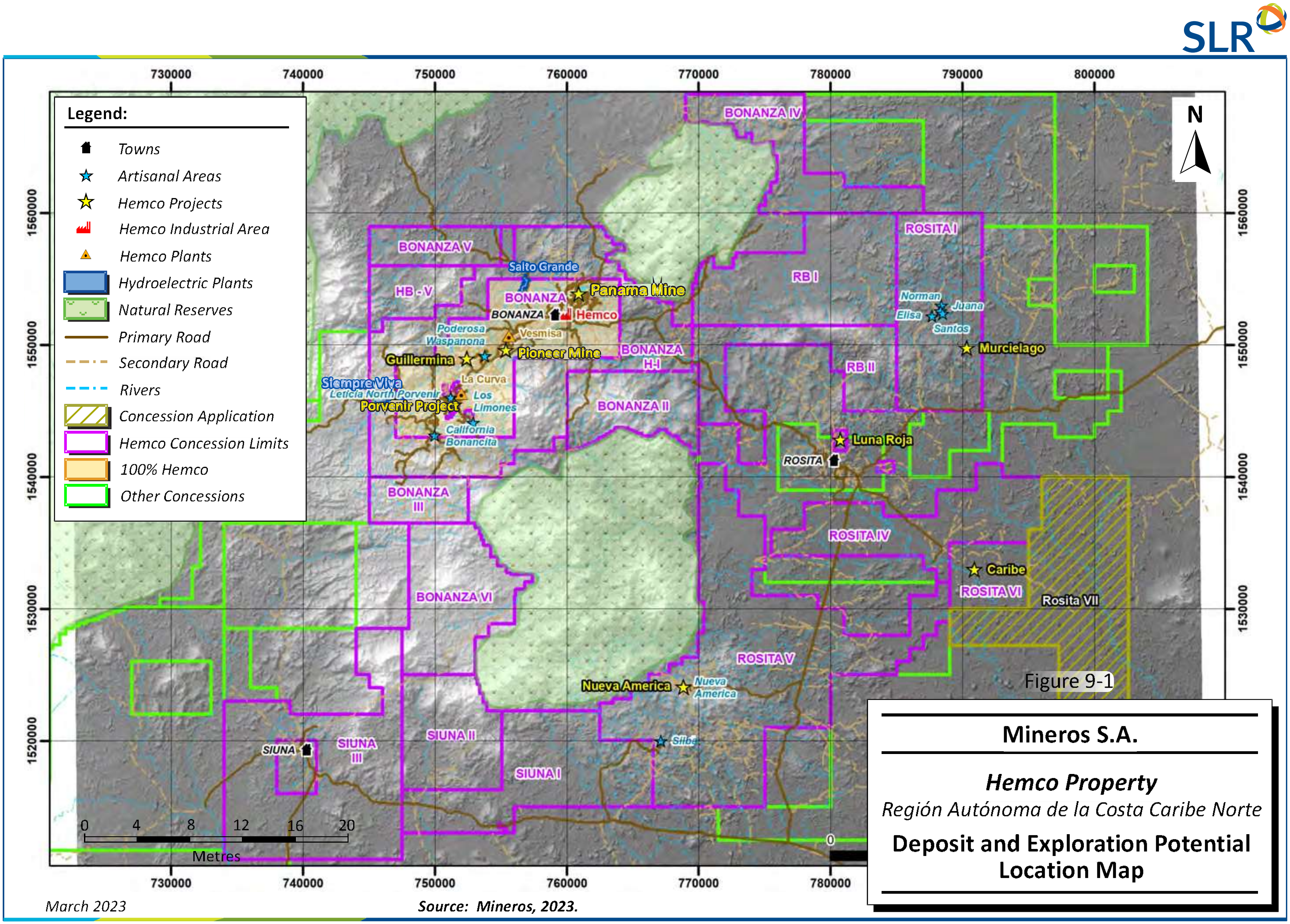
Additional artisanal geological potential was estimated for 40 vein groups from the Bonanza concession and four vein groups from the Rosita I concession. Ranges of tonnes, grades, and gold ounces for artisanal targets have been approximated based on mapping, grab sampling, trenching, and drilling. The estimates represent simple geometric approximations, measuring the strike length of mineralized shoots and projecting the structures to depth. The ranges of tonnes are determined by selecting reasonable ranges of vein widths, based on the sampling for each structure multiplied by the strike length, dip length, and vein density (2.7 t/m^3 assigned to all structures). The grades are determined by selecting reasonable grade ranges from the assay results for each vein.

Vein groups from the Bonanza concession range from less than 100 m to greater than 1,000 m in estimated strike length and have been projected down dip from approximately 30 m to 60 m, with vein widths ranging from 0.1 m to 1.5 m. Estimated gold grades range from 2 g/t Au to greater than 25 g/t Au. Vein groups from the Rosita I concession range from approximately 300 m to greater than 4,000 m in estimated strike length and have been projected down dip from approximately 30 m to 50 m, with vein widths ranging from less than 0.1 m to greater than 4.0 m. Estimated gold grades range from 2 g/t Au to greater than 20 g/t Au.

The total artisanal geological potential for both the Bonanza and Rosita I concessions ranges between 2.7 Mt and 5.0 Mt at grades from 3 g/t Au to 9 g/t Au for 0.3 Moz Au to 1.5 Moz Au.

The potential quantities and grades of these exploration targets are conceptual in nature and there has been insufficient exploration to define a Mineral Resource. It is uncertain if further exploration will result in the above targets being delineated as Mineral Resources.

The location of each target at property scale is shown in Figure 9-1.


Legend:
Towns
Artisanal Areas
Hemco Projects
Hemco Industrial Area
Hemco Plants
Hydroelectric Plants
Natural Reserves
Primary Road
Secondary Road
Rivers
Concession Application
Hemco Concession Limits
100% Hemco
Other Concessions
N
BONANZA IV
BONANZA V
HB - V
BONANZA
BONANZA
BONANZA H-I
BONANZA II
BONANZA III
BONANZA VI
Salto Grande
Panama Mine
Hemco
Vesmisa
Poderosa
Waspanona
Guillermina
Pioneer Mine
Siempre Viva
Leticia North Porvenir
Porvenir Project
La Curva
Los Limones
California
Bonancita
RB I
RB II
ROSITA I
Norman
Juana
Elisa
Santos
Murcielago
Luna Roja
ROSITA
ROSITA IV
ROSITA V
ROSITA VI
Rosita VII
Caribe
Nueva America
Nueva America
Silba
SIUNA
SIUNA III
SIUNA II
SIUNA I
730000
740000
750000
760000
770000
780000
790000
800000
1520000
1530000
1540000
1550000
1560000
0
4
8
12
16
20
Metres
Figure 9-1
Mineros S.A.
Hemco Property
Región Autónoma de la Costa Caribe Norte
Deposit and Exploration Potential Location Map
March 2023
Source: Mineros, 2023.

10.0 DRILLING

Descriptions of historical drilling can be found in Section 6 of this Technical Report.

10.1 Hemco Drilling

A total of 4,643 surface diamond drill holes (DDH) totalling 666,348 m have been completed at the Hemco Property from 1954 to year end 2022. Table 10-1 summarizes the drilling, trenches, and underground channel samples for the Hemco Property.

Drilling data are currently stored in Datamine's Fusion databases for the Porvenir, San Antonio, Leticia, Pioneer, Luna Roja, and artisanal deposits, and in an SQL database for the Panama deposit, which are continuously updated and validated as new information becomes available.

Between 2011 and 2022, Mineros has carried out diamond drilling for exploration and definition of Mineral Resources using surface drill rigs; KD1000 and KD-600, and underground rigs; UG2000, Gopher, and HC2000.

The drill collars are surveyed by the mine surveyor using a Total Station instrument. The Universal Transverse Mercator (UTM) NAD27 zone 16N was used. All drill holes were downhole surveyed using a Reflex instrument.

Drill hole locations for Panama, Pioneer, Porvenir, Luna Roja, Leticia, San Antonio, and artisanal areas are shown in Figure 10-1, Figure 10-2, Figure 10-3, Figure 10-4, Figure 10-5, and Figure 10-6, respectively.

Table 10-1: Summary of Exploration Drilling, Trenches, and Channels up to December 31, 2022
Mineros S.A. – Hemco Property

Area	Time Period	DDH		Trench		UG		RC		Total	
		No. Holes	Metres (m)	No. Holes	Metres (m)	No. Channel	Metres (m)	No. Holes	Metres (m)	No. Holes	Metres (m)
Greenfields Exploration											
Adela-Colonia Norte	2017 - 2021	-	-	-	-	59	53	-	-	59	53
Atlas-Tigre Negro	2018 - 2020	-	-	-	-	204	239	-	-	204	239
Bonancita NE	2021	-	-	3	30	7	5	-	-	10	35
California-Bonancita	2018 - 2021	13	1,201	-	-	72	48.93	-	-	85	1,249.93
California-Picadillo	2021	-	-	-	-	35	25.75	-	-	35	25.75
Cleopatra-Bonanza-Verdum	2018 - 2021	-	-	-	-	98	99	-	-	98	99
Concordia	2017 - 2022	-	-	10	119	50	48	-	-	60	167
Concordia	Old	5	1,230	-	-	-	-	-	-	5	1230
El Paraiso	2022	-	-	4	40.5	15	14.4	-	-	19	54.9
El Piñal	2019 - 2022	-	-	11	149.8	34	27.24	-	-	45	177.04
Españolina	2021			-	-	62	54.44	-	-	62	54.44
Guillermina-Colorado	2019 - 2022	-	-	10	154	148	187.83	-	-	158	341.83
Guillermina-Colorado	Old - 2011	54	7,174	29	648	-	-	-	-	83	7,822
La Bolsa	2022	-	-			8	7.6	-	-	8	7.6
La Cascada	2022	-	-	-	-	11	6.38	-	-	11	6.38

Area	Time Period	DDH		Trench		UG		RC		Total	
		No. Holes	Metres (m)	No. Holes	Metres (m)	No. Channel	Metres (m)	No. Holes	Metres (m)	No. Holes	Metres (m)
La Union	2022	-	-	-	-	6	5.3	-	-	6	5.3
Leticia - north of Porvenir	2021	-	-			28	25.8	-	-	28	25.8
Leticia - north of Porvenir	Old	12	585	-	-	-	-	-	-	12	585
Limones	2018	-	-	1	1	17	8	-	-	18	9
Magdalena NE	2021	-	-	-	-	11	8	-	-	11	8
Mina Pis Pis	2021 - 2022	10	1,292	-	-	62	53.79	-	-	72	1,345.79
Monte Carmelo	2017 - 2020	-	-	-	-	305	433	-	-	305	433
Monte Carmelo	2019 - 2020	36	5,563	-	-	-	-	-	-	36	5,563
Nueva America	2005 - 2016	9	3,024	39	926	-	-	12	3339	48	3,950
Okonwas	2021 - 2022	-	-	-	-	29	32.68			29	32.68
Panama Este	2018 - 2021	-	-	-	-	155	246.57	-	-	155	246.57
Panama Oeste	2020	14	3,620	-	-	-	-	-	-	14	3,620
Panama Oeste	2018 - 2020	-	-	-	-	97	134	-	-	97	134
Pioneer 2 - 3	2022	-	-	-	-	102	126	-	-	102	126
Pioneer FW - La Reforma	2022	-	-	-	-	15	21.22	-	-	15	21.22
Pioneer NE	Old	226	31,218	-	-	-	-	-	-	226	31218
Pioneer NE Ext	2020 - 2022	-	-	-	-	21	18.2	-	-	21	18.2
San Antonio NE	2020 - 2021	-	-	-	-	64	78	-	-	64	78
San Antonio NE	Old - 2020	56	9,149	-	-	-	-	-	-	56	9,149

Area	Time Period	DDH		Trench		UG		RC		Total	
		No. Holes	Metres (m)	No. Holes	Metres (m)	No. Channel	Metres (m)	No. Holes	Metres (m)	No. Holes	Metres (m)
San Antonio Okonwas	2017 - 2018	-	-	31	498	115	66	-	-	146	564
San Antonio SW	2020	-	-	-	-	14	15	-	-	14	15
San Antonio SW	Old - 2015	8	1,026	-	-	-	-	-	-	8	1,026
San Joaquin	2021	-	-	-	-	23	22	-	-	23	22
San Ramon	2022	-	-	-	-	31	35.56	-	-	31	35.56
Silba	2017 - 2021	12	1,206	36	853	110	94.51	-	-	158	2,153.51
Waspanona-Poderosa	2018 - 2022	11	1,176	70	1,080	70	61.27	-	-	151	2,317.27
Total Artisanal	**Old - 2022**	**466**	**67,464**	**244**	**4,499.3**	**2,078**	**2,301.47**	**12**	**3,339**	**2,788**	**74,264.77**
Adela-Colonia Norte	2017 - 2021	-	-	-	-	59	53	-	-	59	53
Atlas-Tigre Negro	2018 - 2020	-	-	-	-	204	239	-	-	204	239
Bonancita NE	2021	-	-	3	30	7	5	-	-	10	35
California-Bonancita	2018 - 2021	13	1,201	-	-	72	48.93	-	-	85	1,249.93
California-Picadillo	2021	-	-	-	-	35	25.75	-	-	35	25.75
Cleopatra-Bonanza-Verdum	2018 - 2021	-	-	-	-	98	99	-	-	98	99
Concordia	2017 - 2022	-	-	10	119	50	48	-	-	60	167
Concordia	Old	5	1,230	-	-	-	-	-	-	5	1230
El Paraiso	2022	-	-	4	40.5	15	14.4	-	-	19	54.9
El Piñal	2019 - 2022	-	-	11	149.8	34	27.24	-	-	45	177.04
Españolina	2021			-	-	62	54.44	-	-	62	54.44

Area	Time Period	DDH		Trench		UG		RC		Total	
		No. Holes	Metres (m)	No. Holes	Metres (m)	No. Channel	Metres (m)	No. Holes	Metres (m)	No. Holes	Metres (m)
Guillermina-Colorado	2019 - 2022	-	-	10	154	148	187.83	-	-	158	341.83
Guillermina-Colorado	Old - 2011	54	7,174	29	648	-	-	-	-	83	7,822
La Bolsa	2022	-	-			8	7.6	-	-	8	7.6
La Cascada	2022	-	-	-	-	11	6.38	-	-	11	6.38
La Union	2022	-	-	-	-	6	5.3	-	-	6	5.3
Leticia - north of Porvenir	2021	-	-			28	25.8	-	-	28	25.8
Leticia - north of Porvenir	Old	12	585	-	-	-	-	-	-	12	585
Limones	2018	-	-	1	1	17	8	-	-	18	9
Magdalena NE	2021	-	-	-	-	11	8	-	-	11	8
Mina Pis Pis	2021 - 2022	10	1,292	-	-	62	53.79	-	-	72	1,345.79
Monte Carmelo	2017 - 2020	-	-	-	-	305	433	-	-	305	433
Monte Carmelo	2019 - 2020	36	5,563	-	-	-	-	-	-	36	5,563
Nueva America	2005 - 2016	9	3,024	39	926	-	-	12	3339	48	3,950
Okonwas	2021 - 2022	-	-	-	-	29	32.68			29	32.68
Brownfields Exploration											
Panama	2003 - 2022	3,127	417,621	-	-	86,103	114,743	-	-	89,230	532,363
Pioneer	1956 - 1983	79	5,315	-	-	-	-	-	-	79	5,315
Pioneer	2011 - 2017	121	31,367	-	-	60	149	-	-	181	31,516

Area	Time Period	DDH		Trench		UG		RC		Total	
		No. Holes	Metres (m)	No. Holes	Metres (m)	No. Channel	Metres (m)	No. Holes	Metres (m)	No. Holes	Metres (m)
Pioneer	2017 - 2022	220	34,997	-	-	1,874	3,554	-	-	2094	38,551
Total Brownfield	**1956 - Dec 2022**	**3,547**	**489,300**			**88,037**	**118,445**			**91,584**	**607,745**

Notes:

1. Caribe drilling is listed in Section 10.2.
2. Brownfields exploration includes mine exploration.

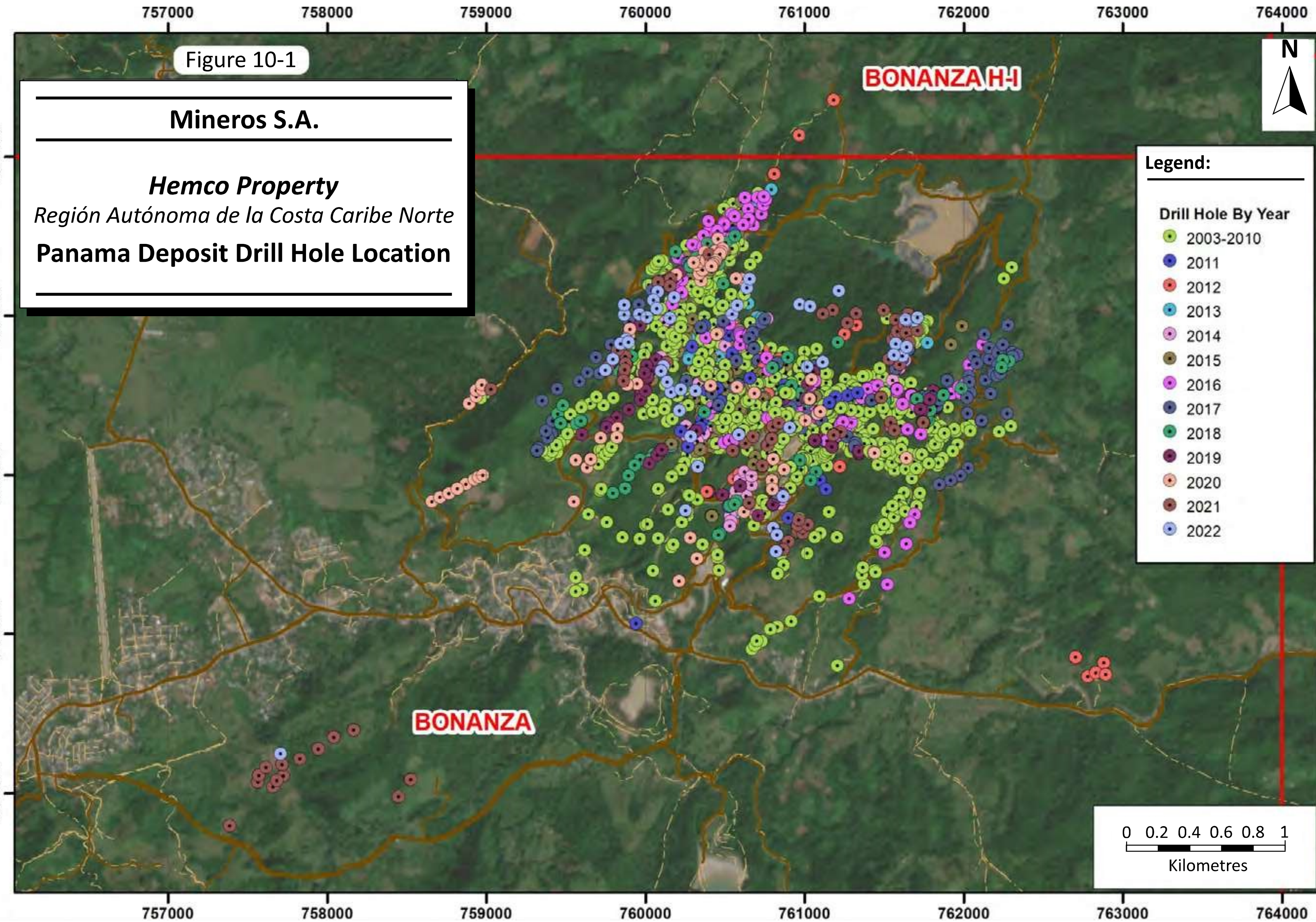


Figure 10-1

Mineros S.A.

Hemco Property

Región Autónoma de la Costa Caribe Norte

Panama Deposit Drill Hole Location

March 2023

Source: Mineros, 2023.

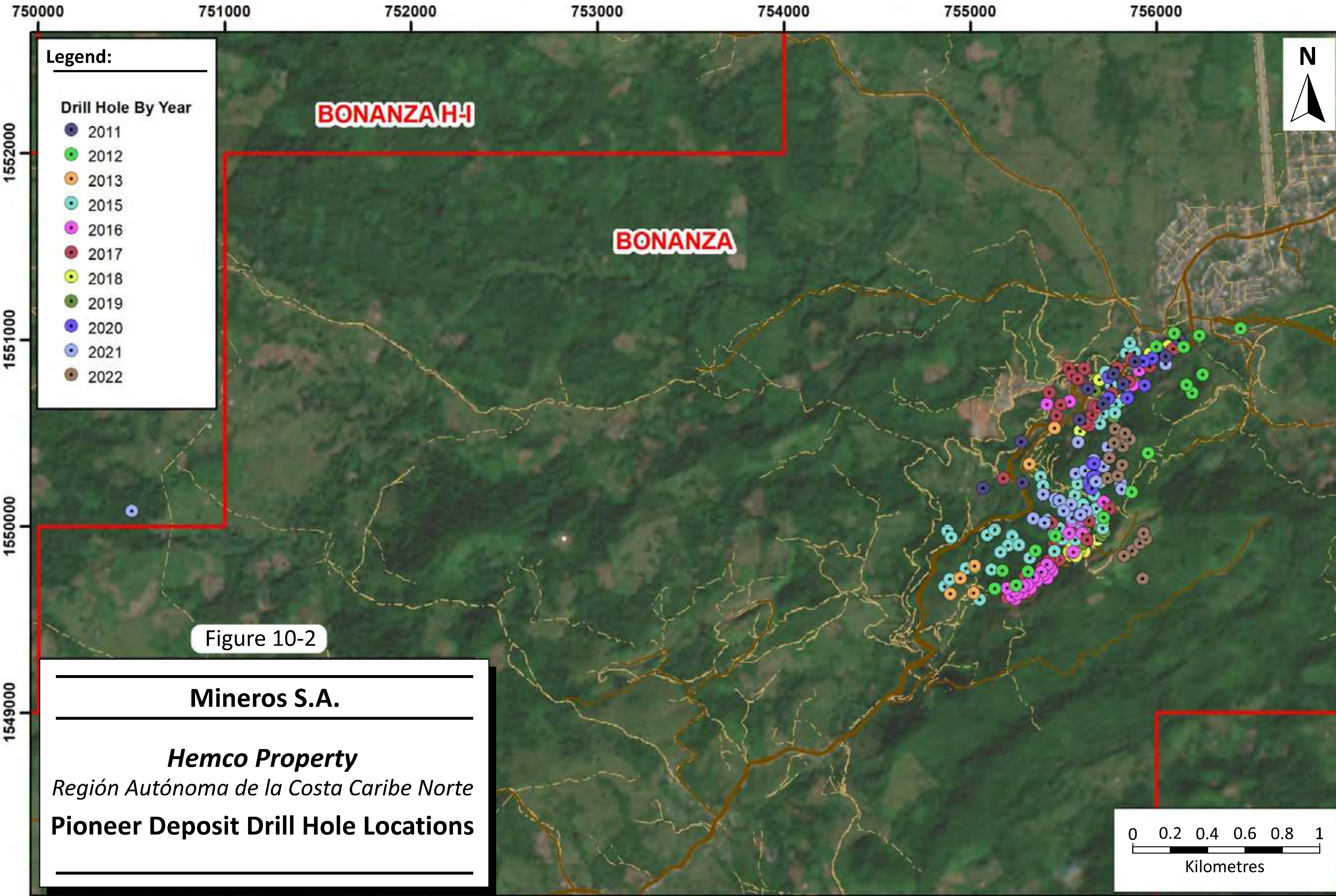


Figure 10-2

Mineros S.A.

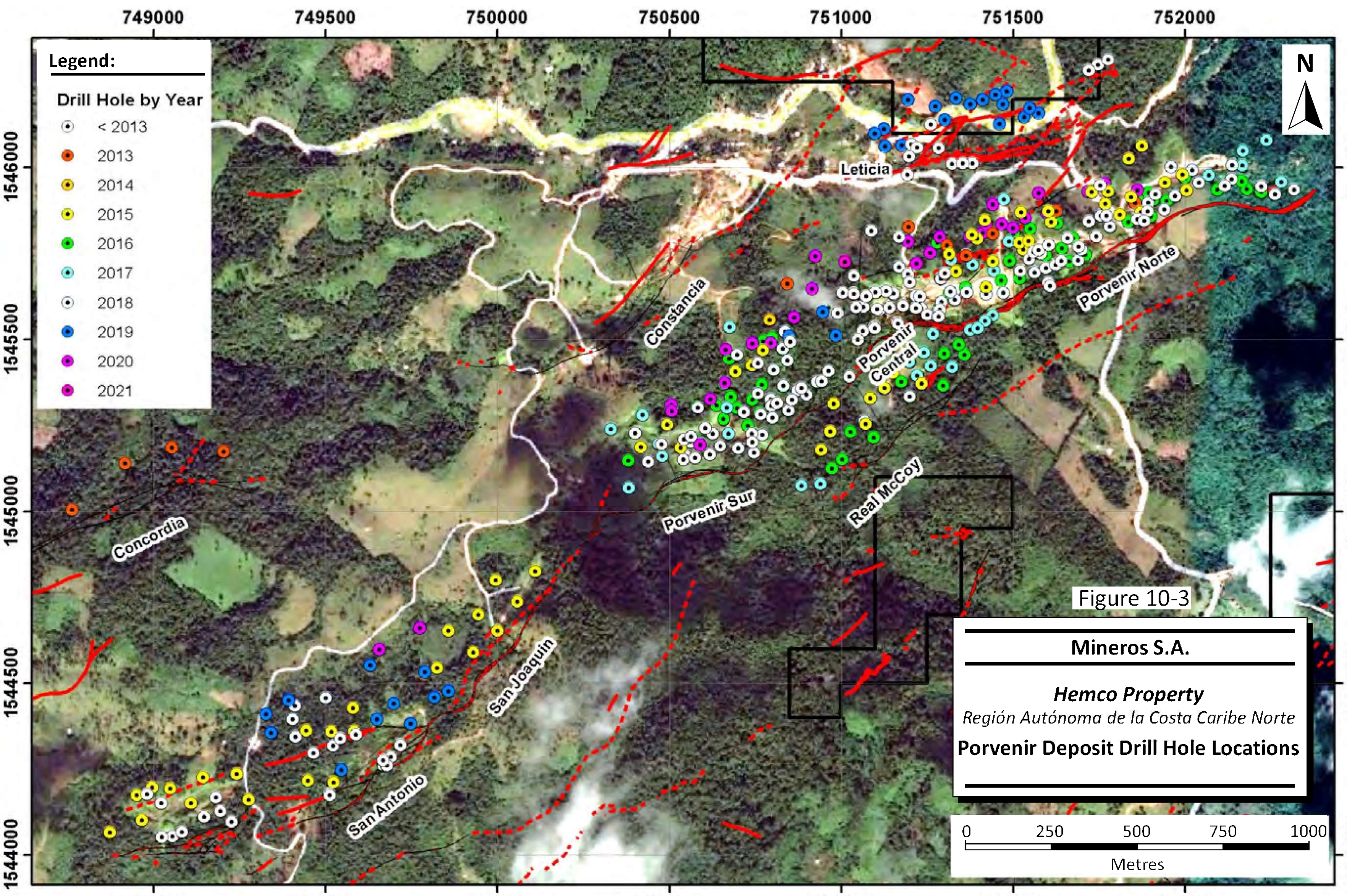
Hemco Property

Región Autónoma de la Costa Caribe Norte

Pioneer Deposit Drill Hole Locations

March 2023

Source: Mineros, 2023.



March 2023

Source: Mineros, 2023.

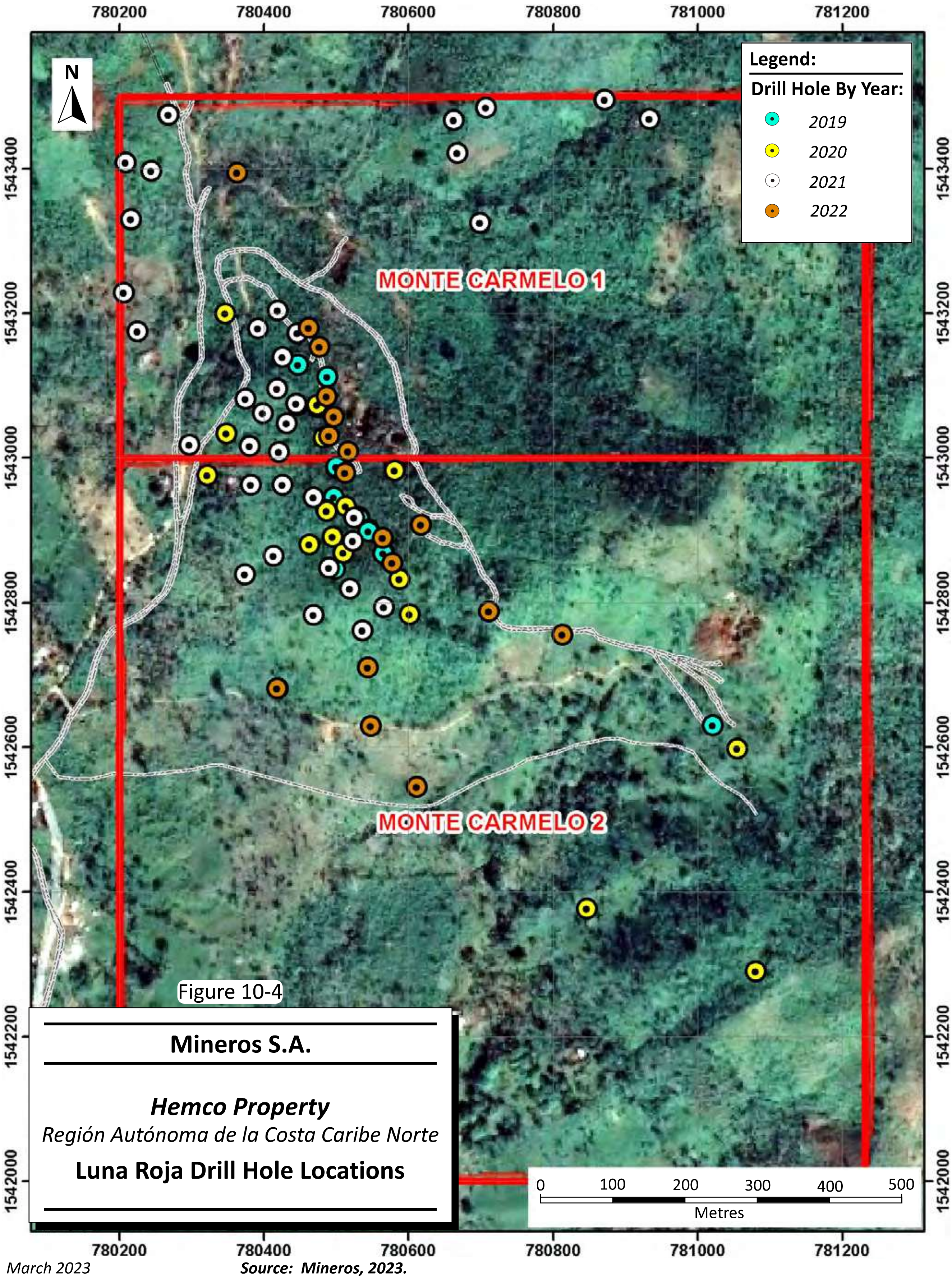


Figure 10-4

Mineros S.A.

Hemco Property

Región Autónoma de la Costa Caribe Norte

Luna Roja Drill Hole Locations

March 2023

Source: Mineros, 2023.

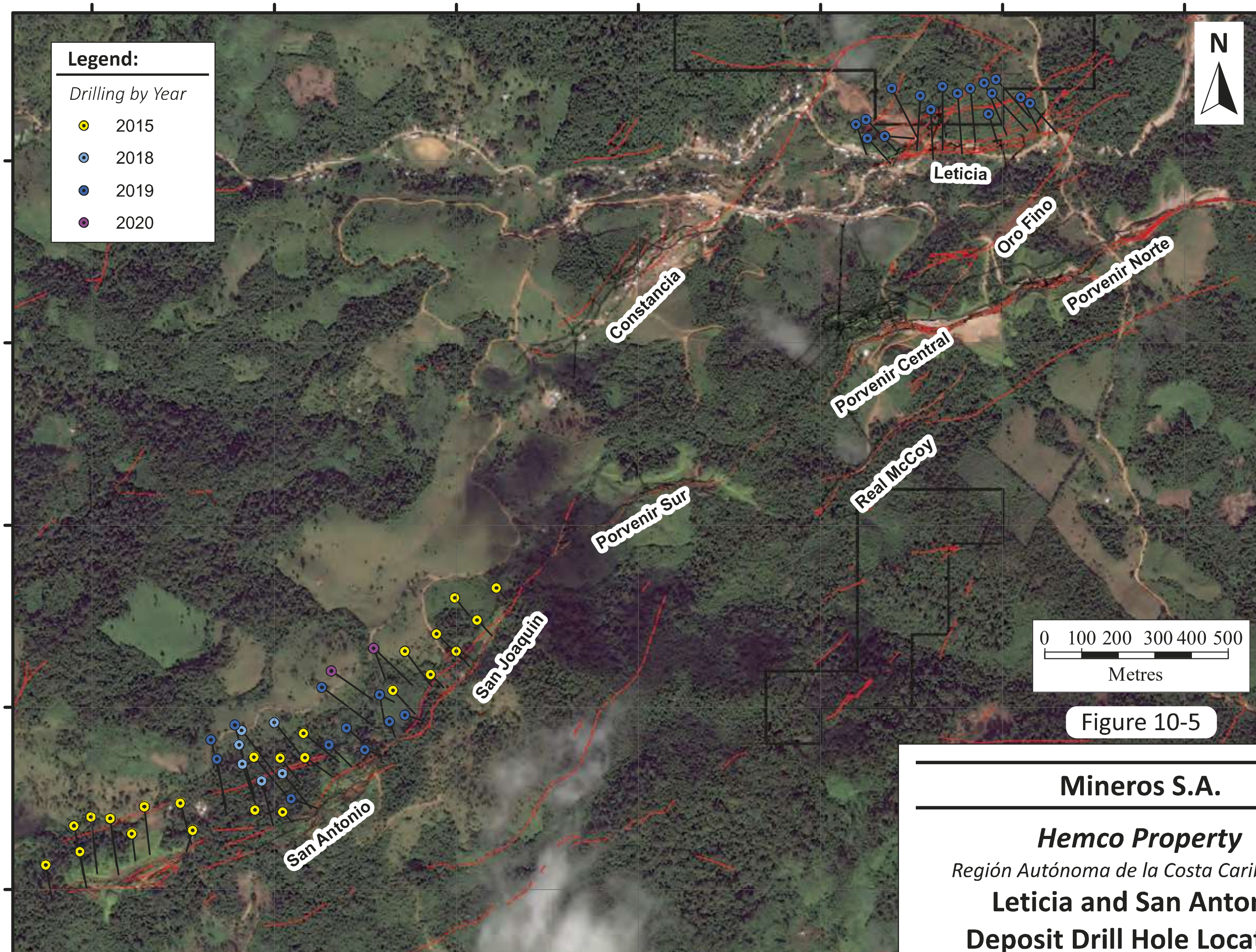


Figure 10-5

Mineros S.A.

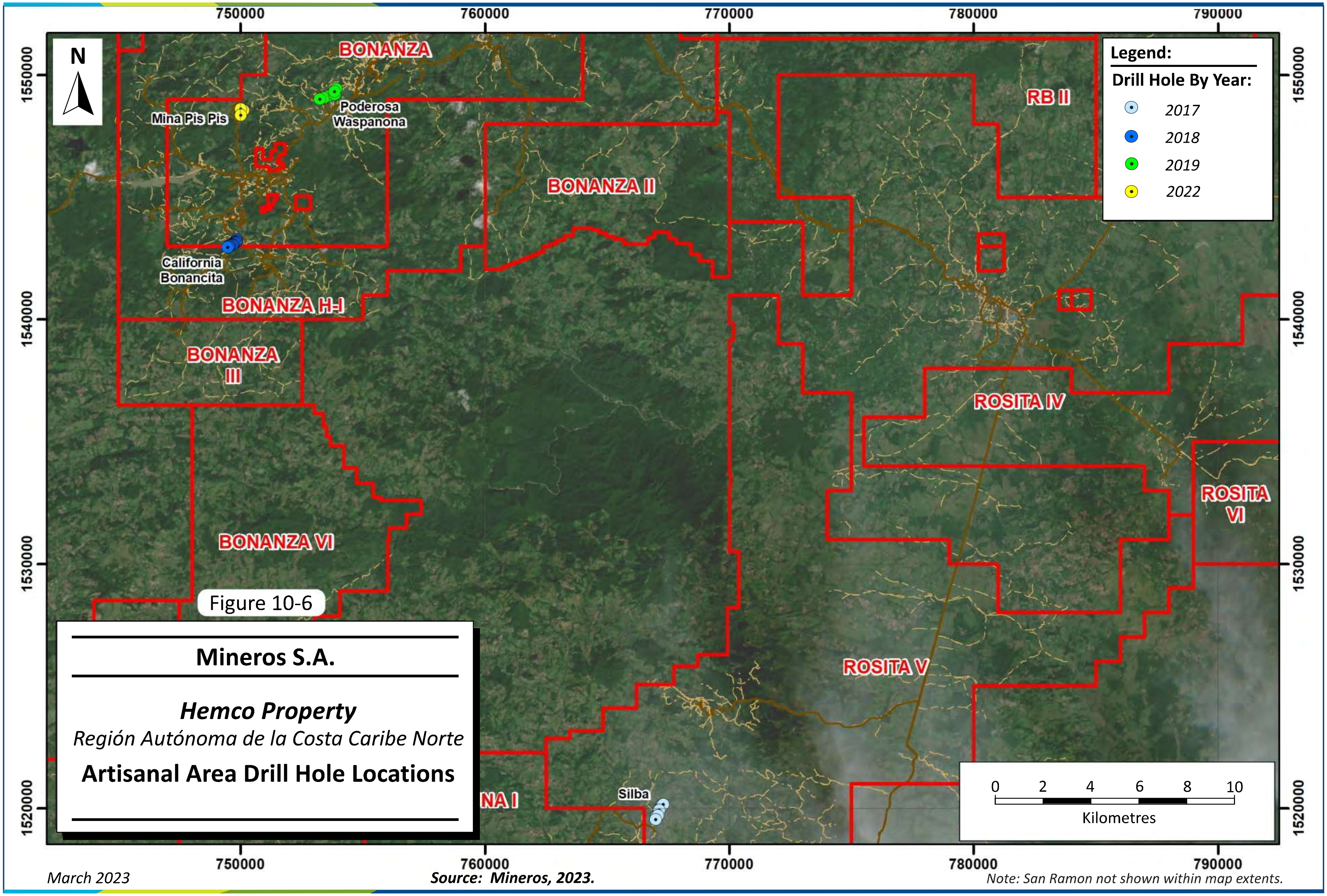
Hemco Property

Región Autónoma de la Costa Caribe Norte

Leticia and San Antonio Deposit Drill Hole Locations

March 2023

Source: Mineros, 2021.



March 2023

Source: Mineros, 2023.

Note: San Ramon not shown within map extents.

10.2 Hemco - Royal Road Strategic Alliance Drilling

Subsequent to preliminary field work, in 2019, initial drilling programs were completed on Luna Roja and Caribe under the Royal Road Alliance Agreement. During 2019 and 2020, Royal Road acted as the operator and was responsible for the drilling, logging, and sampling. In May 2021, Mineros acquired the remaining 50% interest in Luna Roja held by Royal Road. Prior to and in connection with that transaction, Mineros assumed operation of Luna Roja on January 1, 2021. As such, all drilling on Luna Roja completed in 2021 was performed by Hemco. Royal Road remains the operator for Caribe.

Drilling programs have been completed on Caribe from 2019 to 2022 and Nueva America and Murcielago in 2022, for a total of approximately 12,623 m in 64 surface drill holes. This includes 5,888 m of diamond drilling in 26 holes during 2022.

Table 10-2 lists the relevant drilling information for these drilling programs. Figure 10-7 and Figure 10-8 illustrate the drill hole locations at Caribe and Guillermina.

Table 10-2: Summary of Hemco-Royal Road Strategic Alliance Drilling
Mineros S.A. – Hemco Property

Exploration Target	Year	DDH		RC	
		No. Holes	Metres (m)	No. Holes	Metres (m)
Caribe	2019	4	413		
Caribe	2020	13	1,903		
Caribe	2021	21	3,916	110	2,291
Caribe	2022	13	2,702	406	6,404
Nueva America	2022	7	2,271		
Murcielago	2022	6	1,418		
Totals		**64**	**12,623**	**516**	**8,695**

Notes.

1. Drill holes completed by Hemco.
2. Drilling up to December 31, 2022.

In October 2019, a four-hole exploratory diamond drilling program, designed to test the continuity of gold mineralization, was completed at Caribe. Drilling confirmed significant near surface intercepts of gold mineralization. Gold at Caribe is hosted in a northeast dipping volcanic breccia body and is associated with carbonate-sericite alteration and later-stage, pyrite, chalcopyrite, and molybdenite mineralized hydrothermal breccia bodies An additional 47 holes totalling 8,521 m were completed between 2020 and 2022 (up to December 31, 2022). Significant intersections achieved in 2022 at Caribe are listed in Table 10-3.

Table 10-3: Caribe Drill Hole Intercepts
Mineros S.A.– Hemco Property

DDH	From (m)	To (m)	Interval (m)	Grade (ppm Au)
CB-DDH-039	51.0	119.0	68.0	0.9
And	135.0	139.0	4.0	1.0
CB-DDH-040	0.0	104.0	104.0	0.8
And	139.0	205.0	66.0	1.3
CB-DDH-044	90.0	204.0	114.0	1.0
CB-DDH-049	19.0	24.4	5.4	0.9
And	50.8	53.8	3.0	1.2
And	71.6	90.0	18.4	0.9
CB-DDH-050	27.0	199.0	172.0	1.4
Including	80.0	85.0	5.0	8.3
Including	103.0	108.0	5.0	5.1
Including	160.0	182.0	22.0	2.4
CB-DDH-051	82.0	191.0	109.0	1.0
Including	162.0	174.0	12.0	2.6

Notes:

1. The true width of the mineralized zone has not yet been determined.
2. As publicly disclosed by Royal Road in its press release titled "Royal Road Provides Exploration Update for its Caribe Gold Discovery, Nicaragua", effective December 6, 2022.
3. Down Hole cut-off is 0.2 g/t Au.
4. Maximum internal dilution is 10 m.

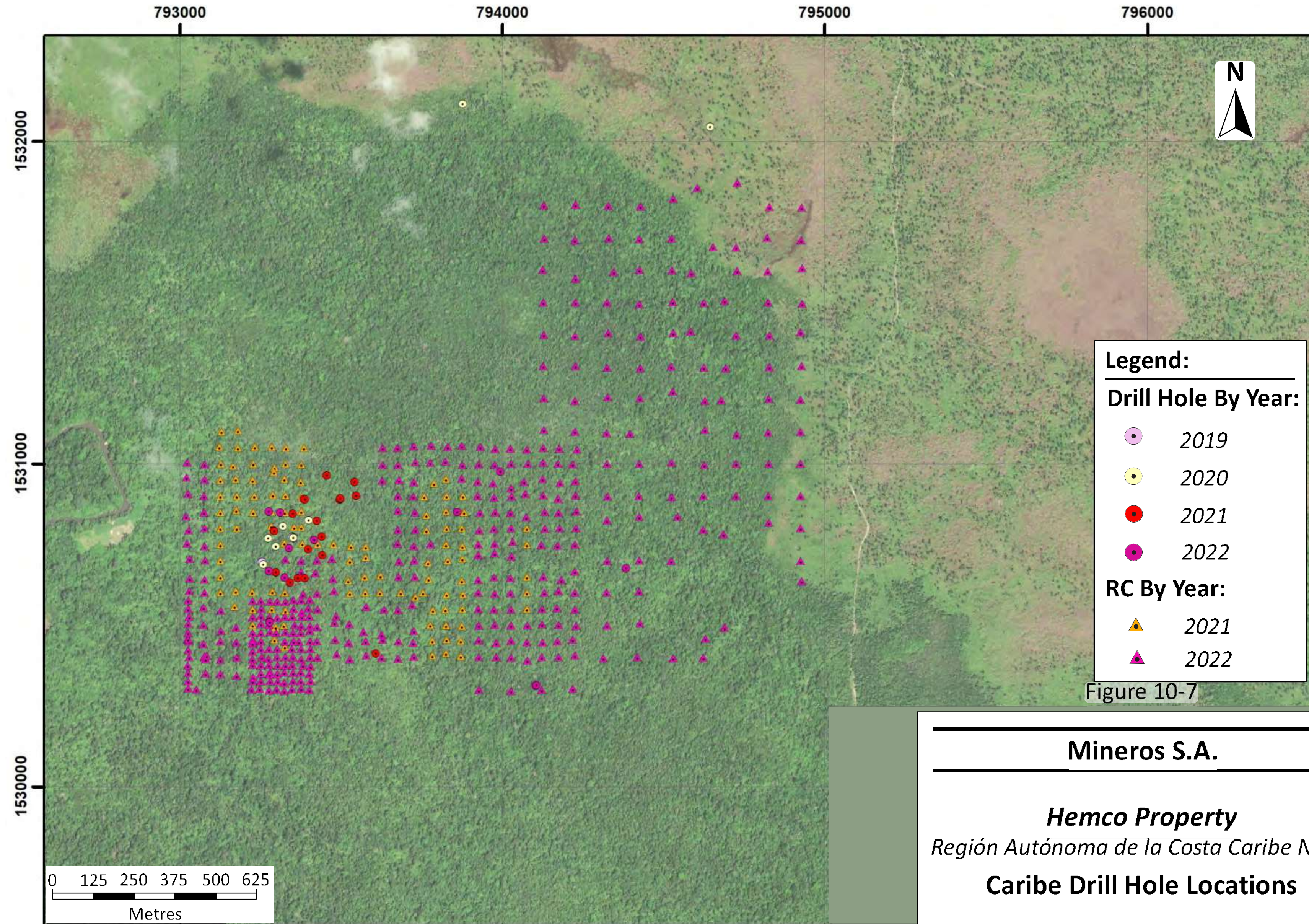


Figure 10-7

Mineros S.A.

Hemco Property

Región Autónoma de la Costa Caribe Norte

Caribe Drill Hole Locations

March 2023

Source: Mineros, 2023.

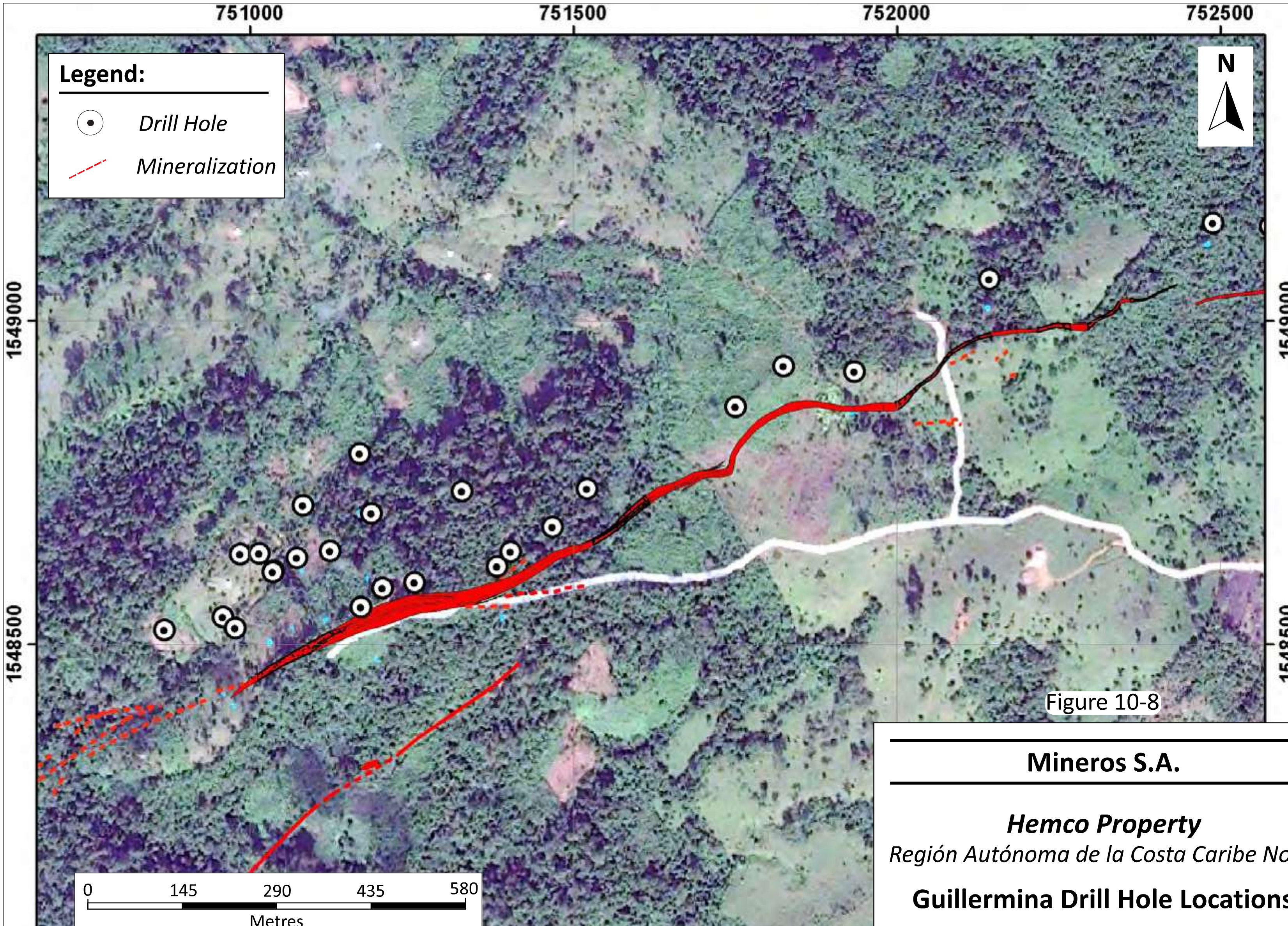


Figure 10-8

Mineros S.A.

Hemco Property

Región Autónoma de la Costa Caribe Norte

Guillermina Drill Hole Locations

Source: Mineros, 2023.

10.3 Core Sampling

Mineros follows conventional, industry standard practices for geologic and engineering data acquisition and sampling. Drill core is logged manually for geotechnical data and geology. Drill holes are logged by the geologist, who describes the downhole lithology, structure, alteration, and mineralization. Only sections indicated by the geologist are split.

The Pioneer and Porvenir deposit mineralization is easily identified by visual inspection and during geological logging of the core. Mineralization is sampled through the zone in intervals with a minimum of 0.5 m and a maximum of 1.2 m. Prior to 2016, the minimum length of samples was 0.2 m. Core sampling is guided by lithology, i.e., quartz morphology, alteration style, and sulphide content.

Core processing is industry standard commencing with geotechnical logging, geologic logging, and marking of sample limits. Core is oriented and diamond sawed in half with one half placed in a numbered plastic bag with a tag and the other half returned and fitted in the wood core box for archive. Flow through water is used for the diamond saw to avoid sample carry-over. Broken rubbly core is hand sampled to obtain the most representative sample possible.

While at site, SLR inspected the drilling locations, core logging, sampling and storage facilities, and held discussions with geologists, drillers, and support personnel. There are adequate standard operating procedures in place and staff are well trained at implementing the protocols.

In the QP's opinion, the drilling, logging, and drill core and channel sampling procedures meet industry standards. The QP is not aware of any drilling, sampling, or recovery factors that could materially impact the accuracy and reliability of the results.

11.0 SAMPLE PREPARATION, ANALYSES, AND SECURITY

In the QP's opinion, the sample preparation, analysis, security procedures, and quality assurance/quality control (QA/QC) are suitable for use in the estimation of Mineral Resources.

11.1 Sample Chain of Custody and Storage

Core is moved by truck from the drilling platforms to Mineros' core facility located at the edge of the Bonanza municipality. The core facility is fenced in and guarded by security personnel and has lockable buildings for core logging, sawing, and sample storage. The storage facility is open at the sides and covered with a corrugated iron roof. A core storage map is maintained by onsite technicians. Greenfield regional and mine exploration core are stored and processed in separate buildings.

Assay samples are shipped in rice bags by truck to the independent BVM sample preparation facility, in Managua (ISO 17025 certification), Nicaragua. All pulps are shipped back to the onsite facility by the Inspectorate laboratory. Only selected coarse rejects chosen by the Hemco Project Geologist are shipped back to the onsite facility. Pulps and rejects are stored with reference to individual sample locations.

11.2 Density Test Work

In order to determine material densities, a total of 99 and 537 drill core samples were collected from the Pioneer and Porvenir deposits, respectively. Samples from the Pioneer deposit were shipped to independent laboratory, SGS in Medellín, Colombia (ISO 9001 and BASC V5 – 2017 certifications), for determination of apparent bulk density using the wax coating/water immersion method (code GQ_GEP). The Pioneer samples were grouped into three lithologies: andesite, breccia, and quartz vein (Table 11-1).

Table 11-1: Pioneer Density Sample
Mineros S.A. – Hemco Property

Material	Number of Samples	Average Density (t/m^3)
Andesite	34	2.76
Breccia	39	2.74
Quartz Vein	26	2.60
Total	**99**	**2.71**

Samples from the Porvenir deposit were shipped for preparation to the BVM preparation facility in Managua, Nicaragua, then to BVM in Vancouver, Canada an independent laboratory, for determination of apparent bulk density using the wax coating/water immersion method (code_SPG03). The sample of the rock or drill core was first weighed in air then submerged in a container of water. The mass of immersed sample was measured, and the weight was then calculated for specific gravity. The Porvenir deposit samples were grouped into two categories: mineralized veins and non-mineralized material (Table 11-2).

Table 11-2: Porvenir Density Samples
Mineros S.A. – Hemco Property

Material	Number of Samples	Average Density (t/m^3)
Mineralized Veins	70	2.78
Non-Mineralized Material	467	2.76
Total	**537**	**2.76**

11.3 Sample Preparation

Sample preparation was performed by BVM in Managua, Nicaragua. The samples were logged in the tracking system (LIMS), weighed, dried, and crushed to greater than 70% passing a 2 mm screen. A split of up to 250 g was taken and pulverized to greater than 85% passing a 75 µm screen. This sample preparation package was coded PRP70-250 by BVM. Following this preparation, pulp samples were shipped for analysis to BVM.

BVM is independent of Mineros. In the QP’s opinion, the sample preparation methodology is acceptable for the purposes of a Mineral Resource estimate.

11.4 Sample Analysis

11.4.1 Assay Data

All diamond drill core samples are prepped at the BVM sample preparation facility in Managua, Nicaragua (ISO 17025 certification), then assayed at the BVM facilities in Vancouver, Canada, an independent laboratory. Samples were assayed for gold and analyzed for a 30-element suite. BVM holds global certifications for quality ISO 9001:2008, Environmental Management: ISO 14001 and Safety Management OH SAS 18001 and AS4801.

The following sample analyses were undertaken at the (BVM) facility in Vancouver, Canada:

- Multi Element Analysis: AQ200. Used for all drill core samples. A 37-element suite using aqua regia digestion and ICP mass spectrometry (ICP-MS) finish. The upper detection limit for gold and silver is 100 ppm.
- Multi Element Analysis: AQ370. Used for mineralized drill core samples. A 24-element suite using aqua regia digestion and ICP emission spectrometry (ICP-ES) finish. The upper detection limit for silver is 1,000 ppm.
- Multi Element Analysis: AQ371. Used for over-limit values of zinc and silver. Uses a hot aqua regia digestion and ICP-ES finish. The upper detection limit for silver is 1,000 ppm.
- Multi Element Analysis: MA200. Used for Luna Roja drill core samples. A 45- element suite using multi-acid digestion and ICP mass spectrometer. The upper detection limit for gold ans silver is 200 ppm
- Au Analysis: FA430. Gold analysis by lead collection fire-assay fusion, atomic absorption spectrometry finish (AAS). The upper detection limit for gold is 10 ppm.
- Au Analysis: FA530. Gold analysis by lead collection fire-assay fusion, gravimetric finish.

Acme (BVM) is independent of Mineros. In the QP's opinion, the sample analysis methodology is acceptable for the purposes of Mineral Resource estimation.

11.4.1 Database Management

Database management for the Hemco Property is carried out by a dedicated onsite geologist under the supervision of the Hemco Project Geologist and a GIS Geologist. Digital logging using hand-held device is performed by the geologists and is uploaded to Datamine's Fusion database for Porvenir, San Antonio, Leticia, Panama, Pioneer, and artisanal areas. Mineros transferred the Porvenir, Pioneer, Leticia, and San Antonio drill hole databases, during 2015, and the artisanal areas drill hole database during 2017, from Excel files to Fusion software. Mineros performed a number of checks to confirm the accuracy of the data migration.

Original drill logs, structural logs, geotechnical logs, and details of chain of custody, site reclamation, and drilling are stored on site in a folder, specific to a single drill hole. Folders are clearly labelled and stored in a cabinet in the office, which is locked during out of office hours. Data are continuously updated and validated as new information becomes available.

Analytical data are uploaded from digital sources. Survey data are uploaded by the Hemco Project Geologist from digital survey files. Verification is performed on all digitally collected data upon upload to the main database, and includes checks on surveys, collar coordinates, lithology data, and assay data.

Assay certificates for exploration are emailed to the Mineros QAQC and DB Department in Medellín, Colombia, by BVM and subsequently emailed to appropriate Mineros employees. Assay certificates for planning purposes are emailed directly to the site. Certificates are reviewed and filed by a GIS Geologist, prior to incorporation into the master assay database.

In the QP's opinion, the sample preparation, analysis, and security procedures at the Hemco Property are adequate for use in the estimation of Mineral Resources.

11.5 Quality Assurance/Quality Control

Quality Assurance (QA) is necessary to demonstrate that the assay data has precision and accuracy within generally accepted limits for the sampling and analytical methods used in order to have confidence in the resource estimation. Quality control (QC) consists of procedures used to ensure that an adequate level of quality is maintained in the process of sampling, preparing, and assaying the drill core samples. In general, QA/QC programs are designed to prevent or detect contamination and allow analytical precision and accuracy to be quantified. In addition, a QA/QC program can disclose the overall sampling – assaying variability of the sampling method itself.

11.5.1 QA/QC Protocols

The primary laboratories used for preparation and analysis of drilling and channel samples from the various Hemco deposits are listed below:

- Leticia and San Antonio –Bureau Veritas – BVM (Acme until 2014), Vancouver, Canada
- Porvenir – BVM (Acme until 2014), Vancouver, Canada
- Panama and Pioneer – Brownfield Exploration – BVM, Vancouver, Canada
- Panama and Pioneer – Grade Control Mine (channel samples) – Hemco and Vesmisa, Bonanza, Nicaragua

- Luna Roja – BVM, Vancouver, Canada

Hemco and Vesmisa are internal laboratories, and are not independent of Mineros. They are located at the mine site and are not certified.

QA/QC protocols involve the insertion of a minimum of 2% certified reference materials (CRM), 4% blank samples, 1% twin duplicates (from split core), 2% field duplicates (from channels, trenches, and outcrops), 2% reject duplicates, and 2% pulp duplicates. In addition, 2% pulp duplicate samples are sent to an external assay laboratory.

Prior to 2019, the Panama deposit had a noticeably low insertion rate of approximately 0.5% for the overall deposit. Mineros corrected the insertion rate during the 2019 drilling campaign to reflect the current protocols.

Table 11-3 shows the insertion rates by project, which vary between 15% and 20% overall, meeting the best industry practices.

Table 11-3: Summary of QA/QC Submittals from 2015 to 2022
Mineros S.A. – Hemco Property

Year	2015	2016	2017	2018	2019	2020	2021	2022	Total	Insertion Rate%
CRM Submission										
Leticia and San Antonio	-	-	-	-	91	-	-	-	91	3%
Panama	11	494	555	840	685	832	1,047	812	5,276	4%
Pioneer	183	85	127	15	89	102	143	93	837	5%
Porvenir	89	551	239	124	10	138			1,151	7%
Luna Roja	-	-	2	5	-	423	94	50	574	6%
Blank Submission										
Leticia and San Antonio	-	-	-	-	88	-	-	-	88	3%
Panama		459	366	261	1,101	834	863	710	4,594	3%
Pioneer	90	58	60		84	134	122	72	620	4%
Porvenir	41	273	124	219	20	276	-	-	953	6%
Luna Roja	-	-	2	5	2	283	188	97	577	6%
Field Duplicate Submission										
Leticia and San Antonio										
Panama	11	249	462	465	469	432	381	272	2,741	2%
Pioneer	9	12		12	10	36	25	35	139	1%
Porvenir	-	-	-	-	-	-	-	-	-	-
Luna Roja	-	-	-	3	-	-	-	2	5	0%

Year	2015	2016	2017	2018	2019	2020	2021	2022	Total	Insertion Rate%
Coarse Duplicate Submission										
Leticia and San Antonio	-	17	-	6	44	-	-	-	67	2%
Panama	-	-	340	515	626	509	443	359	2,792	2%
Pioneer		12	32	13	29	49	62	48	245	2%
Porvenir	25	137	61	64	5	68	-	-	360	2%
Luna Roja	-	-	1	3	57	80	47	25	213	2%
Pulp Duplicate Submission										
Leticia and San Antonio	2	17	-	7	44	-	-	-	70	2%
Panama	9		353	538	604	504	446	367	2,821	2%
Pioneer	9	12	32	14	30	50	63	45	255	2%
Porvenir	23	138	60	62	5	67	-	-	355	2%
Luna Roja	-	-	1	1	45	50	47	33	177	2%
Twin Duplicate Submission										
Leticia and San Antonio	4	27	-	4	24	-	-	-	59	2%
Panama	-	-	14	59	72	78	70	74	367	1%
Pioneer	45	57	35		23	25	21	14	220	2%
Porvenir	22	139	60	36	2	36	-	-	295	2%
Luna Roja	-	-	-	-	-	-	24	13	37	0%
External Checks										
Leticia and San Antonio	-	-	-	-	143	-	-	-	143	2%
Panama	-	69	2	1,025	579	886	854	582	3,997	3%
Pioneer	-	4	-	-	35	65	61	54	219	1%
Porvenir	-	-	-	-	-	-	-	-	-	-
Luna Roja	-	-	-	-	-	-	42	144	186	2%
Total										
Leticia and San Antonio	6	61	-	17	436	-	-	-	520	14%
Panama	31	1,271	2,092	3,703	4,136	4,075	4,104	3,176	22,588	17%
Pioneer	336	240	286	54	300	461	497	361	2,535	17%
Porvenir	200	1,238	544	505	42	585	-	-	3,114	20%
Luna Roja	-	-	6	17	104	837	442	364	1,770	19%

Year	2015	2016	2017	2018	2019	2020	2021	2022	Total	Insertion Rate%
Total	**573**	**2,810**	**2,928**	**4,296**	**5,018**	**5,958**	**5,043**	**3,901**	**30,527**	

A QA/QC report is prepared monthly by the onsite QA/QC technician and Project Geologist and reviewed by the Mineros corporate QA/QC coordinator in Medellín, Colombia.

Mineros used specific pass/fail criteria based upon setting the reference standard acceptance limits at mean assay ± two standard deviations (2SD) as a warning and ±3SD as a failure limit. Batches of samples identified by QA/QC as anomalous are repeated by the laboratory at the request of Mineros.

A QA/QC relational database is maintained in Datamine Fusion GDMS Mineros' Nicaraguan properties. The QP reviewed the raw data provided by Mineros for the Nicaraguan projects, as well as annual QA/QC reports prepared by Mineros for 2017 through the end of 2022. The QP found some discrepancies in the number of QA/QC samples presented in the reports versus the raw database, but nonetheless, finds the conclusions of the analysis to be an appropriate support for the Mineral Resource database at the Hemco Property.

11.5.2 Certified Reference Material

Results of the regular submission of CRMs or standards are used to identify any issues with a specific batch of samples and long term biases associated with the primary assay laboratory. The QP analyzed the results of the CRMs sent to the external primary laboratories, and plotted them in control charts, with failure rates, defined as assay values reporting more than 3SD from the expected value, and warning rates, defined as assay values reporting more than 2SD, but less than 3SD from the expected values, tabulated monthly and annually for review by onsite and head office personnel. The CRM results from the Hemco and Vesmisa internal laboratories, which are used to analyze the channels samples, are not presented in this section.

A total of 28 different CRMs were used among Leticia and San Antonio, Panama, Pioneer, El Porvenir, and Luna Roja and inserted into the sample streams by Mineros geologists and analyzed for gold, silver, copper, lead, and zinc grades.

A total of 3,633 CRMs were submitted to BVM, which was primarily used for analysis of drill hole samples. A total of 2,538 samples were submitted to the Hemco laboratory and 1,758 samples were submitted to the Vesmisa laboratory, with both laboratories used to analyze channel samples for grade control. Table 11-4 shows the different standards used and analyzed for gold, years active, and statistics regarding the CRMs. Figure 11-1 to Figure 11-7 graphically show the performances of selected CRMs covering the last seven years for the CRMs analyzed by BVM and five separate mining projects. Assay values are represented in parts per million (ppm), unless otherwise noted.

Table 11-4: 2015-2022 Hemco Property Certified Reference Materials and Performances
Mineros S.A. – Hemco Property

CRM	Project[1]	Period	Element	Certified Value	SD	Assay Count	Mean	Bias
CDN-GS-12A	2	2017-2018	Au (ppm)	12.31	0.27	44	12.26	0.4%
CDN-GS-13A	2	2017	Au (ppm)	13.20	0.36	4	13.49	-2.2%

CRM	Project[1]	Period	Element	Certified Value	SD	Assay Count	Mean	Bias
CDN-GS-1R	2	2017	Au (ppm)	1.21	0.06	17	1.24	-2.4%
CDN-GS-1T	2	2017-2018	Au (ppm)	1.08	0.05	42	1.11	-2.4%
CDN-GS-3M	2	2017	Au (ppm)	3.10	0.12	23	3.04	1.9%
CDN-GS-3Q	2	2017-2018	Au (ppm)	3.30	0.13	37	3.40	-3.0%
CDN-GS-7F	2	2017-2018	Au (ppm)	6.90	0.21	41	7.03	-1.9%
OREAS 209	1, 4, 5	2019-2020, 2022	Au (ppm)	1.58	0.04	58	1.55	2.1%
OREAS 214	1, 4, 5	2019-2020, 2022	Au (ppm)	3.03	0.08	17	2.98	1.5%
OREAS 238	5	2020	Au (ppm)	3.03	0.08	14	3.05	-0.7%
OREAS 254B	2, 3	2022	Au (ppm)	2.53	0.06	19	2.50	1.1%
OREAS 256	1, 4, 5	2019-2020, 2022	Au (ppm)	7.66	0.24	11	7.54	1.6%
OREAS 278	5	2021-2022	Au (ppm)	4.99	0.17	20	4.97	0.5%
OREAS 521	5	2020-2022	Au (ppm)	0.38	0.02	335	0.37	0.9%
OREAS 524	5	2020	Au (ppm)	1.54	0.05	93	1.54	0.1%
OREAS 601	3, 4	2015-2018	Au (ppm)	0.78	0.03	309	0.79	-1.9%
OREAS 609	2, 3	2021-2022	Au (ppm)	5.16	0.14	177	5.20	-0.8%
OREAS 60C	2, 3	2015-2018	Au (ppm)	2.47	0.08	333	2.49	-0.6%
OREAS 60d	1, 2, 3, 4, 5	2019-2022	Au (ppm)	2.47	0.08	484	2.50	-1.2%
OREAS 61e	2,3	2018-2019	Au (ppm)	4.43	0.15	44	4.54	-2.5%
OREAS 61f	2,3	2019-2021	Au (ppm)	4.60	0.13	199	4.68	-1.7%
OREAS 621	1, 4, 5	2019-2020	Au (ppm)	1.25	0.04	60	1.24	0.8%
OREAS 622	3, 4, 5	2015-2018	Au (ppm)	1.85	0.07	376	1.82	1.6%
OREAS 623	1, 4	2019-2020	Au (ppm)	0.83	0.04	56	0.82	0.9%
OREAS 62E	1, 2, 3, 4, 5	2015-2019	Au (ppm)	9.13	0.41	417	9.33	-2.1%
OREAS 62f	1, 2, 3	2019-2022	Au (ppm)	9.71	0.24	321	9.81	-1.1%
OREAS 700	5	2021-2022	Au (ppm)	0.51	0.02	39	0.50	0.6%
OREAS 701	5	2021-2022	Au (ppm)	1.11	0.05	44	1.09	1.4%

Notes:

1. 1-Leticia and San Antonio, 2-Panama, 3-Pioneer, 4-Porvenir, 5-Luna Roja.

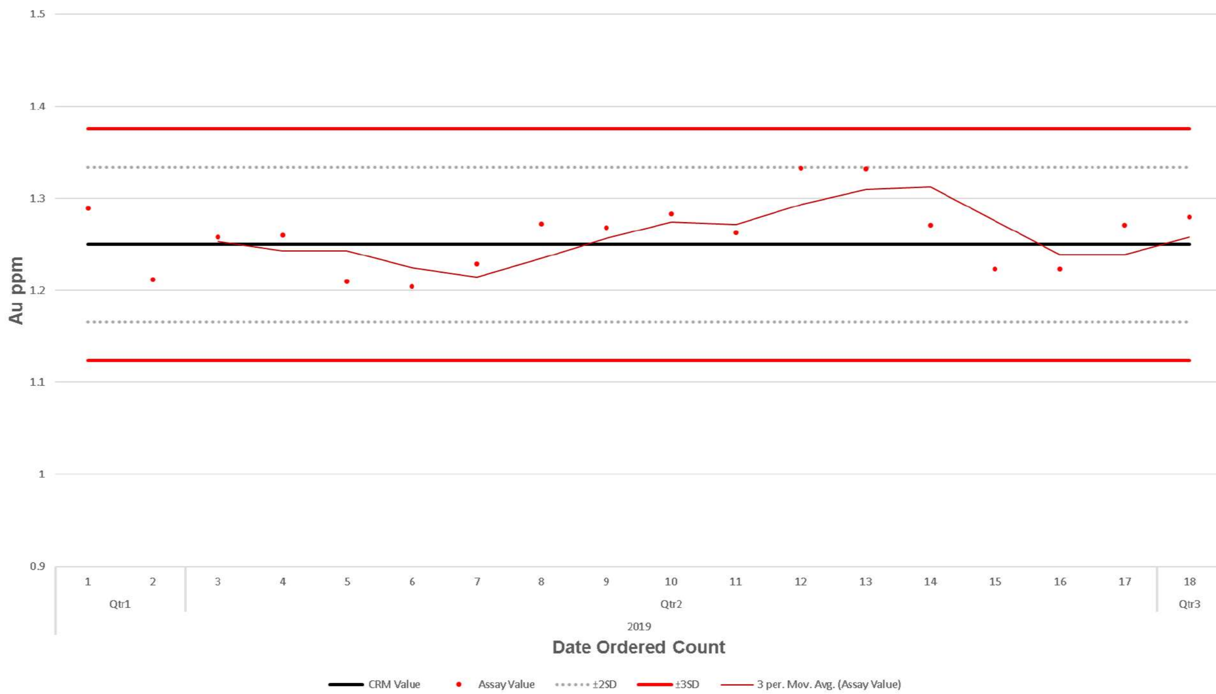


Figure 11-1: Leticia and San Antonio Control Chart of CRM OREAS-621:2019 (Gold)

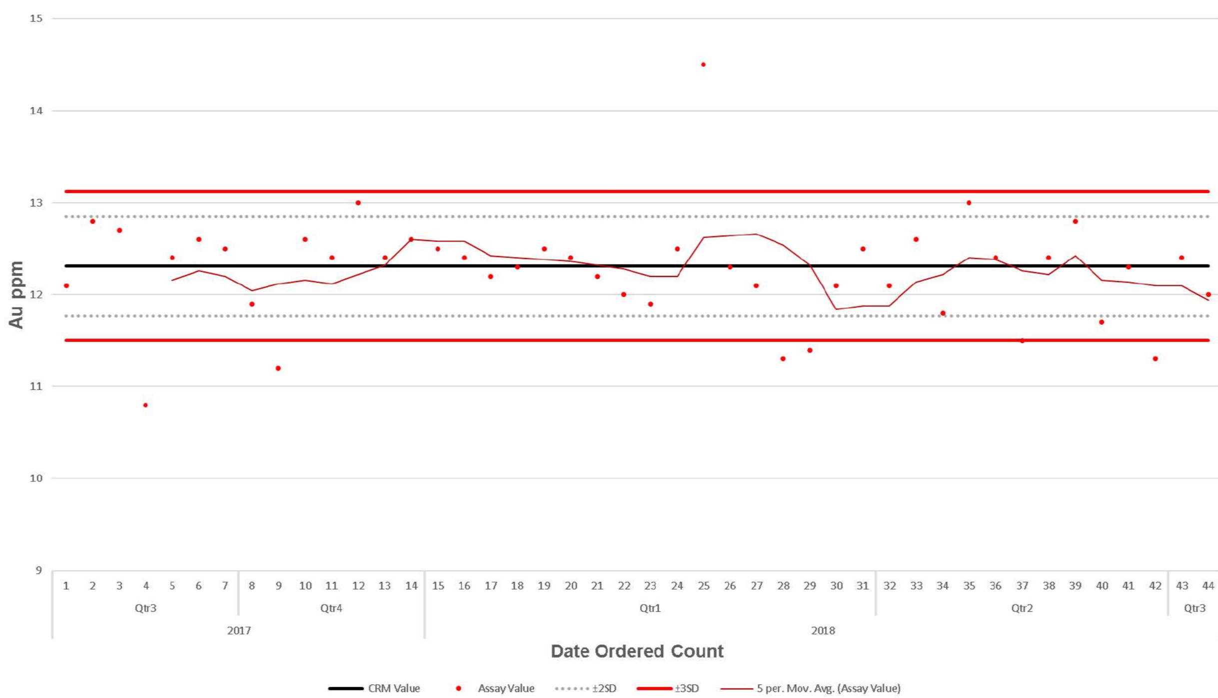


Figure 11-2: Panama Control Chart of CRM CDN-GS-12A: 2017-2018 (Gold)

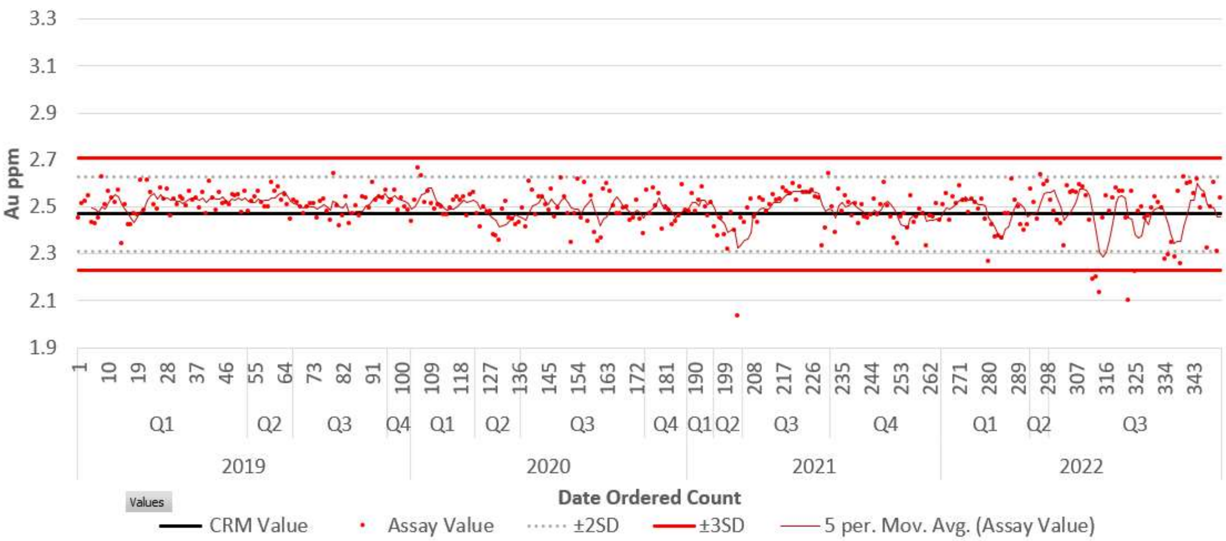


Figure 11-3: Panama Control Chart of CRM OREAS 60D: 2019-2022 (Gold)

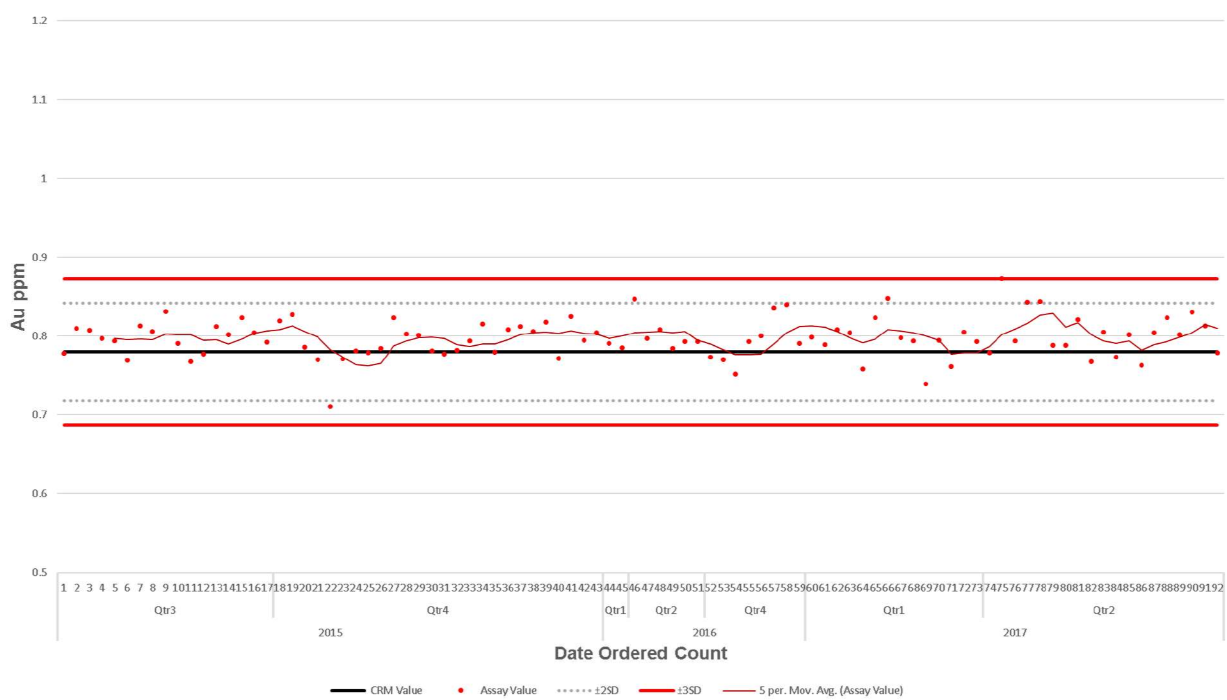


Figure 11-4: Pioneer Control Chart of CRM OREAS-601: 2015-2017 (Gold)

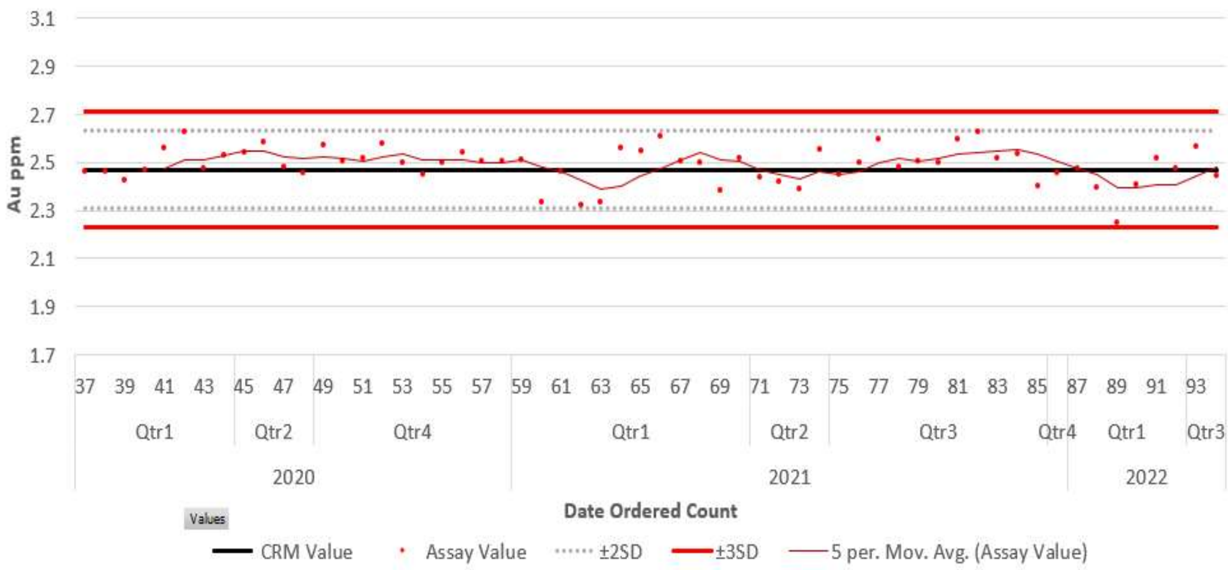


Figure 11-5: Pioneer Control Chart of CRM OREAS-60D: 2019 - 2022 (Gold)

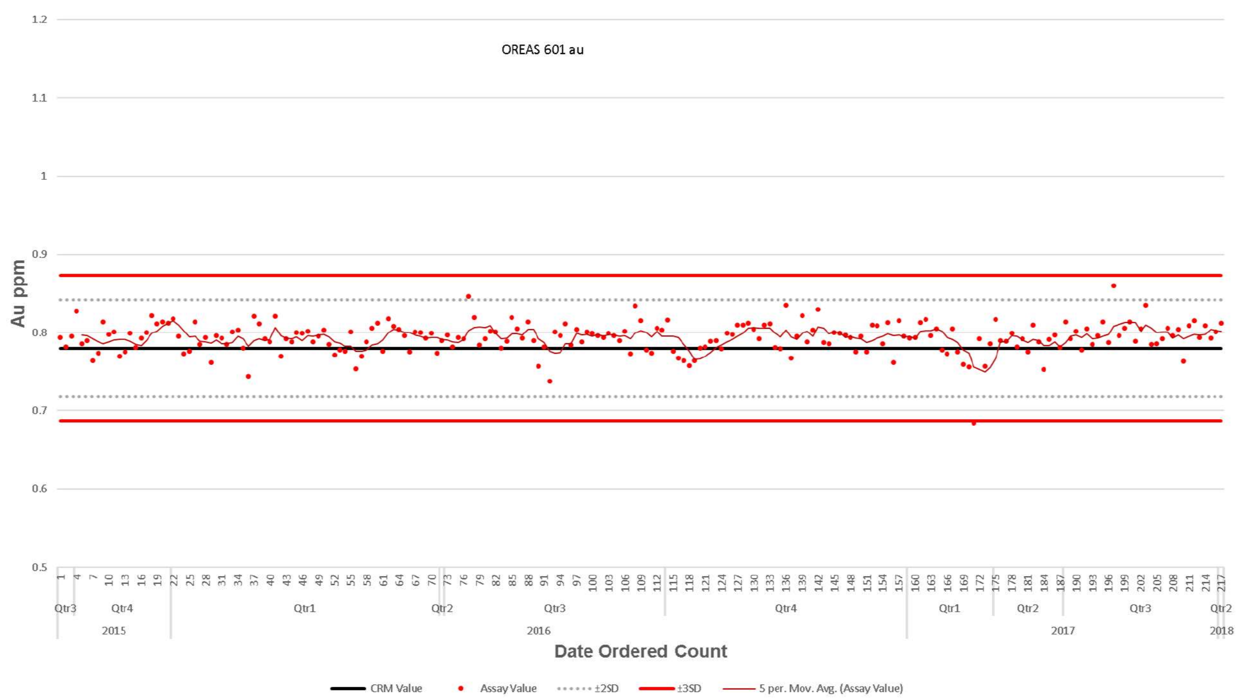


Figure 11-6: Porvenir Control Chart of CRM OREAS-601: 2015-2018 (Gold)

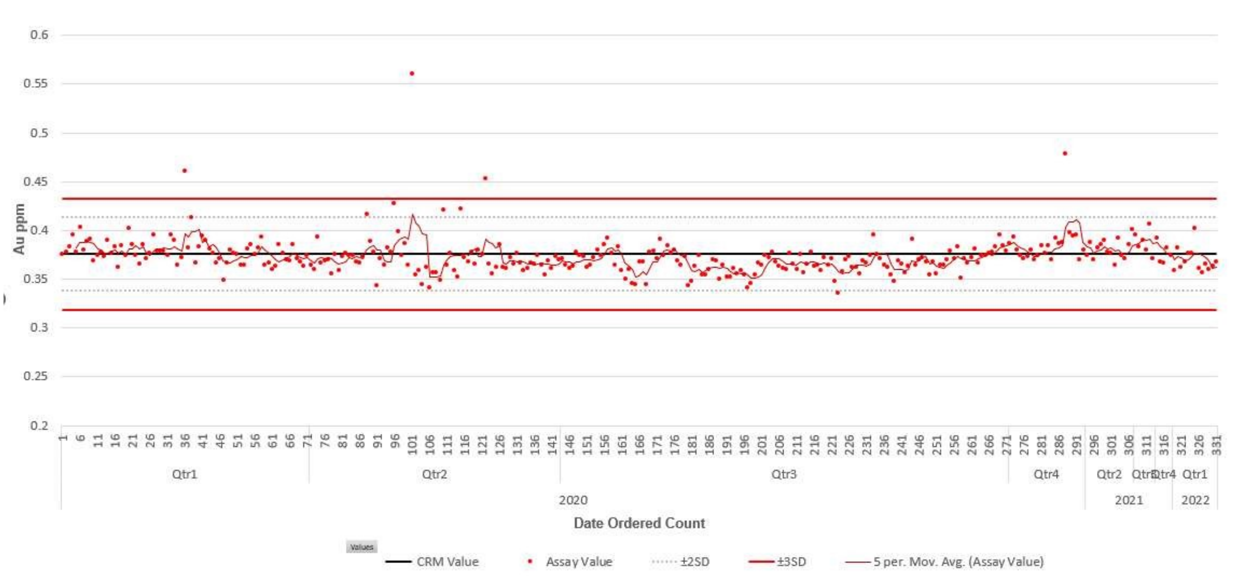


Figure 11-7: Luna Roja Control Chart of CRM OREAS-521: 2020-2022 (Gold)

Overall, Mineros has kept good records of the raw data allowing the QP to review the performances of all available CRMs. CRMs can return high or low biases regarding the certified value.

The control charts show an acceptable degree of scatter and good levels of accuracy for gold for every mining project, especially for those drill hole samples analyzed in BVM. In Figure 11-2, the CRM CDN-GS-12A shows a higher degree of scatter, indicating a moderate precision, however, such variations in the precision do not adversely affect the overall confidence in the assays, while it can be difficult to monitor the performances of the CRMs if they are constantly being replaced with new ones. The QP recommends using the same CRMs over the period of the Hemco Property's life in order to determine any long-term trends in the biases of the CRMs.

Five of the CRMs inserted within channel batches analyzed by the Hemco and Vesmisa laboratories before 2018 had several values near to zero. It is not common to happen and due to the number of occurrences, the SLR QP recommends an investigation to identify if it is a laboratory issue or field issue (CRM insertion in core shed).

The QP recommends ongoing monitoring of QA/QC results, particularly for mislabelling that has been identified in a number of instances during SLR's review. The QP is of the opinion that the results of the CRM samples support the use of sample assays from the various laboratories in the Mineral Resource estimation.

11.5.3 Blanks

The regular submission of blank material is used to assess contamination during sample preparation and to identify sample numbering errors. Fine blanks are pulverized material prepared and certified by ORE Research and Exploration Pty Ltd (OREAS), whereas coarse blanks are obtained from a marble quarry located near Managua, Nicaragua, and validated by BVM for use as blank material. Coarse and fine blank material was inserted in the sample stream at Bureau Veritas Commodities Canada Ltd. SLR prepared charts of fine blank submissions and reviewed Mineros' charts from 2015 through 2022. The QA/QC protocol accepts results returning up to five times the detection limit as a pass. The detection limit for gold is 0.005 ppm for BVM. A total of 2,784 blank samples were inserted within drill hole batches sent for analysis to BVM and a total of 4,141 blank samples were inserted within channel sample batches sent to the internal Hemco and Vesmisa laboratories. Figure 11-8 through Figure 11-12 show the performances of selected gold blank materials for each of the five projects. Results indicate a negligible amount of sample contamination associated with samples from the Hemco Property.

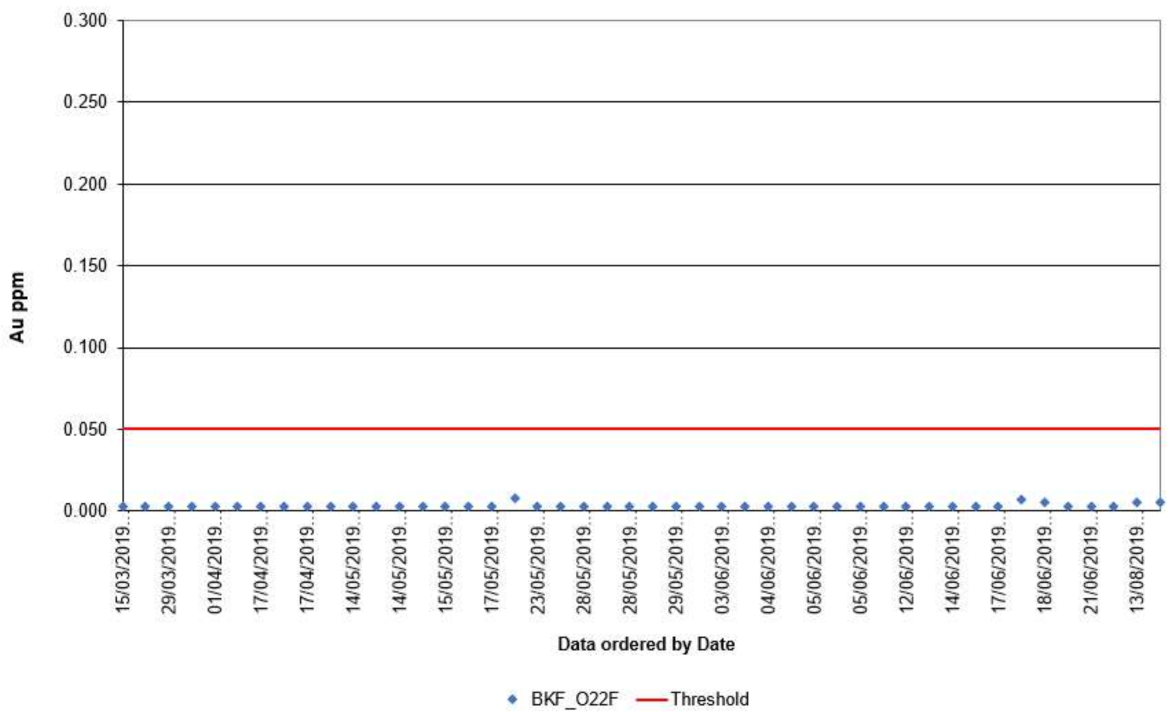


Figure 11-8: Leticia and San Antonio Blank Assays (2019) – BKF_022F (Gold)

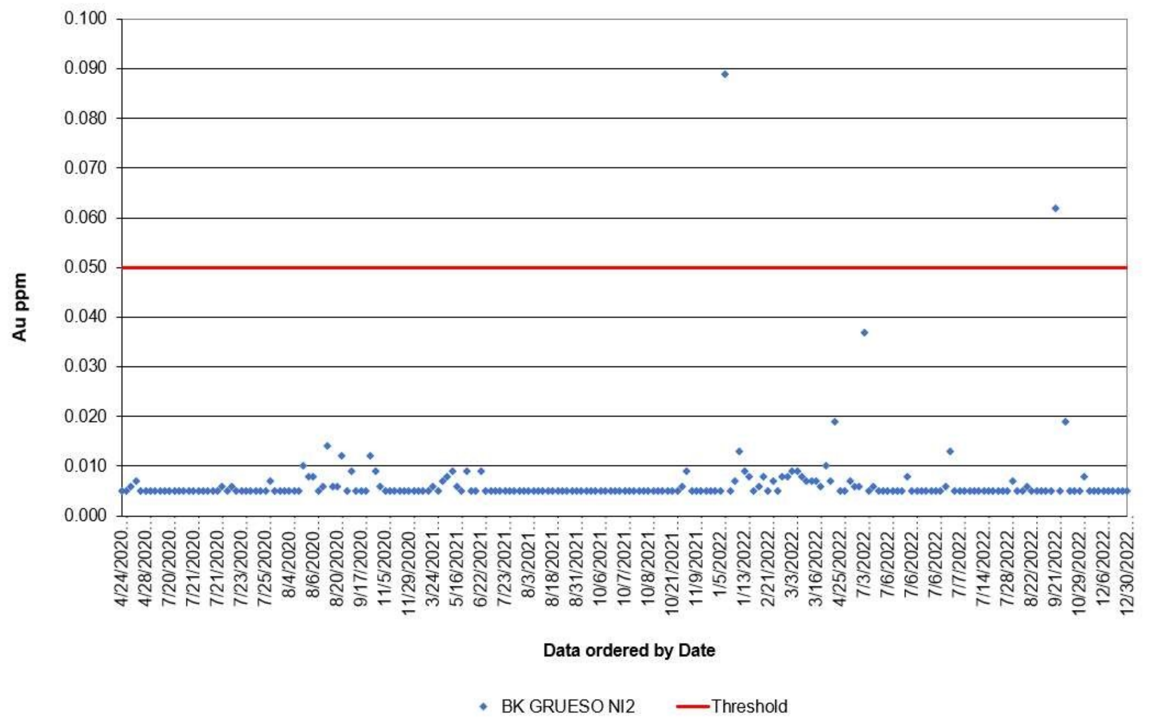


Figure 11-9: Panama Blank Assays (2020-2022) – BK GRUESO NI2 (Gold)

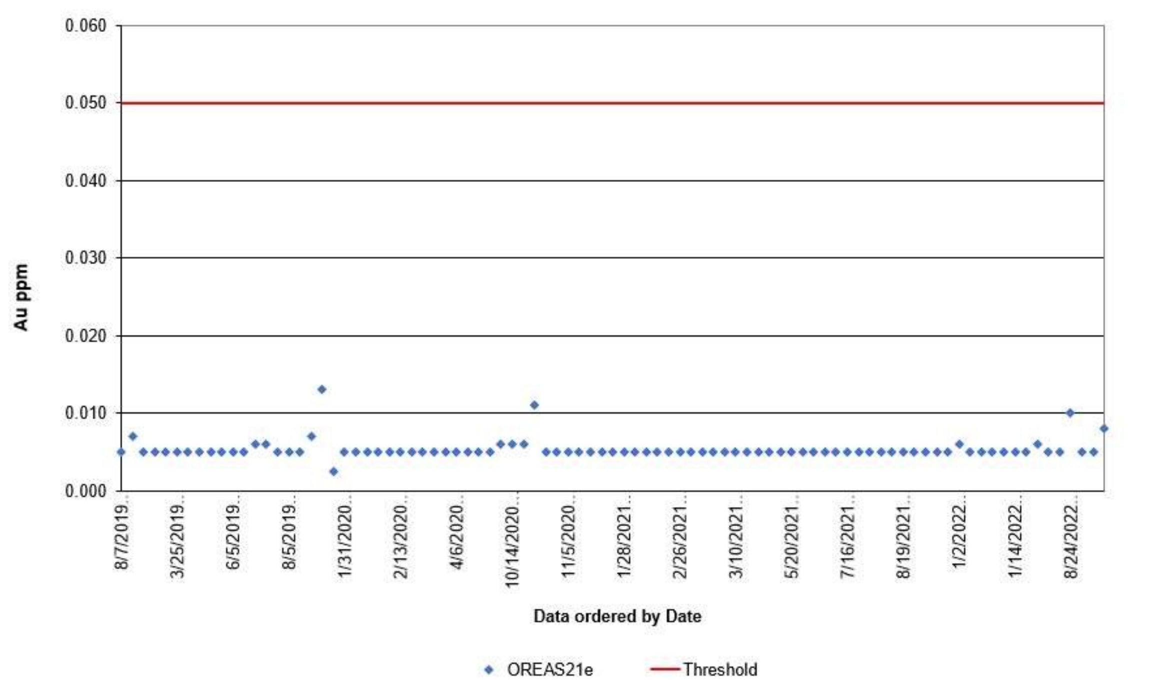


Figure 11-10: Pioneer Blank Assays (2020-2022) – OREAS21e (Gold)

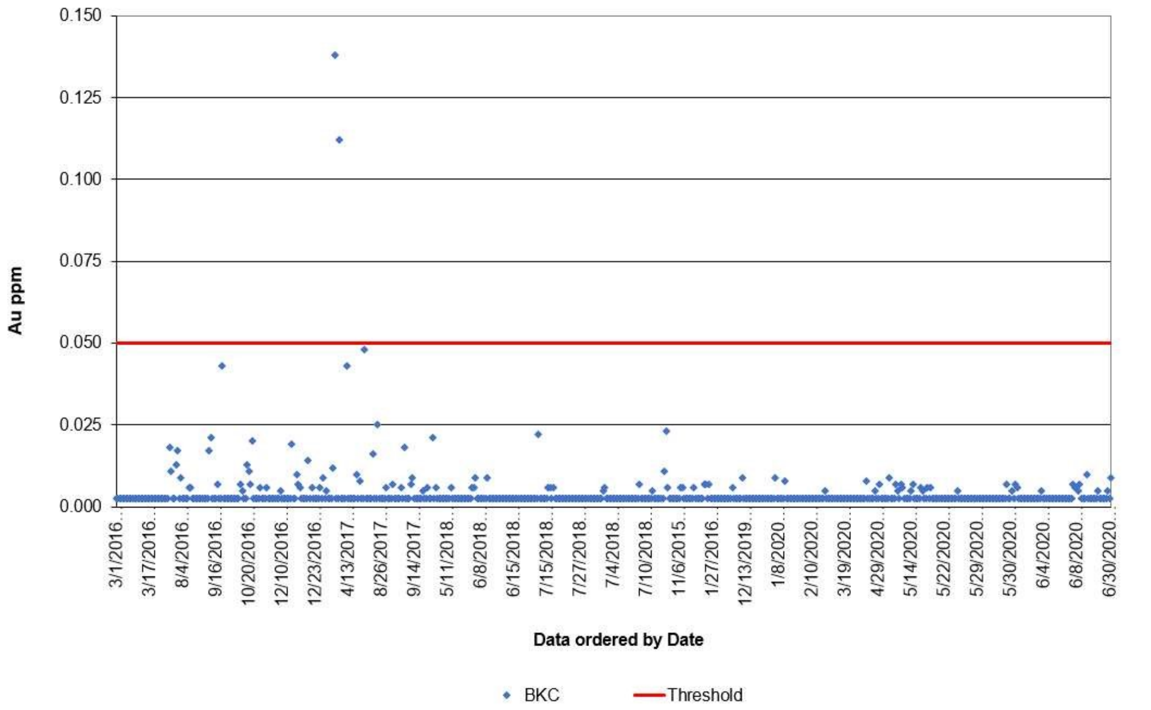


Figure 11-11: Porvenir Blank Assays (2016-2020) – BKC (Gold)

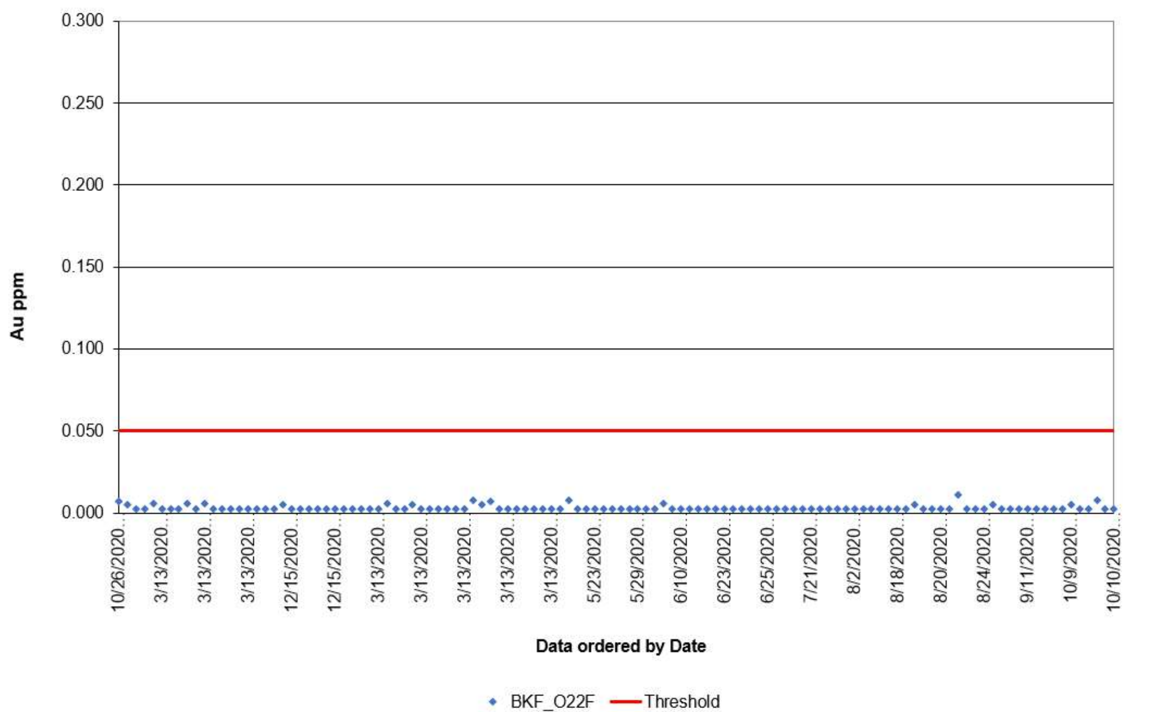


Figure 11-12: Luna Roja Blank Assays (2020) –BKF_022F (Gold)

The plotted blank material indicates that there are good protocols at the laboratories to mitigate any contamination and produce reliable assays. In the QP's opinion, the performances of the blank materials support the use of the associated assays for resource estimation.

11.5.4 Twin, Field, Coarse Reject, and Pulp Duplicates

Duplicate samples help to monitor preparation, assay precision, and grade variability as a function of sample homogeneity and laboratory error. SLR analyzed the complete database of twin (drill holes), field (channels), coarse, and pulp duplicate data compiled by Mineros using basic statistics, scatter, quantile-quantile, and percent relative difference plots.

Twin and field duplicates include the natural variability of the original core sample, as well as all levels of error including core splitting, sample size reduction in the preparation laboratory, sub-sampling of the pulverized sample, and the analytical error. Coarse reject and pulp duplicates provide a measure of the sample homogeneity at different stages of the preparation process (crushing and pulverizing).

A total of 3,231 duplicate samples were inserted between 2015 and 2022 into drill hole sample batches and sent to BVM and a total of 4,154 and 3,837 duplicates were inserted into channel sample batches and sent to the Hemco and Vesmisa laboratories, respectively. These included twin, field, coarse, and pulp duplicates for the five different projects. The duplicate performances for San Antonio and Leticia, Panama, Pioneer, Porvenir, and Luna Roja are shown in Figure 11-13 through Figure 11-19, with duplicates analyzed by either BVM (for drill holes) or Hemco/Vesmisa (for channels).

Mineros' protocols plot duplicates using the Hyperbolic Method to define the acceptance limit, and consider failure when samples have differences greater than 30%, 20% and 10%, depending on the type of the duplicate evaluated and a specific practical detection limit (PDL) used by the laboratory; for instance, a PDL of 0.05 ppm Au is used by BVM and 0.3 ppm Au by the Hemco and Vesmisa laboratories. This practice is considered industry standard; duplicate failure limits are as follows with higher acceptability thresholds often set for gold mineralization:

- Acceptable difference value for field and twin duplicates is < 30%.
- Acceptable difference value for coarse duplicate is < 20%.
- Acceptable difference value for pulp is < 10%.

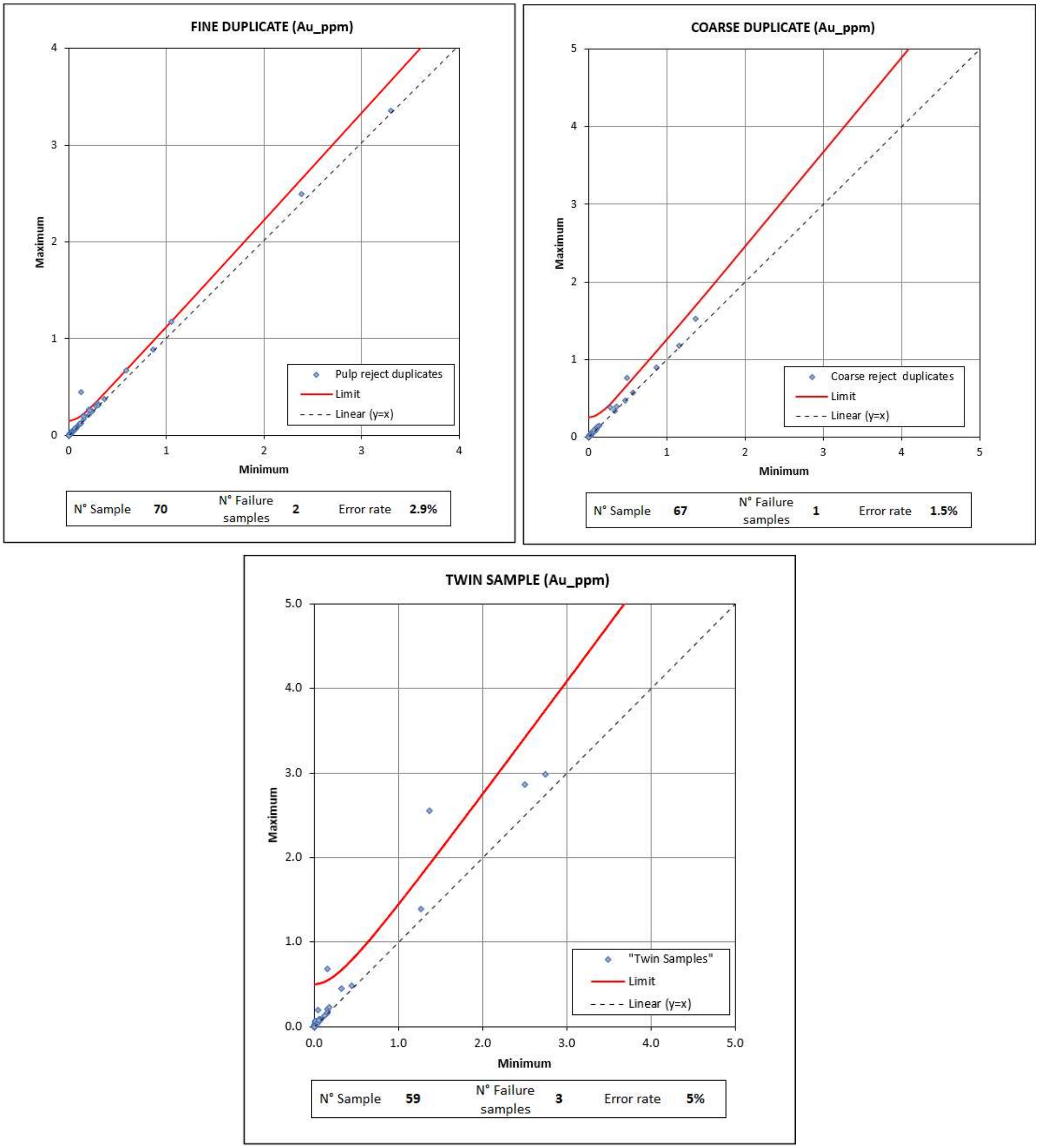


Figure 11-13: Leticia and San Antonio Project - Performance of Duplicates in Drill Holes – Au (2015 - 2019)

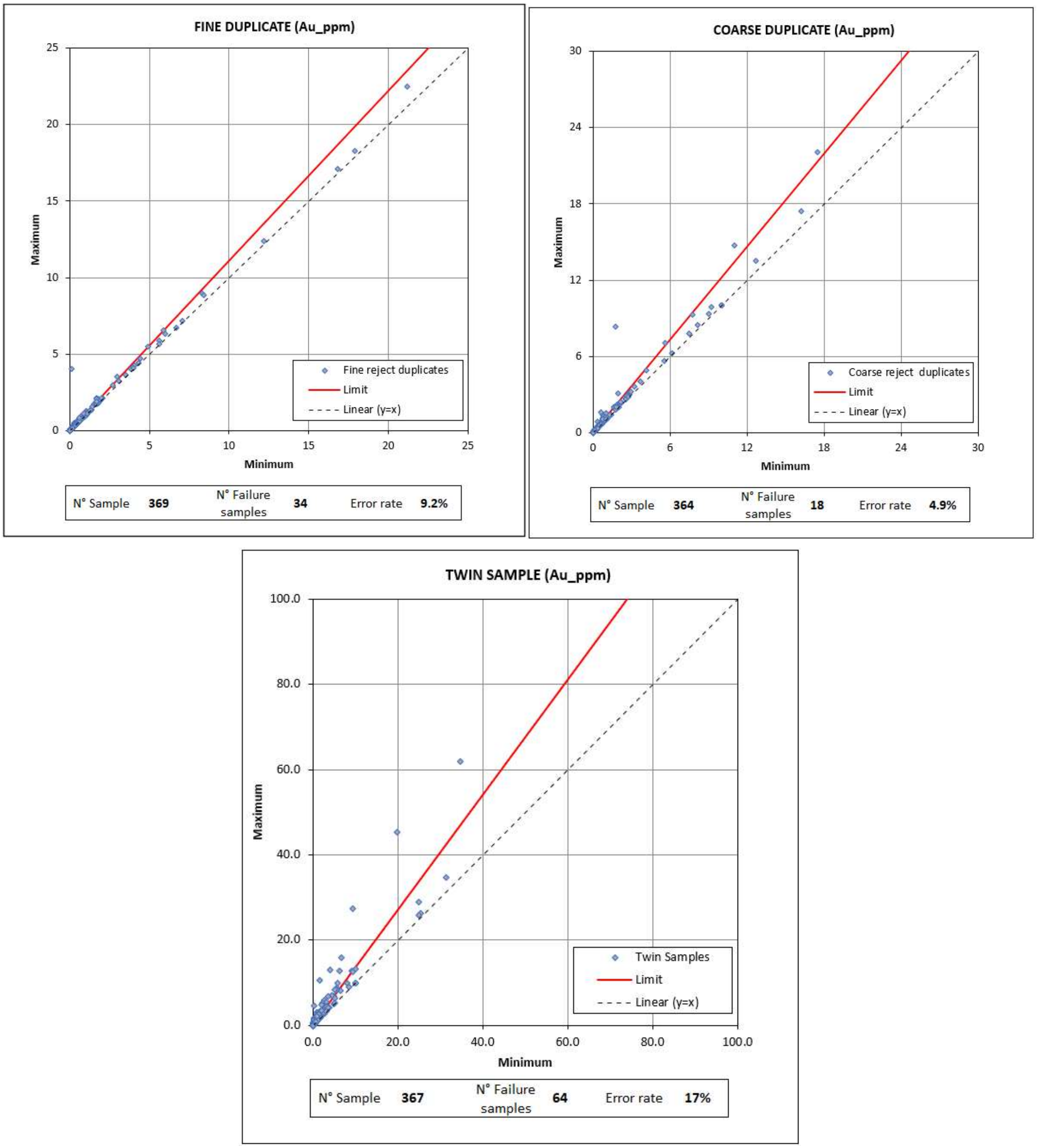


Figure 11-14: Panama Project – Performance of Duplicates in Drill Holes – Au (2017-2022)

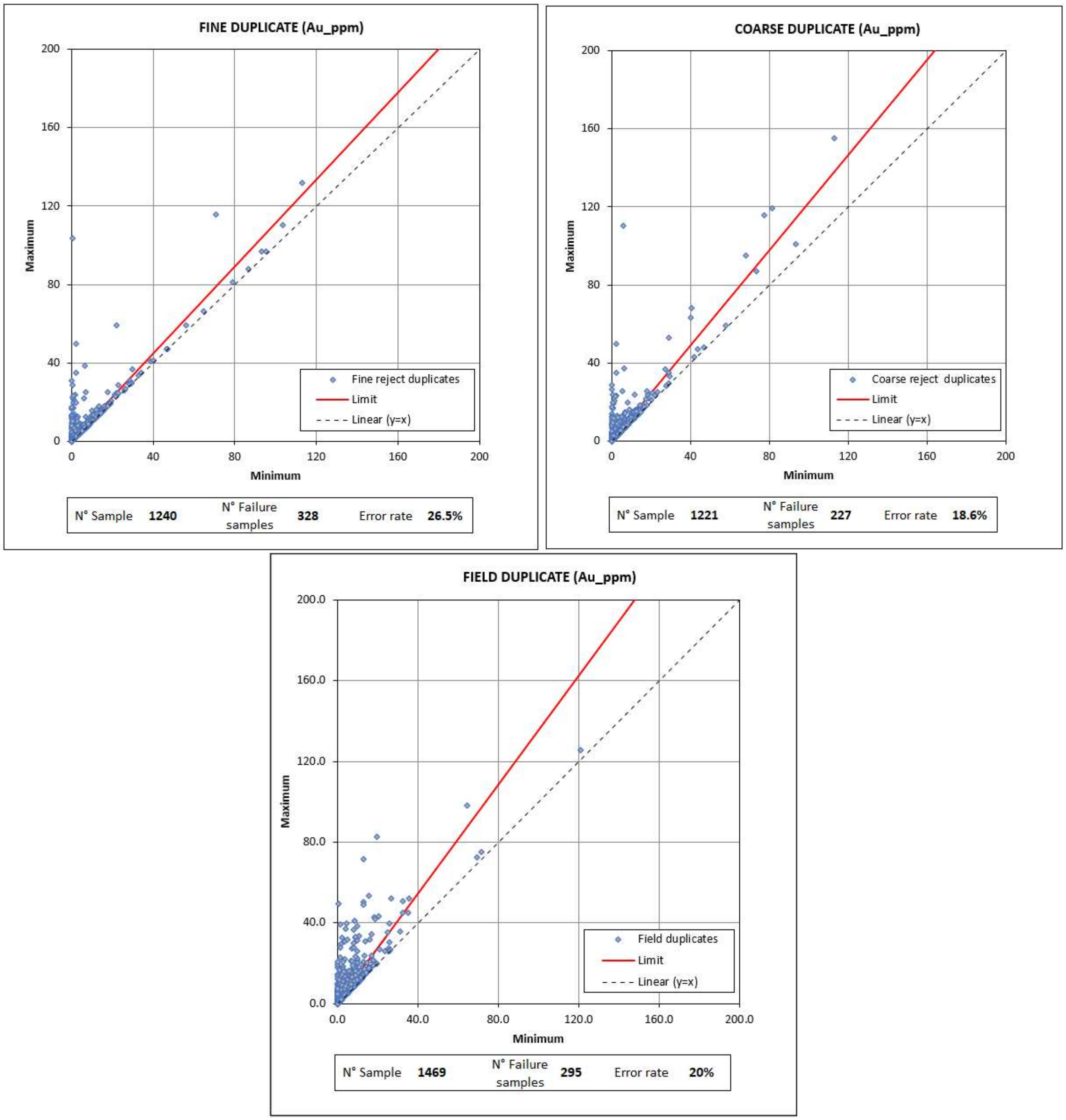


Figure 11-15: Panama Project – Performance of Duplicates in Channel Batches – Au (2015-2022)

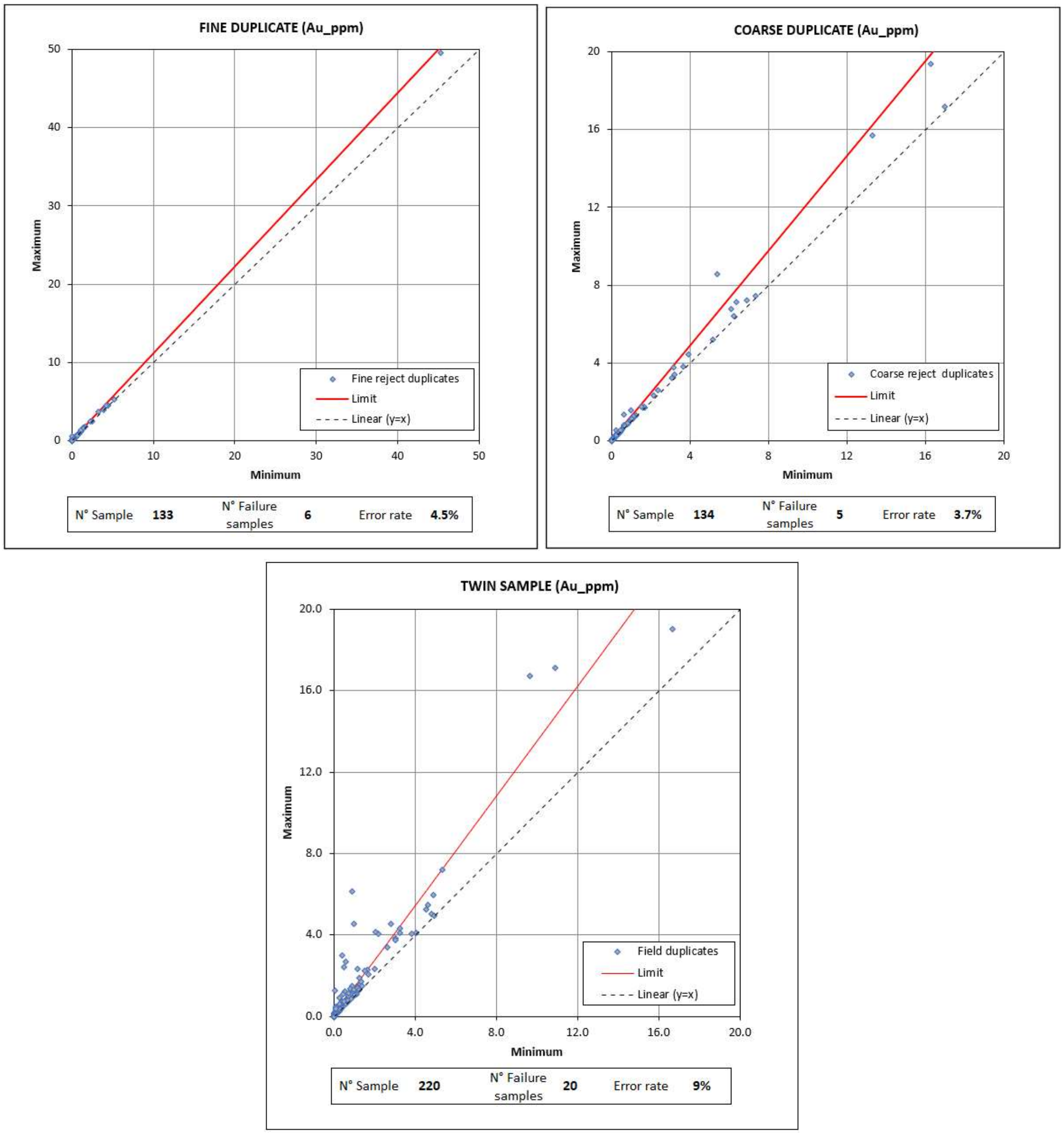


Figure 11-16: Pioneer Project – Performance of Duplicates in Drill Holes – Au (2015-2022)

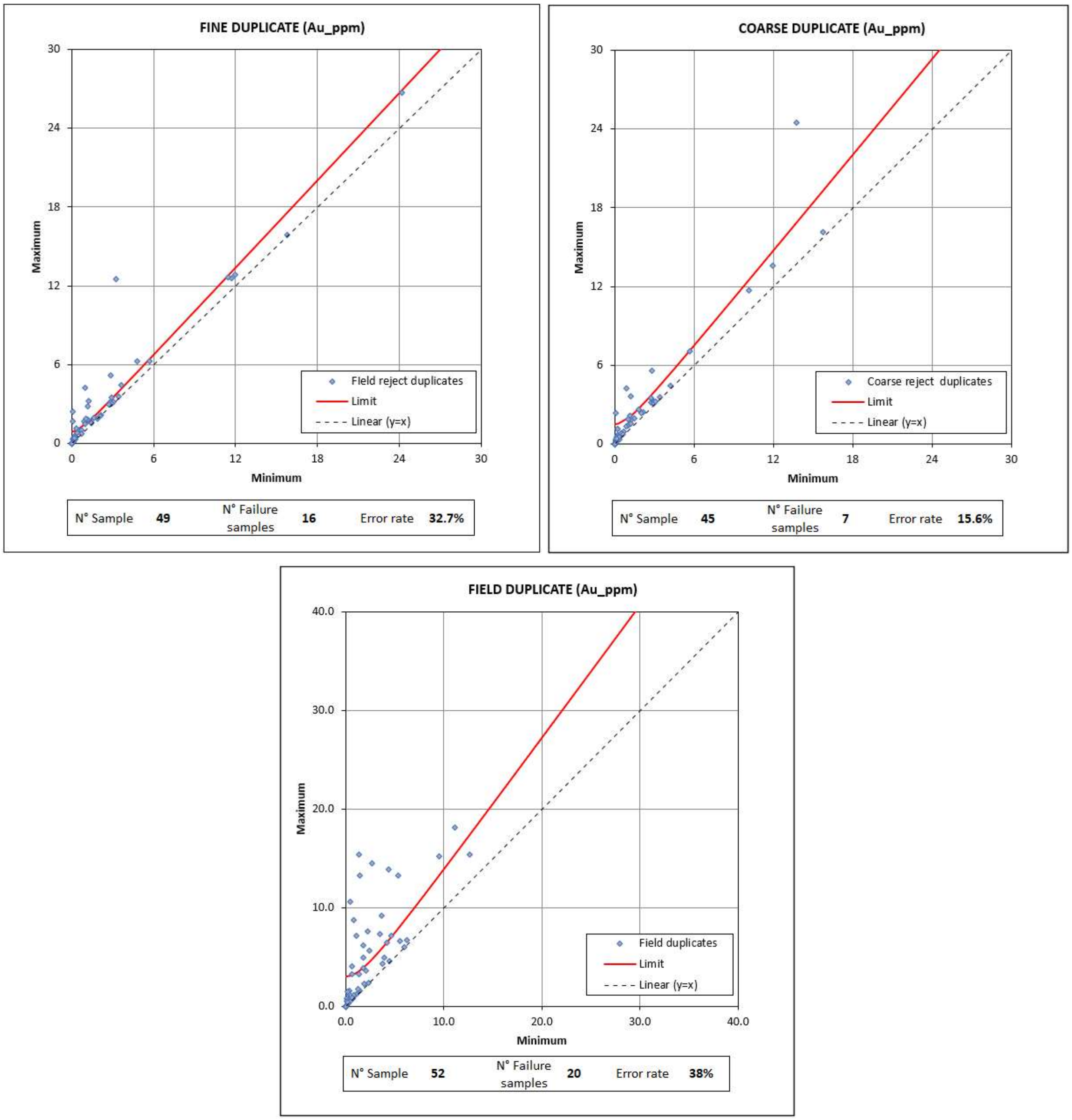


Figure 11-17: Pioneer Project – Performance of Duplicates in Channels – Au (2016-2021)

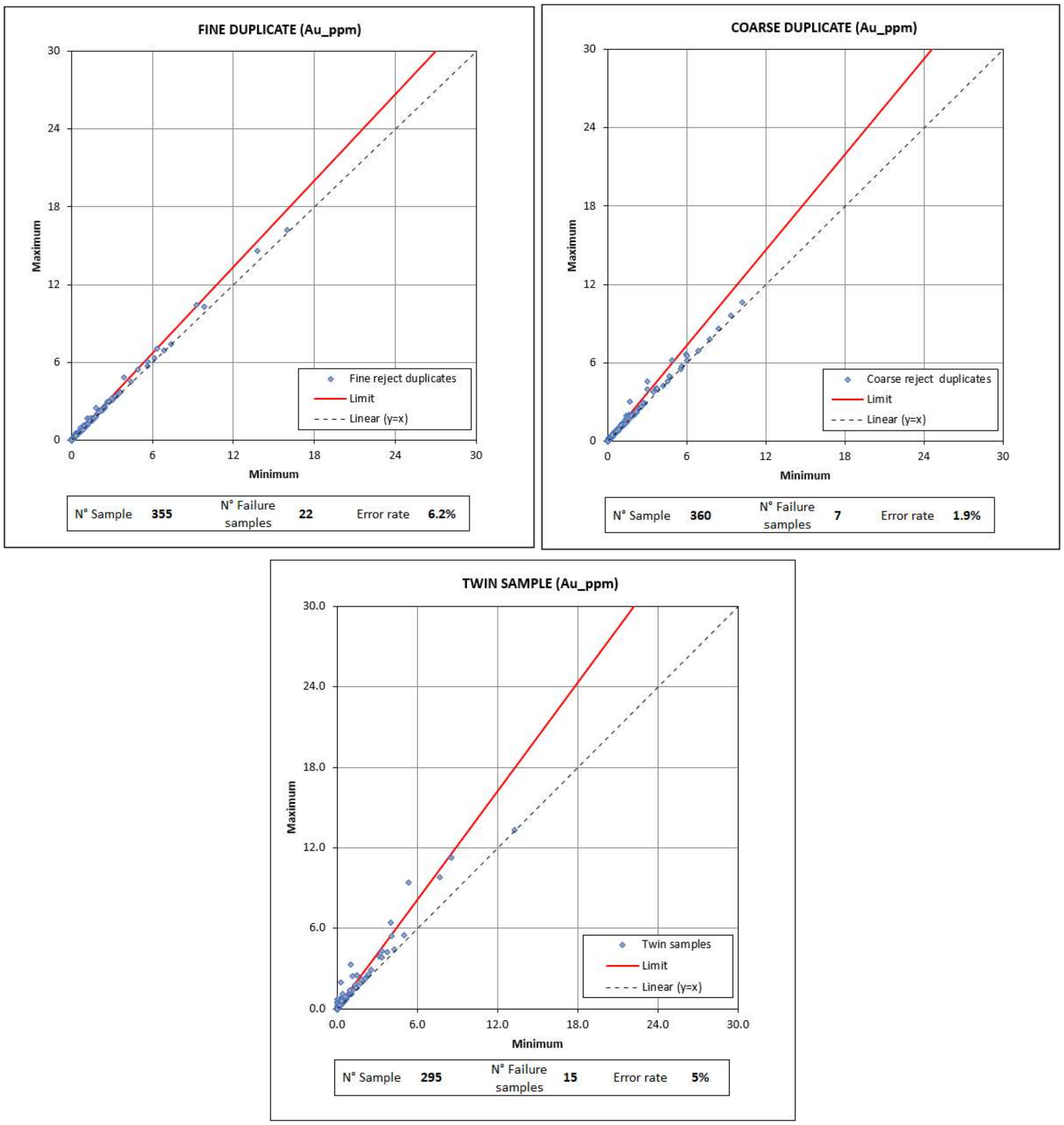


Figure 11-18: Porvenir Project - Performance of Duplicates in Drill Holes -– Au (2015-2020)

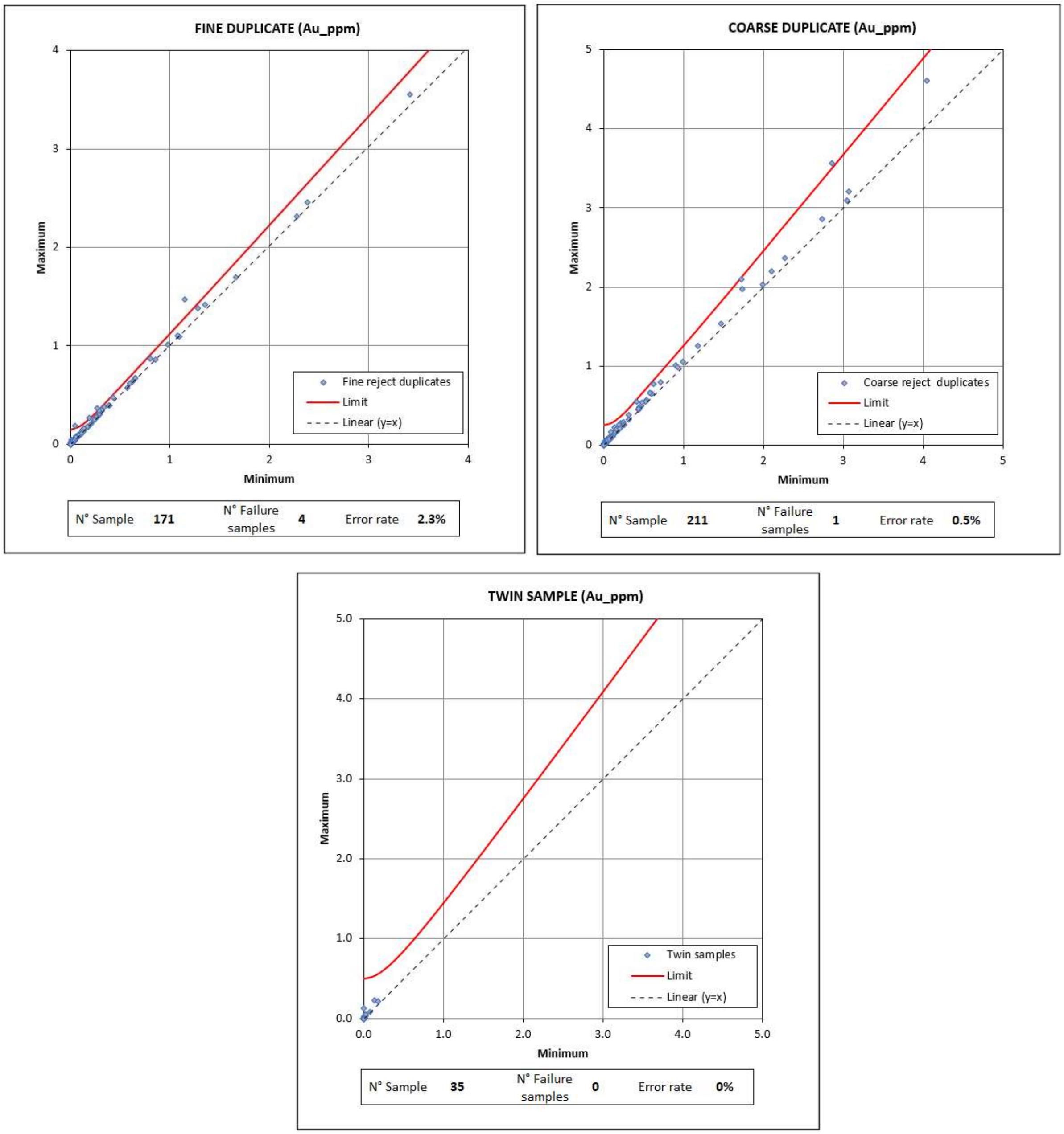


Figure 11-19: Luna Roja Project - Performance of Duplicates in Drill Holes – Au (2017-2022)

SLR re-evaluated the duplicates by laboratory using the hyperbolic method for the five projects (Leticia and San Antonio, Panama, Pioneer, Porvenir and Luna Roja), including the information from 2015 to 2022. Pulps (fine) and coarse duplicates inserted into drill hole sample batches and prepared in BVM show good performance, indicating that appropriate protocols are followed during the preparation process. Those duplicates prepared by the Hemco or Vesmisa laboratory show higher rates of variation compared to BVM performance. For instance, Figure 11-15 indicates that for Panama, there is an error rate of 26% for pulps and 18% for coarse duplicates for the Hemco laboratory and only 9.2% for pulps and 4.9% for coarse duplicates for BMV. This is an indication that the internal laboratory should revise the sample preparation and pulverization protocol, which has been regularly observed in the monthly QA/QC reports up to 2022.

The same is observed for the field and twin duplicate results, where the charts show a good performance of the duplicates analyzed in the external laboratory, and a poorer performance in the internal laboratories.

All duplicate results are based on a reasonably good grade distribution, including results for both low and high grade, but perhaps more medium and high grade samples should be selected in the future. The duplicate results from BVM show a better consistency and precision than those from the Hemco and Vesmisa internal laboratories, with the exception of the Panama twin duplicates that have an error rate of 17%.

The QP recommends continued analyses of duplicates, in particular the twin and field duplicates, as well as an investigation into the higher error rates in the Hemco internal laboratories, which might be associated with the sample preparation protocol used in these laboratories. The QP is of the opinion that the duplicate QA/QC protocols are of industry standards and the results support the use of the assays in the Mineral Resource estimate.

11.5.5 External Checks

As part of the QA/QC program, channel sample pulps, which are analyzed in the internal laboratories, were submitted to a secondary laboratory for check assays. Similarly, drill hole sample pulps, which are analyzed currently at BVM, were also submitted to a secondary laboratory (ALS Chemex), including the Luna Roja and Leticia-San Antonio projects.

Check assays consist of submitting pulps that were assayed at the primary laboratory to a secondary laboratory and re-analyzing them by using the same analytical procedures. This is done primarily to improve the assessment of bias in addition to the submission of CRMs to the original laboratory.

From 2015 to 2022, Mineros used BVM as a secondary laboratory for the Hemco Property channel check assays, obtaining a bias of -3.1% for gold between BVM and the Hemco internal laboratory. Drill hole check assays from Luna Roja and Leticia-San Antonio were performed by ALS as a secondary laboratory and resulted in a bias of 3.0% and 0.3% for gold, respectively. Examples of gold check assay performances for the Panama and Pioneer deposits are shown in Figure 11-20 and Figure 11-21.

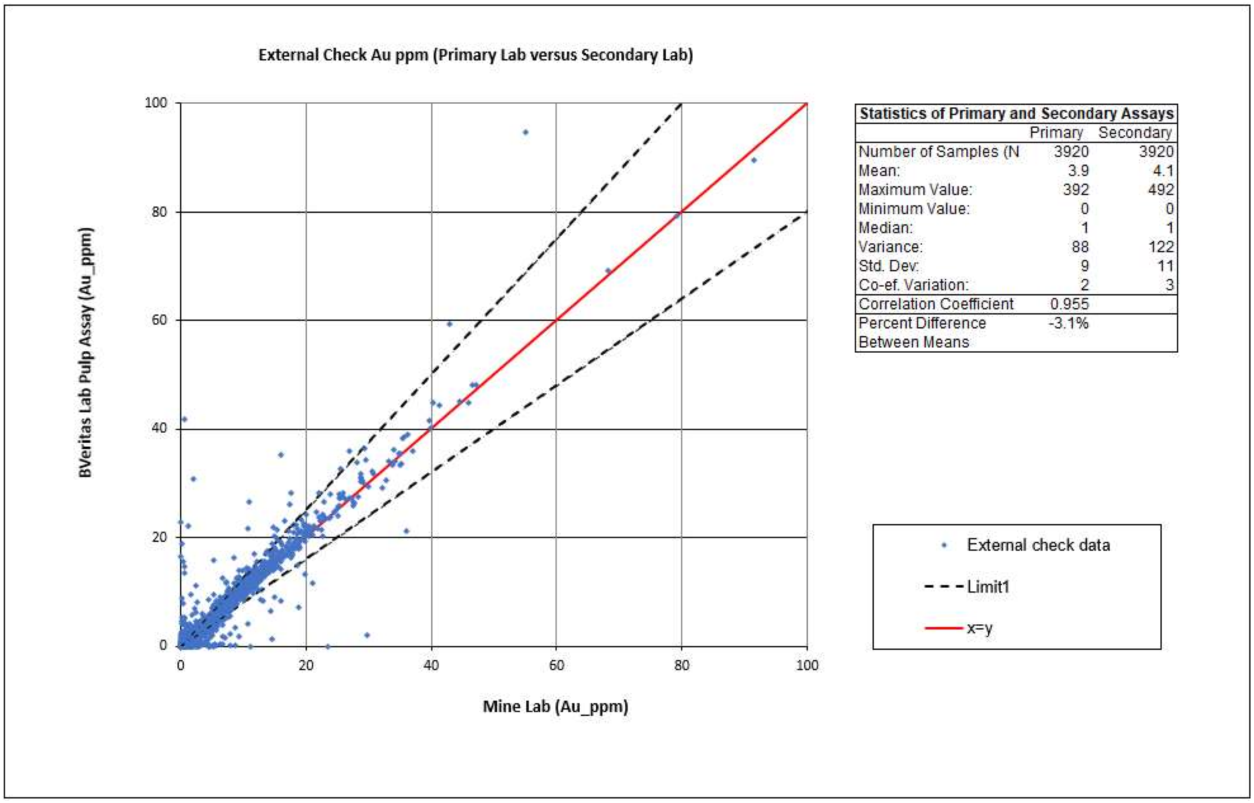


Figure 11-20: Panama – Au Check Assays

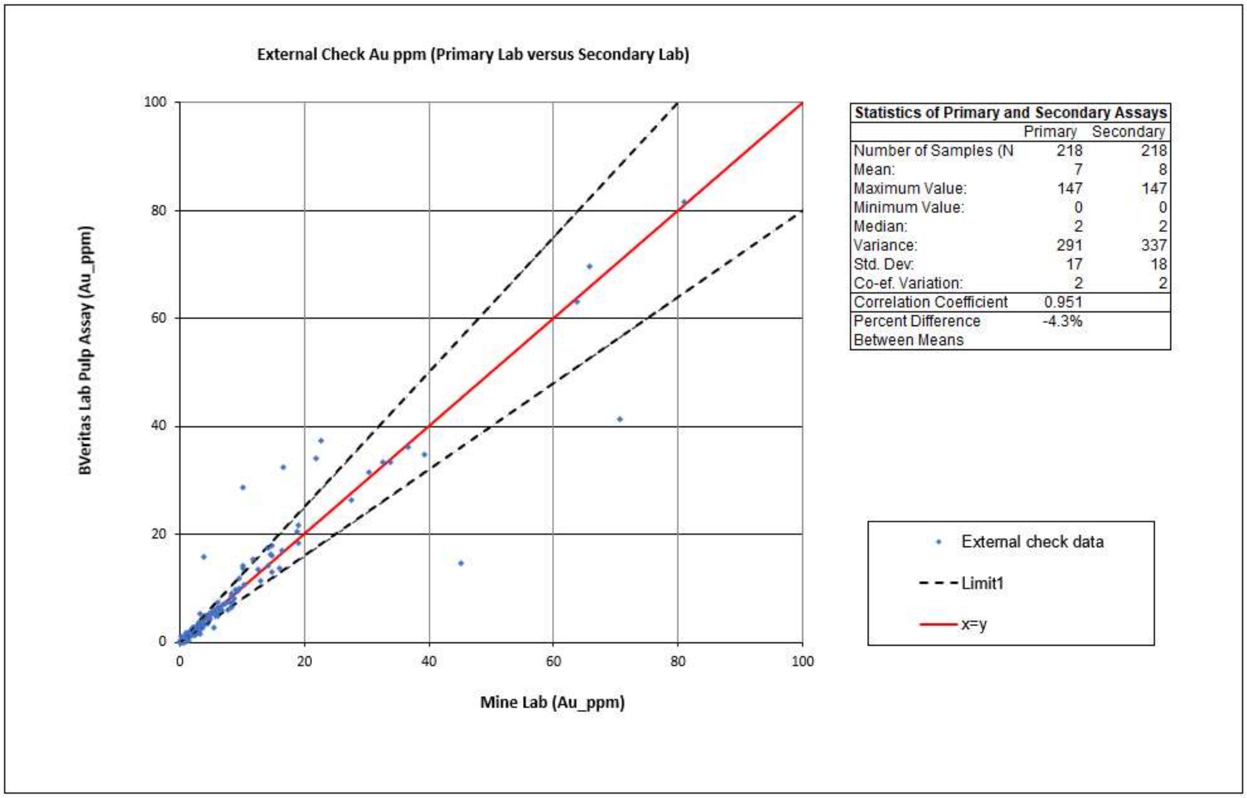


Figure 11-21: Pioneer – Au Check Assays

The dispersion at the origin is higher for Panama than Pioneer, which is explained by the many more results available for Panama, making the dispersion more evident. The coefficient of correlation is approximately 0.95 for both deposits, which is reasonable. Overall, the check assays show that the secondary laboratory has a reasonable correlation with the original primary laboratory assay results (Hemco and Vesmisa), with differences indicating that the analytical protocols used in the internal laboratories require improvement.

The QP is of the opinion that any bias observed in the check assays at the Hemco Property is not material and should not affect the quality of the Mineral Resource estimate.

11.5.6 QA/QC Conclusions and Recommendations

The results of the CRM campaigns in place at the Leticia, San Antonio, Panama, Pioneer, Porvenir, and Luna Roja deposits show no significant biases and generally low failure rates, indicating that the external laboratories are generating reliable and accurate assay results, which is supported by duplicate and blank results. Blank failures are rare, indicating that the laboratories are doing a good job tracking samples and keeping the sample crushers and pulverizers clean.

Drill hole duplicates reviewed by the QP show moderate to high precision for gold mineralization. The QP recommends, however, that the preparation, granulometric control, and chemical analysis protocols be reviewed for Mineros' internal laboratories (Hemco and Vesmisa), due to the poorer duplicate performance versus the check assays results.

The QP recommends maintaining insertion rates for QA/QC samples and implementing submission of drill hole samples from Panama, Pioneer, and Porvenir that are analyzed by the primary laboratory, BMV, for check assays at a secondary laboratory. The QP also recommends that the analytical procedures used by the internal laboratories be reviewed to improve the precision and accuracy of results.

Although SLR has recommended a number of improvements to the QA/QC program at the Hemco Property, the QP is of the opinion that the results are adequate to support Mineral Resource estimation.

12.0 DATA VERIFICATION

12.1 Software Validation

Mineros utilized MS Excel, Fusion, Isatis, and Leapfrog Geo's validation features to check for any errors or potential issues associated with the drill hole database, including:

- Sample length issues
- Maximum and minimum
- Negative values
- Detection limit/Zero values
- Borehole deviations
- Gaps
- Overlaps
- Drill hole collar versus topography
- Datum
- Laboratory certificate versus database values

The QP reviewed the database files provided using MS Excel and MS Access as well as the error reports generated by Datamine Studio 3 (Pioneer) and Leapfrog Geo Version 5.0 (Leticia, San Antonio, Panama, Pioneer, and Luna Roja) during database import and did not note any significant errors. SLR completed a variety of validation queries and routines such as out of range values, missing intervals, and overlapping intervals to identify any remaining data entry errors. In general, the database was found to be acceptable with no significant errors.

During modelling, the QP did note some issues with the Panama database and therefore excluded a total of 264 drill holes from Panama below the 850 ft Level block models. Some of the issues encountered included:

- Collars not matching the topographic surface (the QP corrected these where possible)
- Duplicated sample sequences
- Duplicated drill hole series
- Composited assays being stored as original assays
- Drilling at low angles to the vein causing unrealistic volumes in the generated wireframe

GeoEstima also excluded drill holes based on the Mineros drill hole exclusion table. The QP recommends recompiling the Panama database to realize the full value of the data excluded from the Mineral Resource estimate.

12.2 SLR Audit of Drill Hole Database

12.2.1 Lithology

The QP reviewed lithology logs and the final assay results for selected mineralized intervals in ten drill holes from Pioneer and ten drill holes from Porvenir. Digital drill hole contacts agreed with the logging results, and higher grades of gold and silver were observed to correlate with the presence of breccia and/or veins. Also, higher grades of zinc, lead, and copper were observed to correlate with sulphide content.

12.2.2 Assays

The QP compared 90% of the sample databases for the artisanal areas, Leticia, San Antonio, Panama, Pioneer, Porvenir, and Luna Roja projects to the assay certificates from the Acme (BVM), Hemco, and Vesmisa laboratories that were provided for the years 2015 to 2022. No major discrepancies were found. SLR reviewed the compiled assay certificates for the years 2020 and 2021 and matched them with the assay database and found no discrepancies.

12.2.3 Duplicate Samples

SLR conducted a search of the database looking for duplicate sample IDs. Duplicate samples were found in two projects, Panama and Pioneer, which account for less than 0.5% of their respective databases. SLR recommends cleaning up the database to remove any duplicate samples.

12.2.4 Excluded Drill Holes

Mineros maintains a file of 206 underground channels and 264 drill holes that have been excluded from Mineral Resource estimation at Panama and Pioneer. No drill holes have been excluded from Porvenir, Luna Roja and Leticia, and San Antonio.

While the QP is of the opinion that the data exclusion measures taken by Mineros has ensured that the data used is of sufficient quality to support Mineral Resource and Mineral Reserve estimation, the QP recommends performing additional validation on the property wide database to realize the full value of the data excluded from the Mineral Resource estimate.

12.2.5 Density

The QP reviewed measured density values by rock group at Pioneer and Porvenir. At Pioneer, samples designated as andesite were found to have the highest average density. Samples designated as breccia had the highest density variation and also the highest number of samples with a density above 3.0 t/m^3 (Figure 12-1). At Porvenir, average density between economic vein samples and mineralized structure samples was very similar, however, economic vein samples showed more variability (Figure 12-2). The average density of shear zone samples was similar to that of the vein samples and mineralized structure samples, while the variability was lower.

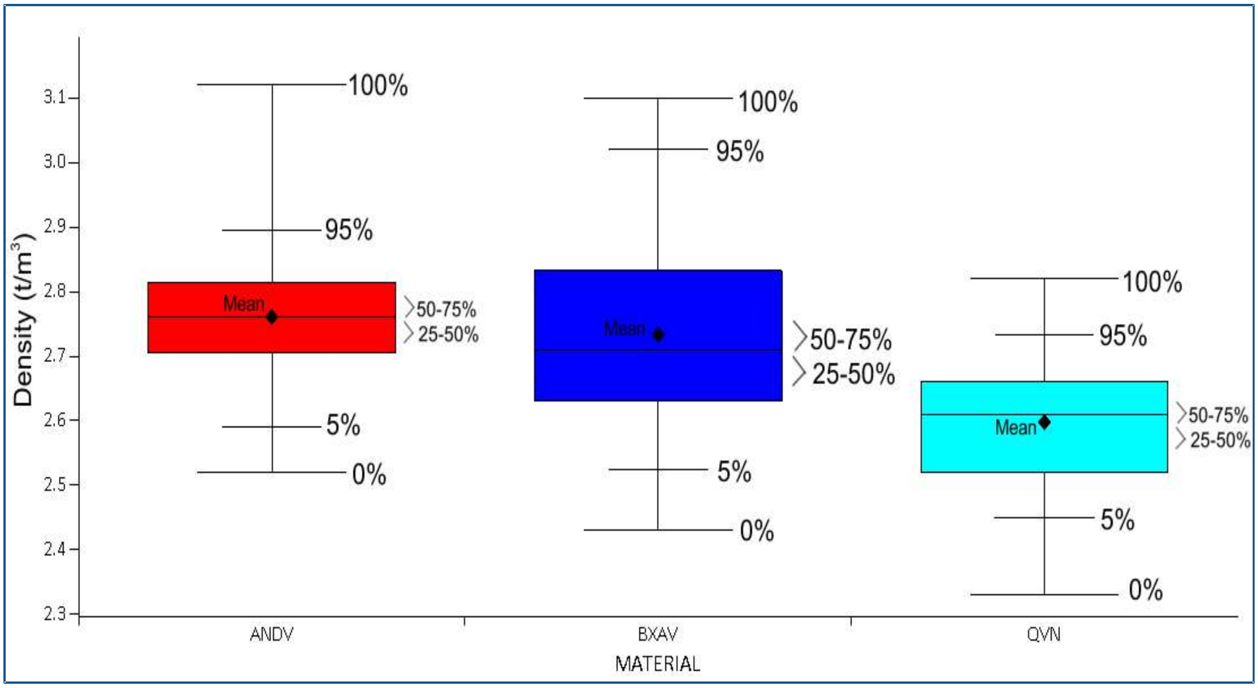


Figure 12-1: Pioneer Density Measurements by Rock Group

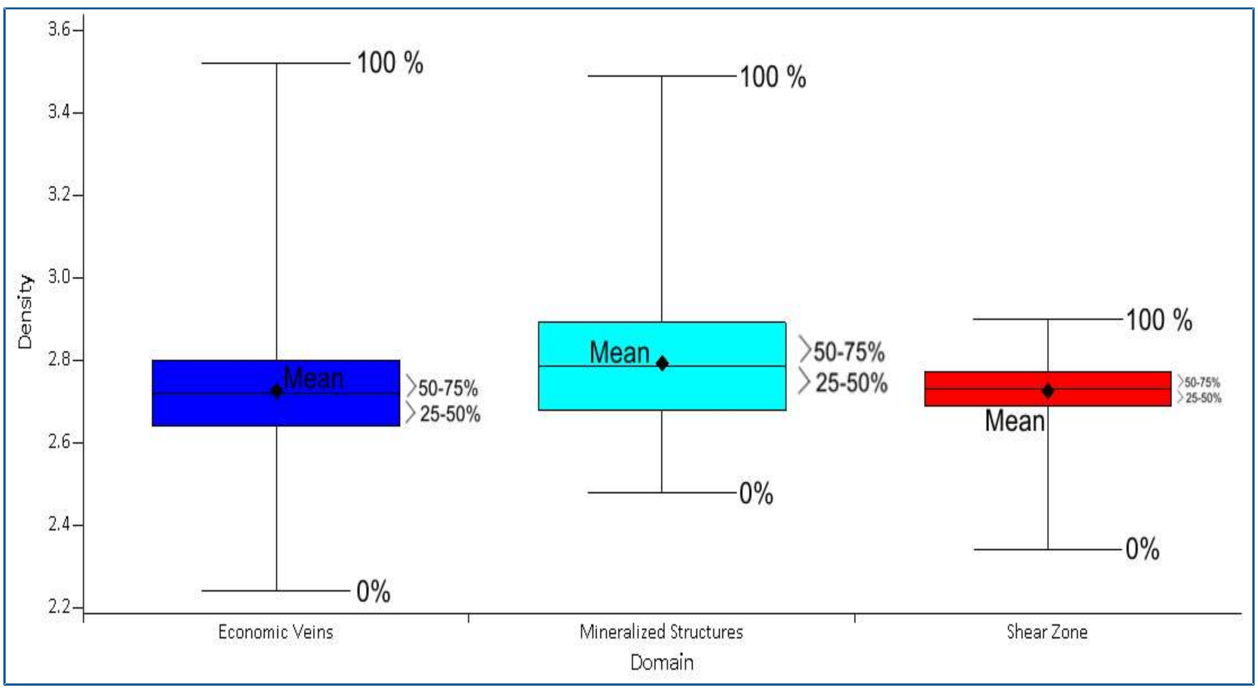


Figure 12-2: Porvenir Density Measurements by Rock Group

No density data has been collected at Leticia and San Antonio. At Leticia, a density value of 2.75 t/m^3 was applied based on data collected at Porvenir Norte. At San Antonio, a density value of 2.72 t/m^3 was applied based on data collected at Porvenir Sur. The QP recommends conducting a density sampling program at Leticia and San Antonio to support Mineral Resource estimates.

The QP is of the opinion that the database is reasonable and acceptable to support the estimation of Mineral Resources and Mineral Reserves.

12.3 Pre-2011 Drilling of the Pioneer Deposit

Drilling at Pioneer has been performed between 1956 and 2021 with the largest gap in drilling occurring between 1983 and 2011. In 2018, SLR completed block models for Pioneer which excluded drilling prior to 2011 as per the resource estimation protocol at the time (as described in Section 12.2.4). During the completion of the block models, SLR recommended investigating the use of pre-2011 drill holes after observing similar grades intercepting the mineralization wireframes at similar relative locations to the post-2011 drilling. In 2021, SLR updated the block models and performed spatially relevant statistical comparisons between the two data sets and concluded that the pre-2011 drilling was suitable to support the estimation of Mineral Resources. It should also be noted that the pre-2011 data represents only 1.2% of the composites used for the 2021 block models.

As part of the justification for using the pre-2011 drilling, SLR completed nearest neighbour (NN) interpolations using pre-2011 and post-2011 data separately. The results were tabulated, filtered on only blocks which were within 20 m of both data sets. The results show similar means and standard deviations (Table 12-1). The QP is of the opinion that, given the volume of historic data and the similarity between the statistics, it is reasonable to use the pre-2011 drill hole data for the Pioneer deposit Mineral Resource estimate.

Table 12-1: Comparison Between Pre-2011 and Post-2011 Drilling Data (Nearest Neighbour)
Mineros S.A. – Hemco Property

Name	Units	Post 2011	Pre 2011
Block Count	No. of Blocks	29,463	29,463
Mean	g/t Au	2.32	2.53
Standard Deviation	g/t Au	1.89	1.21
Minimum	g/t Au	0.00	0.21
Maximum	g/t Au	8.52	4.24

13.0 MINERAL PROCESSING AND METALLURGICAL TESTING

13.1 Mineral Processing

The Hemco Property process area is composed of three processing plants: the Hemco Plant, the La Curva Plant, and the Vesmisa Plant. The Hemco Plant treats underground and artisanal feeds, while the La Curva Plant and Vesmisa Plant treat artisanally mined material only. The Vesmisa Plant has a similar flow sheet to the Hemco Plant, using whole ore cyanidation, and produces doré bars. The La Curva Plant produces flotation and gravity concentrates which are sent to Hemco for treatment in an intensive leach reactor (ILR). Solution grades and volumes are carefully measured to ensure QA/QC, which is required due to the artisanal feed input. A separate QA/QC department is in place to do sampling, analysis, and reporting for all three plants. This department also conducts metallurgical test work on plant feeds to determine amenability to treatment and recovery of various feedstocks.

There are three sources of feed for the Hemco Plant: artisanal mining, and the Panama and Pioneer underground mines, while feed for the Vesmisa and La Curva plants are exclusively from artisanal mining. The artisanal feed is transported to the Hemco property by trucks, which are weighed on arrival and departure, and each truck load is placed separately on a pad. Samples are taken from each truck load and sent to a sampling plant. After analysis of the sample and agreement by both Mineros and the artisanal miner on the grade of the sample, the material is taken from the pad and added to the plant feed stockpile. If no agreement can be reached on the sample grade, then the artisanal miner removes their ore from the pad, a process which usually takes about three days. More than 50% of the ore being milled at the Hemco Plant and 100% of the ore being milled at the Vesmisa and La Curva plants is purchased from artisanal mining cooperatives under contracts.

Process results from the Processing Plants from 2011 to 2022 are shown in Table 13-1. Table 13-2 shows process results from the individual plants for 2022. Total production (from Mineral Reserves and from artisanal sources) has exceeded 120,000 oz of gold per year since 2019.

Table 13-1: Overall Plant Production
Mineros S.A. – Hemco Property

Description	Unit	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Tonnes Processed	t	311,945	355,225	392,292	412,565	471,859	542,524	634,062	632,986	649,805	700,048	715,792	716,257
Daily Tonnage	t/cal. day	855	973	1,075	1,130	1,293	1,486	1,737	1,734	1,780	1,913	1,961	1,952
Head Grade	g/t Au	4.52	4.52	5.79	5.79	5.34	5.29	5.62	6.04	6.93	6.15	6.34	6.49
Recovery	% Au	84.90	82.28	82.57	82.58	85.98	89.84	88.63	88.48	88.20	88.9	88.5	89.30
Poured Gold	oz Au	45,928	54,403	60,338	63,431	69,681	82,903	101,554	108,689	127,643	123,029	129,137	133,482
Poured Silver	oz Ag	95,885	111,956	109,724	98,723	108,160	209,315	230,763	194,401	243,851	246,550	373,046	350,889
Silver to Gold Ratio	Ag:Au	1.82	1.82	1.82	1.56	1.55	2.52	2.27	1.79	1.91	2.00	2.89	2.63

Table 13-2: Processing Plant Production 2022
Mineros S.A. – Hemco Property

Processing Plant	Tonnes Processed (t)	Daily Tonnage (t/cal.day)	Head Grade (g/t Au)	Recovery (% Au)	Poured Metal (oz Au)	Poured Metal (oz Ag)	Silver to Gold Ratio (Ag:Au)
Hemco	638,332	1,739	6.09	91.1	113,875	318,604	2.80
Vesmisa	47,270	129	8.86	86.3	11,629	25,395	2.18
La Curva	30,655	84	11.27	71.9	7,979	6,890	0.86

13.2 Historical Independent Test Work

High grade gold and silver ores that contain other elements, such as copper, sulphur, lead, and zinc, were sent to Cuban laboratories (CIPIMM) and Mexico (Tecamachalco) to establish the optimum process for gold extraction. The process methods investigated were direct cyanidation and cyanidation of flotation concentrates. The investigated mineral source was from Neblina above the 850 ft Level, which was considered metallurgically complex and contained high concentrations of zinc and gold.

Similar results, on chemical analyses, were obtained from both laboratories: 17 g/t Au, 1.5% Cu, 4% Zn, 4% Pb, and 4% Fe_2O_3. The following analyses were obtained for the composition of the flotation concentrate: 148 g/t Au, 904 g/t Ag, 15% Pb, 32% Zn, and 5% Cu. Metallurgical test results for direct cyanidation and cyanidation of flotation concentrates, carried out on these ores, indicated low gold recovery values (30%), i.e., these ores would require shipment of concentrates. Metallurgical tests conducted by the Mexican Laboratory to analyze direct cyanidation of the differential flotation concentrates (lead concentrates) concluded that direct cyanidation was neither technically feasible nor economically practicable.

Samples of ball mill feed (i.e., blended, crushed feed to the plant) were sent to Met-Solve Laboratories in Langley, British Columbia. These samples were subjected to a combination of gravity gold recovery, flotation, and cyanide leaching of both the flotation concentrates and the flotation tailings. This test work indicated that there were opportunities to improve overall gold recovery through the installation of gravity recovery and flotation circuits in the plant.

In 2019, Porvenir metallurgical test work was carried out at Asmin Industrial Ltda. (ASMIN) in Santiago, Chile, resulting in a report titled "Pruebas Metalúrgicas de Cianuración Y Flotación A Nivel Laboratorio, Hatch, Proyecto ASMIN 2184 Informe Final de Resultados (Junio 2019)". The test work program and results were reviewed in detail and were previously reported in the 2021 Technical Report (SLR, 2021).

13.2.1 Porvenir Test Work - 2020

Porvenir is a new deposit that is planned to be mined with the ore to be processed in a new beneficiation plant.

Figure 13-1 shows the proposed process design based on metallurgical testing (BISA, 2022a).

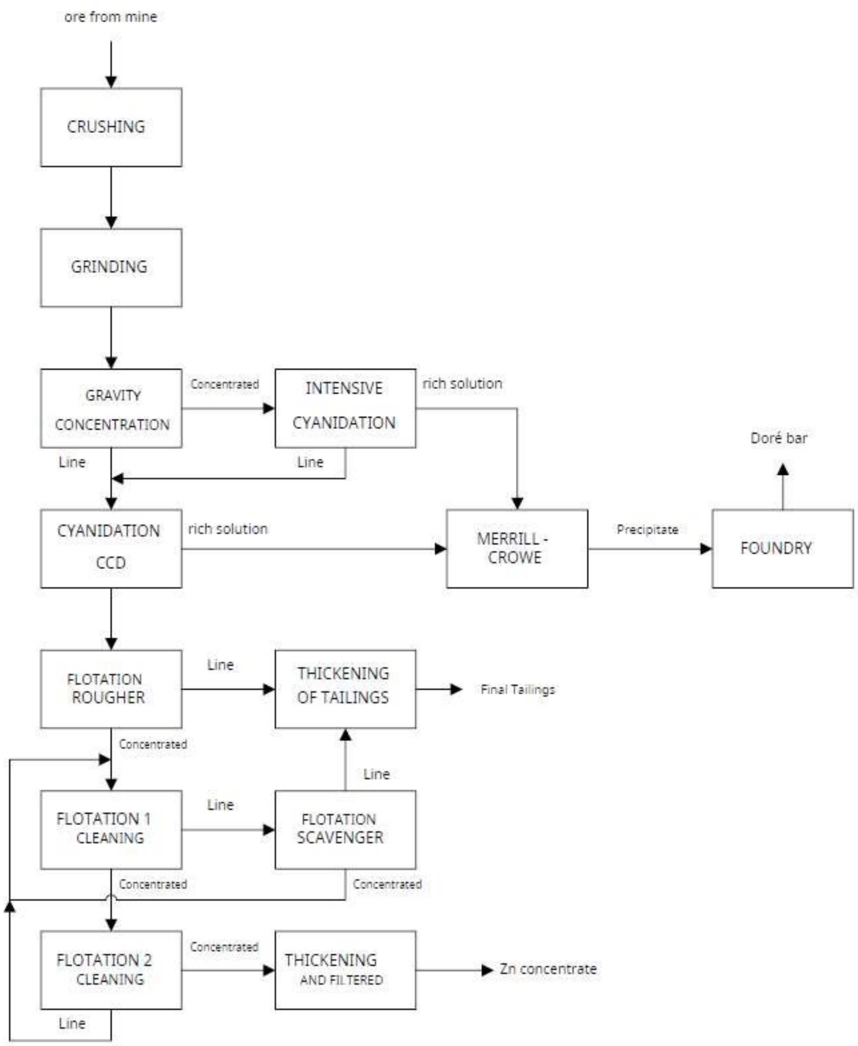


Figure 13-1: Process Design Based on Metallurgical Testing

In 2020, laboratory tests were carried out by SGS Minerals SA (SGS) located in Quilicura, Santiago, Chile on 38 samples which consisted of comminution, cyanidation, mineral flotation tests (MFT), differential flotation, rheology, sedimentation, and filtration tests, as well as tests in the mini pilot plant (MPP). The selection of samples and the metallurgical test work campaign undertaken by SGS was carried out under the direction of Hatch Ltd. (Hatch) (Hatch, 2021). Cyanide destruction and flotation for the copper composite was also investigated. The data considered in this section is largely summarized from information supplied by BISA on SGS data previously reported by Hatch in 2021 (BISA, 2022a).

13.2.1.1 Sample Selection

Samples were collected from the following sources to characterize the first seven years of production expected from Porvenir Norte, Sur, and Real McKoy (Hatch, 2021):

- Core samples from drilling and assay reject samples from the 2020 drilling campaign (26 samples):
    - Assay reject samples from the 2020 geochemical campaign obtained from the 2020 drilling campaign.

- Reserve core borehole samples from the 2020 borehole campaign.

- Historical drill core samples corresponding to old drilling campaigns (prior to 2020, three samples).
- Samples from a new drilling campaign carried out at the end of 2020 (nine samples).

Hatch, together with Hemco, obtained 38 samples for the Porvenir Project weighing approximately 2,228 kg in total and the spatial locations of these sample are presented in Figure 13-2.

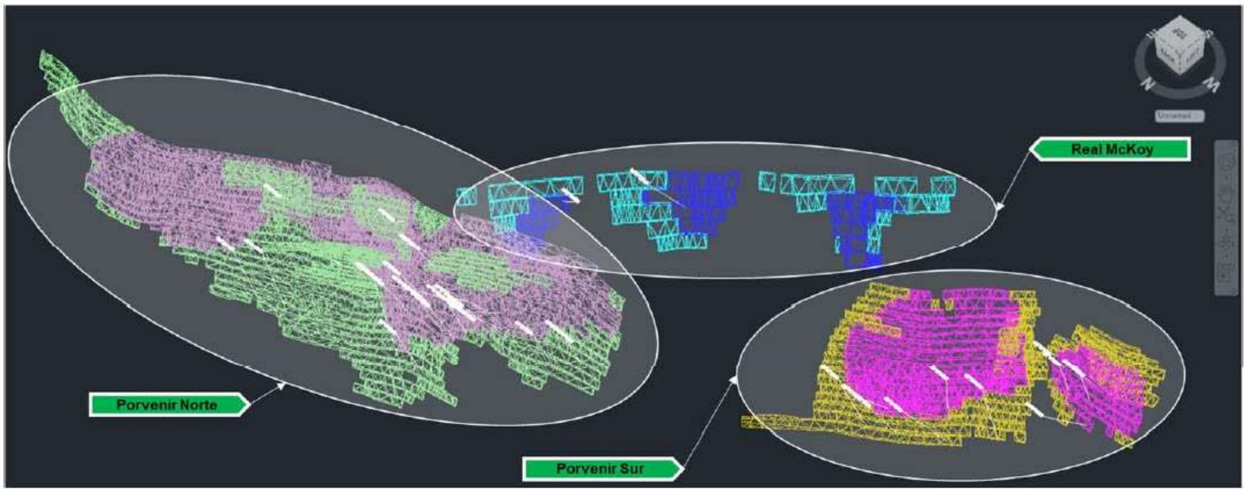


Figure 13-2: General Location of Samples by Veins

13.2.1.2 Test Work Program

The test work program included:

- Receipt and identification of samples (MH-1 to MH-38)
- Sample Preparation
- Chemical Characterization
- Mineralogical Analyses
- Comminution Test Work
- Cyanidation Test Work
- Flotation Test Work
  - Zn Flotation After Cyanidation
  - Cu-Zn Differential Flotation
- Mini Pilot Plant Tests
  - Low Copper Sample Mini Pilot Plant Test (MPP1)
  - High Copper Sample Mini Pilot Plant Test (MPP2)
  - Open Cycle Test (TCA) with High Copper Sample
- Rheology, Sedimentation, and Filtration Tests on Final Concentrate and Final Tailings

13.2.1.3 Test Work Results

The main results are summarized below.

13.2.1.3.1 Chemical Characterization

Table 13-3 below summarizes the average, maximum, and minimum assays for gold, silver, copper, iron, lead, zinc, and sulphur assays, based on 38 samples analyzed by SGS.

Table 13-3: Summary of Head Sample Assays
Mineros S.A. – Hemco Property

Value	Au (g/t)	Ag (g/t)	CuT (%)	Fe (%)	Pb (%)	Zn (%)	Cu Sol (%)	S (%)	S^{2-} (%)	CuSCN (%)
Average	2.17	15.09	0.59	5.08	0.13	2.03	0.02	3.10	2.94	0.10
Maximum	17.00	42.00	1.73	9.42	0.91	8.42	0.07	8.09	7.81	0.26
Minimum	0.26	4.00	0.09	2.24	0.00	0.11	0.00	1.30	1.14	0.01

Notes: CuT – total Cu concentration, Cu Sol – acid soluble Cu (citric acid leach), CuSCN – cuprous thiocyanate

Cyanide soluble copper (Cu_CN) averaged 18.2%, with a maximum of 51.6% and a minimum of 7.5%, reaching maximum Cu_CN values above 2,000 ppm for some samples (Figure 13-3).

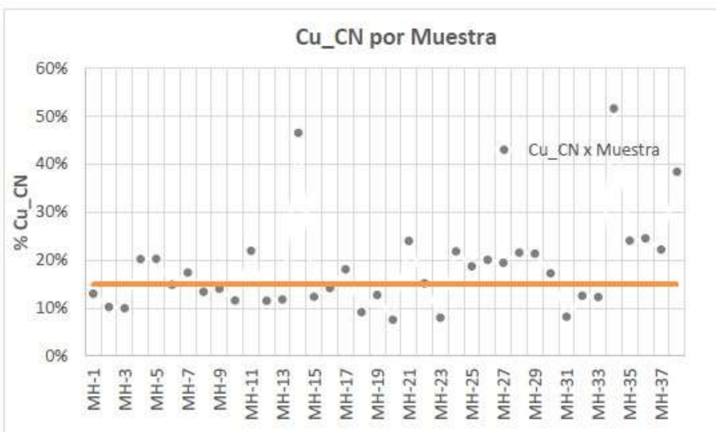


Figure 13-3: Variability – Proportion of Cu_CN in Samples

SGS noted two groups of Porvenir samples based on %Cu_CN:

- A group of 35 samples in a zone of primary sulphides, where the proportion of Cu_CN varies from 7% to 24%; and
- A group of three samples (MH34, MH14, MH38) with higher Cu_CN and Cu Sol content.

SGS stated that the metallurgical response of cyanide soluble copper vs. zinc reported in the copper concentrate for the case of a Cu-Zn differential flotation warrants further evaluation.

13.2.1.3.1 Mineralogical Analyses

In the case of gold and silver, a trace mineral search (TMS) type mineralogical characterization was used.

Thirty-seven selected samples were also mineralogically characterized through Quantitative Evaluation of Materials by Scanning Electron Microscopy (QEMSCAN), using the Particle Mineral Analysis (PMA) method at 80% passing (P_{80}) 75 µm.

Gold is found as native gold or electrum, the latter being the dominant mineralogy (average grain size of 8 µm), and is mainly associated with quartz, pyrite, chalcopyrite, and silver minerals.

Silver is found in various minerals such as telluride or selenate, silver sulphides (acanthite), bismuth minerals and/or lead (average grain size of 15 µm). The main associations of silver mineral grains are with quartz, followed by chalcopyrite and pyrite.

Copper occurs mainly as chalcopyrite and, to a lesser extent, as chalcocite and some samples presented iron oxides with copper. Zinc occurs as sphalerite, but carbonates with zinc were not identified.

The liberation of copper sulphides and zinc sulphides averaged 82% and 79%, respectively.

The gangue is mainly quartz, K-feldspars, chlorites, and micas, with respect to pyrite, which averaged 3.6% (mineral base), which is considered low for a polymetallic-type deposit.

13.2.1.3.2 Comminution Test Work

Comminution tests performed on ten samples included:

- Bond Work Index (BWi)
- Semi-autogenous Grinding Mill Comminution (SMC) Test (Axb)

Bond Work Index (BWi) tests and SMC tests were carried out to obtain the sizing parameters for the ball mill. These values correspond to the 80th percentile of the results obtained (BWi of 17.59 kWh/t and 35.4 for the parameter Axb). The comminution results are listed below in Table 13-4.

Table 13-4: Comminution Results
Mineros S.A. – Hemco Property

Sample	BWi (kWh/t)	SMC (Axb)
MH-4	16.00	36.62
MH-9	15.93	35.04
MH-11	17.56	39.73
MH-13	15.74	38.45
MH-15	18.14	39.41
MH-18	16.91	47.97
MH-21	13.86	33.99
MH-24	17.45	38.99
MH-25	17.30	38.05

Sample	BWi (kWh/t)	SMC (Axb)
MH-35	17.71	36.04
Average	16.66	38.43
80th Percentile	17.59	39.47

The BWi overall average indicates that the samples are generally considered "hard". The SMC (Axb) overall average also indicates that the ore is "medium hard".

13.2.1.3.3 Cyanidation Test Work

Bottle roll cyanidation tests were performed on 37 selected samples with one kilogram of sample ground to a particle size of P_{80} 75 µm and slurries containing 50% solids were leached for 48 h, with sampling at 2, 6, 12, 24, and 48 h intervals. The cyanide dosage was 1 g/t NaCN and the pH was adjusted to 10.5-11 with the addition of lime. Approximately 50 mL of solution was collected during sampling and was analyzed for cyanide concentration, gold, silver, copper, zinc, and iron, as well as free cyanide, total cyanide, lime, and pH. At the end of testing, the slurry was filtered and washed. The filter cake was dried and pulverized to a size of – 150 mesh for further cyanide destruction and flotation tests.

As shown in Table 13-5, gold recoveries varied from 34.21% Au (MH-6) to 95.55% Au (MH-11), while silver recoveries varied from 1.35% Ag (MH-8) to 81.88% Ag (MH-29). Cyanide consumption varied between 0.61 kg/t NaCN (MH-19) and 3.64 kg/t NaCN (MH-1). While zinc recoveries were very low (an exception was sample MH-3), copper recoveries ranged from 2.58% Cu (MH-33) to 51.07% Cu (MH-34). There is a inverse correlation between high copper content and gold and silver extractions. Also, there is a high correlation between copper head grade and cyanide consumption.

Table 13-5: Cyanidation Results
Mineros S.A. – Hemco Property

Sample	Head Grade				NaCN Consumption (kg/t)	Au Recovery (%)	Ag Recovery (%)	Cu Recovery (%)	Zn Recovery (%)
	Au (g/t)	Ag (g/t)	%Cu	%Zn					
MH-1	1.47	42.00	1.69	1.28	3.64	38.57	4.36	9.08	0.00
MH-2	1.42	16.00	0.74	1.50	2.19	52.21	39.16	10.19	0.47
MH-3	0.82	11.00	0.74	0.16	1.99	68.34	43.38	7.30	17.02
MH-4	1.25	10.00	0.57	0.79	2.72	51.20	32.58	19.06	0.89
MH-5	3.10	29.00	0.97	3.16	3.05	44.04	3.93	12.59	0.01
MH-6	1,420	35.00	1.35	1.90	3.39	34.21	2.72	9.90	0.00
MH-7	3,190	28.00	0.72	1.08	2.64	36.74	30.11	13.71	0.24
MH-8	0.73	35.00	1.73	1.23	3.24	35.13	1.35	6.37	0.01
MH-9	0.34	9.00	0.60	0.99	1.82	82.35	49.24	9.19	0.47
MH-10	2,800	10.00	0.43	2.97	1.70	91.81	57.55	11.41	0.22
MH-11	1,290	8.00	0.32	2.32	1.30	95.55	61.33	8.79	0.48
MH-12	1,290	9.00	0.48	1.21	1.57	88.22	49.29	8.90	1.37
MH-13	0.94	11.00	0.55	1.40	1.90	82.52	57.85	11.44	0.29
MH-14	0.55	10.00	0.57	0.49	3.22	40.05	3.23	22.53	0.01
MH-15	0.86	6.00	0.32	0.78	1.44	91.10	50.55	12.10	0.64
MH-17	1.87	8.00	0.59	1.27	2.24	41.06	30.45	14.85	0.71
MH-18	1.99	21.00	0.77	2.88	1.75	61.14	37.83	7.59	0.24
MH-19	0.66	4.00	0.11	0.96	0.61	78.85	28.01	9.14	0.33
MH-20	1.52	5.00	0.33	6.34	1.10	87.45	38.05	7.61	0.10

Sample	Head Grade				NaCN Consumption (kg/t)	Au Recovery (%)	Ag Recovery (%)	Cu Recovery (%)	Zn Recovery (%)
	Au (g/t)	Ag (g/t)	%Cu	%Zn					
MH-21	1.92	17.00	0.53	3.42	1.67	95.27	55.36	7.75	0.31
MH-22	0.65	8.00	0.62	0.11	2.31	50.74	48.04	12.94	4.01
MH-23	1.50	16.00	1.44	2.11	2.33	34.23	26.34	6.24	0.27
MH-24	1.37	7.00	0.29	3.51	1.86	87.47	68.65	14.32	0.22
MH-25	2.52	18.00	1.08	2.59	3.19	40.78	3.17	12.18	0.01
MH-26	4.10	7.00	0.50	2.68	2.02	93.51	52.51	8.90	0.44
MH-27	4.15	13.00	0.18	4.65	1.10	83.71	50.06	8.67	0.35
MH-28	1.10	11.00	0.09	7.06	1.40	94.04	18.81	9.45	0.75
MH-29	17.00	15.00	0.29	0.78	1.90	92.29	81.88	20.13	0.23
MH-30	8.00	31.00	0.61	8.42	2.16	70.70	46.11	10.17	0.01
MH-31	1.71	7.00	0.53	0.56	1.73	79.23	64.18	8.36	0.09
MH-32	2.22	10.00	0.67	0.39	1.97	66.37	65.59	9.23	0.72
MH-33	0.59	10.00	0.64	0.91	1.94	73.27	66.56	2.58	0.08
MH-34	0.26	4.00	0.15	0.20	2.16	46.37	57.78	51.07	2.56
MH-35	2.27	17.00	0.45	1.61	2.05	78.92	39.88	13.27	0.15
MH-36	1.28	7.00	0.29	1.87	1.54	85.03	59.25	14.95	0.25
MH-37	0.93	4.00	0.16	0.66	1.28	85.67	54.38	18.68	0.84
MH-38	2.01	4.00	0.18	0.94	1.77	91.94	79.78	33.61	0.21

13.2.1.3.4 Flotation Test Work

Mineral Flotation Tests

MFTs were performed after the cyanidation process for the 37 selected samples, based on previously optimized flotation parameters for grind size, reagent dosage, pH control, % solids, air flow, and residence time (BISA, 2022a).

The results of the MFTs are summarized as follows:

- Copper head grade affected the quantity of zinc in the rougher concentrate.
  - If copper grades were less than 0.6%, then zinc grades increased up to 24% in the concentrate.
  - If copper grades were greater than 0.6%, then zinc grades dropped down to 10% in the concentrate.
- Copper head grade affected the quantity of gold in the rougher concentrate.
  - If copper grades were less than 0.6%, then the concentrates produced contained less than 1.5 g/t Au.
  - If copper grades were higher than 0.6%, then the concentrates produced contained more than 4 g/t Au.
- Copper head grade affected the quantity of silver in the rougher concentrate.
  - If copper grades were less than 0.6%, then the concentrates produced contained up to 40 g/t Ag.
  - If copper grades were higher than 0.6%, then the concentrates produced contained up to 100 ppm Ag.

Differential Cu-Zn Flotation Tests

Three rounds of differential flotation tests were carried out with adjustments to reagent dosages and flotation time to allow the effective separation of copper from zinc. These tests were carried out for five samples (MH-5, MH-18, MH-25, MH-2, and MH-6), by varying cyanidation, pH, and feed particle size.

The test results were as follows:

- Recoveries of copper and zinc were 80% and 90%, respectively, while the concentrate grades were 25% for both metals.
- Higher gold and silver recoveries were observed in copper flotation vs. zinc flotation, which is advantageous since the by-product credits are greater for gold and silver in the copper concentrate.

Mini Pilot Plant Tests

Two MPP tests were carried out:

- MPP1 test using a sample of low copper content (Composite 1 sample) to corroborate the circuit defined in the BISA PFS (cyanidation-flotation).
- MPP2 test using a sample of high copper content (Composite 2 sample).

MPP1 – Cyanidation and Flotation Tests

Cyanidation tests were carried out with a low copper sample after grinding to a P_{80} of 75 µm. Tailings were generated for both cyanide detoxification testing and to feed flotation. A sample consisting of 50% solids was leached with cyanide for 48 h at a pH of 10.5-11. The tailings were washed three times to remove residual cyanide to acceptable detoxification levels and filtered before feeding flotation. Post-cyanidation grinding of the sample was not considered.

The flotation test was carried out in a pilot flotation mini plant. The tests were carried out under the following conditions:

- Grind - P_{80} of 75 µm
- Slurry density - 32% solids
- Rougher flotation residence time - 15 min
- First cleaner flotation residence time - 10 min
- Scavenger flotation residence time - 10 min
- Second cleaner flotation residence time - 5 min
- Third cleaner flotation residence time - 3 min

Cyanide destruction tests on tailings were carried out in batch mode on a stirred solution under these conditions:

- Addition of 2.5 g/L metabisulphite (MBS)
- Air injection at 2 L/min to achieve a dissolved oxygen level > 4 mg/L
- pH of 8.5, controlled by addition of 5 g/L calcium hydroxide (milk of lime)

Reagents were added until weak acid dissociable cyanide (WAD CN) levels were less than 0.05 ppm.

MPP2 Test

A differential Cu-Zn flotation circuit was used for the sample high in copper. The first circuit is dedicated to the recovery of copper and considers a rougher flotation stage, three cleaning stages and a scavenging step (similar to the zinc circuit with MPP1 composite). The difference is that the primary and reprocessed tailings fed primary flotation stages of the zinc circuit.

The zinc circuit considers the same stages and characteristics of the copper circuit, with three conventional cleaner flotation stages operating in series, to clean the zinc concentrate.

MPP Test Results

The composite samples used in the MPP tests are listed in Table 13-6.

Table 13-6: Composite Samples for MPP Tests
Mineros S.A. – Hemco Property

Composite	Sample	Mass (kg)	% of Each Sample in Composite	Total Mass of Composite (kg)
Composite 1	MH-10	69	46	150
	MH-11	15	10	
	MH-21	39	26	

Composite	Sample	Mass (kg)	% of Each Sample in Composite	Total Mass of Composite (kg)
Composite 2	MH-26	22	15	150
	MH-28	5	3	
	MH-1	10	7	
	MH-5	39	26	
	MH-6	44	29	
	MH-18	19.5	13	
	MH-23	18	12	
	MH-25	19.5	13	

Table 13-7 shows the head assays of the composites used in the MPP tests. Composite 1 has a head grade of 0.44% Cu, while Composite 2 has a head grade of 1.18% Cu.

Table 13-7: Composite Sample Assays
Mineros S.A. – Hemco Property

Sample	Cu (%)	Fe (%)	S (%)	Zn (%)	Pb (%)	Au (g/t)	Ag (g/t)
Composite 1	0.44	4.11	2.79	2.93	0.31	2.06	13
Composite 2	1.18	4.86	3.75	2.32	0.08	2.23	27

For the MPP cyanidation test using a sample of lower copper content (Composite 1), gold and silver recoveries achieved were 89% and 34%, respectively, and are shown in Table 13-8.

Table 13-8: MPP Cyanidation Results for Composite 1
Mineros S.A. – Hemco Property

	Au	Ag	Cu	Fe	Zn
Calculated grade (%, ppm)	3.33	13.71	4,667	40,302	29,752
Extraction	88.89	34.35	13.43	0.05	0.04

For the MPP test for cyanide destruction of the tailings, total cyanide levels of less than 1 ppm were obtained with the use of a copper catalyst with kinetics of up to 30 minutes. Approximately 360 minutes was required for oxidation of the WAD CN and consumption of 6 g SO_2/g WAD CN was estimated.

For the flotation tests with low copper in feed (MPP1), a zinc concentrate of 48.5% Zn grade and 93.4% overall zinc recovery was obtained and a copper concentrate was produced with a copper grade of 6% and 93% overall copper recovery. Because the zinc concentrate grade was below the typical commercial grade (50%) for zinc concentrate sale, a second test was carried out, which consisted of column flotation of the concentrate produced from the third cleaner flotation stage. By using column flotation, the grades of the zinc concentrate achieved were greater than 50%.

The rougher flotation on the high copper sample (Composite 2) achieved a recovery of 91.4% Cu and a zinc concentrate of 34% Zn and a recovery of 94% Zn in the zinc rougher stage. The TCA tests for

Composite 2 indicated that it is possible to achieve high quality copper and zinc concentrates, the concentrate grades were 32% Cu and 49% Zn, respectively. Based on these results, a balance was estimated for the closed copper and zinc circuit, which presents a global recovery of copper in the copper circuit of 82.2% with a concentrate grade of 26.2%, and an overall zinc recovery in the zinc circuit of 94.6% with a concentrate grade of 49.7%.

Based on the proposed plant treatment circuit (Figure 13-1) and the metallurgical test results achieved, the estimated recovery for the Porvenir Project has been determined by BISA as shown in Table 13-9.

Table 13-9: Estimated Metal Distribution and Recovery
Mineros S.A. – Hemco Property

Product	Processing Rate		Composition						Distribution			
	tpd	kg/day	Au (g/t)	Au (%)	Ag (g/t)	Ag (%)	Cu (%)	Zn (%)	Au (%)	Ag (%)	Cu (%)	Zn (%)
Ore Feed	2,000		3.17		9.89		0.27	2.82	100.00	100.00	100.00	100.00
Doré		19.36		27.59		51.91			84.25	50.80		
Zn Conc.	1,069		0.69					50.00	1.15			93.95
Tailings	1,894		0.49		5.14		0.29	0.18	14.6	49.20	100.00	6.05

13.2.1.3.5 Rheology, Sedimentation, and Filtration Tests

The products obtained from the MPP tests were characterized according to the following solid-liquid separation tests:

1. **Final Concentrate**

- Static sedimentation
- Rheology
- Vacuum filtration test

2. **Final Tailings**

- Dynamic sedimentation
- Rheology tests
- Horizontal plate pressure filter test

Final Concentrate

For the determination of the thickening unit area, a rate of 0.065 m^2/tpd, was obtained, considering the method of Talmage & Fitch. Vacuum filtration tests showed a final moisture of 14% to 15% with filtration rates in the range of 258 kg/h/m^2 to 370 kg/h/m^2.

Tailings

For the rheology, sedimentation and tailings filtration tests, a thickening unit area of 0.0186 m^2/tpd was obtained, considering the Talmage & Fitch method. In the filtration tests, a final moisture of 13% to 14% and filtration rates between 290 kg/h/m^2 to310 kg/h/m^2 were obtained.

13.2.1.3.6 Discussion and Conclusions

Determination of ore characteristics included:

- Chemical characterization (agrees with the overall Porvenir deposit).
- Natural pH (6.11-7.46)
- Specific gravity (average 2.74)

The QP is of the opinion that the test work conducted appears to be comprehensive. The results show that gold and silver recovery is achievable at acceptable recovery rates by direct cyanidation, while the making of commercial grade copper and zinc concentrates requires further test work. It appears that a commercial zinc concentrate may be more achievable than a copper concentrate, due to low copper grades and high zinc content in the copper concentrate produced during test work.

The QP recommends further test work to optimize the flotation flowsheet and reagent combinations.

13.2.2 Panama and Pioneer Test Work

In 2019, test work was carried out by the National University of Colombia to determine BWi for five Panama Group veins and one Pioneer Group vein. The results are shown in Table 13-10.

Table 13-10: Gold Vein Bond Work Indices
Mineros S.A. – Hemco Property

Deposit	Vein	BWi (kWh/ton)
Panama	Adan	27.45
	Elefante	30.20
	Neptuno	22.52
	Toboba	21.34
	Vicky	29.83
Pioneer	Lone Star	28.11

13.2.2.1 Discussion

The BWi results indicate that all of the veins are considered very hard to grind.

In the QP's opinion, test work should be carried out to determine if the ore from the Panama and Pioneer veins will have an adverse effect on the grind characteristics of the Hemco Plant, as the BWi for the samples appear to be much higher than those for ore being presently treated.

In the QP's opinion, additional test work is necessary to determine if there are processing factors or deleterious elements that could have an impact on potential economic processing of these ores.

14.0 MINERAL RESOURCE ESTIMATE

14.1 Summary

The Mineral Resource estimates for the Hemco Property utilized conventional block model methods for Panama below the 850 ft Level, Pioneer, Porvenir, Luna Roja, and Leticia and San Antonio. All of the deposits are primarily gold deposits, with or without minor silver, except for Porvenir, Leticia and San Antonio, for which gold, silver, and zinc have reasonable expectations for eventual economic extraction. Parts of the Panama and Pioneer Mineral Resources have been converted to Mineral Reserves as discussed in Section 15. Mineral Resources are reported outside of mined out areas and design shapes used to report Mineral Reserves.

Material within 30 m of the topographic surface has been excluded from the Pioneer and Porvenir Mineral Resources to allow for artisanal mining.

The Porvenir and Luna Roja deposit estimates were completed by SLR, the Pioneer and Panama block models were completed by either SLR in 2018 and 2019, or by GeoEstima and Mineros in 2019 to 2022 (Table 14-2 and Table 14-3). Wireframes for Porvenir, Leticia, and San Antonio were completed by Mineros and wireframes for Pioneer, Panama, and Luna Roja were completed by either SLR in 2018 and 2022, or by GeoEstima in 2019 and Mineros in 2019 through 2022. Block estimates were completed using either Datamine, Leapfrog Edge, or Surpac. Estimates were completed using Inverse Distance raised to the second or third exponents (ID^2 or ID^3). Blocks were classified as Measured, Indicated, and Inferred using distance-based criterion in conjunction with grade continuity and vein thickness. SLR validated the estimates using industry standard validation techniques. SLR has reviewed and adopted the Mineral Resource estimates completed by Mineros and GeoEstima.

The Panama deposit resource models are in feet except for Cleopatra, Tigre Blanco, and Independencia, whereas all other deposits are in metres.

The QP is of the opinion that the Mineral Resources are reasonable and suitable to support the estimation of Mineral Reserves.

The Hemco Property Mineral Resource statement, by deposit and exclusive of Mineral Reserves, as of December 31, 2022, is summarized in Table 14-1. A summary of the Mineral Resource estimation techniques is given in Table 14-3 and the locations of the resource areas are shown in Figure 14-1. Mineral Resources conform to Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Definition Standards for Mineral Resources and Mineral Reserves dated May 10, 2014 (CIM (2014) definitions).

There are no open pits in the current mine plan, however, the Hemco Property Mineral Resource estimate includes open pit material at Luna Roja. The open pit material was reported at a cut-off grade of 0.87 g/t Au. All other Mineral Resources are based on an underground mining scenario and are reported using cut-off grades corresponding to underground mining methods.

Table 14-1: Summary of Mineral Resource Estimate – December 31, 2022
Mineros S.A. – Hemco Property

Deposit	Cut-Off Grade/Value	Tonnes (kt)	Grade			Contained Metal		
			(g/t Au)	(g/t Ag)	(%Zn)	(koz Au)	(koz Ag)	(Mlb Zn)
Measured Resources								
Panama	2.0 g/t Au	28.2	3.85			3.5		
Pioneer	2.0 g/t Au	12.1	2.59	11.3		1.0	4.4	
Porvenir	US$82.3/t	59.1	1.75	8.08	2.11	3.3	15.4	2.7
Total		**99.4**	**2.45**			**7.8**	**19.8**	**2.7**
Indicated Resources								
Panama	2.0 g/t Au	1,848.7	3.85			228.7		
Pioneer	2.0 g/t Au	480.6	3.62	9.7		56.0	150.5	
Porvenir	US$82.30/t	974.3	2.39	8.13	2.56	74.9	254.8	55.0
Luna Roja (open pit)	0.87 g/t Au	1,139.6	2.39			87.6		
Luna Roja (underground)	2.0 g/t Au	24.6	5.10			4.0		
Total		**4,467.8**	**3.14**			**451.1**	**405.3**	**55.0**
Measured and Indicated Resources								
Panama	2.0 g/t Au	1,876.9	3.85			232.2		
Pioneer	2.0 g/t Au	492.7	3.60	9.8		57.0	155.0	
Porvenir	US$82.30/t	1,033.4	2.35	8.13	2.53	78.2	270.1	57.7
Luna Roja (open pit)	0.87 g/t Au	1,139.6	2.39			87.6		
Luna Roja (underground)	2.0 g/t Au	24.6	5.10			4.0		
Total		**4,567.2**	**3.13**			**458.9**	**425.1**	**57.7**
Inferred Resources								
Panama	2.0 g/t Au	2,222.2	4.60			328.7		
Pioneer	2.0 g/t Au	916.3	3.99	8.1		117.5	239.7	
Porvenir	US$82.30/t	1,693.9	2.42	12.05	3.64	132.1	656.3	135.9
Luna Roja (open pit)	0.87 g/t Au	313.8	2.30			23.2		
Luna Roja (underground)	2.0 g/t Au	185.8	2.37			14.1		
Leticia	US$73.30/t	586.3	4.19	7.1	1.15	78.9	133.8	14.8
San Antonio	US$73.30/t	1,139.6	3.26	9.0	0.59	119.3	330.8	14.9
Total		**7,057.9**	**3.59**			**813.9**	**1,360.6**	**165.6**

Notes:

1. CIM (2014) definitions were followed for Mineral Resources.
2. The effective date for the Mineral Resources is December 31, 2022 except for the Luna Roja Mineral Resources, which is June 17, 2022.

3. Mineral Resources are estimated at a cut-off grade of 2.0 g/t Au for long hole stoping resource, and an NSR cut-off value of US$82.30/t for Porvenir (sublevel stoping), and US$73.30/t for Leticia, and San Antonio. Open pit material at Luna Roja was estimated using a cut-off grade of 0.87 g/t Au.
4. Mineral Resources are estimated using a long term gold price of US$1,700/oz Au, a silver price of US$20/oz Ag, and a zinc price of US$1.36/lb Zn for Panama, Pioneer, Porvenir, and Luna Roja. Mineral Resources are estimated using a long term gold price of US$1,700/oz Au, a silver price of US$20/oz Ag, and a zinc price of US$1.22/lb Zn for Leticia and San Antonio.
5. A minimum mining width of 0.9 m was used at Panama, at Cruzada and Elefante, underground reporting shapes were used to demonstrate Reasonable Prospects for Eventual Economic Extraction. For Pioneer, a minimum mining width of 1.0 m was used for all veins except Lone Star, Pioneer, Pioneer Northeast Extension, Pioneer 3, and Pioneer 4 which used underground reporting shapes to demonstrate Reasonable Prospects for Eventual Economic Extraction. A minimum mining width of 0.8 m was used at Porvenir and 2.0 m at Luna Roja to create underground reporting shapes to demonstrate Reasonable Prospects for Eventual Economic Extraction. At Leticia and San Antonio, grade, continuity, and thickness were used to demonstrate Reasonable Prospects for Eventual Economic Extraction.
6. Bulk density is between 2.66 t/m^3 and 2.68 t/m^3 for Panama, between 2.65 t/m^3 and 2.92 t/m^3 for Porvenir, 2.68 t/m^3 for Pioneer, 2.96 t/m^3 for Luna Roja, 2.72 t/m^3 for Leticia, and 2.75 t/m^3 for San Antonio.
7. Mineral Resources are exclusive of Mineral Reserves.
8. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
9. Material within 30 m of the topographic surface has been excluded from the Pioneer and Porvenir Mineral Resources to allow for artisanal mining.
10. Numbers may not add due to rounding.

Table 14-2: Summary of Block Model Dates
Mineros S.A. – Hemco Property

Project	Vein Group	Vein	Model Date
Pioneer	Highland Mary	Footwall	2018
		Northeast	2018
		Southwest	2018
	Pioneer	Pioneer	2021
		Northeast Hanging Wall	2022
		Pioneer 2	2018
		Pioneer 3	2021
		Pioneer 4	2021
	Pioneer Northeast Extension	Northeast Extension	2022
	Lone Star	Lone Star	2022
Panama	Toboba Grande		2018
	Neptuno		2019
	Pluto SW		2022
	Neblina SW		2019
	Eloisa		2020
	Foundling		2020
	Elefante		2020

Project	Vein Group	Vein	Model Date
	La Toboba		2020
	Adan		2020
	Capitan FW		2020
	Nugget FW		2020
	Patricia		2020
	Tesoro FW		2020
	Independencia		2021
	Washington		2021
	Neblina		2021
	Cleopatra		2021
	Tigre Blanco		2021
	Eden-Tigre Negro		2022
	Balbino		2022
	Cruzada		2022
Porvenir	Porvenir		2021
Luna Roja	Luna Roja		2022
Leticia	Leticia		2019
San Antonio	San Antonio		2019

Table 14-3: Summary of Mineral Resource Estimation Techniques Mineros S.A. – Hemco Property

Resource	Stage	Completed By	Database Cut-Off	Estimate Type	Software	Estimation Technique
Panama below 850 ft Level	Operation	SLR	31-Jul-18[1]	Block Model	Surpac	Inverse Distance
Panama below 850 ft Level	Operation	GeoEstima	31-May-19[2], 30-Sep-19[3]	Block Model	Leapfrog Edge	Inverse Distance
Panama below 850 ft Level	Operation	Mineros	31-Dec-21[4], 16-Jul-20[5], 18-Jul-20[6], 30-Oct-20[7], 31-Dec-20[8] 25-Jan-21[9], 20-Apr-21[10] 9-Jul-21[11], 30-Nov-21[12] 1-Jun-22[13], 20-Aug-22[14]	Block Model	Surpac	Inverse Distance
Pioneer	Operation	SLR	31-Dec-17[15]	Block Model	Datamine	Inverse Distance

Resource	Stage	Completed By	Database Cut-Off	Estimate Type	Software	Estimation Technique
Pioneer	Operation	SLR	31-Mar-21[16]	Block Model	Leapfrog Edge	Inverse Distance
Pioneer	Operation	Mineros	30-Sep-21[17], 30-Nov-21[18] 5-Apr-22[19], 20-Aug-22[20]	Block Model	Surpac	Inverse Distance
Porvenir	Study	SLR	30-Apr-21	Block Model	Vulcan	Inverse Distance
Luna Roja	Exploration	SLR	17-Jun-22	Block Model	Leapfrog Edge	Inverse Distance
Leticia	Exploration	Mineros	30-Jun-19	Block Model	Vulcan	Inverse Distance
San Antonio	Exploration	Mineros	30-Jun-19	Block Model	Vulcan	Inverse Distance

Notes:

1. Toboba Grande
2. Neptuno
3. Neblina SW
4. Pluto SW
5. Eloisa, Foundling
6. Elefante
7. La Toboba
8. Adan, Capitan FW, Nugget FW, Patricia, Tesoro FW
9. Independencia
10. Washington
11. Neblina
12. Cleopatra, Tigre Blanco
13. Eden-Tigre Negro
14. Balbino, Cruzada
15. Highland Mary Footwall, Highland Mary Northeast, Highland Mary Southwest, Pioneer 2, Pioneer Northeast Hanging Wall
16. Pioneer 3
17. Pioneer 4
18. Pioneer
19. Lone Star
20. Pioneer Northeast Extension

Definitions for resource categories are consistent with those defined by CIM (2014) and adopted by NI 43-101. In the CIM classification, a Mineral Resource is defined as "a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade or quality and quantity that there are reasonable prospects for eventual economic extraction". Mineral Resources are classified into Measured, Indicated, and Inferred categories. A Mineral Reserve is defined as the "economically mineable part of a Measured and/or Indicated Mineral Resource" demonstrated by studies at Pre-Feasibility or Feasibility level as appropriate. Mineral Reserves are classified into Proven and Probable categories.

The QP is not aware of any environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other relevant factors that could materially affect the Mineral Resource estimate.

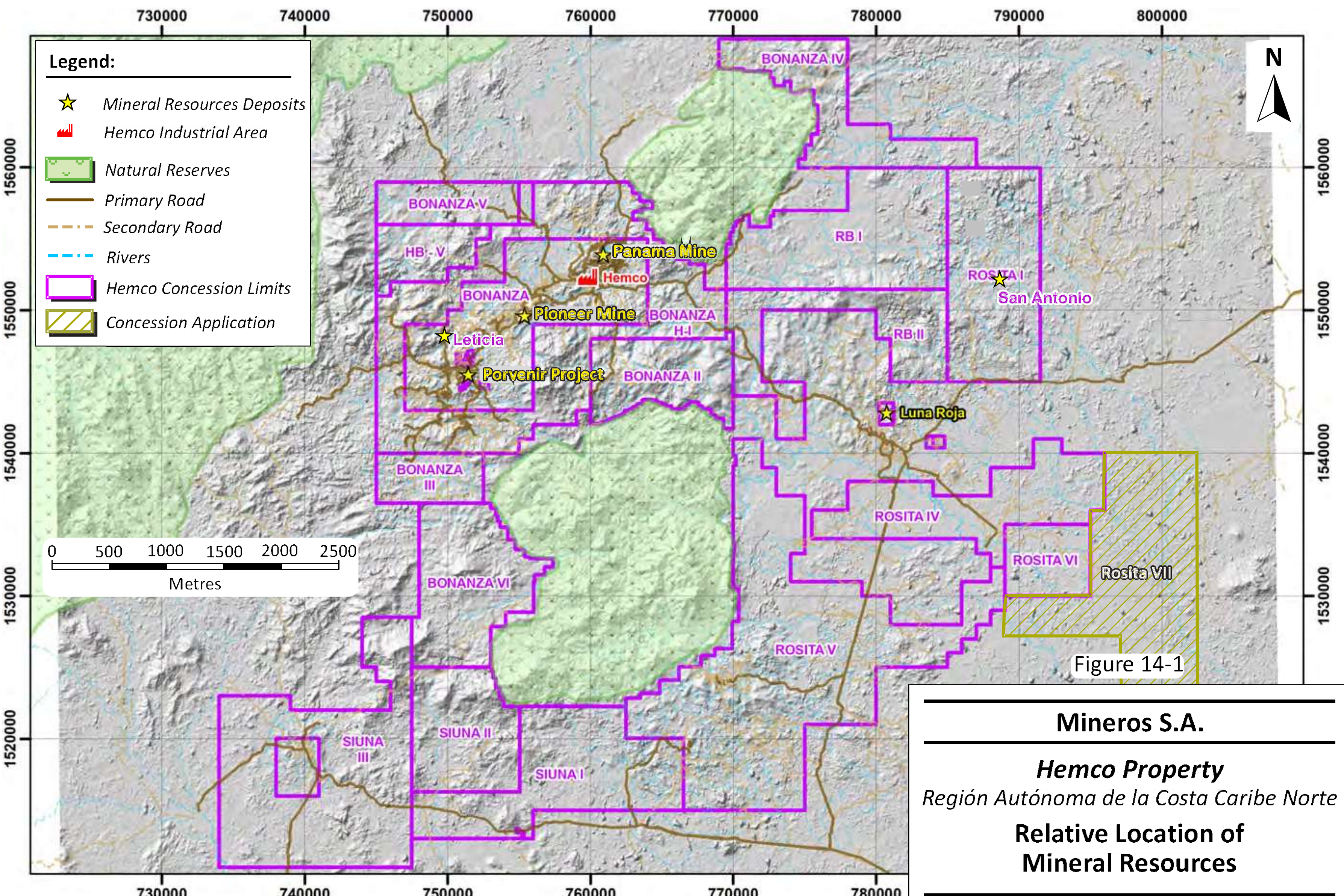


Figure 14-1

Mineros S.A.

Hemco Property

Región Autónoma de la Costa Caribe Norte

Relative Location of Mineral Resources

March 2023

Source: Mineros, 2023.

14.2 Comparison with Previous Mineral Resource Estimates

The previous estimates for Hemco Property were effective as of September 15, 2021, with the exception for the Luna Roja, for which the Mineral Resource was reported as of June 17, 2022 in a press release dated July 7, 2022. Differences between the previous and current estimates are discussed in more detail in each mineral deposit section, with the main changes summarized as the following:

- Porvenir: first time conversion of part of the Mineral Resource to Mineral Reserve.
- Pioneer: Mineral Resource added to the Indicated and Inferred categories for the Lone Star, Pioneer, Pioneer Northeast Extension, and Pioneer 4 veins.
- Artisanal Areas: removed from the current Mineral Resource.

Table 14-4 presents the comparison of the current versus previous Mineral Resource estimates, and Table 14-5 shows the difference in percentage between the two estimates.

Table 14-4: Summary of the December 31, 2022 versus September 15, 2021 Mineral Resource (exclusive of Mineral Reserves)[1]
Mineros S.A. – Hemco Property

Category	Deposit	Tonnes	Grade			Contained Metal		
		(kt)	(g/t Au)	(g/t Ag)	(%Zn)	(koz Au)	(koz Ag)	(Mlb Zn)
			2022					
Measured	Panama	28.2	3.85	-	-	3.5	-	-
	Pioneer	12.1	2.59	11.34	-	1.0	4.4	-
	Porvenir	59.1	1.75	8.08	2.11	3	15	3
	Luna Roja	-	-	-	-	-	-	-
	Artisanal Areas	-	-	-	-	-	-	-
	Leticia and St Antonio	-	-	-	-	-	-	-
Indicated	Panama	1,848.7	3.85	-	-	228.7	-	-
	Pioneer	480.6	3.62	9.74	-	56.0	150.5	-
	Porvenir	974.3	2.39	8.13	2.56	75	255	55
	Luna Roja	1,164.0	2.46	-	-	92.0	-	-
	Artisanal Areas	-	-	-	-	-	-	-
	Leticia and St Antonio	-	-	-	-	-	-	-
Measured + Indicated	**Panama**	**1,876.9**	**3.85**	**-**	**-**	**232.2**	**-**	**-**
	Pioneer	**492.7**	**3.60**	**9.8**	**-**	**57.0**	**155.0**	**-**
	Porvenir	**1,033.4**	**2.35**	**8.13**	**2.53**	**78.2**	**270.1**	**57.7**
	Luna Roja	**1,164.0**	**2.46**	**-**	**-**	**92.0**	**-**	**-**
	Artisanal Areas	**-**	**-**	**-**	**-**	**-**	**-**	**-**
	Leticia and St Antonio	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Inferred	Panama	2,222.2	4.60	-	-	328.7	-	-
	Pioneer	916.3	3.99	8.1	-	117.5	239.7	-
	Porvenir	1,693.9	2.42	12.1	3.64	132.1	656.3	135.9

Category	Deposit	Tonnes	Grade			Contained Metal		
		(kt)	(g/t Au)	(g/t Ag)	(%Zn)	(koz Au)	(koz Ag)	(Mlb Zn)
	Luna Roja	504.0	2.31	-	-	37.0	-	-
	Artisanal Areas	-	-	-	-	-	-	-
	Leticia and St Antonio	1,725.9	3.57	8.37	0.78	198.2	464.6	29.7
			2021					
Measured	Panama	-	-	-	-	-	-	-
	Pioneer	20.3	3.09	3.90	-	2.0	2.5	-
	Porvenir	550.4	2.29	12.85	2.39	41	228	29
	Luna Roja	-	-	-	-	-	-	-
	Artisanal Areas	-	-	-	-	-	-	-
	Leticia and St Antonio	-	-	-	-	-	-	-
Indicated	Panama	1,976.7	4.59	-	-	292.0	-	-
	Pioneer	387.0	3.66	9.70	-	45.5	120.7	-
	Porvenir	8,957.0	2.89	10.66	2.78	832	3,069.8	549
	Luna Roja*	1,164.0	2.46	-	-	92.0	-	-
	Artisanal Areas	-	-	-	-	-	-	-
	Leticia and St Antonio	-	-	-	-	-	-	-
Measured + Indicated	**Panama**	**1,976.7**	**4.59**	**-**	**-**	**292.0**	**-**	**-**
	Pioneer	**407.3**	**3.63**	**9.4**	**-**	**47.5**	**123.2**	**-**
	Porvenir	**9,507.4**	**2.86**	**10.79**	**2.76**	**872.1**	**3,297.3**	**578.3**
	Luna Roja*	**1,164.0**	**2.46**	**-**	**-**	**92.0**	**-**	**-**
	Artisanal Areas	-	-	-	-	-	-	-
	Leticia and St Antonio	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Inferred	Panama	2,117.9	4.42	-	-	301.3	-	-
	Pioneer	850.6	3.63	9.4	-	99.3	257.7	-
	Porvenir	2,445.5	2.39	12.2	3.25	188.2	955.2	175.3
	Luna Roja*	504.0	2.31	-	-	37.0	-	-
	Artisanal Areas	435.0	5.69	-	-	79.6	-	-
	Leticia and St Antonio	1,725.9	3.57	8.37	0.78	198.2	464.6	29.7

Notes:

1. The respective Mineral Resource footnotes are presented in the mineral deposit subsection in the 14, Mineral Resource Estimate section.
2. Press release on July 7th, 2022.

Table 14-5: Percentage Differences Between December 31, 2022 and September 15, 2021 Mineral Resource Estimates (exclusive of Mineral Reserves) Mineros S.A. – Hemco Property

Category	Deposit	Tonnes	Grade			Contained Metal		
		(kt)	(g/t Au)	(g/t Ag)	(%Zn)	(koz Au)	(koz Ag)	(Mlb Zn)
				Difference (%)				
Measured	Panama	-	-	-	-	-	-	-
	Pioneer	-41%	-16%	191%	-	-50%	76%	-
	Porvenir	-89%	-23%	-37%	-12%	-92%	-93%	-91%
	Luna Roja	-	-	-	-	-	-	-
	Artisanal Areas	-	-	-	-	-	-	-
	Leticia and St Antonio	-	-	-	-	-	-	-
Indicated	Panama	-6%	-16%	-	-	-22%	-	-
	Pioneer	24%	-1%	0%	-	23%	25%	-
	Porvenir	-89%	-17%	-24%	-8%	-91%	-92%	-90%
	Luna Roja[1]	0%	0%	-	-	0%	-	-
	Artisanal Areas	-	-	-	-	-	-	-
	Leticia and St Antonio	-	-	-	-	-	-	-
Measured + Indicated	**Panama**	**-5%**	**-16%**	**-**	**-**	**-20%**	**-**	**-**
	Pioneer	**21%**	**-1%**	**4%**	**-**	**20%**	**26%**	**-**
	Porvenir	**-89%**	**-18%**	**-25%**	**-8%**	**-91%**	**-92%**	**-90%**
	Luna Roja[1]	**0%**	**0%**	**-**	**-**	**0%**	**-**	**-**
	Artisanal Areas	-	-	-	-	-	-	-
	Leticia and St Antonio	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Inferred	Panama	5%	4%	-	-	9%	-	-
	Pioneer	8%	10%	-13%	-	18%	-7%	-
	Porvenir	-31%	1%	-1%	12%	-30%	-31%	-22%
	Luna Roja[1]	0%	0%	-	-	0%	-	-
	Artisanal Areas	-100%	-100%	-	-	-100%	-	-
	Leticia and St Antonio	0%	0%	0%	0%	0%	0%	0%

14.3 Cut-Off Grade

Metal prices used for Mineral Reserves are based on consensus, long term forecasts from banks, financial institutions, and other sources. For Mineral Resources, metal prices used are slightly higher than those for Mineral Reserves.

Metal price assumptions for Mineral Resources are as follows:

- US$1,700/oz Au
- US$20/oz Ag
- US$1.36/lb Zn, with the exception of Leticia and San Antonio, which used US$1.22/lb.

14.3.1 Panama and Pioneer Deposits

The underground cut-off grades and assumptions for the Panama and Pioneer deposits are given in Table 14-6. For Mineral Resource reporting, the long hole stoping cut-off grade of 2.0 g/t Au is used.

Table 14-6: Mineral Resource Cut-Off Grade Assumptions
Mineros S.A. – Hemco Property

Parameter	Units	Panama Long Hole Stoping	Pioneer Long Hole Stoping
Cut-off Grade	g/t Au	2.00[1]	2.00[1]
Mining Cost	US$/t	27.30	27.30
Incremental Mining Cost	US$/t	-	-
Processing Cost	US$/t	30.23	30.23
General and Administrative (G&A) Costs	US$/t	27.45	27.45
Selling Cost	US$/t	3.74	3.74
Total Cost	US$/t	88.72	88.72
Metallurgical Recovery	%	90	90

Note:

1. The cut-off grade is rounded up from 1.80 g/t Au to 2.0 g/t Au to retain a relatively constant Mineral Resource cut-off grade over time.

14.3.2 Porvenir Deposit

An NSR value was assigned to blocks for the purposes of validation of the geological interpretation and resource reporting. NSR is the estimated dollar value per tonne of mineralized material after consideration of smelter terms, including revenue from payable metals, treatment charges, refining charges, price participation, penalties, smelter losses, transportation, and sales charges.

Input parameters used to develop the NSR calculation have been derived from metallurgical test work for the Porvenir deposit, smelter terms from comparable projects, and information provided by Mineros. These assumptions are dependent on the processing scenario and will be sensitive to changes in inputs from further metallurgical test work. Key assumptions are listed below.

Metallurgical recoveries are based on preliminary metallurgical testing, and are summarized in Table 14-7 below:

Table 14-7: Recovery Curves Used for Porvenir
Mineros S.A. – Hemco Property

Metallurgical Recovery	Min	Max	Cu (%) Thresholds	Formula
REC_AU	0	92.3	≥0.7	108.553 - 6.110*Au (g/t) - 0.870*Ag (g/t) + 2.245*Zn (%) + 5.827*Ln(Pb (%)) - 13.223*Ln(S (%))
			≥0.5 to <0.7	108.553 + 0.860*Au (g/t) - 0.870*Ag (g/t) + 2.245*Zn (%) + 5.827*Ln(Pb (%)) - 13.223*Ln(S (%))
			<0.5	108.553 + 1.942*Au (g/t) - 0.870*Ag (g/t) + 2.245*Zn (%) + 5.827*Ln(Pb (%)) - 13.223*Ln(S (%))
REC_AG	0	81.9	≥0.85	65.355 + 2.885*Au (g/t) - 1.066*Ag (g/t) - 11.986*Zn (%) + 2.573*Ln(Pb (%))
			<0.85	65.355 + 2.885*Au (g/t) - 1.066*Ag (g/t) - 1.756*Zn (%) + 2.573*Ln(Pb (%))
REC_ZN	0	92.2	≥0	96.382 + 0.472*Au (g/t) - 2.746*Ln(Ag (g/t)) + 2.377*Ln(Cu (%)) + 5.362*Ln(Zn (%))

Standard smelting and refining charges were applied to the various concentrates. It was assumed that the concentrates would be marketed internationally.

The NSR factors are shown in Table 14-8 which can be used to calculate approximately the NSR for any set of metal grades.

Table 14-8: Resource NSR Factors
Mineros S.A. – Hemco Property

Metal	Unit	Factor
Au	US$ per g Au	53.12
Ag	US$ per g Ag	0.41
Zn	US$ per % Zn	1,755.54

The NSR value is assigned to blocks as follows:

$$NSR_{Total} = Grade\ Au\left(\frac{g}{t}\right) * \text{Rec Au (\%)} * 53.12\left(\frac{US\$}{g}\right) + Grade\ Ag\left(\frac{g}{t}\right) * \text{Rec Ag (\%)}0.41\left(\frac{US\$}{g}\right) + Grade\ Zn\ (\%) * \text{Rec Zn (\%)}1{,}755.54\left(\frac{US\$}{t}\right)$$

Three mining methods were envisaged to be used at Porvenir: sub-level stoping (SLS), bench and fill, and bench and fill with pillars. For the purposes of developing an NSR cut-off value, a total unit operating cost, including mining, processing, power, and G&A expenses, was estimated for each mining method. A total operating cost weighted average of US$82.30 per tonne of mineralized material milled was calculated based on an estimated proportion of tonnes mined for each mining method (Table 14-9).

Table 14-9: Porvenir Operating Cost Assumptions for Cut-Off Value Calculation
Mineros S.A. – Hemco Property

Operating Cost	Sublevel Stoping (US$/t)	Bench & Fill with Pillars (US$/t)	Bench & Fill with Backfill (US$/t)
Mining	37.46	35.70	36.56
Processing	28.13	28.13	28.13
Power	14.88	14.88	14.88
Tailings	2.89	2.89	2.89
Total	**83.37**	**81.34**	**82.20**
Estimated Proportion of Total Tonnes	40%	31%	29%

Notes:

1. All costs include G&A.
2. Numbers may not add due to rounding.

For the purposes of demonstrating Reasonable Prospects for Eventual Economic Extraction (RPEEE), SLR created underground reporting shapes using the Deswik Stope Optimizer (DSO) using the weighted average cut-off grade of US$82.30/t.

14.3.3 Luna Roja

The open pit and underground cut-off grades and assumptions for the Luna Roja are given in Table 14-10.

Table 14-10: Mineral Resource Cut-Off Grade Assumptions at Luna Roja
Mineros S.A. – Hemco Property

Parameter	Units	Underground	Open Pit
Cut-off Grade	g/t Au	2.00[1]	0.87[2]
Mining Cost	US$/t	50.00	3.50
Processing Cost	US$/t	34.00	34.00
Rehandling Cost	US$/t	3.50	3.50
G&A Cost	US$/t	2.00	2.00
Total Operating Cost	US$/t	89.50	39.50
Metallurgical Recovery	%	83.3	83.3

Note:

1. The cut-off grade is rounded up from 1.9751 g/t Au to 2.0 g/t Au.
2. Marginal cut-off grade. The cut-off grade is rounded down from 0.8717 g/t Au to 0.87 g/t Au.

The open pit was generated using Whittle software and a slope angle of 45°. For the purposes of demonstrating RPEEE for material below the open pit, SLR created underground reporting shapes using constraining wireframes built around continuous blocks above a 2.0 g/t Au and with a minimum thickness of 2.0 m. All blocks within the constraining wireframes, regardless of grade, are reported as Mineral Resources.

14.3.4 Leticia and San Antonio Deposits

The Mineral Resource estimates at Leticia and San Antonio are based on a cut-off value of US$73.30/t.

14.4 Panama Deposit

14.4.1 Summary

The Panama deposit consists of a large group of veins (at least 50 have been named) which have been mined since the early 1900s. Past mining operations include multiple small open pits and trenches, extensive underground mining, and ongoing artisanal surface mines (Figure 14-2).

GeoEstima, Mineros, and SLR used Leapfrog Geo to model 21 vein groups (22 wireframes) at Panama that were deemed to have adequate data and sufficient tonnage to support the declaration of a Mineral Resource estimate (Figure 14-3). These areas were typically located below the 850 ft Level except for the Elefante, Neblina, and Toboba veins, parts of which outcrop at the base of historical surface workings. Table 14-11 summarizes the Panama vein domain update status for the current Technical Report including the database cut-off dates.

Since the previous Technical Report (SLR, 2021), nine Panama vein models are new or have been updated by Mineros: Pluto SW, Independencia, Washington, Neblina, Cleopatra, Tigre Blanco, Eden-Tigre Negro, Balbino, and Cruzada. Initial Mineral Resources have been disclosed at Independencia, Washington, Cleopatra, Tigre Blanco, Eden-Tigre Negro, Balbino, and Cruzada in the current Technical Report. Geological modelling and grade interpolation was completed by Mineros. Sections 14.4.6 to 14.4.10 describe the methodology for new and updated veins.

Table 14-11: Panama Vein Group Models and Updates
Mineros S.A. – Hemco Property

Vein Group	Estimate Completed By	Database Cut-Off	Mineralization Model Software	Block Model Software
Toboba Grande	SLR	31-Jul-18	Surpac	Surpac
Neptuno	GeoEstima	31-May-19	Leapfrog Edge	Leapfrog Edge
Pluto SW	Mineros	31-Dec-21	Leapfrog Edge	Surpac
Neblina SW	GeoEstima	30-Sep-19	Leapfrog Edge	Leapfrog Edge
Eloisa	Mineros	16-Jul-20	Leapfrog Edge	Surpac
Foundling	Mineros	16-Jul-20	Leapfrog Edge	Surpac
Elefante	Mineros	18-Jul-20	Leapfrog Edge	Surpac
La Toboba	Mineros	30-Oct-20	Leapfrog Edge	Surpac
Adan	Mineros	31-Dec-20	Leapfrog Edge	Surpac
Capitan FW	Mineros	31-Dec-20	Leapfrog Edge	Surpac
Nugget FW	Mineros	31-Dec-20	Leapfrog Edge	Surpac

Vein Group	Estimate Completed By	Database Cut-Off	Mineralization Model Software	Block Model Software
Patricia	Mineros	31-Dec-20	Leapfrog Edge	Surpac
Tesoro FW	Mineros	31-Dec-20	Leapfrog Edge	Surpac
Independencia	Mineros	25-Jan-21	Leapfrog Edge	Surpac
Washington	Mineros	20-Apr-21	Leapfrog Edge	Surpac
Neblina	Mineros	9-Jul-21	Leapfrog Edge	Surpac
Cleopatra	Mineros	30-Nov-21	Leapfrog Edge	Surpac
Tigre Blanco	Mineros	30-Nov-21	Leapfrog Edge	Surpac
Eden-Tigre Negro	Mineros	1-Jun-22	Leapfrog Edge	Surpac
Balbino	Mineros	20-Aug-22	Leapfrog Edge	Surpac
Cruzada	Mineros	20-Aug-22	Leapfrog Edge	Surpac

Modelling by SLR at Toboba Grande was completed in Geovia Surpac using a two pass ID^2 approach and capped assays prior to compositing them to the full width of the vein.

Modelling by GeoEstima at Neptuno and Neblina SW was completed in Leapfrog Edge using a single pass ID^3 approach. GeoEstima composited to the full width of the vein and estimated resources using a grade-thickness ID^3 modelling approach, interpolating capped gold grade-thickness values and vein thickness separately and determining the final gold grade by dividing grade-thickness by grade for each block.

Modelling by Mineros was completed in Geovia Surpac using a three pass ID^3 approach and nested high and low grade gold domains with a hard boundary. Nested grade domains were not used at Cleopatra. Mineros composited assay samples to the full width of the vein using drill holes and/or channels, the latter included if at least 90% of the vein width was sampled. Composites that did not sample at least 90% of the vein width were discarded. Capping was completed on composited samples.

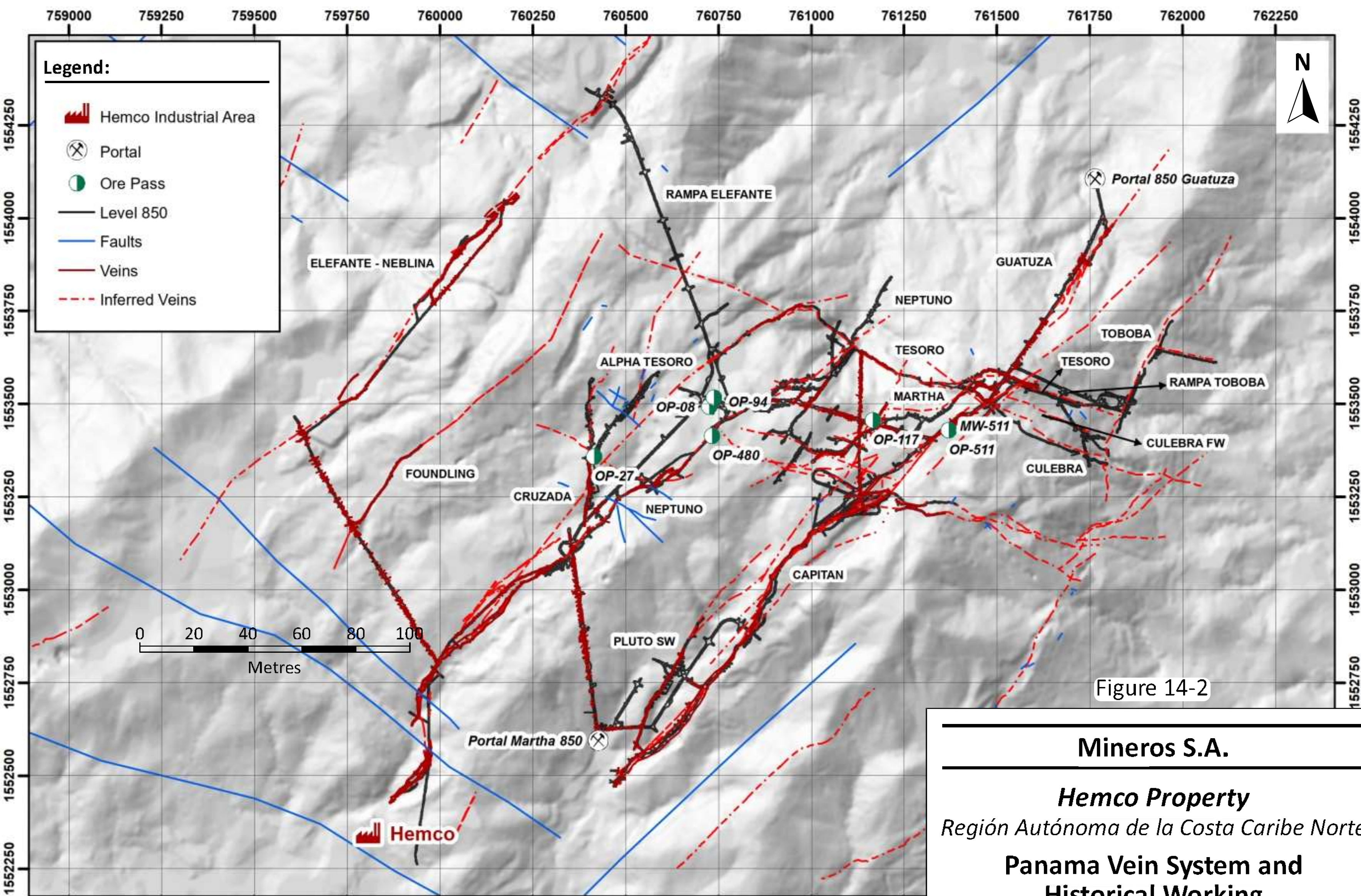


Figure 14-2

Mineros S.A.

Hemco Property

Región Autónoma de la Costa Caribe Norte

Panama Vein System and Historical Working

March 2023

Source: Mineros, 2023.

Blocks were classified as Measured at Pluto SW in areas of dense development that were extensively sampled. Resources were classified as Indicated or Inferred based on the drill hole spacing. Blocks were excluded from the Mineral Resource estimate where they were:

- located above the provided topography,
- located within mined out areas, or
- accounted for within the polygonal vein models that have not been included in Mineral Resource estimates.

The December 31, 2022 Panama Mineral Resource estimate is based on a 2.0 g/t Au cut-off grade. The Measured Mineral Resource estimate totals approximately 28.2 kt averaging 3.85 g/t Au containing 3.5 koz. The Indicated Mineral Resource estimate totals approximately 1,848.7 kt averaging 3.85 g/t Au containing 228.7 koz Au. The Inferred Mineral Resource estimate totals approximately 2,222.2 kt averaging 4.60 g/t Au containing 328.7 koz Au. The Mineral Resource estimate for Panama is summarized in Table 14-12.

Table 14-12: Panama Mineral Resource Estimate by Vein Group – Effective December 31, 2022
Mineros S.A. – Hemco Property

Vein Group	Tonnes (kt)	Grade (g/t Au)	Contained Metal (koz Au)
	Measured Mineral Resources		
Pluto SW	28.2	3.85	3.5
Total	**28.2**	**3.85**	**3.5**
	Indicated Mineral Resources		
Toboba Grande	16.9	3.94	2.1
Neptuno	509.4	3.11	50.9
Pluto SW	112.7	4.09	14.8
Neblina SW	95.7	3.46	10.7
Eloisa	11.8	4.47	1.7
Foundling	66.2	5.50	11.7
Elefante	63.8	2.58	5.3
La Toboba	68.5	5.59	12.3
Adan	93.4	4.05	12.2
Capitan FW	246.4	5.29	41.9
Nugget FW	44.0	7.18	10.2
Patricia	58.5	4.66	8.8
Tesoro FW	71.2	3.87	8.9
Independencia	-	-	-
Washington	-	-	-

Vein Group	Tonnes (kt)	Grade (g/t Au)	Contained Metal (koz Au)
Neblina	348.2	3.04	34.0
Cleopatra	-	-	-
Tigre Blanco	-	-	-
Eden-Tigre Negro	-	-	-
Balbino	-	-	-
Cruzada	42.2	2.45	3.3
Total	**1,848.7**	**3.85**	**228.7**
Inferred Mineral Resources			
Toboba Grande	191.7	5.65	34.8
Neptuno	275.0	3.36	29.7
Pluto SW	127.7	4.35	17.8
Neblina SW	134.7	3.80	16.5
Eloisa	3.0	4.06	0.4
Foundling	63.4	5.02	10.2
Elefante	-	-	-
La Toboba	31.4	4.54	4.6
Adan	61.7	4.62	9.2
Capitan FW	230.6	4.91	36.4
Nugget FW	10.7	9.81	3.4
Patricia	29.8	5.02	4.8
Tesoro FW	16.8	3.30	1.8
Independencia	33.8	6.88	7.5
Washington	79.4	3.15	8.0
Neblina	230.8	3.22	23.9
Cleopatra	260.6	6.61	55.4
Tigre Blanco	167.4	4.20	22.6
Eden-Tigre Negro	51.1	6.07	10.0
Balbino	61.3	6.28	12.4
Cruzada	161.4	3.74	19.4
Total	**2,222.2**	**4.60**	**328.7**

Notes:

1. CIM (2014) definitions were followed for Mineral Resources.
2. Mineral Resources are estimated at a cut-off grade of 2.0 g/t Au.
3. Mineral Resources are estimated using a long term gold price of US$1,700/oz Au.

4. A minimum mining width of 0.9 m was used for all veins except Cruzada and Elefante which used underground reporting shapes to demonstrate Reasonable Prospects for Eventual Economic Extraction.
5. Bulk density is 2.66 t/m^3 and 2.68 t/m^3.
6. Mineral Resources are exclusive of Mineral Reserves.
7. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
8. Numbers may not add due to rounding.

14.4.2 Comparison to Previous Mineral Resource Estimates

For the Panama Mineral Resources, a comparison of the June 30, 2021 to the current Mineral Resources is summarized in Table 14-13. Overall, the Mineral Resource has increased due the following changes:

- The declaration of Mineral Resources at seven new veins: Balbino, Cleopatra, Cruzada, Eden-Tigre Negro, Independencia, Tigre Blanco, and Washington. Mineral Resources were largely added to the Inferred category.
- First time inclusion of Indicated Mineral Resources at Neptuno that were omitted in past Mineral Resources estimates.

Other material changes to the Panama Mineral Resource estimate include:

- The Panama Polygonal and Artisanal Areas have been excluded from the current Mineral Resources.
- Indicated Mineral Resources have been converted to Measured Mineral Resources at Pluto SW.
- The Neblina vein group interpretation was updated to include additional drilling which in turn caused an update in the classification to reflect the new information. Neblina FW and Neblina Main were also combined into a single model.
- Development at Pluto SW, Elefante, Cruzada, Captain FW, Neblina, Neptuno, Patricia, and Toboba Grande.

Table 14-13: Panama Mineral Resource Estimate: Comparison of 2022 vs. 2021
Mineros S.A. – Hemco Property

Category	Tonnes (kt)	Grade (g/t Au)	Contained Metal (koz Au)
December 31, 2022			
Measured	28.2	3.85	3.5
Indicated	1,848.7	3.85	228.7
M+I	1,876.9	3.85	232.2
Inferred	2,222.2	4.60	328.7
June 30, 2021			
Measured	-	-	-
Indicated	1,523.1	4.82	235.8
M+I	1,523.1	4.82	235.8
Inferred	1,577.9	4.36	221.0
% Difference			

Category	Tonnes (kt)	Grade (g/t Au)	Contained Metal (koz Au)
Measured	-	-	-
Indicated	21.4	-20.2	-3.0
M+I	23.2	-20.2	-1.5
Inferred	40.8	5.5	48.7

Notes:

1. CIM (2014) definitions were followed for Mineral Resources.
2. Mineral Resources are estimated at a cut-off grade of 2.0 g/t Au.
3. Mineral Resources are estimated using a long term gold price of US$1,700/oz Au.
4. In 2022, a minimum mining width of 0.9 m was used for all veins except Elefante and Cruzada which used underground reporting shapes to demonstrate Reasonable Prospects for Eventual Economic Extraction. In 2021, a minimum mining width was used for all veins and all blocks above the cut-off grade were reported.
5. Bulk density is between 2.66 t/m^3 and 2.68 t/m^3.
6. Mineral Resources are exclusive of Mineral Reserves.
7. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
8. Numbers may not add due to rounding.

14.4.3 Resource Database

Mineros compiled a complete database for the Panama deposit and provided collar, survey, assay, and lithology information as MS Excel files. Drill hole data is summarized in Table 14-14.

Table 14-14: Panama Deposit Mineral Resource Database
Mineros S.A. – Hemco Property

Sample Type	Number of Holes	Length (ft)
Diamond Drill	3,127	1,370,131
Channel	86,103	376,447

Section 12, Data Verification, describes the drill hole data verification steps completed by the QP. In summary, some discrepancies were identified by Mineros and, as a consequence, 170 drill holes and 206 channels were excluded from the Mineral Resource database. Of these, twelve drill holes were excluded from grade estimation at Neptuno and Pluto SW and 126 channel samples were not used in the grade estimation at Elefante because they did not spatially corelate with the current vein interpretation. The QP recommends that the location of the drill holes and channels be reviewed, and the interpretation of Neptuno, Pluto SW, and Elefante be updated to incorporate this data. The QP is of the opinion that the changes as a result of these excluded samples would not be material to the overall Panama Mineral Resource estimate and that the remaining drill hole data that were used are valid and suitable to estimate Mineral Resources for the Panama deposit.

Subsequent to the closure of the drilling databases for the vein groups, additional drilling and channel sampling has been completed by Mineros totalling 31,269 m in 118 drill holes and 16,080 m in 10,947 channels (Table 14-15). SLR reviewed the new assay results with respect to existing wireframe models and block model grade calculations. In the QP's opinion, the impact of the new drilling on the global

Mineral Resource estimates will not be material. The QP recommends that the new data be incorporated into the vein models for subsequent resource updates.

Table 14-15: Summary of New Drilling After Database Closure at Panama Mineros S.A. – Hemco Property

Vein Group	Drilling (m)	Drill Hole Count	Channel (m)	Channel Count
Toboba Grande	2,378	25	2,679	1,374
Neptuno	750	4	3,304	2,301
Capitan FW	8,167	21	2,353	1,608
Pluto SW	4,794	14	2,877	1,548
Adan	4,732	19	120	200
Nugget FW	840	2	107	149
Patricia	-	-	530	336
Cleopatra	2,117	10	-	-
Tigre Blanco	849	3	-	-
Neblina	2,552	12	1,789	1,050
Foundling	-	-	278	271
Eloisa	4,091	8	1,386	1,345
Tesoro FW	-	-	657	765
Total	**31,269**	**118**	**16,080**	**10,947**

14.4.4 Geological Interpretation

Sets of wireframes representing the more significant quartz veins in the Panama deposit area were interpreted using information such as drill hole logs, underground mapping, underground workings, and previous wireframes prepared by Mineros staff. Database issues as described above sometimes manifested as a misalignment between the diamond drill holes, the channel sampling, and the surveyed underground mine workings. In cases where the drill holes and channel samples were conflicted, the drill hole samples were used to generate the wireframes and the channel samples were treated separately. The channel samples that were not flagged by the wireframes were incorporated into the composite file later in the estimation process.

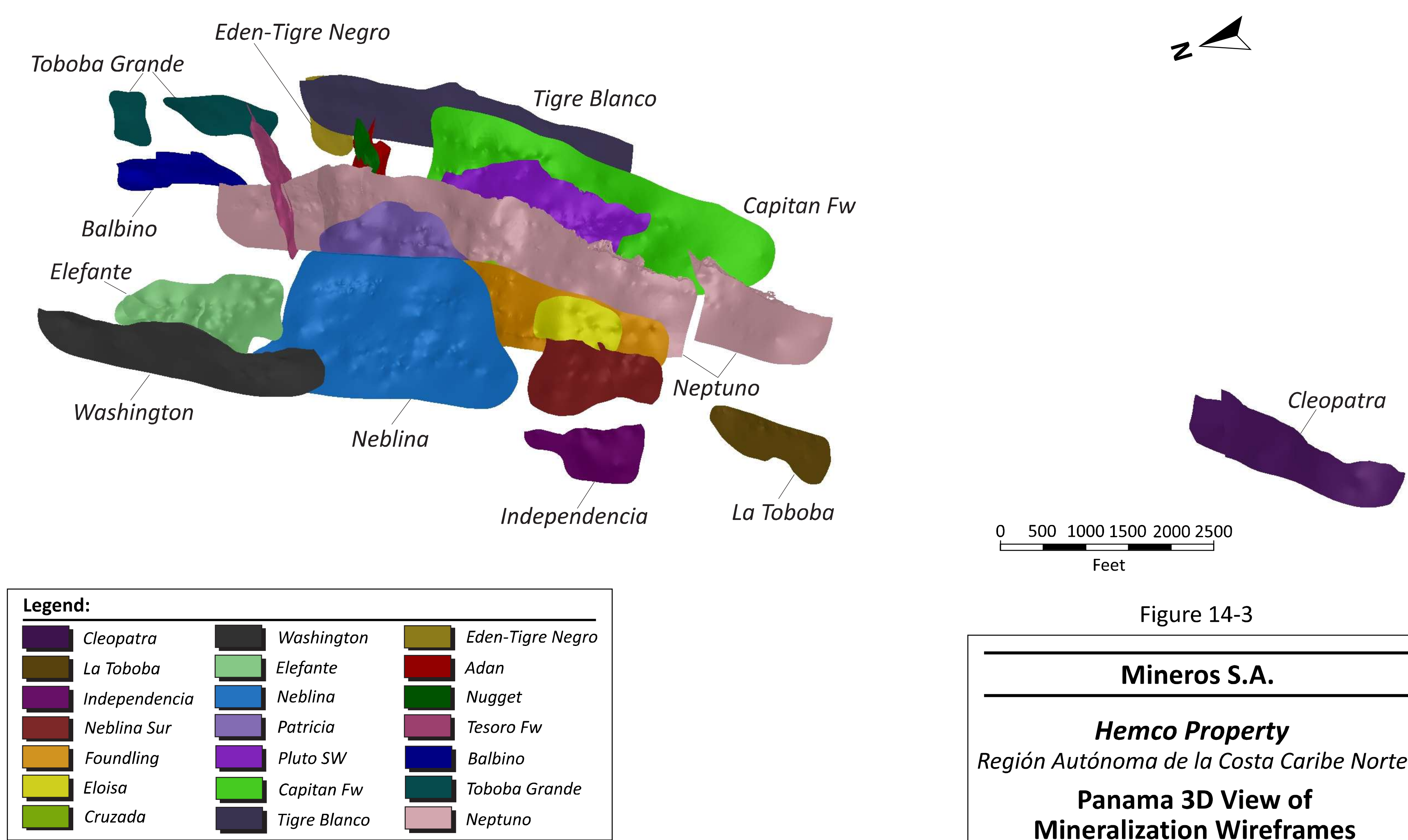
Panama area was divided into 21 vein groups (see Table 14-11) totalling 22 individual vein wireframes that were assessed to contain sufficient information and of adequate quality to estimate Mineral Resources. Wireframe models were driven primarily by structure and were clipped to areas of continuous grade above a nominal cut-off grade of 1.0 g/t Au.

In general, a minimum wireframe thickness of three feet (0.9 m) was applied to ensure that any blocks exceeding the Mineral Resource cut-off grade demonstrated RPEEE. SLR notes that a minimum vein thickness was not applied to veins modelled by Mineros and that locally vein thickness may be less than one foot (0.3 m). Vein wireframes are typically five feet (1.5 m) to 10 ft (3.0 m) wide but can reach widths of 20 ft (6.1 m) to 50 ft (15.2 m).

At La Toboba, Patricia, Elefante, Eloisa, Foundling, Tesoro FW, Adan, Nugget HW, Capitan FW, Neptuno, Neblina, Neblina FW, and Toboba Grande, Mineros and GeoEstima defined a high grade and low grade sub-domain within the vein model at a threshold of 0.9 g/t Au to 2.5 g/t Au using the Indicator RBF tool in Leapfrog Geo. Block model interpolation was carried out separately in the high grade and low grade gold sub-domains using a hard boundary.

The QP reviewed the wireframe interpretations completed by GeoEstima and Mineros and is of the opinion that they are acceptable. Although the use of domaining to control the influence of high grade samples is reasonable, the QP recommends that an additional step to smooth the edges of the domains and remove isolated small volumes of high grade domain within the low grade domain, and vice versa, be considered. The QP also recommends evaluating the application of a soft boundary between the nested domains.

A three dimensional (3D) view of the wireframes for Panama is shown in Figure 14-3.



March 2023

Source: SLR, 2023.

Figure 14-3

Mineros S.A.

Hemco Property

Región Autónoma de la Costa Caribe Norte

Panama 3D View of Mineralization Wireframes

14.4.5 Density

A density of 2.66 t/m^3 (0.075278 t/ft^3) or 2.68 t/m^3 (0.076127 t/ft^3) was assigned to all veins at the Panama deposit. This figure was provided by Mineros and is based on production records from these deposits. The assigned density value of either metric tonnes per cubic foot or metric tonnes per cubic metre was assigned to the interpolated blocks.

Mineros provided a small dataset of density measurements undertaken as part of a larger analysis of the geo-mechanical properties of the rock at Panama that suggest that the rock density is both higher and more variable than the provided density value.

The QP recommends that density sampling be incorporated into the standard operating procedures for drill core sampling to build a robust database of density measurements across the whole deposit.

14.4.6 Capping and Compositing

The raw assays within the wireframes for Toboba Grande were analyzed and capped at 20 g/t Au. Drill hole and channel sample data were analyzed as both separate and combined populations; additional weight was given to the drill hole sample populations as they better represent the unmined portions of the deposit. The capping level and basic statistics of raw assays against capped assays for Toboba Grande are shown in Table 14-16.

Table 14-16: Toboba Grande Deposit Assay Statistics
Mineros S.A. – Hemco Property

Vein Group	Count	Minimum (g/t Au)	Maximum (g/t Au)	Uncapped		Capped		
				Mean (g/t Au)	CV	Cap (g/t Au)	Mean (g/t Au)	CV
Toboba Grande	2,121	0.0	313.15	5.35	2.04	20	4.47	1.22

Capped assays at Toboba Grande were composited across the full width of the vein wireframe. The composite widths and statistics for Toboba Grande are summarized in Table 14-18.

The raw assays within the wireframes of the remainder of the Panama veins (20) were not capped prior to compositing by either GeoEstima or Mineros. The basic statistics of raw assays for these 20 veins are summarized in Table 14-17.

Table 14-17: Assay Statistics for Uncapped Panama Vein Groups
Mineros S.A. – Hemco Property

Vein Group	Count	Minimum (g/t Au)	Maximum (g/t Au)	Mean	CV
Neptuno	12,037	0.0	1,560.17	4.76	4.53
Pluto SW	3,147	0.00	68.60	3.95	1.54
Neblina SW	296	0.01	24.90	3.25	1.51
Adan	431	0.00	75.89	6.11	1.45
Capitan FW	2,898	0.00	1,005.89	5.59	5.65

Vein Group	Count	Minimum (g/t Au)	Maximum (g/t Au)	Mean	CV
Elefante	2,056	0.00	278.90	1.87	3.89
Eloisa	127	0.00	70.51	4.71	1.81
Foundling	1,059	0.00	149.30	5.47	2.11
La Toboba	433	0.01	68.42	5.09	1.52
Nugget HW	444	0.00	497.65	10.06	1.98
Patricia	2,887	0.00	2,475.51	5.06	13.04
Tesoro FW	3,669	0.00	358.31	5.17	2.04
Neblina	2,314	0.00	74.20	2.43	1.73
Independencia	62	0.02	26.40	3.26	1.58
Washington	218	0.00	17.30	1.21	2.19
Eden-Tigre Negro	141	0.00	88.20	12.50	1.05
Balbino	69	0.00	26.20	1.88	2.26
Cruzada	213	0.00	85.40	2.03	3.43
Cleopatra	44	0.02	51.80	3.86	2.34
Tigre Blanco	135	0.00	78.40	2.74	2.75

Assays for Neptuno and Neblina SW were composited across the full width of the vein wireframe and the calculated true width (CTW) of the intersection was determined. The composited gold grade times the CTW (*Au*CTW*) was analyzed by GeoEstima to determine capping levels. Composites were not capped; however, a high yield restriction was applied to limit the influence of a small number of high grade samples on interpolation. At Neptuno, Au*CTW was limited to 30 g/t Au per foot in the low grade domain, and 315 g/t Au per foot in the high grade domain. No high yield restriction was applied at Neblina SW. The QP reviewed the compositing and capping methodology used by GeoEstima at Neptuno and Neblina SW and considers capping *Au*CTW* grades prior to interpolation at the levels selected by GeoEstima to be acceptable.

For the remainder of the Panama vein groups, assays were composited across the full width of the vein wireframe. The raw composites within the wireframes were analyzed by Mineros using histograms, probability plots, linear regression, and disintegration plots where applicable to determine capping levels. The QP reviewed the compositing and capping methodology used by Mineros for these 17 vein groups and considers capping levels acceptable but recommends capping raw assays prior to compositing. The QP also recommends that in veins where the typical thickness is greater than 10 ft to 15 ft (such as Pluto SW, Elefante, and Capitan FW), compositing be completed on equal lengths across the vein intersection as opposed to using full vein width compositing.

The composite statistics for each vein group are summarized in Table 14-18.

Table 14-18: Composite Statistics and Capping for Panama Vein Groups
Mineros S.A. – Hemco Property

Vein Group	Domain	Width	Count	Minimum (g/t Au)	Maximum (g/t Au)	Uncapped Mean (g/t Au)	Uncapped CV	Capped Cap (g/t Au)	Capped Mean (g/t Au)	Capped CV
Toboba Grande	-	Full Width	671	0	20	-	-	20	4.72	0.92
Neptuno	High Grade	Full Width	969	0	414.67	5.67	2.94	-	-	-
	Low Grade		275	0	21.5	0.92	1.95	-	-	-
Pluto SW	High Grade	Full Width	785	0.27	30.15	5.14	0.84	25.00	5.13	0.83
	Low Grade		178	0.06	3.11	0.57	0.63	-		-
Neblina SW	-	Full Width	63	0	23.64	4.19	1.24	-	-	-
Adan	High Grade	Full Width	143	0.47	60.47	8.30	0.98	19.00	7.46	0.73
	Low Grade		61	0.05	14.62	1.14	1.60	3.00	0.95	0.78
Capitan FW	High Grade	Full Width	423	0.62	444.17	9.81	2.85	40.00	8.04	1.06
	Low Grade		400	0.04	29.87	1.10	1.57	6.00	1.02	0.82
Elefante	High Grade	Full Width	55	1.60	18.48	4.54	0.67	10.00	4.32	0.52
	Low Grade		197	0.00	18.85	1.09	1.70	4.00	0.95	0.95
Eloisa	High Grade	Full Width	34	2.05	27.12	6.28	0.93	8.00	4.64	0.42
	Low Grade		21	0.00	1.64	0.65	0.98	1.30	0.58	0.93
Foundling	High Grade	Full Width	329	0.31	104.51	9.27	1.37	30.00	8.08	0.87
	Low Grade		235	0.00	15.55	1.26	1.30	2.00	1.02	0.56
La Toboba	High Grade	Full Width	167	0.84	53.03	5.86	1.13	53.00	5.86	1.13
	Low Grade		27	0.05	2.46	0.65	0.61	2.50	0.65	0.61
Nugget HW	High Grade	Full Width	199	0.62	497.65	13.04	1.64	31.00	10.96	0.67
	Low Grade		64	0.02	7.86	1.78	0.92	3.50	1.54	0.67
Patricia	High Grade	Full Width	258	1.00	200.75	5.16	2.47	25.00	4.10	1.07
	Low Grade		151	0.03	0.98	0.48	0.56	1.00	0.48	0.56
Tesoro FW	All	Full Width	1,254	0.00	358.31	5.39	1.83	28.43	5.14	1.06
Neblina	High Grade	Full Width	221	1.00	12.26	2.98	0.58	7.00	2.98	0.58
	Low Grade		74	0.00	1.00	0.45	0.70	-	0.45	0.70
Independencia	High Grade	Full Width	17	0.03	0.92	0.46	0.74	12.50	6.25	0.63
	Low Grade		17	0.46	0.03	0.92	0.74	-	0.46	0.74
Washington	High Grade	Full Width	14	1.02	12.13	3.77	0.93	8.00	0.43	0.87
	Low Grade		30	0.00	1.80	0.43	0.87	-	3.38	0.80

Vein Group	Domain	Width	Count	Minimum (g/t Au)	Maximum (g/t Au)	Uncapped Mean (g/t Au)	Uncapped CV	Cap (g/t Au)	Capped Mean (g/t Au)	Capped CV
Eden-Tigre Negro	HW	Full Width	5	0.27	9.11	3.75	0.96	8.00	3.53	0.90
	High Grade		109	0.62	80.25	13.73	0.87	35.00	13.25	0.78
	Low Grade		8	0.01	0.62	0.35	0.74	-	0.35	0.74
Balbino	High Grade	Full Width	11	1.11	15.30	4.79	1.01	-	-	-
	Low Grade		16	0.00	0.72	0.27	0.91	-	-	-
Cruzada	High Grade	Full Width	15	1.01	15.10	3.44	1.08	7.00	2.90	0.74
	Low Grade		13	0.15	0.91	0.51	0.48	-	0.51	0.48
Cleopatra	All	Full Width	10	0.09	10.90	3.67	1.08	-	-	-
Tigre Blanco	High Grade	Full Width	33	0.31	34.01	4.70	1.40	20.00	4.22	1.10
	Low Grade		26	0.00	0.90	0.37	0.87	-	0.37	0.87

14.4.7 Block Model

Nineteen block models were constructed for the 21 Panama veins. The block rotation, dip, the minimum and maximum coordinates, and block size for each model are presented in Table 14-19. All block models are in feet except for Cleopatra, Tigre Blanco, and Independencia, which are in metres.

Table 14-19: Panama Block Model Setup
Mineros S.A. – Hemco Property

Vein Group	Rotation (°)	Dip (°)	Minimum (ft) / (m)[1]			Maximum (ft) / (m)[1]			Parent Block Size (ft) / (m)[1]			Sub Block Count		
			X	Y	Z	X	Y	Z	X	Y	Z	X	Y	Z
Adan and Nugget HW	21°		53580	51967.33	235	55678.93	53155.12	1123	6	6	6	2	2	2
Capitan FW	323°		49442.88	49123	-160	54023.94	53168.71	1820	6	6	6	2	2	2
Elefante	26°		50486	55352.45	560	52072.35	57523.54	1460	6	6	6	2	2	2
Eloisa and Foundling	310°		48149.08	51411.86	522.16	50772.86	54324.8	1506.16	6	6	6	2	2	2
La Toboba	322°		45308.51	50843	266	46882.77	52188.38	930	6	6	6	2	2	2
Patricia	305°		50753.57	52696.76	358.759	52461.56	54714.41	1692.183	6	6	6	2	2	2
Tesoro FW	20°		52854.08	54077.65	271.503	55940.74	53640.59	1596.503	6	6	6	2	2	2
Neblina	310°		49456	52836	370	50460.01	56288.33	1710	10	10	10	8	8	8
Toboba	0°		55550	53200	300	56702	55024	1356	6	6	6	2	2	2
Neptuno	310°		48957.84	48966.63	105	56697.84	50586.63	1665	15	10	15	3	10	3
Pluto SW	52°		51570.67	50302.23	338	52569.79	52783.01	1348	10	10	10	16	16	16

Vein Group	Rotation (°)	Dip (°)	Minimum (ft) / (m)[1]			Maximum (ft) / (m)[1]			Parent Block Size (ft) / (m)[1]			Sub Block Count		
			X	Y	Z	X	Y	Z	X	Y	Z	X	Y	Z
Neblina SW	308°	44°	48250	51635	1965	54950	53565	2475	10	10	2	1	1	1
Washington	317°		49740	55500	348	52066.94	58271.53	1356	8	8	8	4	4	4
Eden-Tigre Negro	333°		55337	52278	50	55876.46	52794.17	1355	5	5	5	6	6	6
Balbino	298°		54773	54036	415	54958.51	55726.82	1235	10	10	10	8	8	8
Cruzada	0°		50420	52575	-35	51390	54495	1015	10	10	10	5	5	5
Cleopatra[1]	323°		757686	1550795	-24	758253.2	1551579	276	5	5	5	5	8	5
Tigre Blanco[1]	315°		760870	1552370	6	761690.2	1553377	490	4	4	4	4	16	4
Independencia[1]	129°		759165	1553720	91	758953.9	1553307	325	2	2	2	8	8	8

Notes:

1. Dimensions for Cleopatra, Independencia, and Tigre Blanco are in metres (m).

14.4.8 Interpolation Strategy

Vein wireframes were used to flag blocks on a sub-cell centroid basis at Toboba Grande; flagged blocks then had gold grades interpolated using ID^2 in two search passes and a search that plunged to reflect the principal mineralized shoot directions. A spherical search was used because any grade variability across the strike of the vein would be beyond the resolution dictated by the smallest mining unit, and in general, no strong trends in gold grade distributions were observed. Both drill holes and channel samples were used to interpolate grades.

At Neptuno, and Neblina SW, GeoEstima interpolated CTWs and *Au*CTW* values into blocks using a single pass ID^3 approach and a large pseudo-isometric search. Nested high grade and low grade gold domains and a soft boundary were used at Neptuno (Table 14-20). A quadrant search was used, with a maximum number of samples per sector set at three. At Neblina SW, the vein was divided by a fault and each fault block was interpolated separately with a soft boundary of 200 m. Fault block 1 was interpolated using a minimum of four samples and a maximum number of eight samples. Fault block 2 was interpolated using a minimum of four samples and a maximum of five samples.

The final block grade was determined by dividing gold grade-thickness by the CTW value in each block for Neptuno and Neblina SW.

Mineros used vein wireframes to flag blocks and interpolated gold grades using ID^3 and two or three search passes. Dynamic anisotropy (DA) was used to direct the search ellipse along the dip and strike trend of the wireframe with a plunge following the principal mineralized shoot directions of the vein except at Cruzada and Balbino where the search ellipse orientation was aligned with the trend of the deposit and plunged to reflect the principal mineralized shoot directions. All samples were used to estimate block grades. Where nested high and low grade gold domains were used, grades were interpolated using a hard boundary in order to minimize the influence of high grade samples.

Table 14-20 summarizes the interpolation parameters for each vein/group.

Table 14-20: Panama Vein Interpolation Parameters
Mineros S.A. – Hemco Property

Vein Group	Method	Boundary Type	Domain	Search Pass	Sample Types	Sample Search and Selection			Search Ellipse Dimensions (ft) / (m)[1]			Search Ellipse Rotations (°)		
						Min Samples	Max Samples	Max per DH	Major Axis	Semi-Major Axis	Minor Axis	Bearing	Plunge	Dip
Neptuno	ID^3	80 ft soft boundary	High Grade	1	All	2	8	1	1000	1000	1000	0	0	0
	ID^3	20 ft soft boundary		1	All	2	8	1	1000	1000	1000	0	0	0
Pluto SW	ID^3	Hard	High Grade	1	All	4	16	1	150	100	50	Dynamic	55	Dynamic
				2		4	12	1	300	200	100			
				3		2	8	1	600	400	200			
	ID^3	Hard	Low Grade	1	All	4	16	1	150	100	50	Dynamic	55	Dynamic
						2	10	1	300	200	100			
						1	8	1	600	400	200			
Toboba Grande	ID^2	-		1	All	2	6	1	150	150	60	195	-20	0
Neblina SW	ID^3	200 ft soft boundary	Fault Block 1	1	All	4	8	1	800	1000	800	322.88	73.7	75.29
	ID^3	200 ft soft boundary	Fault Block 2	1	All	4	5	1	500	700	500	309.83	90	45.18
Adan	ID^3	Hard	High Grade	1	All	4	10	1	140	120	70	Dynamic	70	Dynamic
				2		4	8	1	280	240	140			
				3		1	8	1	530	450	250			
	ID^3	Hard	Low Grade	1	All	4	10	1	140	120	70	Dynamic	70	Dynamic

Vein Group	Method	Boundary Type	Domain	Search Pass	Sample Types	Sample Search and Selection			Search Ellipse Dimensions (ft) / (m)[1]			Search Ellipse Rotations (°)		
						Min Samples	Max Samples	Max per DH	Major Axis	Semi-Major Axis	Minor Axis	Bearing	Plunge	Dip
				2		4	8	1	280	240	140			
				3		1	8	1	1000	840	440			
Nugget HW	ID^3	Hard	High Grade	1	All	4	10	1	120	100	50	Dynamic	70	Dynamic
				2		4	8	1	240	200	100			
				3		1	8	1	480	400	200			
	ID^3	Hard	Low Grade	1	All	4	10	1	120	100	50	Dynamic	70	Dynamic
				2		4	8	1	240	200	100			
				3		1	8	1	480	400	200			
Capitan FW	ID^3	Hard	High Grade	1	All	4	8	1	200	200	133	Dynamic	83	Dynamic
				2		2	6	1	400	400	250			
				3		1	4	1	600	600	400			
	ID^3	Hard	Low Grade	1	All	2	4	1	200	200	133	Dynamic	83	Dynamic
				2		4	6	1	400	400	250			
				3		2	8	1	1000	1000	650			
Elefante	ID^3	Hard	High Grade	1	All	4	8	1	200	200	133	Dynamic	83	Dynamic
				2		2	6	1	400	400	250			
				3		1	4	1	600	600	400			
	ID^3	Hard	Low Grade	1	All	2	4	1	200	200	133	Dynamic	83	Dynamic
				2		4	6	1	400	400	250			
				3		2	8	1	600	600	400			

Vein Group	Method	Boundary Type	Domain	Search Pass	Sample Types	Sample Search and Selection			Search Ellipse Dimensions (ft) / (m)[1]			Search Ellipse Rotations (°)		
						Min Samples	Max Samples	Max per DH	Major Axis	Semi-Major Axis	Minor Axis	Bearing	Plunge	Dip
Foundling	ID^3	Hard	High Grade	1	All	4	8	1	175	150	65	Dynamic	57	Dynamic
				2		4	6	1	350	300	130			
				3		2	6	1	700	600	260			
		Hard	Low Grade	1	All	4	10	1	175	150	65	Dynamic	57	Dynamic
				2		4	8	1	350	300	130			
				3		2	6	1	700	600	260			
Eloisa	ID^3	Hard	High Grade	1	All	4	10	1	175	120	65	Dynamic	69	Dynamic
				2		4	8	1	350	240	130			
				3		2	6	1	700	480	260			
	ID^3	Hard	Low Grade	1	All	4	10	1	175	120	35	Dynamic	69	Dynamic
				2		4	6	1	350	240	130			
				3		2	6	1	700	480	260			
La Toboba	ID^3	Hard	High Grade	1	All	4	10	1	150	120	80	Dynamic	100	Dynamic
				2		4	8	1	300	240	160			
				3		2	6	1	450	360	240			
		Hard	Low Grade	1	All	4	10	1	150	120	80	Dynamic	100	Dynamic
				2		4	10	1	300	240	160			
				3		2	6	1	450	360	240			
Patricia	ID^3		High Grade & Low Grade	1	All	4	10	1	150	120	60	Dynamic	103	Dynamic

Vein Group	Method	Boundary Type	Domain	Search Pass	Sample Types	Sample Search and Selection			Search Ellipse Dimensions (ft) / (m)[1]			Search Ellipse Rotations (°)		
						Min Samples	Max Samples	Max per DH	Major Axis	Semi-Major Axis	Minor Axis	Bearing	Plunge	Dip
				2		4	8	1	300	240	120			
				3		2	8	1	600	480	240			
Tesoro FW	ID^3		High Grade & Low Grade	1	All	4	16	1	150	120	50	Dynamic	95	Dynamic
				2		4	10	1	300	240	100			
				3		2	10	1	600	480	200			
				3		2	10	1	600	480	200			
Balbino	ID^3	Hard	High Grade	1	DDH	2	8	1	150	100	50	115	75	55
				2		1	5	1	300	200	100			
		Hard	Low Grade	1	DDH	2	8	1	150	100	50	115	75	55
				2		1	5	1	600	400	200			
Washington	ID^3		High Grade & Low Grade	1	All	2	8	1	150	100	50	Dynamic	95	Dynamic
				2		1	6	1	300	200	100			
Eden-Tigre Negro	ID^3	Hard	High Grade	1	All	4	12	1	150	100	50	Dynamic	90	Dynamic
				2		2	8	1	300	200	100			
				3		1	6	1	600	400	200			
		Hard	Low Grade	1	All	4	12	1	150	120	50	Dynamic	90	Dynamic
				2		2	8	1	300	200	100			
				3		1	6	1	50	100	400			

Vein Group	Method	Boundary Type	Domain	Search Pass	Sample Types	Sample Search and Selection			Search Ellipse Dimensions (ft) / (m)[1]			Search Ellipse Rotations (°)		
						Min Samples	Max Samples	Max per DH	Major Axis	Semi-Major Axis	Minor Axis	Bearing	Plunge	Dip
Cruzada	ID^3	Hard	High Grade	1	DDH	2	10	1	300	200	100	275	90	50
				2		1	6	1	600	400	200			
		Hard	Low Grade	1	DDH	2	6	1	300	200	100	275	90	50
				2		1	4	1	600	400	200			
Cleopatra[1]	ID^3		All	1	All	2	8	1	150	100	50	Dynamic	90	Dynamic
				2		1	4	1	300	200	100			
Independencia[1]	ID^3	Hard	High Grade	1	All	4	12	1	50	30	10	Dynamic	90	Dynamic
				2		2	8	1	150	90	30			
		Hard	Low Grade	1	All	4	12	1	50	30	10	Dynamic	90	Dynamic
						1	8	1	150	90	30			
Tigre Blanco[1]	ID^3	Hard	High Grade	1	All	4	8	1	150	100	50	Dynamic	75	Dynamic
				2		2	6	1	300	200	100			
		Hard	Low Grade	1	All	2	8	1	150	10	50	Dynamic	75	Dynamic
				2		1	6	1	330	220	110			

Notes:

1. Dimensions for Cleopatra, Independencia, and Tigre Blanco are in metres (m).

14.4.9 Validation

SLR performed industry standard block model validation procedures including:

- A comparison of wireframe and block volumes
- A detailed visual review of block grades versus composites in plan section and cross section
- A visual and statistical review of block grades versus composites and assays in longitudinal section, comparison of the ID^2 or ID^3, NN, and composite means
- The production of swath plots along the strike and dip of the veins

Examples of longitudinal sections for Neblina SW, Neblina, and Cruzada are shown in Figure 14-4, Figure 14-5, Figure 14-6.

In the QP's opinion, the results of the validation procedures are reasonable.

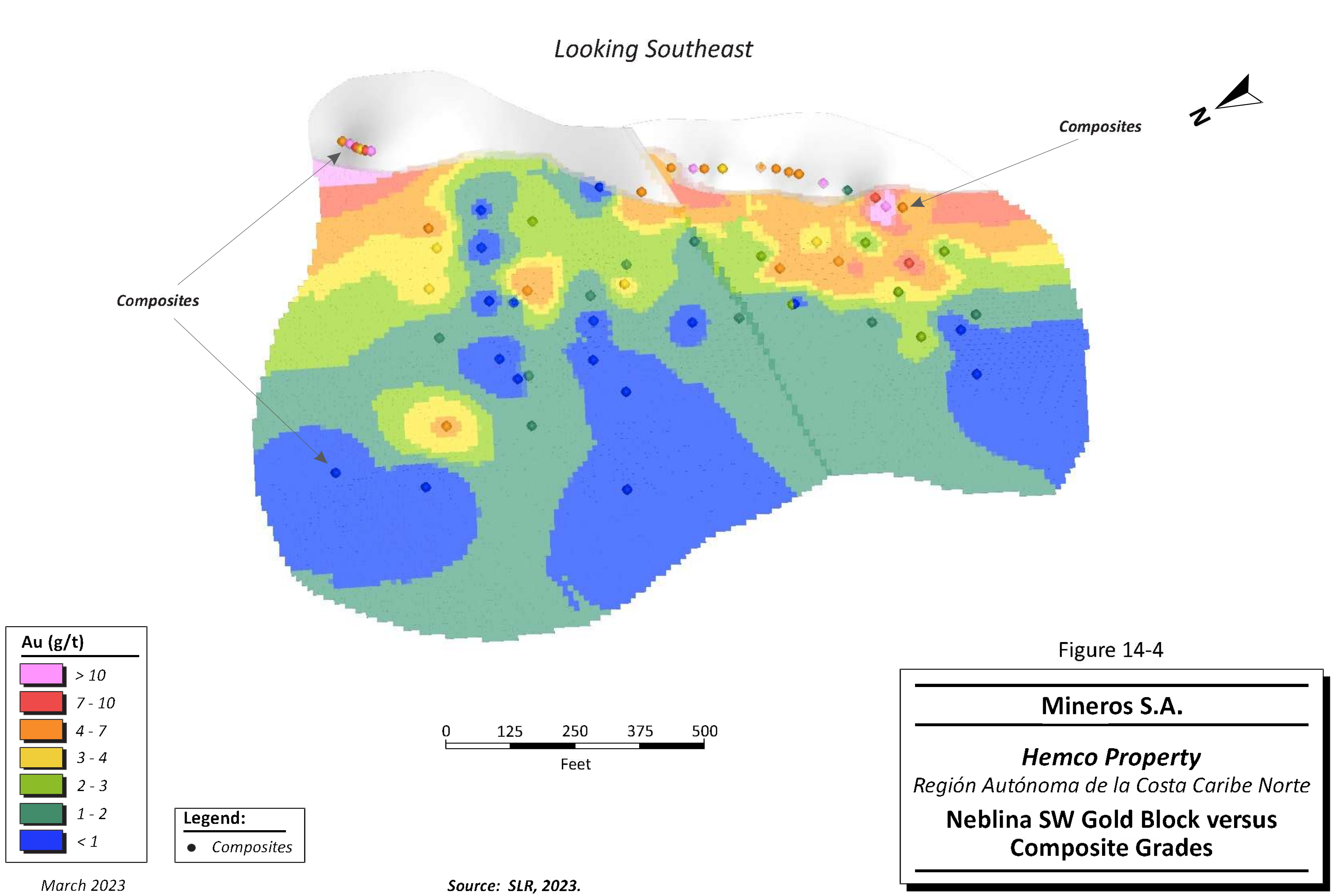


Figure 14-4

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Neblina SW Gold Block versus Composite Grades

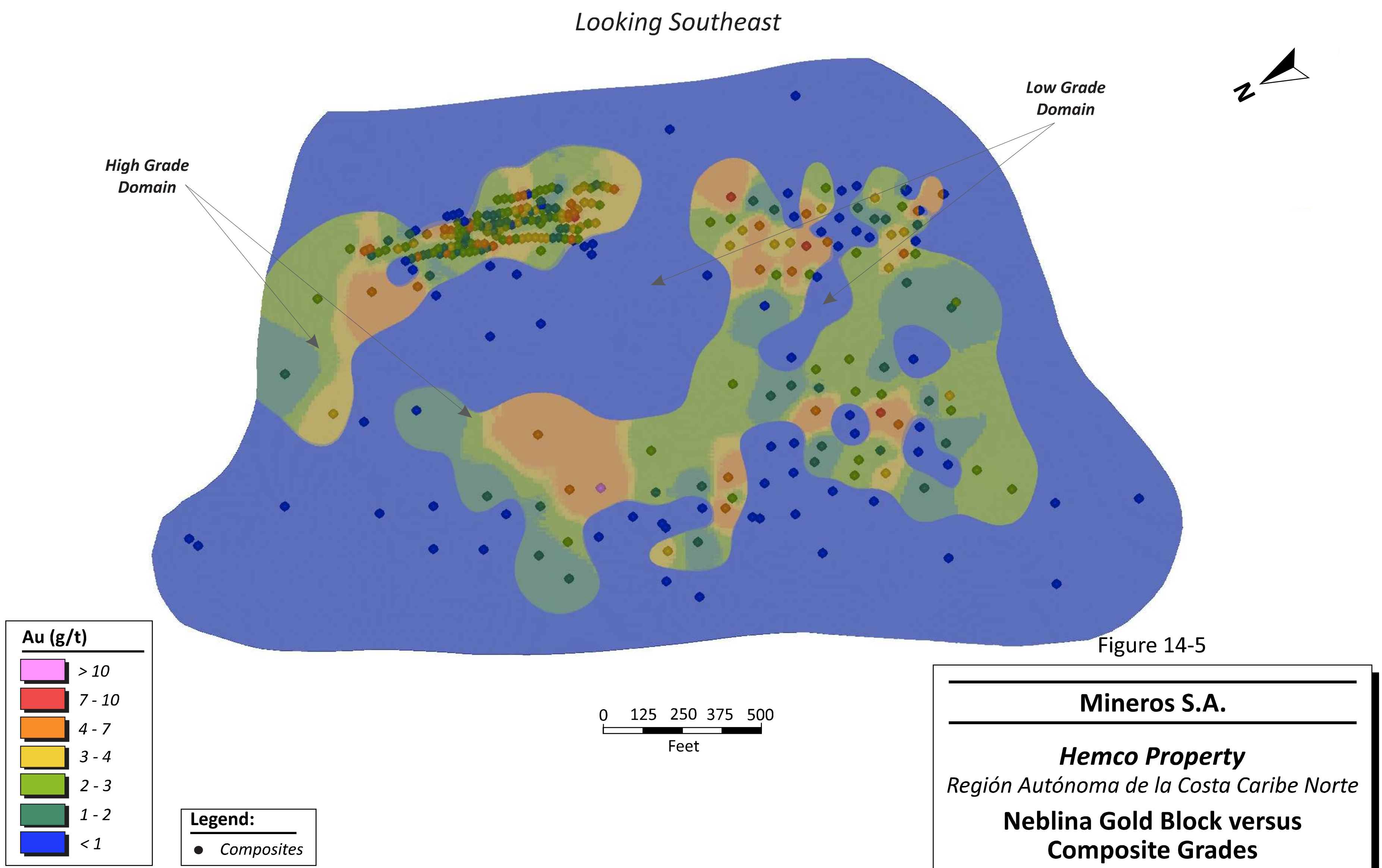

Figure 14-5

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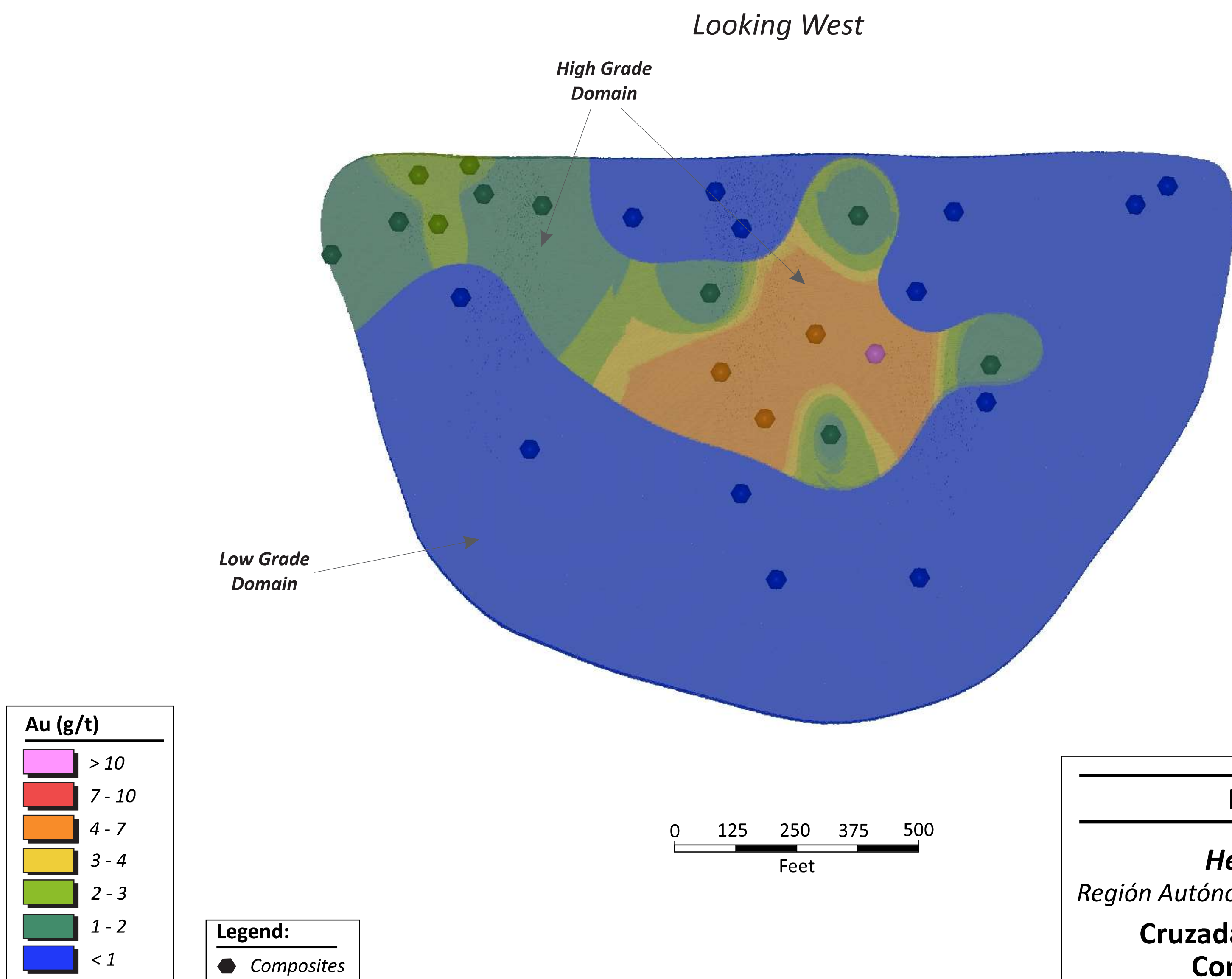
Neblina Gold Block versus Composite Grades

March 2023

Source: SLR, 2023.



March 2023

Source: SLR, 2023.

Figure 14-6

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Cruzada Gold Block versus Composite Grades

14.4.10 Classification

Resources were classified as Indicated or Inferred based on the drill hole spacing. Blocks were excluded from the Mineral Resource estimate where they were:

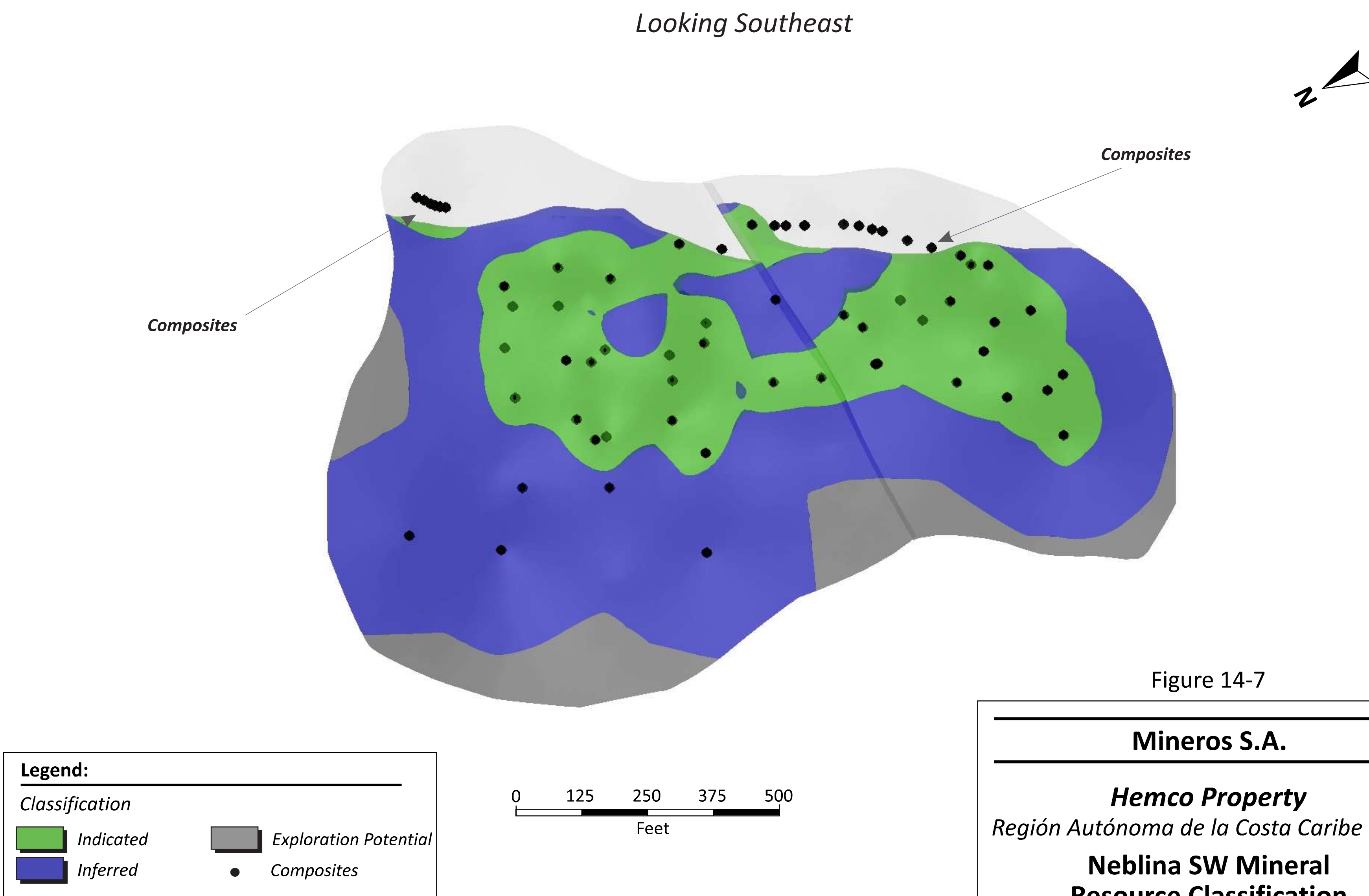
- Located above the provided topography,
- Located within mined out areas, or
- Accounted for within the polygonal vein models that have not been included in the current Mineral Resource estimates.

Where the grade was continuous over 2.0 g/t Au and the drill hole spacing was less than 100 ft, blocks were classified as Indicated at Toboba Grande. If the drill hole spacing was from 100 ft to 200 ft (35 m to 60-70 m), blocks were classified as Inferred. In areas where the drill hole spacing was greater than 200 ft (60-70 m), blocks remained outside of classification. The exceptions to this distance-based criteria include:

- Pluto SW: Indicated Mineral Resources have been upgraded to Measured in areas of substantial development and extensive sampling.
- Balbino, Washington, Eden-Tigre Negro: Where drill hole spacing is less than 200 ft, all blocks are classified as Inferred.
- Independencia, Tigre Blanco: Where drill hole spacing is less than 60 m, all blocks are classified as Inferred.
- Cleopatra: Where drill hole spacing is less than 70 m, all blocks are classified as Inferred.
- Cruzada: Where drill hole spacing is less than 120 ft, all blocks are classified as Indicated. Where drill hole spacing is less than 240 ft, all blocks are classified as Inferred.

Solid models were used to flag the block classifications in order to clean isolated blocks and smooth the edges of the Indicated and Inferred areas. The final classification models for Neblina SW, Neblina, Cruzada, and Pluto SW are shown in Figure 14-7, Figure 14-8, Figure 14-9, and Figure 14-10, respectively.

The QP is of the opinion that resource classification is acceptable but recommends that in future updates the classification criteria of the Mineral Resources be consistent throughout the vein groups at Panama.



March 2023

Source: SLR, 2023.

Figure 14-7

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Neblina SW Mineral Resource Classification

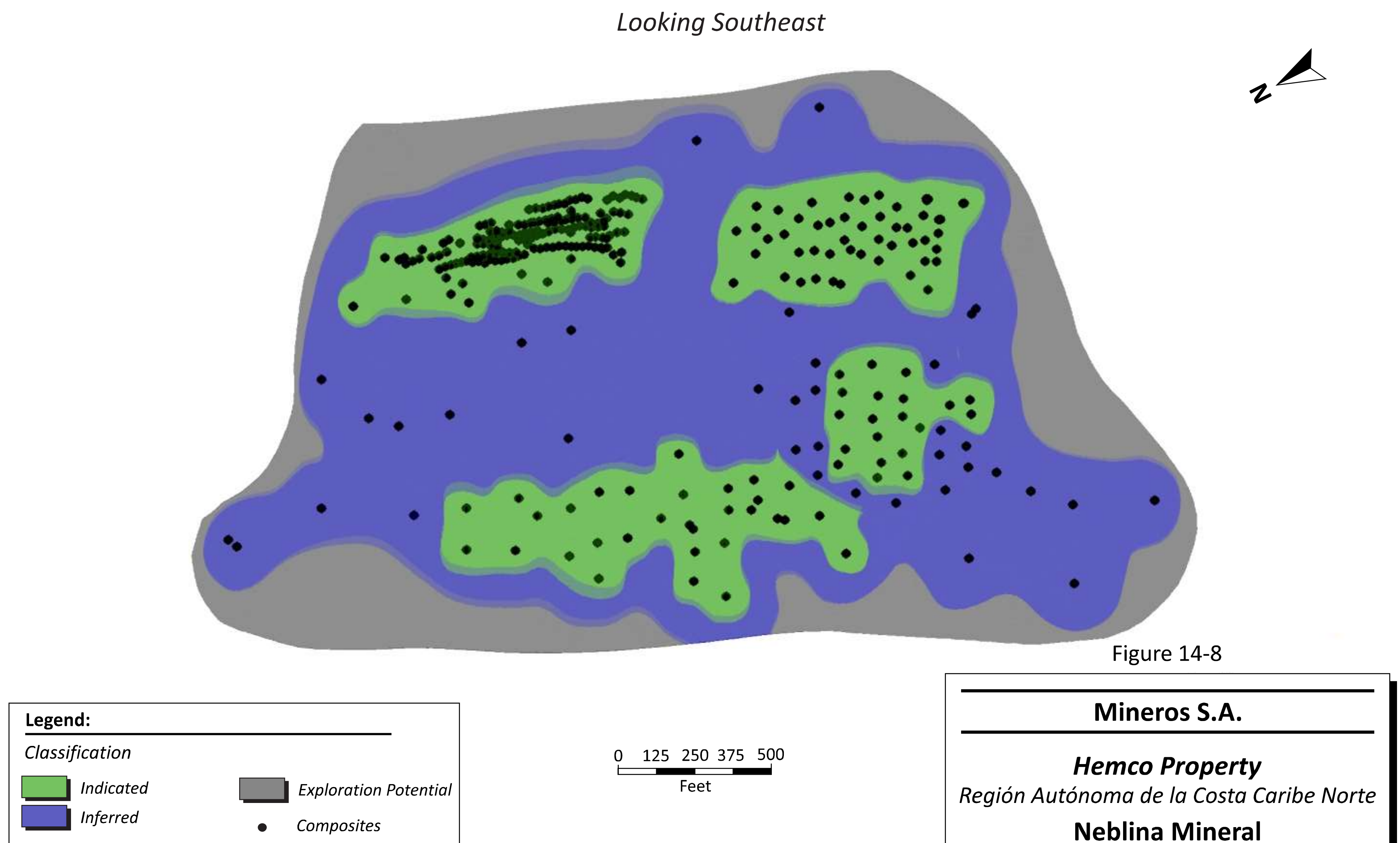

Figure 14-8

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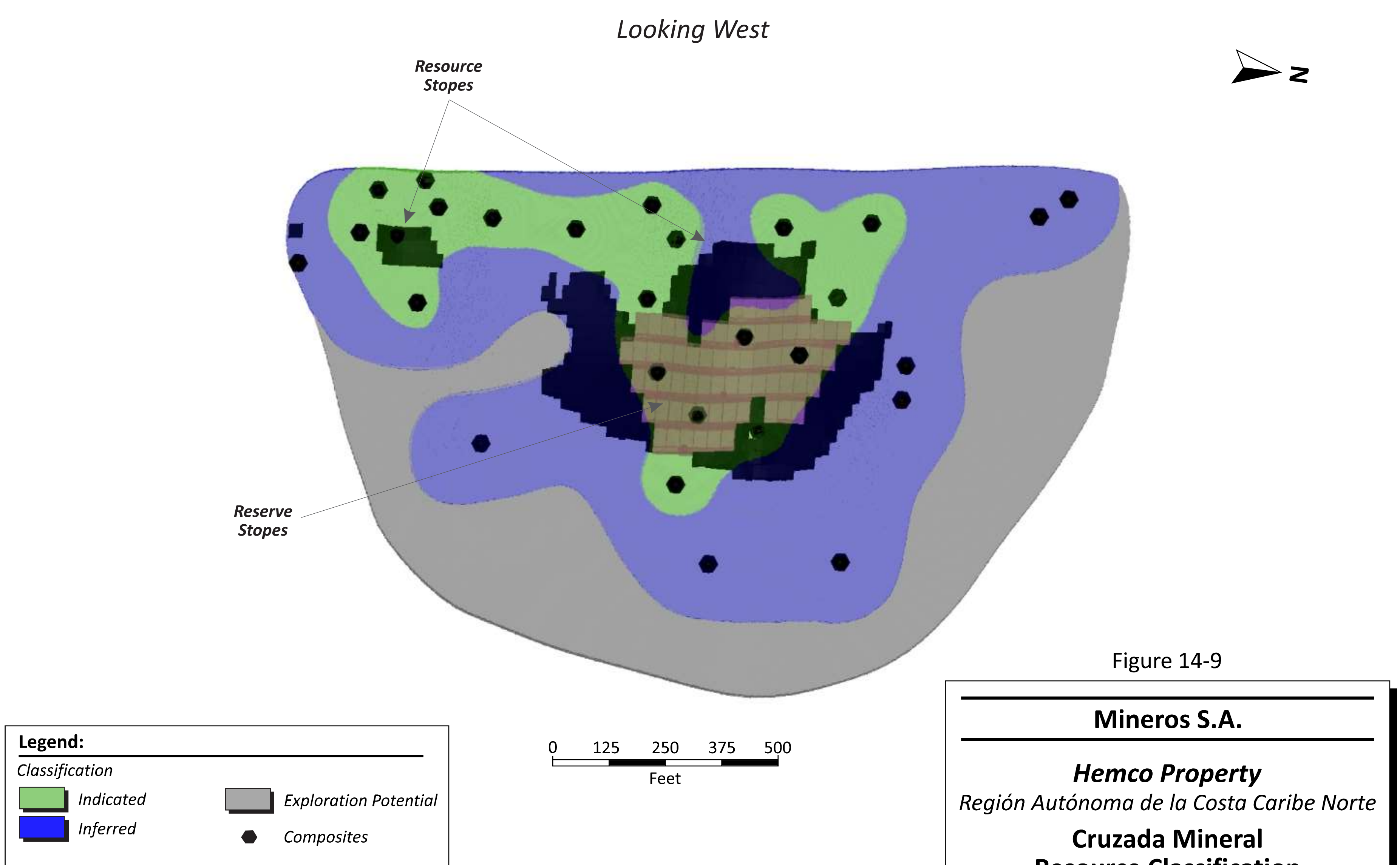
Neblina Mineral Resource Classification

March 2023

Source: SLR, 2023.



March 2023

Source: SLR, 2023.

Figure 14-9

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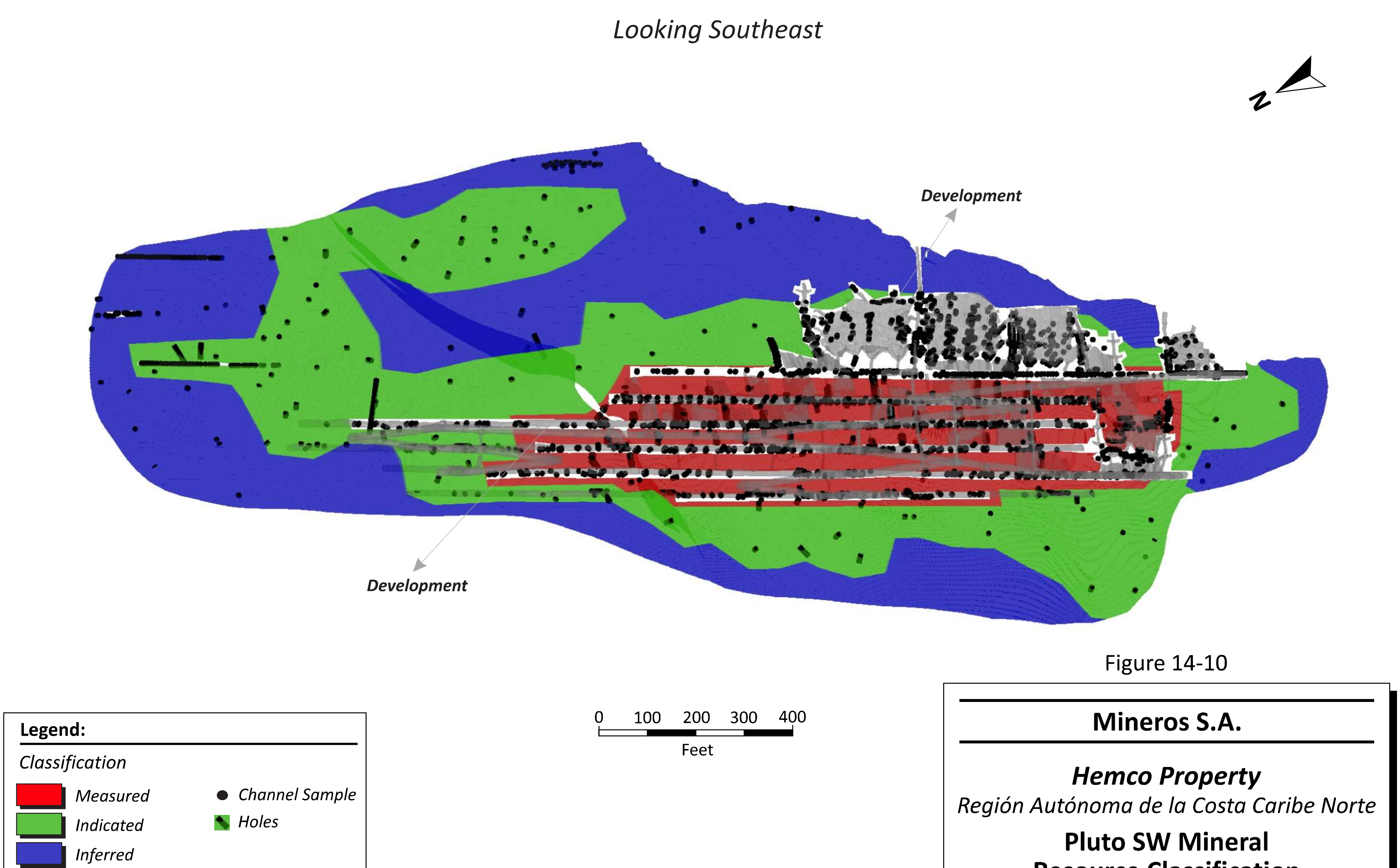
Cruzada Mineral Resource Classification



March 2023

Source: SLR, 2023.

Figure 14-10

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Pluto SW Mineral Resource Classification

14.5 Pioneer Deposit

14.5.1 Summary

The Pioneer gold vein system comprises five main veins that produced 1,211,724 tons averaging 0.31 oz/ton Au and containing 374,600 oz Au prior to 1979 (Arengi, 2003). Drilling of the Pioneer gold vein system began in 1954. The Pioneer gold vein system consists of Pioneer, Highland Mary, Colorado, Pioneer Northeast Extension, and Lone Star veins (Figure 14-11).

From 1950 to 1978, underground mining of the Pioneer deposit occurred over 12 levels. The Highland Mary vein was mined from five levels. Mining of the Lone Star vein began in 1906, making it one of the oldest mines in the district. The Pioneer Northeast Extension vein was mined by open pit and from one underground level.

The current Mineral Resource estimate prepared by Mineros and SLR comprises models completed in 2018, based on information available at the time, and block models updated in 2021 and 2022 for Lone Star, Pioneer (previously named Pioneer Northeast), Pioneer Northeast Extension, Pioneer 3, and Pioneer 4 (previously named Lone Star FW).

For the block models completed in 2018, SLR modelled 12 different wireframes using Leapfrog version 4.2.3 which were used to constrain block estimates for Pioneer. The block model was completed in Datamine Studio RM version 1.3.35 using a three pass ID^3 approach. Assays were capped at two levels, the higher grade cap restricted to within 25 m of the drill holes. Assays were composited over the entire width of the veins within the system.

For the Pioneer 3 block model update in 2021, SLR completed the estimates in Seequent's Leapfrog Edge version 2021.1.2 using a three pass ID^3 approach. Assays were capped prior to compositing using a single capping level. Assays were composited over the entire width of the veins.

For the Lone Star, Pioneer, Pioneer Northeast, and Pioneer 4, Mineros modelled resource wireframes using Leapfrog and a nested grade shell domains which were used to constrain block estimates and the estimates were completed in Surpac using a three pass ID^3 approach. Assays were composited over the entire width of the veins and capping analysis was completed on the composite samples within the high grade and low grade domains separately.

Mineral Resources were classified as Indicated and Inferred based on drill hole spacing and grade continuity above 2.0 g/t Au. Blocks situated within 30 m of the topography and within areas of previous mining activity were excluded from the Mineral Resource estimate to account for unrecoverable or mined out material and allowances for the exploitation agreement between Mineros and artisanal miners.

To demonstrate RPEEE, a minimum mining width of 1.0 m was applied during the construction of the wireframes for block models completed in 2018, while for models completed in 2021 and 2022, underground reporting shapes generated in DSO were used for reporting purposes. The reporting shapes used a minimum mining width of 1.8 m at a cut-off grade of 2.0 g/t Au.

Based on a 2.0 g/t Au cut-off grade, exclusive of Mineral Reserves, the December 31, 2022 Pioneer Measured Mineral Resources total approximately 12.1 kt averaging 2.59 g/t Au and containing 1.0 koz Au and 4.4 koz Ag, Indicated Mineral Resources total approximately 480.6 kt averaging 3.62 g/t Au and containing 56.0 koz Au and 150.5 koz Ag, and Inferred Mineral Resources total approximately 916.3 kt averaging 3.99 g/t Au and containing 117.5 koz Au and 239.7 koz Ag (Table 14-21).

Table 14-21: Pioneer Mineral Resource Estimate by Zone – Effective December 31, 2022
Mineros S.A. – Hemco Property

Classification/Domain	Tonnes (kt)	Grade		Contained Metal	
		(g/t Au)	(g/t Ag)	(koz Au)	(koz Ag)
Measured Resources					
Lone Star	12.1	2.59	11.3	1.0	4.4
Measured Total	**12.1**	**2.59**	**11.3**	**1.0**	**4.4**
Indicated Resources					
Highland Mary Footwall	101.2	4.51	13.2	14.7	42.9
Highland Mary Northeast	78.6	3.99	8.2	10.1	20.8
Lone Star	31.0	2.68	16.0	2.7	15.9
Pioneer	128.2	3.83	7.2	15.8	29.6
Pioneer Northeast Hanging Wall	9.0	4.40	12.6	1.3	3.7
Pioneer 3	44.0	3.29		4.7	
Pioneer Northeast Extension	88.6	2.40	13.2	6.8	37.7
Indicated Total	**480.6**	**3.62**	**9.7**	**56.0**	**150.5**
Measured and Indicated Mineral Resources					
Highland Mary Footwall	101.2	4.51	13.2	14.7	42.9
Highland Mary Northeast	78.6	3.99	8.2	10.1	20.8
Lone Star	43.1	2.65	14.7	3.7	20.3
Pioneer	128.2	3.83	7.2	15.8	29.6
Pioneer Northeast Hanging Wall	9.0	4.40	12.6	1.3	3.7
Pioneer 3	44.0	3.29		4.7	
Pioneer Northeast Extension	88.6	2.40	13.2	6.8	37.7
Measured and Indicated Total	**492.7**	**3.60**	**9.8**	**57.0**	**155.0**
Inferred Resources					
Highland Mary Northeast	44.1	3.40	7.6	4.8	10.7
Highland Mary Southwest	41.9	3.80	50.1	5.1	67.5
Lone Star	25.2	4.68	24.4	3.8	19.7
Pioneer	322.5	4.55	7.7	47.2	79.7
Pioneer Northeast Hanging Wall	61.6	2.85	3.7	5.6	7.3
Pioneer 2	207.2	3.28	5.5	21.8	36.4

Classification/Domain	Tonnes (kt)	Grade		Contained Metal	
		(g/t Au)	(g/t Ag)	(koz Au)	(koz Ag)
Pioneer 3	117.9	2.68		10.2	
Pioneer Northeast Extension	18.1	2.47	11.0	1.4	6.4
Pioneer 4	78.0	6.99	4.8	17.5	12.0
Inferred Total	**916.3**	**3.99**	**8.1**	**117.5**	**239.7**

Notes:

1. CIM (2014) definitions were followed for Mineral Resources.
2. Mineral Resources are estimated at a cut-off grade of 2.0 g/t Au for long hole stoping resource shapes.
3. Mineral Resources are estimated using a long term gold price of US$1,700/oz Au and a silver price of US$20/oz Ag.
4. A minimum mining width of 1.0 m was used for all veins except Lone Star, Pioneer, Pioneer Northeast Extension, Pioneer 3, and Pioneer 4 which used underground reporting shapes to demonstrate Reasonable Prospects for Eventual Economic Extraction.
5. Bulk density is 2.68 t/m^3.
6. Mineral Resources are exclusive of Mineral Reserves.
7. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
8. Material within 30 m of the topographic surface has been excluded from Pioneer Mineral Resources to allow for artisanal mining.
9. Numbers may not add due to rounding.

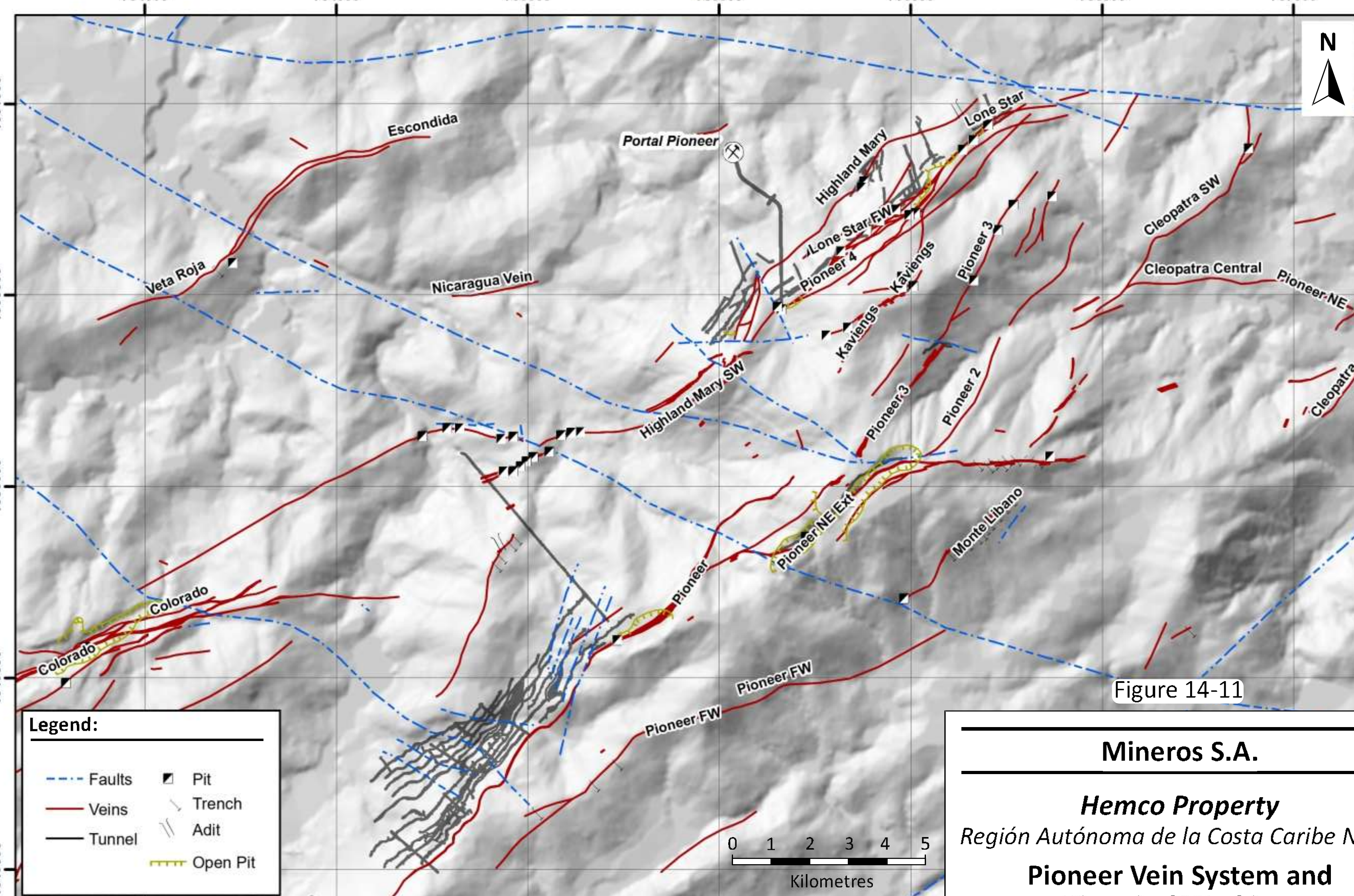


Figure 14-11

Mineros S.A.

Hemco Property

Región Autónoma de la Costa Caribe Norte

Pioneer Vein System and Historical Workings

March 2023

Source: Mineros, 2023.

14.5.2 Comparison to Previous Mineral Resource Estimates

For the Pioneer Mineral Resources, a comparison of the June 30, 2021, to the current Mineral Resources is summarized in Table 14-22. The amount of Measured Mineral Resources has decreased because of development at Lone Star and more restrictive sample spacing parameters applied to the updated classification model.

Overall, however, the Mineral Resources at Pioneer have increased, with resources added to the Indicated and Inferred categories for the Lone Star, Pioneer, Pioneer Northeast Extension, and Pioneer 4 veins. Classification models at these veins were updated and expanded by Mineros to reflect the additional sampling resulting in an increase in tonnage and metal content. The change was most pronounced at Pioneer and Pioneer Northeast Extension, where additional drilling significantly increased Indicated Mineral Resources at Pioneer and Inferred Mineral Resources at Pioneer Northeast Extension.

Table 14-22: Pioneer Mineral Resource Estimate: Comparison of 2022 vs 2021
Mineros S.A. – Hemco Property

Category	Tonnes (kt)	Grade (g/t Au)	Grade (g/t Ag)	Contained Metal (koz Au)	Contained Metal (koz Ag)
			31-Dec-22		
Measured	12.1	2.59	11.3	1.0	4.4
Indicated	480.6	3.62	9.7	56.0	150.5
M+I	492.7	3.60	9.8	57.0	155.0
Inferred	916.3	3.99	8.1	117.5	239.7
			30-Jun-21		
Measured	20.3	3.09	3.9	2.0	2.5
Indicated	387.0	3.67	9.7	45.7	120.7
M+I	407.2	3.64	9.4	47.7	123.2
Inferred	850.6	3.63	9.4	99.4	257.7
			% Difference		
Measured	-40.4	-16.2	189.7	-50.0	76.0
Indicated	24.2	-1.4	0.0	22.5	24.7
M+I	21.0	-1.1	4.3	19.5	25.8
Inferred	7.7	9.9	-13.8	18.2	-7.0

Notes:

1. CIM (2014) definitions were followed for Mineral Resources.
2. Mineral Resources are estimated at a cut-off grade of 2.0 g/t Au for long hole stoping resource shapes.
3. Mineral Resources are estimated using a long term gold price of US$1,700/oz Au and a silver price of US$20/oz Ag.
4. In 2022, a minimum mining width of 1.0 m was used for all veins except Lone Star, Pioneer, Pioneer Northeast Extension, Pioneer 3, and Pioneer 4, which used underground reporting shapes to demonstrate Reasonable Prospects for Eventual Economic Extraction. In 2021, a minimum mining width of 1.0 m was used for all veins except Lone Star,

Pioneer Northeast (renamed to Pioneer in 2022), Pioneer Northeast Extension, and Pioneer 3, which used underground reporting shapes to demonstrate Reasonable Prospects for Eventual Economic Extraction.
5. Bulk density is 2.68 t/m^3.
6. Mineral Resources are exclusive of Mineral Reserves.
7. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
8. Material within 30 m of the topographic surface has been excluded from Pioneer Mineral Resources to allow for artisanal mining.
9. Numbers may not add due to rounding.

14.5.3 Resource Database

SLR and Mineros used Leapfrog Geo to create mineralization wireframes at Pioneer that were deemed to have adequate data and sufficient tonnage to support the declaration of a Mineral Resource estimate. The database cut-off for veins modelled by SLR that were not updated in 2021 is December 31, 2018. The database cut-off for Pioneer 3, updated by SLR in 2021, is March 31, 2021. The database cut-off for vein models updated by Mineros in 2021 and 2022 ranges from September 30, 2021 to August 20, 2022.

Table 14-23 summarizes the Pioneer Group update status for this Technical Report.

Table 14-23: Pioneer Deposit Models and Updates
Mineros S.A. – Hemco Property

Vein Group	Vein	Vein Code	Estimate Completed By	Database Cut-off	Mineralization Model Software	Block Model Software
Highland Mary	Footwall	hm_fw	SLR	31-Dec-17	Leapfrog Geo	Datamine
	Northeast	hm_ne	SLR	31-Dec-17	Leapfrog Geo	Datamine
	Southwest	hm_sw	SLR	31-Dec-17	Leapfrog Geo	Datamine
Pioneer	Pioneer[1]	pio	Mineros	30-Nov-21	Leapfrog Geo	Surpac
	Northeast Hanging Wall	ne_hw	SLR	31-Dec-17	Leapfrog Geo	Datamine
	Pioneer 2	pio2	SLR	31-Dec-17	Leapfrog Geo	Datamine
	Pioneer 3	pio3	SLR	31-Mar-21	Leapfrog Geo	Leapfrog Edge
	Pioneer 4[2]	pio4	Mineros	30-Sep-21	Leapfrog Geo	Surpac
Pioneer Northeast Extension	Northeast Extension	pne	Mineros	20-Aug-22	Leapfrog Geo	Surpac
Lone Star	Lone Star	ls	Mineros	5-Apr-22	Leapfrog Geo	Surpac

Notes:
1. Pioneer Northeast renamed Pioneer.
2. Lone Star FW renamed Pioneer 4.

For the block models completed in 2018, drill holes completed prior to 2011 were excluded based on the following criteria:

- The holes were drilled based on a local grid system and Mineros is uncertain as to the quality of the conversion between the local grid system and the UTM coordinates.

- Original drill hole logs and core were not available for verification.
- It is unknown if any QA/QC procedures were followed during the drilling campaign.

For the models updated in 2021 and 2022, the pre-2011 drill holes were included. Justification for the inclusion of these holes is provided in Section 12.3 of the Data Verification section. A total of 94 drill holes have been excluded from the Pioneer Mineral Resource database, including 13 drill holes that were completed in 2021 for which the results were not received at the database cut-off date.

For all block models the QP reviewed the drill holes completed between database cut-off date and the December 31, 2022 effective date and is of the opinion that changes as a result of the new drilling intersecting the block models would not be material to the overall Pioneer Mineral Resource estimate.

The Pioneer resource database is summarized in Table 14-24.

Table 14-24: Pioneer Deposit Resource Database
Mineros S.A. – Hemco Property

Year	Chip Channel		Surface DDH		Underground DDH		Total	
	No. of Channels	Total Length (m)	No. of DDH	Total Length (m)	No. of DDH	Total Length (m)	No. of DDH/Channels	Total Length (m)
1956			8	554			8	554
1960			3	185			3	185
1965			1	161			1	161
1968			3	232			3	232
1969			11	517			11	517
1972			7	397			7	397
1976			2	244			2	244
1977			2	363			2	363
1979			22	1,821			22	1,821
1982			10	619			10	619
1983			10	223			10	223
2011			13	2,647			13	2,647
2012			28	5,642			28	5,642
2013			10	2,742			10	2,742
2015			59	13,053			59	13,053
2016			96	3,304			96	3,304
2017			54	6,340			54	6,340
2018	83	328	49	4,590			132	4,918
2019	276	698	27	4,295	15	3,425	318	8,418
2020	499	1,057	19	3,634	23	4,633	541	9,325
2021	586	977	30	6,032	11	2,160	627	9,169

Year	Chip Channel		Surface DDH		Underground DDH		Total	
	No. of Channels	Total Length (m)	No. of DDH	Total Length (m)	No. of DDH	Total Length (m)	No. of DDH/Channels	Total Length (m)
2022	463	586	16	3,211			479	3,797
Total	**1,907**	**3,646**	**480**	**60,806**	**49**	**10,218**	**2,436**	**74,671**

Section 12.0 Data Verification, describes the drill hole data verification steps completed by SLR. The QP is of the opinion that the drill hole data used is valid and suitable to estimate Mineral Resources for the Pioneer deposit.

14.5.4 Geological Interpretation

For the block models completed in 2018, SLR interpreted narrow wireframes representing the breccia and quartz veining which hosts economic mineralization at Pioneer. Wireframes provided by Mineros, surface mapping, and underground workings were used as a guide for the interpretation. A nominal 1.0 g/t Au wireframing cut-off grade was used to define the wireframe boundaries down hole while lower grade intercepts were included along strike and down dip to maintain geological continuity. A minimum wireframe thickness of one metre was used to ensure that blocks exceeding the Mineral Resource cut-off grade demonstrated RPEEE. The average wireframe thickness is 3.3 m with approximately 94% of the wireframe volumes exceeding one metre widths.

The Pioneer 3 vein update in 2021 by SLR used the same wireframing approach with the exception that a minimum thickness was not applied to the wireframes. RPEEE was ensured by the use of underground reporting shapes generated using DSO.

The four updated veins by Mineros in 2021 and 2022 used the same wireframing approach as Pioneer 3 and were subdivided into separate high grade and low grade sub-domains within the vein model at a threshold of 1.0 g/t Au to 1.5 g/t Au using the Indicator RBF tool in Leapfrog Geo. A similar approach was used for silver: Mineros defined a high grade and low grade sub-domain for each vein at a threshold varying from 0.3 g/t Ag to 8.0 g/t Ag.

The QP reviewed the wireframe interpretations completed by Mineros and is of the opinion that they are acceptable. Although the use of domaining to control the influence of high grade samples is reasonable, the QP recommends that an additional step to smooth the edges of the domains and remove isolated small volumes of high grade domain within the low grade domain, and vice versa, be considered. The QP also recommends evaluating the application of a soft boundary between the nested domains.

A three-dimensional view of the wireframes constituting the Pioneer Mineral Resource estimate is shown in Figure 14-12.

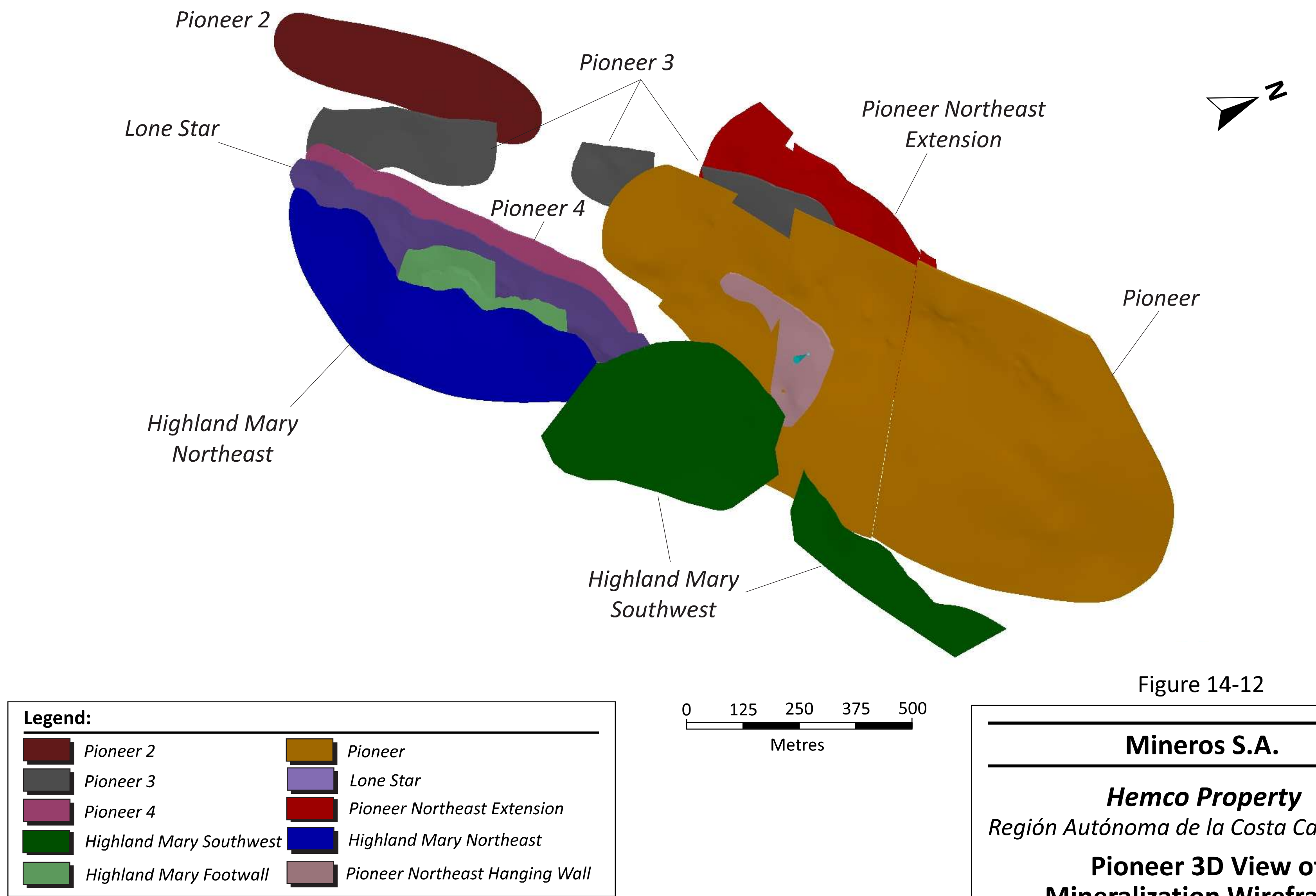


Figure 14-12

Mineros S.A.

Hemco Property

Región Autónoma de la Costa Caribe Norte

Pioneer 3D View of Mineralization Wireframes

March 2023

Source: SLR, 2023.

14.5.5 Density

A density of 2.68 t/m^3 was assigned to all interpolated blocks within the veins at the Pioneer deposit. This figure was provided by Mineros and is based on production records from these deposits and metallurgical testing.

Mineros provided a small dataset of density measurements undertaken as part of a larger analysis of the geomechanical properties of the rock at Panama that suggest that the rock density is both higher and more variable than the provided density value.

SLR was provided with a total of 99 density measurements in 2021 of which 45 occur within the mineralization wireframes. The QP is of the opinion that while there are varying amounts of sulphide minerals associated with the mineralization, the quantity of available data is insufficient to yield a reliable regression equation for the sum of the metals versus density. The QP recommends that density sampling be incorporated into the standard operating procedures for drill core sampling to build a robust database of density measurements across the whole deposit.

14.5.6 Capping and Compositing

Assays were capped at various levels based on capping analysis performed by SLR. For the five 2018 vein models, a high grade cap and a lower grade cap were selected for gold. The higher grade cap applied was 30 g/t Au for all domains. The estimates using the higher capping levels were restricted to 25 m from the closest assay above the lower capping grade. For Pioneer 3, assays were capped at 20 g/t Au. The capping level and basic statistics of raw assays against capped assays for Highland Mary Footwall, Highland Mary Northeast, Highland Mary Southwest, Pioneer 2, Pioneer Northeast Hanging Wall, and Pioneer 3 are summarized in Table 14-25.

Table 14-25: Pioneer Assay Statistics - for Highland Mary Footwall, Highland Mary Northeast, Highland Mary Southwest, Pioneer 2, Pioneer Northeast Hanging Wall, and Pioneer 3
Mineros S.A. – Hemco Property

Vein Group	Count	Minimum (g/t Au)	Maximum (g/t Au)	Uncapped Mean (g/t Au)	Uncapped CV	High Cap Cap (g/t Au)	High Cap Mean (g/t Au)	High Cap CV	Low Cap Cap[1] (g/t Au)	Low Cap Mean (g/t Au)	Low Cap CV
hm_fw	71	0	77.50	4.91	2.85	30	3.37	1.89	15	3.37	1.89
hm_fw2	51	0	146.30	4.23	5.59	30	1.19	4.13	15	1.19	4.13
hm_ne	117	0	22.83	1.90	1.91	30	1.90	1.91	15	1.90	1.91
hm_sw	51	0.01	7.55	1.16	1.59	30	1.16	1.59	15	1.16	1.59
pio2	18	0.01	33.37	2.64	2.22	30	2.55	2.10	15	2.55	2.10
ne_hw	66	0	12.60	1.32	1.88	30	1.32	1.88	15	1.32	1.88
pio3	276	0	21.40	1.73	2.03	20	1.72	2.01			

Note.

1. Cap applied to blocks greater than 25 m from a value greater than 15.0 g/t Au.

Vein Group	Count	Minimum (g/t Ag)	Maximum (g/t Ag)	Uncapped Mean (g/t Ag)	Uncapped CV	High Cap Cap (g/t Ag)	High Cap Mean (g/t Ag)	High Cap CV
hm_fw	71	0	51	6.47	1.31	135	6.47	1.31
hm_fw2	51	0	102	5.95	3.28	135	5.95	3.28
hm_ne	117	0	51.67	6.38	1.52	135	6.38	1.52
hm_sw	51	0.05	98	13.09	1.52	135	13.09	1.52
pio2	18	0.23	32.40	4.20	1.58	135	4.20	1.58
ne_hw	66	0	37.30	4.06	1.98	135	4.06	1.98
pio3	276	0	84	4.68	2.17	150	4.68	2.17

For Lone Star, Pioneer, Pioneer Northeast Extension, and Pioneer 4, assays within the wireframes were not capped prior to compositing by Mineros. The basic statistics of raw assays for these four veins are shown in Table 14-26.

Table 14-26: Assay Statistics for Uncapped Pioneer Vein Groups – Lone Star, Pioneer, Pioneer Northeast Extension, and Pioneer 4
Mineros S.A. – Hemco Property

Vein Group	Count	Minimum (g/t Au)	Maximum (g/t Au)	Mean	CV
ls	3,614	0	324.86	6.58	2.54
pio	1,106	0.01	31.5	1.37	2.07
pne	1021	0	220.31	4.07	2.53
pio4	136	0	278.87	2.04	8.08

Vein Group	Count	Minimum (g/t Ag)	Maximum (g/t Ag)	Mean	CV
ls	424	0.05	266.3	19.37	1.46
pio	1,106	0	660	5.19	4.65
pne	1021	0	100	4.10	2.71
pio4	111	0.05	88.1	1.95	3.74

Assays were composited over the full width of the wireframe intercept at Highland Mary Footwall, Highland Mary Northeast, Highland Mary Southwest, Pioneer 2, Pioneer Northeast Hanging Wall, and Pioneer 3. The capped composite statistics for these veins are summarized in Table 14-27.

Table 14-27: Pioneer Deposit Capped Composite Statistics for Veins Capped Prior to Compositing
Mineros S.A. – Hemco Property

Grade	Zone	Count	Minimum	Maximum	Mean	CV
Au High Cap	ne	181	1.52	1.38	0.00	11.38
	pne	174	3.18	1.16	0.00	18.62
	pio3	96	1.72	1.34	0.00	12.38
	ne_h	17	0.00	7.97	1.32	1.41
	hm_n	32	0.00	10.21	1.81	1.38
	hm_f	34	0.00	7.22	1.97	1.13
	ls	985	6.12	1.29	0.00	80.00
	ls_f	31	0.00	12.71	1.67	1.81
	hm_s	16	0.01	6.29	1.16	1.18
	pio2	3	0.46	3.49	2.14	0.71
	ne_e	2	0.21	2.03	1.28	1.01
Au Low Cap	ne					
	pne					
	pio3					
	ne_h	17	0.00	7.97	1.32	1.41
	hm_n	32	0.00	10.21	1.90	1.42
	hm_f	34	0.00	14.35	2.51	1.39
	ls					
	ls_f	31	0.00	12.71	2.06	1.83
	hm_s	16	0.01	6.29	1.16	1.18
	pio2	3	0.46	3.49	2.55	0.50
	ne_e	2	0.21	2.03	1.28	1.01
Ag Capped	ne	181	5.46	1.44	0.00	54.82
	pne	174	5.49	1.54	0.00	49.14
	pio3	96	4.68	1.49	0.00	26.55
	ne_h	17	0.00	23.59	4.06	1.47
	hm_n	32	0.00	23.55	6.38	1.27
	hm_f	34	0.00	48.73	6.26	1.51
	ls	985	2.31	3.76	0.00	86.09
	ls_f	31	0.00	17.23	2.54	1.91
	hm_s	16	0.18	83.49	13.09	1.35
	pio2	3	2.30	5.72	4.20	0.41
	ne_e	2	3.77	10.88	7.94	0.63

Assays within Lone Star, Pioneer, Pioneer Northeast Extension, and Pioneer 4 were composited across the full width of the vein wireframe. The raw composites within the wireframes were analyzed by Mineros using histograms, probability plots, linear regression, and disintegration plots where applicable to determine capping levels. The QP reviewed the compositing and capping methodology used by Mineros for these four vein groups and considers the capping levels to be acceptable, but recommends capping raw assays prior to compositing.

The composite statistics for each vein group are summarized in Table 14-28.

Table 14-28: Pioneer Deposit Composite Statistics for Veins Capped After Compositing
Mineros S.A. – Hemco Property

Gold

Vein Group	Domain	Width	Count	Minimum (g/t Au)	Maximum (g/t Au)	Uncapped Mean (g/t Au)	CV	Cap (g/t Au)	Capped Mean (g/t Au)	CV
ls	High Grade	Full Width	754	0.29	223.56	7.82	1.45	35	7.22	1.08
	Low Grade		111	0.01	1.86	0.59	0.56	1	0.58	0.53
	fw		64	0.03	9.61	2.70	0.91	2.5	1.66	0.55
pio	High Grade	Full Width	79	0.76	22.10	2.93	1.23	12	2.74	1.02
	Low Grade		117	0.00	1.23	0.36	0.74			
pne	High Grade	Full Width	319	0.00	117.86	4.90	1.67	30	4.57	1.12
	Low Grade		106	0	3.56	0.48	0.70	1.5	0.47	0.62
pio4	High Grade	Full Width	8	1.16	51.91	10.59	1.64	14	5.85	0.97
	Low Grade		46	0	0.78	0.10	1.70			

Silver

Vein Group	Domain	Width	Count	Minimum (g/t Ag)	Maximum (g/t Ag)	Uncapped Mean (g/t Ag)	CV	Cap (g/t Ag)	Capped Mean (g/t Ag)	CV
ls	High Grade	Full Width	84	5.65	97.33	24.71	0.76	50	23.19	0.66
	Low Grade		20	0.18	3.94	2.18	0.51	3	2.08	0.48
	fw		9	0.30	3.68	1.52	0.87	3	1.37	0.76
pio	High Grade	Full Width	115	2.01	89.38	8.57	1.38	40	7.97	1.10
	Low Grade		36	0	1.90	0.99	0.70			
pne	High Grade	Full Width	64	8.10	81.00	18.92	0.59	60	18.78	0.55
	Low Grade		37	0	5.52	2.19	0.92		2.19	0.92
pio4	High Grade	Full Width	25	0.30	17.23	2.98	1.40	15	2.89	1.33
	Low Grade		29	0	0.79	0.10	1.55			

14.5.7 Block Model

For the models completed by SLR in 2018, the mineralization wireframes for the Highland Mary and Pioneer veins were filled with parent cells measuring five metres in each direction, sub-blocked to a minimum size of 0.5 m. The Pioneer 3 block model completed in 2021 used the same setup as the 2018 block models except for the sub-cell approach which used the Leapfrog Edge octree model with a minimum sub-cell size of 0.625 m in each dimension. The block model setup is summarized in Table 14-29.

Table 14-29: Pioneer Deposit Block Model Setup for Highland Mary Footwall, Highland Mary Northeast, Highland Mary Southwest, Pioneer 2, Pioneer Northeast Hanging Wall, and Pioneer 3
Mineros S.A. – Hemco Property

Parameter	X	Y	Z
Origin (m)	754536.01325	1549811.84830	-160.27178
Block Size (m)	5.0	5.0	5.0
Number of Blocks	180	466	132
Rotation (°)		45.0	
Rotation Axes (°)		Z	

Four block models were constructed by Mineros in 2021 and 2022 for the Lone Star, Pioneer, Pioneer Northeast, and Pioneer 4 veins. The block rotation, dip, the minimum and maximum coordinates, and block size for each model are summarized in Table 14-30.

Table 14-30: Pioneer Block Model Setup for Lone Star, Pioneer, Pioneer Northeast Extension, and Pioneer 4
Mineros S.A. – Hemco Property

Vein Group	Rotation	Minimum (m)			Maximum (m)			Parent Block Size (m)			Sub Block Count		
	(°)	X	Y	Z	X	Y	Z	X	Y	Z	X	Y	Z
ls	46	755496	1550470	-47	756326	1551021	388	5	5	5	12	5	5
pio	313	755070	1549250	-154	755668.1	1550683	522	4	4	4	5	32	5
pne	323	755495	1549628	-485	755800.1	1550453	515	5	5	500	5	5	variable
pio4	318	755660	1550356	-580	756230.7	1551112	420	5	5	5	5	16	5

14.5.8 Interpolation Strategy

For the block models completed in 2018, SLR interpolated both gold and silver grades into blocks using ID^3 and a three pass search strategy (Table 14-31). NN was run for validation purposes. DA was used to align the search ellipse with the wireframes. A steep plunge towards the southeast was applied corresponding to a 75° and a 60° rotation from the horizontal for the southwest and northeast domains, respectively. For the block models completed in 2021, trend surfaces, representing the plunge of mineralization, oblique to the strike and dip of the plane of the mineralization, were digitized and used to create variable orientation angles in Leapfrog Edge (variable orientation angles are equivalent to Datamine's DA). Given this approach, the minor directions can be interpreted as the semi-major direction.

Table 14-31: Pioneer Deposit Interpolation Parameters for 2018 Block Models and Pioneer 3
Mineros S.A. – Hemco Property

Pass	1	2	3
2018 Block Models			
Major (m)	70	140	280
Semi Major (m)	30	60	120
Minor (m)	30	60	120
Minimum Number of Samples	3	3	1
Maximum Number of Samples	5	5	5
2021 Block Model - Pioneer 3			
Major (m)	50	150	300
Semi Major (m)	50	150	300
Minor (m)	25	75	150
Minimum Number of Samples	2	2	1
Maximum Number of Samples	8	8	4

For the updated vein models, Mineros used wireframes to flag blocks and interpolated gold and silver grades using ID^3 and two or three search passes. DA was used to direct the search ellipse along the dip and strike trend of the wireframe with a plunge following the principal mineralized shoot directions of the vein. All samples were used to estimate block grades. Hard boundaries were used to interpolate gold and silver grades in the nested high and low grade domains to minimize the influence of high grade samples. Where nested high and low grade gold domains were used, grades were interpolated using a hard boundary in order to minimize the influence of high grade samples.

Table 14-32 summarizes the interpolation parameters for each vein updated by Mineros in 2021 and 2022.

Table 14-32: Pioneer Vein Interpolation Parameters for Lone Star, Pioneer, Pioneer Northeast Extension, and Pioneer 4
Mineros S.A. – Hemco Property

Vein Group	Method	Boundary Type	Domain	Search Pass	Sample Types	Sample Search and Selection			Search Ellipse Dimensions (m)			Search Ellipse Rotations (°)		
						Min Samples	Max Samples	Max per DH	Major Axis	Semi-Major Axis	Minor Axis	Bearing	Plunge	Dip
ls	ID^3	hard	High Grade/FW	1	All	4	10	1	50	30	10	Dynamic	110	Dynamic
				2		4	8	1	100	60	20			
				3		2	8	1	200	120	40			
	ID^3	hard	Low Grade	1	All	4	10	1	50	30	10	Dynamic	110	Dynamic
				2		4	10	1	100	60	20			
				3		2	12	1	200	120	40			
pio	ID^3	hard	High Grade	1	All	4	12	1	50	25	10	Dynamic	115	Dynamic
				2		2	8	1	100	50	20			
				3		1	6	1	220	110	50			
			Low Grade	1	All	1	8	1	100	50	20	Dynamic	115	Dynamic
				2		2	6	1	400	200	80			
pne	ID^3	hard		1	All	4	16	1	50	40	10	Dynamic	90	Dynamic
				2		2	8	1	100	80	20			
				3		1	8	1	200	160	40			
	ID^3	hard	Low Grade	1	All	4	16	1	50	40	10	Dynamic	90	Dynamic
				2		2	8	1	100	80	20			
				3		1	8	1	300	240	60			
pio4	ID^3	hard		1	All	2	8	1	100	100		Dynamic	90	Dynamic
				2		1	8	1	200	200				
	ID^3	hard	Low Grade	1	All	2	8	1	100	100	100	Dynamic	90	Dynamic
				2		1	6	1	300	300	300			

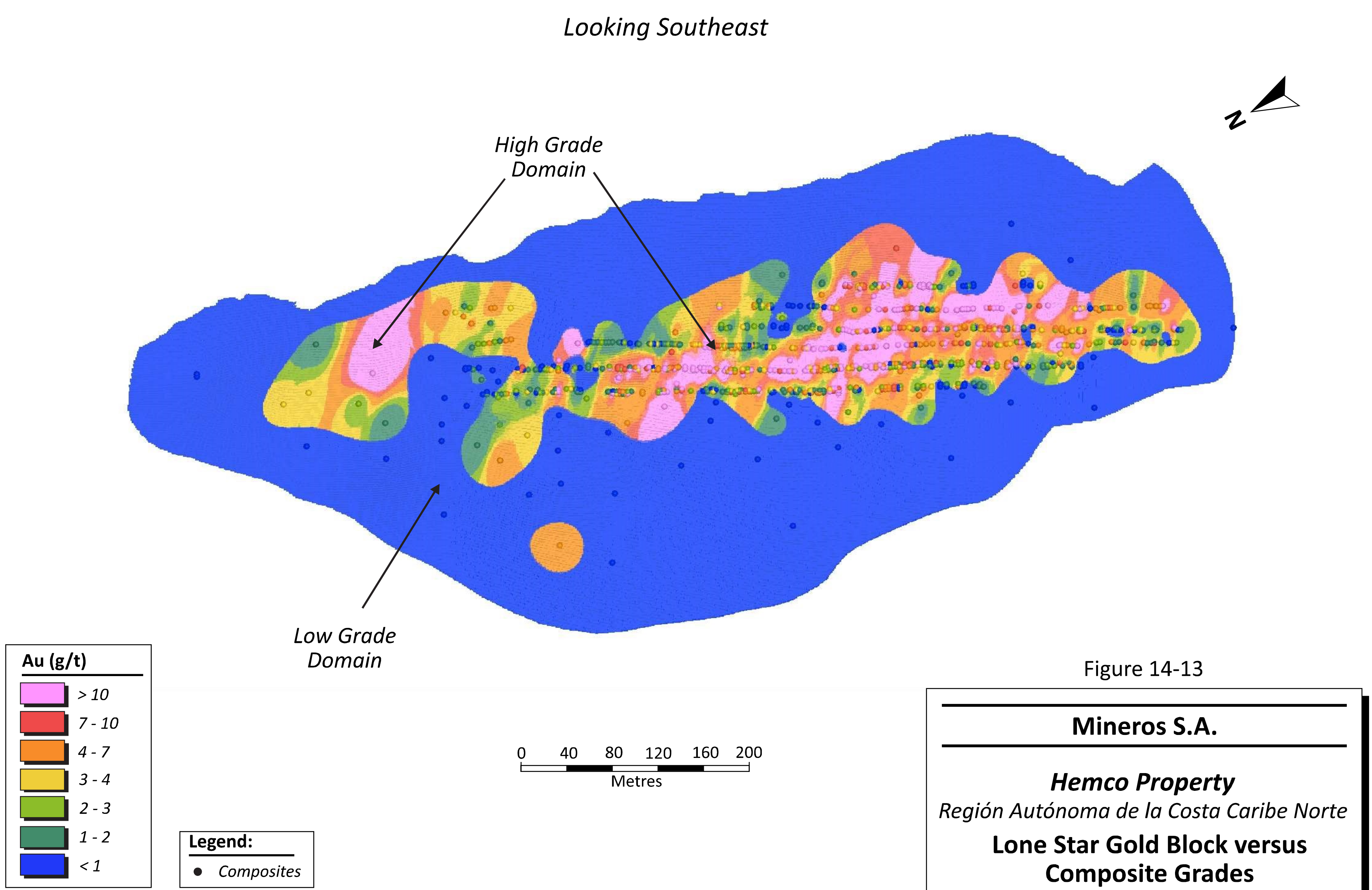
14.5.9 Validation

SLR performed industry standard block model validation procedures including:

- A comparison of wireframe and block volumes.
- A detailed visual review of block grades versus composites in plan section and cross section.
- A visual and statistical review of block grades versus composites and assays in longitudinal section, comparison of the ID^3, NN, and composite means.
- The production of swath plots along the strike and dip of the veins.

Examples of longitudinal sections of gold grades are shown in Figure 14-13, Figure 14-14, and Figure 14-15 for Lone Star, Pioneer, and Pioneer Northeast Extension, respectively.

In SLR's opinion, the results of the validation procedures are reasonable.



March 2023

Source: SLR, 2023.

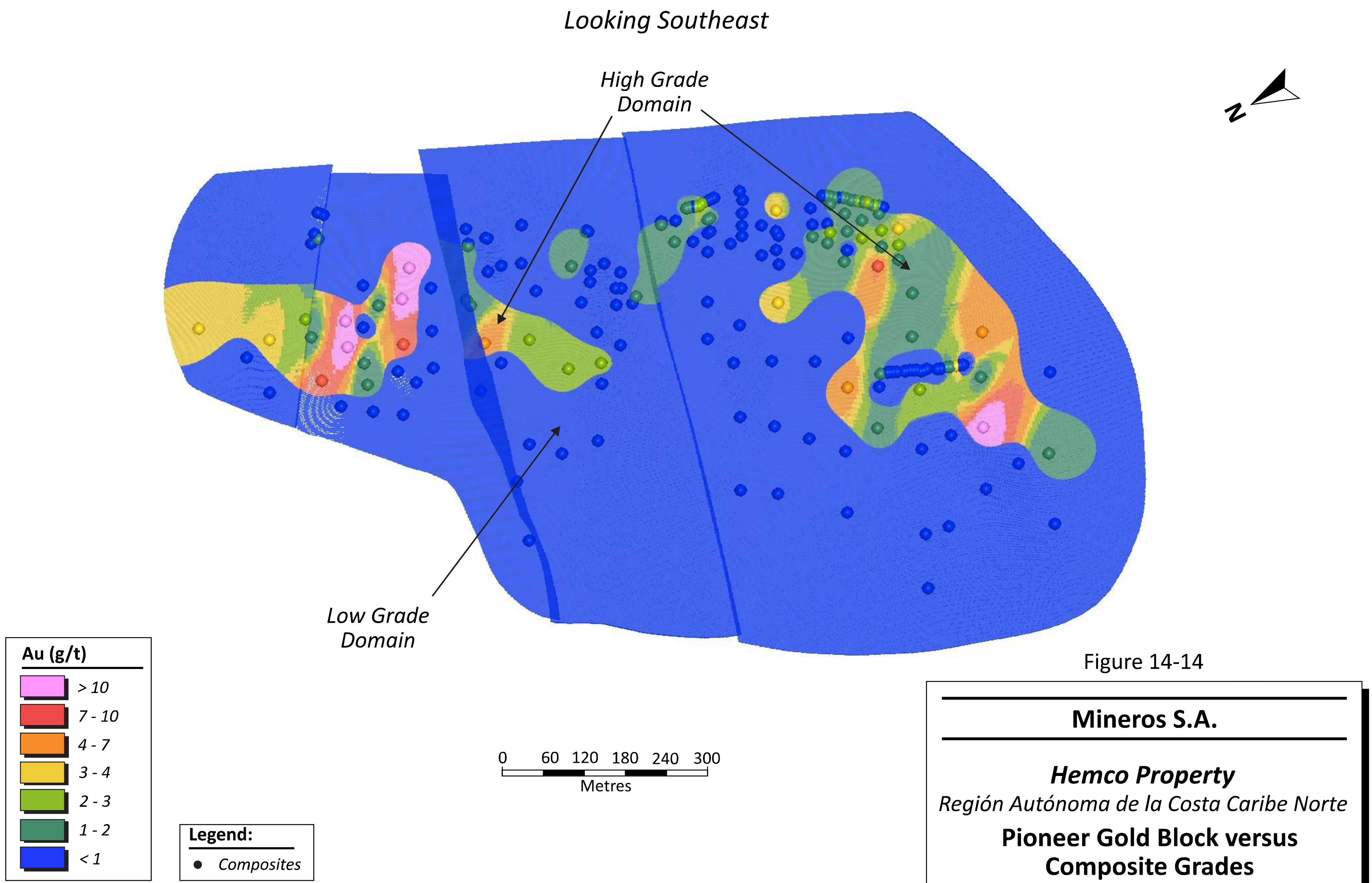
Figure 14-13

Mineros S.A.

Hemco Property

Región Autónoma de la Costa Caribe Norte

Lone Star Gold Block versus Composite Grades



March 2023

Source: SLR, 2023.

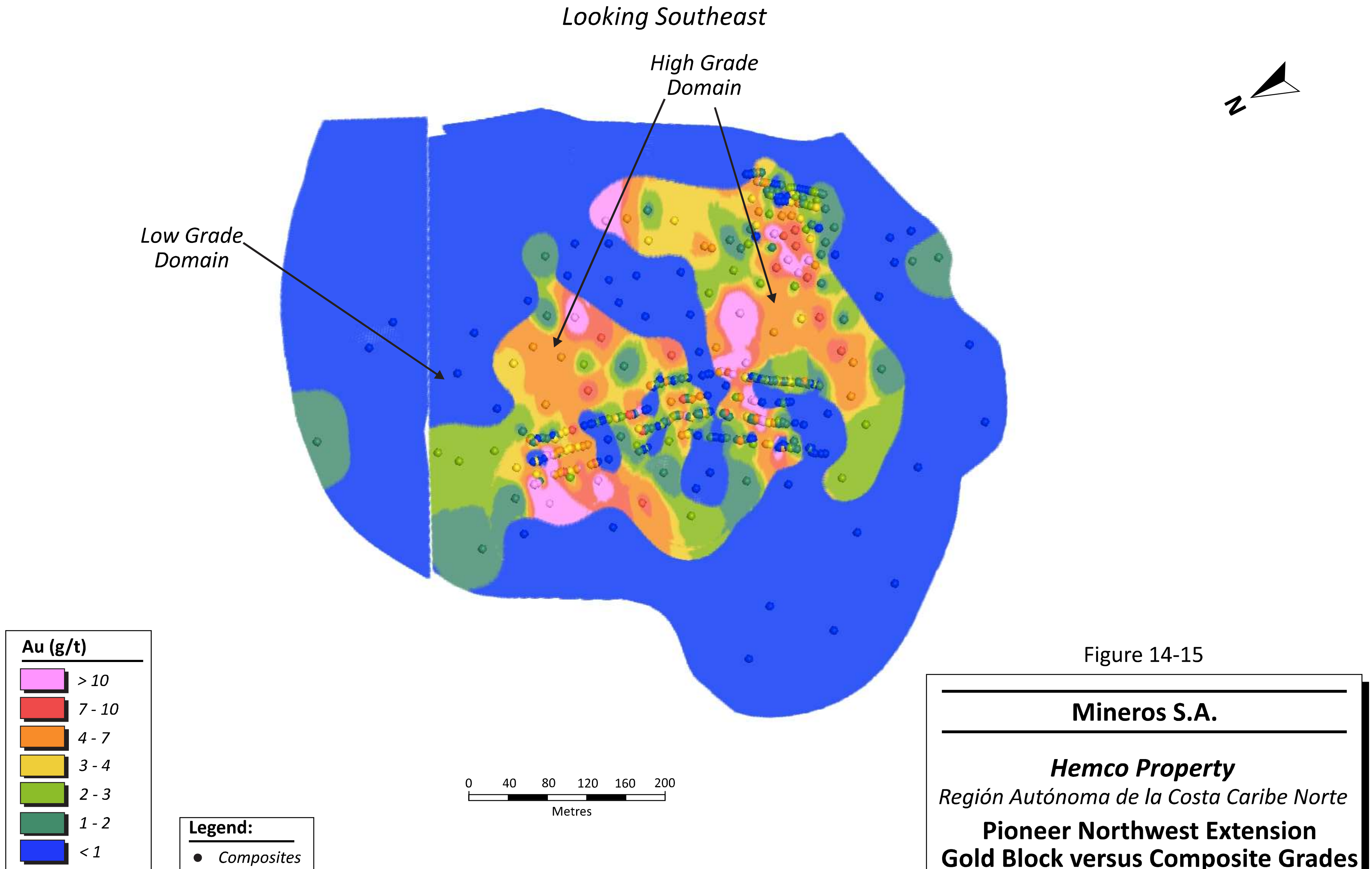
Figure 14-14

Mineros S.A.

Hemco Property

Región Autónoma de la Costa Caribe Norte

Pioneer Gold Block versus Composite Grades



March 2023

Source: SLR, 2023.

Figure 14-15

Mineros S.A.

Hemco Property
Región Autónoma de la Costa Caribe Norte

Pioneer Northwest Extension Gold Block versus Composite Grades

14.5.10 Classification

Blocks were classified as Measured, Indicated, or Inferred Mineral Resources based on the distribution of sample data and the continuity of grade above 2.0 g/t Au. Solids were used to flag the block classifications in order to minimize orphan blocks and smooth the edges of the classification model.

For veins modelled by SLR in 2018, blocks were classified as Indicated and Inferred based on the following assumptions:

- Blocks located in areas with drilling spaced approximately 60 m apart, or within 30 m of the nearest drill hole, were classified as Indicated.
- Blocks located within 120 m from the nearest drill hole or with reasonable geological support from surface mapping were classified as Inferred.

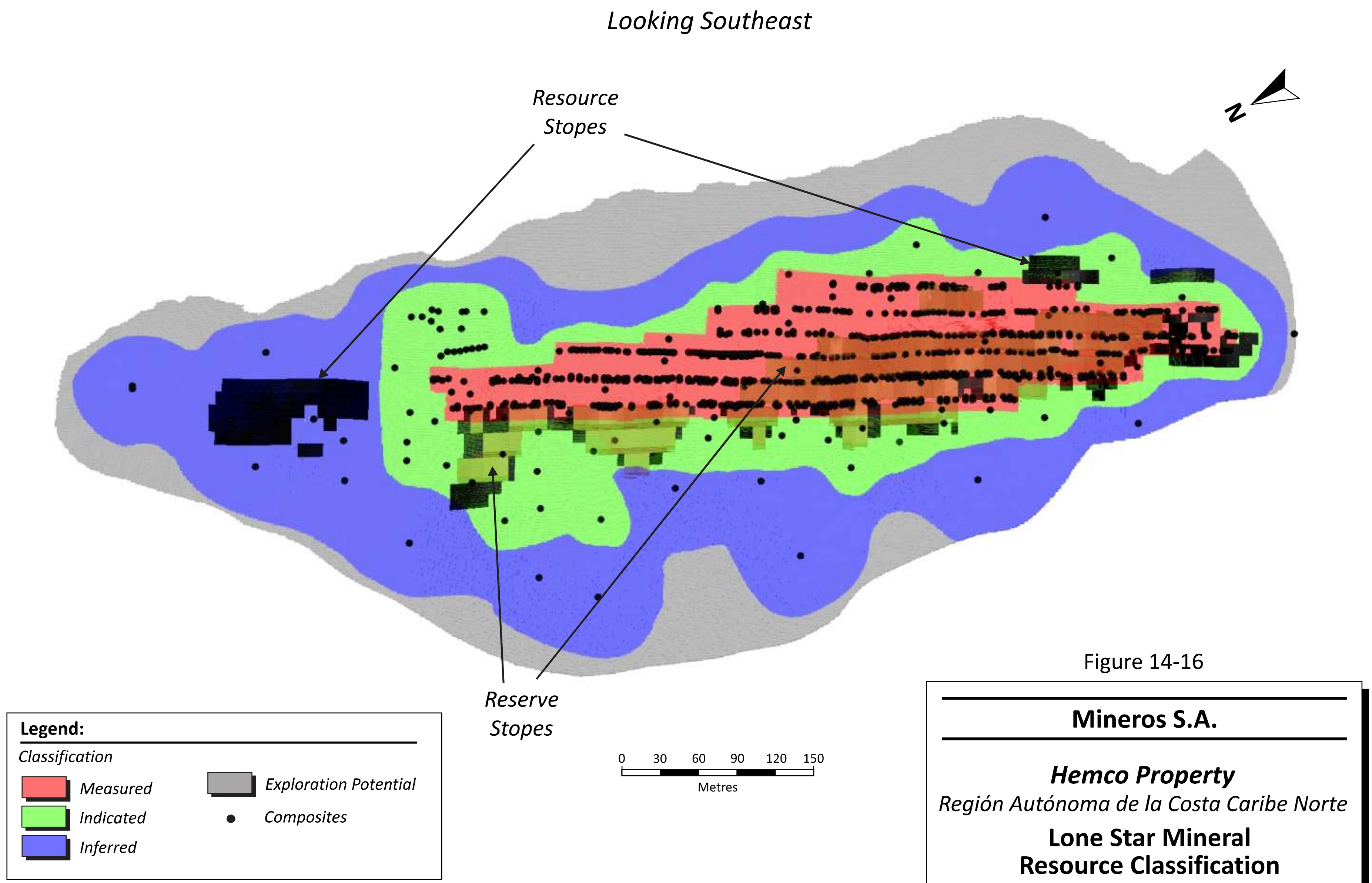
For Pioneer 3, blocks were classified as Indicated and Inferred based on the following criteria:

- If the drill hole spacing was greater than 20 m, but less than 40 m, blocks were classified as Indicated.
- If drill hole spacing was greater than 40 m and less than 90 m, blocks were classified as Inferred.
- In areas where the drill hole spacing was greater than 90 m, blocks remained unclassified.

For veins updated by Mineros in 2021 and 2022, the Measured category was assigned to the Lone Star vein where there is a large amount of historical workings supported by channel samples. If blocks were within 15 m of this development, a classification of Measured was assigned. Otherwise, if the drill hole spacing was less than 30 m, blocks were classified as Indicated, and for drill hole spacing of 30 m to 60 m, blocks were classified as Inferred. For the Pioneer and Pioneer Northeast Extension veins, if the drill hole spacing was less than 35 m, blocks were classified as Indicated, and for drill hole spacing of 35 m to 70 m, blocks were classified as Inferred. Blocks were classified as Inferred at Pioneer 4 if the drill hole spacing was less than 60 m.

Solid models were used to flag the block classifications in order to clean isolated blocks and smooth the edges of the Indicated and Inferred areas. The final classification of the updated Lone Star, Pioneer, and Pioneer Northeast Extension veins is shown in Figure 14-16, Figure 14-17, and Figure 14-18.

The QP is of the opinion that the Mineral Resource classification for the Pioneer deposit is acceptable, but recommends that in future updates the classification criteria of the Mineral Resources be consistent throughout the vein groups at Pioneer.



March 2023

Source: SLR, 2023.

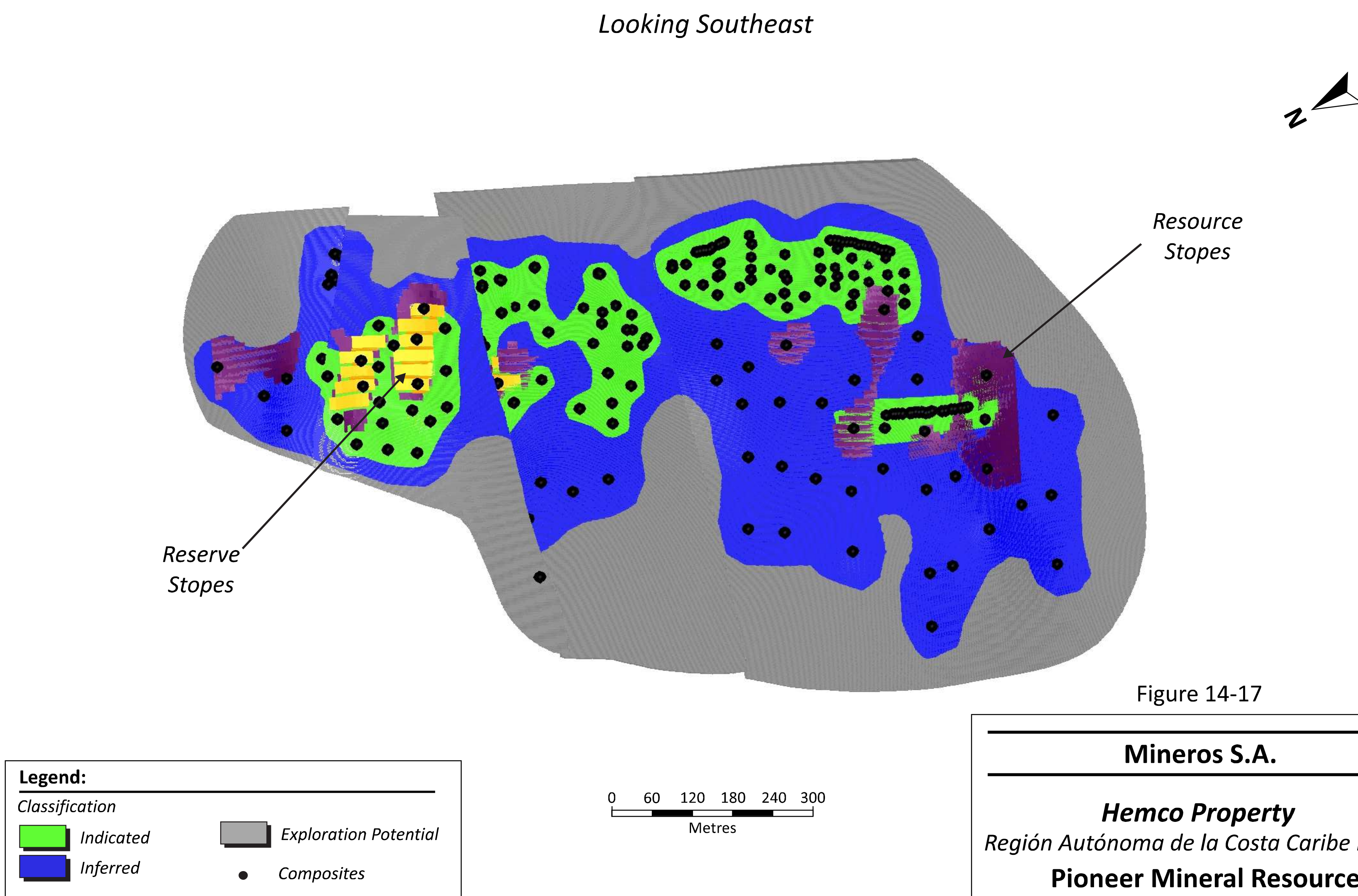
Figure 14-16

Mineros S.A.

Hemco Property

Región Autónoma de la Costa Caribe Norte

Lone Star Mineral Resource Classification



March 2023

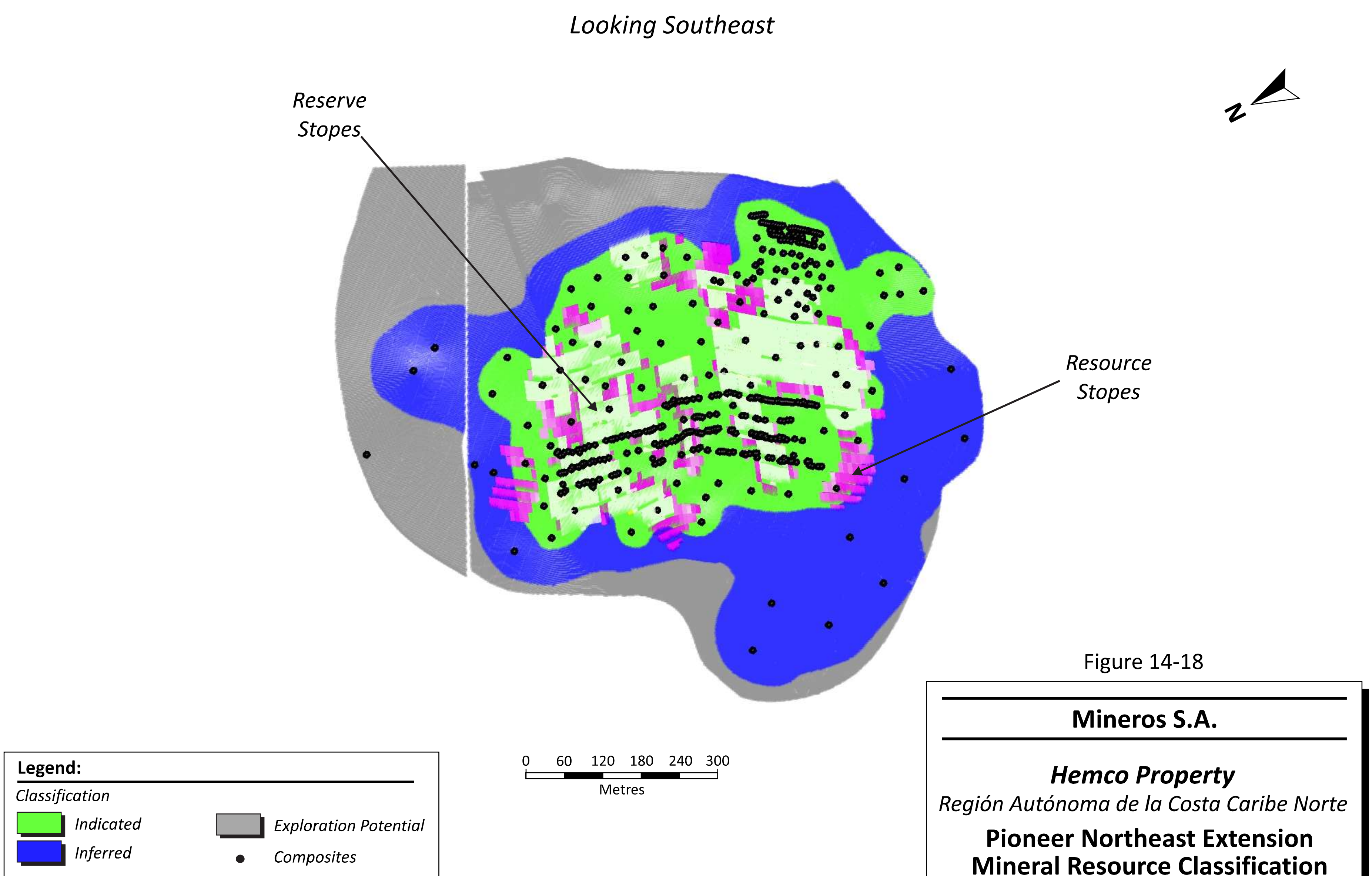
Source: SLR, 2023.

Figure 14-17

Mineros S.A.

Hemco Property
Región Autónoma de la Costa Caribe Norte

Pioneer Mineral Resource Classification



March 2023

Source: SLR, 2023.

Figure 14-18

Mineros S.A.

Hemco Property

Región Autónoma de la Costa Caribe Norte

Pioneer Northeast Extension Mineral Resource Classification

14.6 Porvenir Deposit

14.6.1 Summary

The Porvenir gold vein system comprises five main veins, part of the Constancia Group, which had prior to 1979 produced 789,352 tons averaging 0.28 oz/ton Au and containing 210,780 oz Au (Arengi, 2003). The Porvenir Mine has historical development on 10 levels in the Porvenir Central part of the Porvenir vein (Figure 14-19). The five main veins at Porvenir are Porvenir Norte, Oro Fino, Real McKoy, Elena, and Porvenir Sur.

The Porvenir Mineral Resource estimate is based on 290 diamond drill holes which outlined a total of 16 mineralized structures. SLR was provided with wireframes completed by Mineros, which were subsequently reviewed, adjusted, and adopted by SLR. Raw assay intercepts were subject to capping of high grades at varying levels based on exploratory data analysis (EDA) and were subsequently composited into one metre lengths. SLR interpolated gold, silver, and zinc into blocks using ID^3. Blocks were classified as Measured, Indicated, and Inferred using distance-based criteria.

The SLR December 31, 2022 Porvenir Mineral Resource estimate is summarized in Table 14-33.

Table 14-33: Porvenir Mineral Resource Estimate by Zone – Effective December 31, 2022
Mineros S.A. – Hemco Property

Domain	Tonnes (kt)	NSR ($/t)	Grade			Contained Metal		
			(g/t Au)	(g/t Ag)	(% Zn)	(koz Au)	(koz Ag)	(kt Zn)
Measured Mineral Resources								
OROFINO	0.0	35	0.78	1.45	0.21	0.0	0.0	0.0
PN2E	1.1	102	1.23	2.86	3.18	0.0	0.1	0.0
PN4	19.9	102	1.28	5.04	2.52	0.8	3.2	0.5
PNE	12.8	120	2.15	16.76	2.89	0.9	6.9	0.4
PNHW	2.5	162	2.65	5.26	2.43	0.2	0.4	0.1
PNHW1	12.1	98	1.99	5.21	0.86	0.8	2.0	0.1
RM	4.1	95	2.29	14.04	1.35	0.3	1.8	0.1
ZDPN	6.5	95	1.38	3.88	1.81	0.3	0.8	0.1
Measured Total	**59.1**	**107**	**1.75**	**8.08**	**2.11**	**3.3**	**15.4**	**1.2**
Indicated Mineral Resources								
OROFINO	0.0	16	0.27	1.27	0.34	0.0	0.0	0.0
PN1	62.3	168	2.41	6.78	3.11	4.8	13.6	1.9
PN2	0.0	11	0.10	1.58	0.40	0.0	0.0	0.0
PN2E	112.2	149	2.18	7.31	2.70	7.9	26.3	3.0
PN3	28.4	130	1.19	3.44	4.35	1.1	3.1	1.2
PN4	29.9	130	1.58	4.57	3.38	1.5	4.4	1.0

Domain	Tonnes (kt)	NSR ($/t)	Grade			Contained Metal		
			(g/t Au)	(g/t Ag)	(% Zn)	(koz Au)	(koz Ag)	(kt Zn)
PNE	140.1	190	3.29	11.37	3.32	14.8	51.2	4.7
PNHW	51.0	157	2.29	4.08	3.70	3.7	6.7	1.9
PNHW1	85.4	121	2.09	5.30	2.07	5.7	14.5	1.8
PS1	9.6	120	1.53	6.06	2.81	0.5	1.9	0.3
PSE	174.0	160	3.27	13.80	2.23	18.3	77.2	3.9
PSFW	65.8	126	1.76	5.64	3.12	3.7	11.9	2.0
PSHW	14.2	167	2.87	6.52	2.24	1.3	3.0	0.3
PSHW1	3.4	108	1.76	3.60	1.62	0.2	0.4	0.1
RM	67.1	119	3.33	12.16	0.71	7.2	26.3	0.5
RM1	0.0	60	1.64	7.77	0.12	0.0	0.0	0.0
ZDPN	89.6	70	1.01	3.60	1.49	2.9	10.4	1.3
ZDPS	41.5	80	0.84	2.95	2.53	1.1	3.9	1.0
Indicated Total	**974.3**	**141**	**2.39**	**8.13**	**2.56**	**74.9**	**254.8**	**25.0**
Inferred Mineral Resources								
CAIMANERO	40.5	156	2.53	4.27	2.03	3.3	5.6	0.8
CATALINA	14.5	181	3.09	4.33	2.63	1.4	2.0	0.4
OROFINO	0.3	171	3.89	2.54	0.21	0.0	0.0	0.0
PN2	0.0	11	0.11	1.74	0.36	0.0	0.0	0.0
PNE	0.4	135	1.11	17.47	5.35	0.0	0.2	0.0
PNHW	122.5	167	2.25	4.47	3.78	8.9	17.6	4.6
PNHW1	146.6	260	3.92	7.55	4.30	18.5	35.6	6.3
PS1	4.4	104	0.95	9.81	3.55	0.1	1.4	0.2
PSE	946.5	142	1.99	15.68	3.88	60.6	477.0	36.8
PSFW	99.2	131	1.70	4.62	3.21	5.4	14.7	3.2
PSHW	14.7	180	2.17	7.04	5.36	1.0	3.3	0.8
PSHW1	0.3	110	1.74	3.83	1.65	0.0	0.0	0.0
RM	91.8	275	6.11	16.10	2.01	18.0	47.5	1.8
RM1	92.0	150	2.52	6.64	2.18	7.5	19.6	2.0
VANESSA	81.6	192	2.21	8.47	5.15	5.8	22.2	4.2
ZDPN	0.2	17	0.22	2.19	0.44	0.0	0.0	0.0
ZDPS	39.0	76	1.11	7.56	1.46	1.4	9.5	0.6
Inferred Total	**1,693.9**	**163**	**2.42**	**12.05**	**3.64**	**132.1**	**656.4**	**61.7**

Notes:

1. CIM (2014) definitions were followed for Mineral Resources.
2. Mineral Resources are estimated at NSR cut-off value of US$82.30/t for the sub-level stoping resource shapes.
3. A minimum mining width of 0.8 m was used to create sub-level stoping resource shapes.
4. Mineral Resources are estimated using a long term gold price of US$1,700/oz Au, a silver price of US$20/oz Ag, and a zinc price of US$1.36/lb Zn.
5. Bulk density is between 2.65 t/m^3 and 2.9 t/m^3.
6. Metallurgical recoveries are applied on a block by block basis and average 63.4% for gold, 52.6% for silver, and 84.1% for zinc.
7. Mineral Resources are exclusive of Mineral Reserves.
8. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
9. Material within 30 m of the topographic surface has been excluded from the Porvenir Mineral Resources to allow for artisanal mining.
10. Numbers may not add due to rounding.

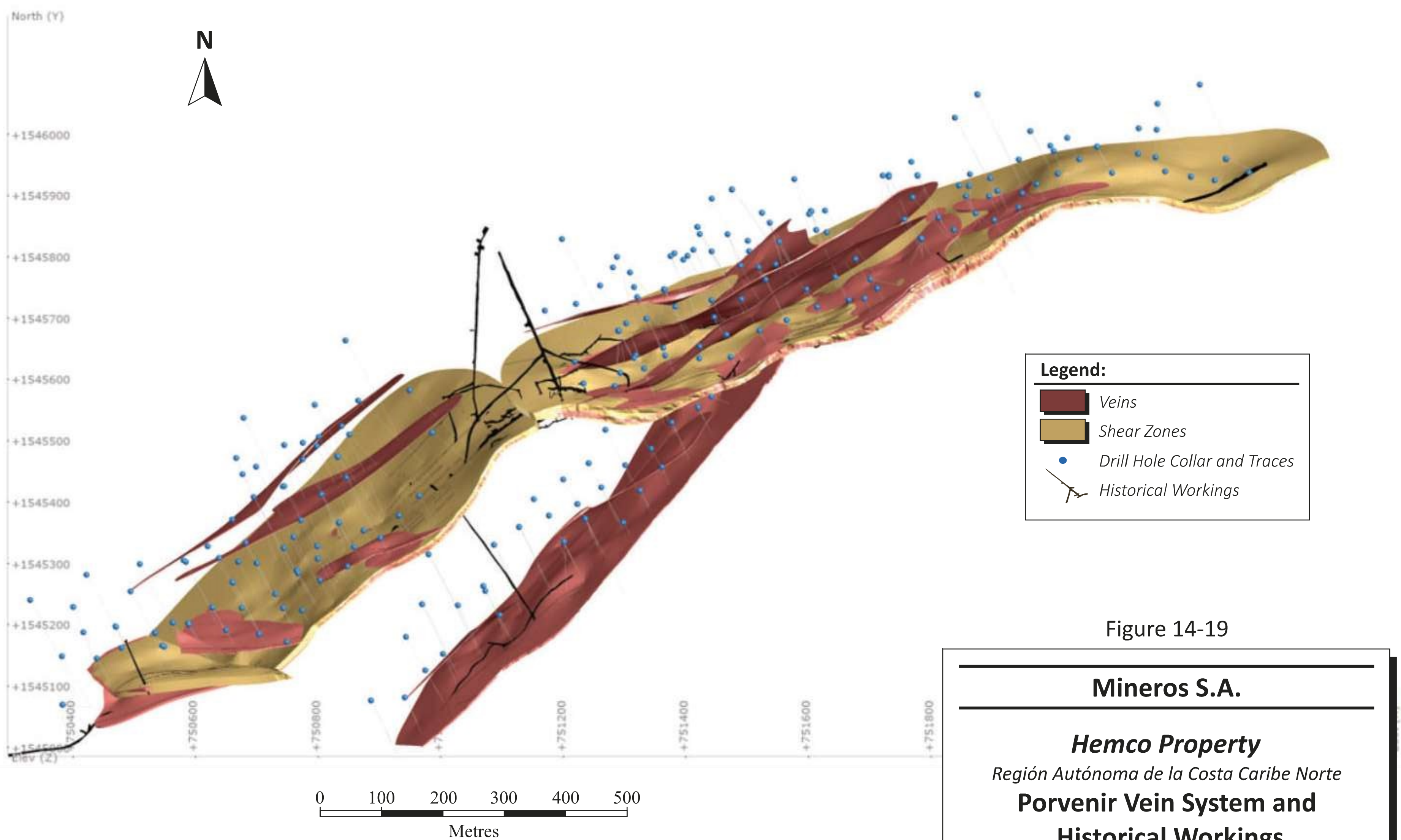


Figure 14-19

Mineros S.A.

Hemco Property

Región Autónoma de la Costa Caribe Norte

Porvenir Vein System and Historical Workings

March 2023

Source: SLR, 2021.

14.6.2 Comparison to Previous Mineral Resource Estimates

A comparison of the current Porvenir Mineral Resource estimate, exclusive of Mineral Reserves, to the previous 2021 Mineral Resource estimate is presented in Table 14-34.

Overall, the Mineral Resource has decreased due to the following changes:

- Conversion of part of Mineral Resources to Mineral Reserves.
- Utilization of recovery curves instead of fixed values. The 2021 estimate was based on recoveries of 87%, 60%, and 0.5% for Au, Ag, and Zn, respectively, to cyanide concentrate and 5.84%, 19.44%, and 86.93% for Au, Ag, and Zn, respectively, to zinc concentrate. The current recovery curves result in the average recoveries of 63.39%, 52.55%, and 84.05% for Au, Ag, and Zn, respectively.
- Change in the NSR cut-off value from US$70.00/t to US$82.30/t due to a cost update for the Zn metal price from US$1.22/lb Zn to US$1.36/lb Zn.
- Update of minimum thickness from 2.00 m to 0.80 m.
- A slight change in the density values due to an update in the regression of Fe+S versus density (approximately 1%).

Table 14-35 summarizes the differences in percentage between the two estimates.

Table 14-34: Porvenir Comparison of 2022 Versus 2021 Mineral Resources
Mineros S.A. – Hemco Property

Category	Tonnes	Grade			Contained Metal			Tonnes	Grade			Contained Metal		
	(kt)	(g/t Au)	(g/t Ag)	(%Zn)	(koz Au)	(koz Ag)	(Mlb Zn)	(kt)	(g/t Au)	(g/t Ag)	(%Zn)	(koz Au)	(koz Ag)	(Mlb Zn)
	June 30, 2021							December 31, 2022						
Measured	550	2.29	12.85	2.39	41	228	29	59	1.75	8.08	2.11	3	15	3
Indicated	8,957	2.89	10.66	2.78	832	3,070	549	974	2.39	8.13	2.56	75	255	55
M+I	9,507	2.86	10.79	2.76	872	3,297	578	1,033	2.35	8.13	2.53	78	270	58
Inferred	2,446	2.39	12.15	3.25	188	955	175	1,694	2.42	12.05	3.64	132	656	136

Notes:

1. CIM (2014) definitions were followed for Mineral Resources.
2. Mineral Resources NSR cut-off value:
    a. June 30, 2021: NSR cut-off value of US$70/t for domains amenable to sub-level stoping and US$84.60/t for those amenable to shrinkage stoping.
    b. December 31, 2022: NSR cut-off value of US$82.30/t used to report Mineral Resources within sub-level stoping resource shapes.
3. Minimum width:
    a. June 30, 2021: 1.8 m for sub-level stoping and 1.0 m for shrinkage stoping.
    b. December 31, 2022: 0.80 m used for reporting within constraining resource shapes.
4. Metal prices:
    a. June 30, 2021: gold price of US$1,700/oz, silver price of US$20/oz, and zinc price of US$1.22/lb.
    b. December 31, 2022: gold price of US$1,700/oz, silver price of US$20/oz, and zinc price of US$1.36/lb.
5. Bulk density is between 2.65 t/m^3 and 2.9 t/m^3.
6. Metallurgical recoveries:
    a. June 30, 2021: cyanide recovery – 87% for Au, 60% for Ag, and 0.5% for Zn; zinc concentrate – 5.84% for Au, 19.44% for Ag, and 86.93% for Zn.
    b. December 31, 2022: applied on a block-by-block basis and averaging 63.4% for Au, 52.6% for Ag and 84.1% for Zn.
7. Mineral Resources are exclusive of Mineral Reserves.
8. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
9. Material within 30 m of the topographic surface has been excluded from the Porvenir Mineral Resources to allow for artisanal mining.
10. Numbers may not add due to rounding.

Table 14-35: Change in Mineral Resources Between June 30, 2021 and December 31, 2022
Mineros S.A. – Hemco Property

Category	Tonnes	Grade			Contained Metal		
	(kt)	(g/t Au)	(g/t Ag)	(%Zn)	(koz Au)	(koz Ag)	(Mlb Zn)
Change							
Measured	-491	-0.54	-4.77	-0.28	-37	-212	-26
Indicated	-7,983	-0.50	-2.53	-0.22	-757	-2,815	-494
M+I	-8,474	-0.50	-2.66	-0.22	-794	-3,027	-520
Inferred	-752	0.03	-0.10	0.39	-56	-299	-39
Percentage Change							
Measured	-189%	-123%	-137%	-112%	-192%	-193%	-191%
Indicated	-189%	-117%	-124%	-108%	-191%	-192%	-190%
M+I	-189%	-118%	-1**25%**	-108%	-191%	-192%	-190%
Inferred	-131%	-99%	-101%	-88%	-130%	-131%	-122%

14.6.3 Resource Database

The drill hole database contains information including collar location, downhole deviation surveys, assay results (multi-element including Au, Ag, and Zn), lithological descriptions, density measurements, and structural observations and measurements. Table 14-36 summarizes the resource database as of April 30, 2021. The drilling used is illustrated in Figure 14-20 with the main mineralized veins.

Table 14-36: Porvenir Deposit Mineral Resource Database
Mineros S.A. – Hemco Property

Item	Record Count/Details
Drill Holes	290
Total Length (m)	60,199
Downhole Survey	2,070
Lithology	10,457
Structure	5,559
Assay Values	15,791
Total Length Assays (m)	13,903
Density	504

Section 12, Data Verification, describes the drill hole data verification steps made by SLR. In summary, no discrepancies were identified, and the QP is of the opinion that the drill hole database is valid and suitable to estimate Mineral Resources for the Porvenir deposit.

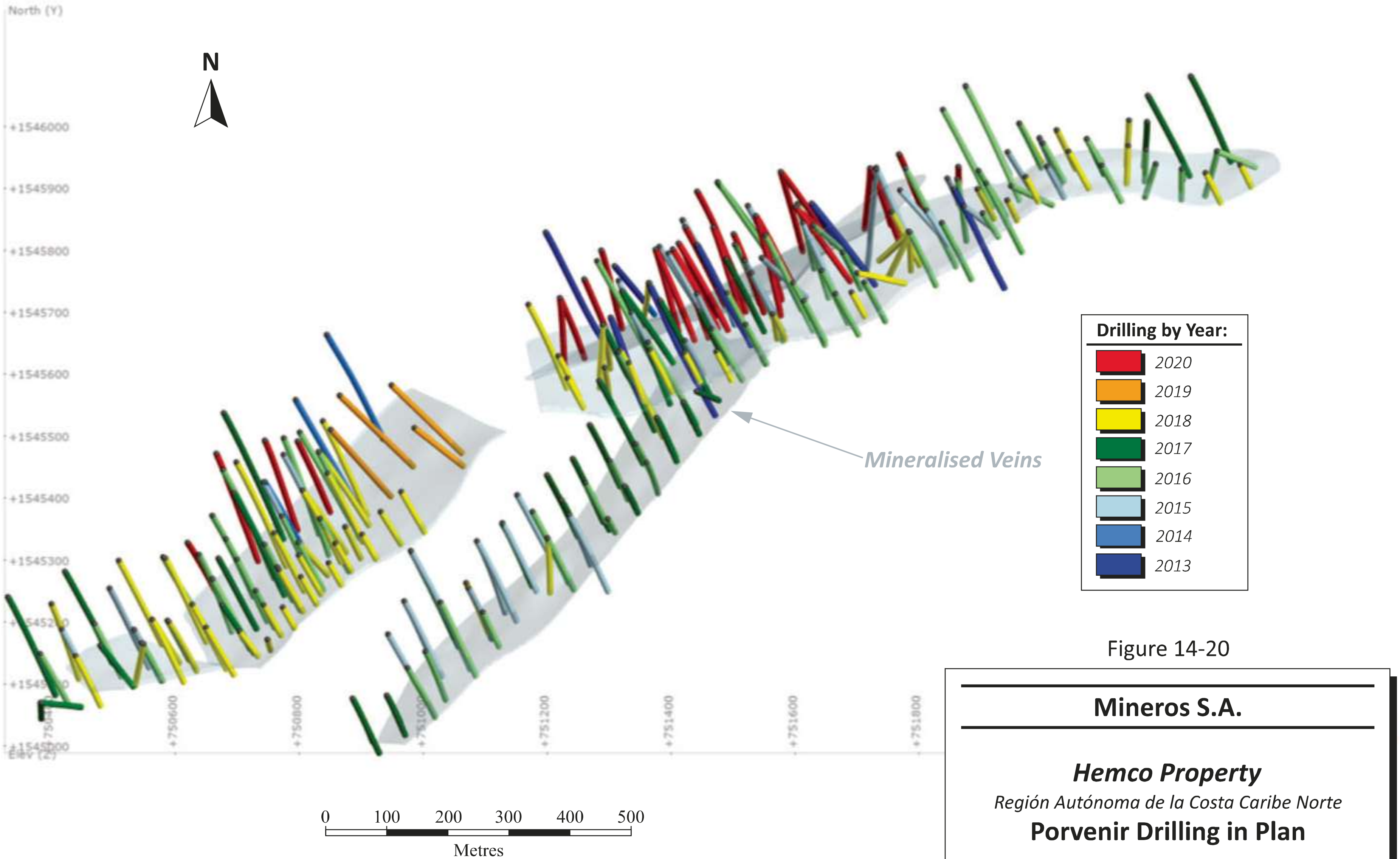


Figure 14-20

Mineros S.A.

Hemco Property

Región Autónoma de la Costa Caribe Norte

Porvenir Drilling in Plan

March 2023

Source: SLR, 2021.

14.6.4 Geological Interpretation

Geological models were constructed by Mineros geologists to provide geologic control for grade estimation and to provide parameters for mine planning. A total of 21 geological domains were built using Leapfrog software. Diamond drill hole surface maps were plotted in Leapfrog and used to create 3D geological wireframes. The geological modelling work for the current Mineral Resource model was completed in 2021, including the addition of three new wireframes.

Mineros geologists modelled three main domain zones:

- Shear Zone: Defined based on volume ratio greater than 15% of veinlets and geochemical anomaly (showing threshold values for 13 elements)
- Mineralized Vein: Based on the hydrothermal breccia (HBX) lithology code that contains veinlets and fragments of wallrock
- Grade Envelope: Modelled at a cut-off grade of 1 g/t Au within the Mineralized Vein domain

Wireframes were built for the main geological domains and are listed in Table 14-37. The main geological domains are shown in Figure 14-21.

In estimating Mineral Resources, SLR has applied minimum mining thicknesses depending on the most likely mining method for each domain; 1.8 m for sub-level stoping and 1.0 m for shrinkage stoping. The minimum mining thickness is applied by virtue of underground reporting shapes completed using DSO.

Table 14-37: Porvenir Deposit Geological Domains
Mineros S.A. – Hemco Property

Domain Number	Geological Domain Zone	Domain Name	Domain Code	Sector
1	Grade Envelope	Porvenir Sur Economico	PSE	South
2		Porvenir Norte 2 Economico	PN2E	North
3		Porvenir Norte Economico	PNE	North
4	Mineralized Vein	Porvenir Sur	PS1	South
5		Real McKoy	RM	Central
6		Porvenir Norte Hanging Wall 1	PNHW1	North
7		Porvenir Norte Hanging Wall	PNHW	North
8		Porvenir Norte 1	PN1	North
9		Porvenir Norte 2	PN2	North
10		Porvenir Norte 3	PN3	North
11		Porvenir Norte 4	PN4	North
12		Real McKoy 1	RM1	Central
13		Porvenir Sur Foot Wall	PSFW	South
14	Shear Zone	Zona de daño Porvenir Sur	ZDPS	South
15		Zona de daño Porvenir Norte	ZDPN	North

Domain Number	Geological Domain Zone	Domain Name	Domain Code	Sector
16	Mineralized Vein	Orofino	OROFINO	Central
17		Porvenir Sur Hanging Wall	PSHW	South
18		Porvenir Sur Hanging Wall 1	PSHW1	South
19	New Domain (2021)	Caimanero	CAIMANERO	Central
20		Catalina	CATALINA	South
21		Vanessa	VANESSA	South

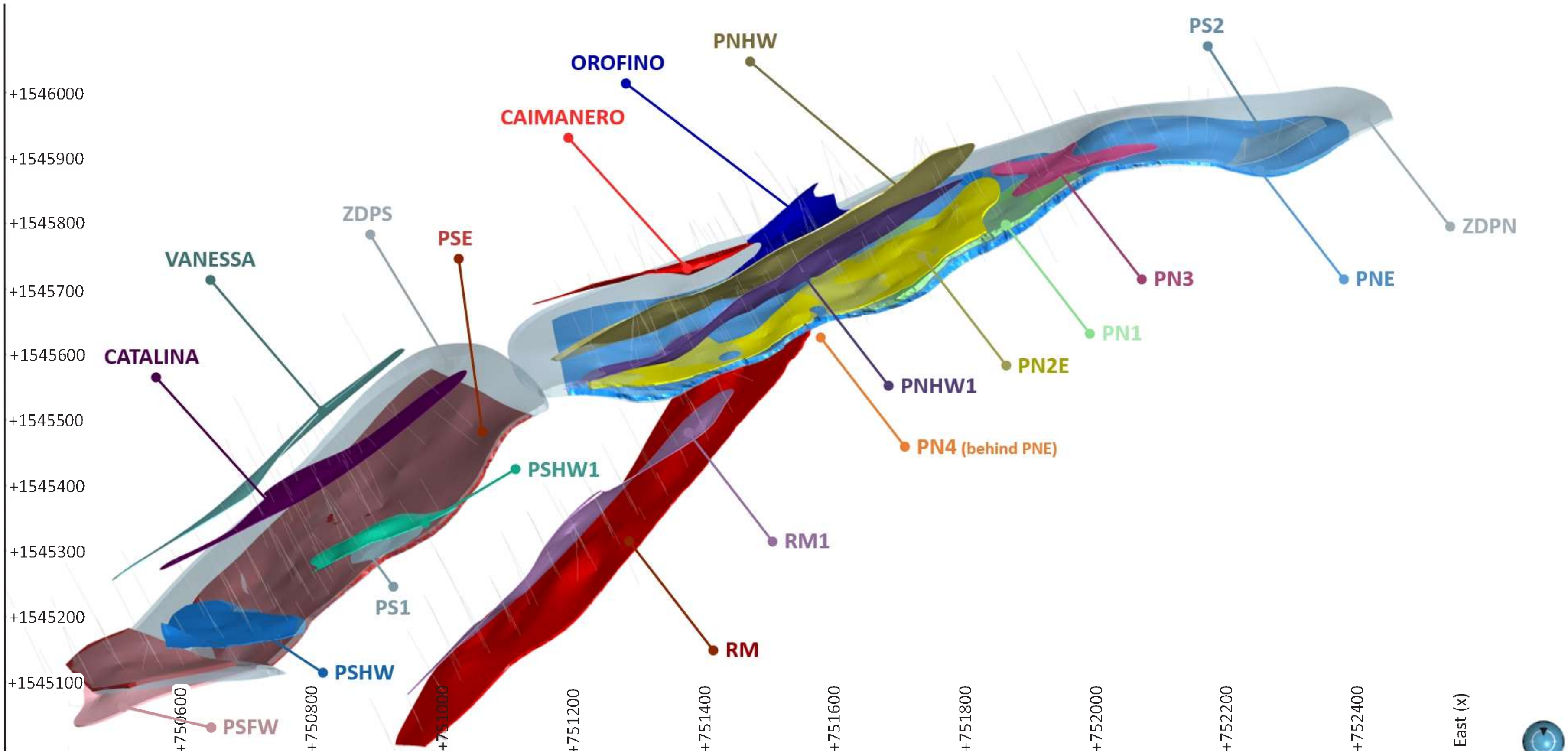


Figure 14-21

Legend:

PSFW, PSHW, PS 1, CATALINA, VANESSA, PSE, ZDPS, PSHW1, RM 1, RM, CAIMANERO, PN 4, PNHW1, OROFINO, PN2E, PNHW, PN 1, PN 3, PNE, PS 2, ZDPN

March 2023

Source: SLR, 2023.

Mineros S.A.

Hemco Property

Región Autónoma de la Costa Caribe Norte

Porvenir 3D View of Mineralization Wireframe

14.6.5 Density

The resource database includes 504 density measurements. These were flagged by domain for statistical analysis. Results show relatively low variance and therefore density assignments were done using blanket values by vein (Table 14-38). For domains with no density measurements, an average value of 2.70 t/m^3 was assigned.

Table 14-38: Porvenir Deposit Assigned Density Data
Mineros S.A. – Hemco Property

Domain	Average (t/m^3)	Count	Minimum (t/m^3)	Maximum (t/m^3)	SD (t/m^3)	Assigned Density (t/m^3)
OROFINO	2.66	1	-	-	-	2.65
PN1	2.68	12	2.51	2.89	0.07	2.70
PN2	2.50	3	2.42	2.54	0.06	2.70
PN2E	2.71	6	2.54	2.86	0.12	2.70
PNE	2.74	126	2.24	3.20	0.15	2.70
PNHW	2.73	4	2.71	2.79	0.04	2.70
PNHW1	2.92	3	2.65	3.35	0.38	2.90
PSE	2.77	52	2.58	3.52	0.15	2.80
PSFW	2.69	6	2.56	2.77	0.08	2.70
RM	2.89	68	2.69	3.49	0.13	2.90
ZDPN	2.69	77	2.34	2.90	0.11	2.70
ZDPS	2.65	20	2.47	2.86	0.10	2.65
Waste	2.78	126	2.53	3.06	0.07	2.70

14.6.6 Capping and Compositing

Given that approximately 40% of the samples in the assay database were taken at one metre and considering the lengths and widths of the veins, SLR chose to composite to one metre lengths starting at each domain boundary. Composites less than 0.5 m long were added to the preceding composite within the same domain.

Table 14-39 lists the average values for each of the three metals. Results are broadly comparable confirming that the compositing process was unbiased.

Table 14-39: Porvenir Average Assay, Composite, Block and Nearest Neighbour Values by Domain (Capped)
Mineros S.A. – Hemco Property

Domain	Average (Au g/t)				Average (Ag g/t)			Average (Zn %)		
	Assay	Comp	ID^3	NN	Assay	Comp	ID^3	Assay	Comp	ID^3
PSE	3.25	3.27	2.83	2.90	15.43	15.23	15.61	2.90	2.91	2.92
PN2E	1.73	1.61	1.68	1.68	6.70	6.36	6.97	2.07	1.85	1.91
PNE	2.94	3.05	2.94	2.89	12.99	13.09	12.61	2.91	2.91	3.03
PS1	1.27	1.28	1.43	1.40	7.39	7.97	7.19	3.12	3.47	2.73
RM	6.24	6.08	6.61	6.59	18.92	19.26	18.24	1.30	1.26	1.62
PNHW1	2.18	2.23	2.45	2.21	5.34	5.56	6.18	2.23	2.36	2.40
PNHW	1.87	1.67	2.16	2.18	3.96	3.34	4.09	1.95	1.78	2.91
PN1	2.32	2.35	2.26	2.25	7.07	7.22	7.59	2.58	2.72	3.01
PN2	0.35	0.29	0.37	0.37	2.70	2.22	2.61	0.13	0.11	0.12
PN3	1.42	1.42	1.31	1.25	4.83	4.38	4.06	3.82	3.81	3.56
PN4	1.46	1.49	1.57	1.65	5.57	5.77	5.52	3.56	3.49	3.49
RM1	1.85	1.73	1.47	1.42	6.44	6.00	5.04	1.49	1.46	1.54
PSFW	1.86	1.78	2.01	1.79	4.90	4.75	4.56	2.30	2.20	2.28
ZDPS	0.57	0.55	0.41	0.42	3.39	3.26	3.48	0.94	0.94	1.01
ZDPN	0.52	0.51	0.43	0.41	3.66	3.50	3.77	0.75	0.74	0.69
OROFINO	1.42	0.68	0.54	0.60	3.15	1.59	2.39	0.68	0.38	0.46
PSHW	2.91	2.93	3.18	3.09	5.30	4.96	5.06	1.50	1.47	1.59
PSHW1	1.42	1.48	1.47	1.49	5.67	5.51	5.05	1.37	1.57	1.30
CAIMANERO	1.53	1.32	1.24	1.29	4.49	4.03	4.37	1.91	1.82	1.94
CATALINA	1.52	1.49	1.70	1.62	3.48	3.46	3.38	1.85	1.86	1.79
VANESSA	1.97	2.03	2.12	1.97	8.68	8.02	7.68	5.53	5.16	5.18

Where the assay distribution is skewed positively, or approaches log normal, erratic high grade assay values can have a disproportionate effect on the average grade of a deposit. One method of treating these outliers to reduce their influence on the average grade is to cap them at a specific grade level. In the absence of production data to calibrate the capping level, inspection of assay distributions can be used to estimate preliminary capping levels.

As a large proportion of sampling has been undertaken using regular sample lengths, SLR recommends capping raw assays rather than composites to apply a high yield restriction during compositing and grade estimation to limit the influence of a small number of high grade samples on interpolations. A total of 10 capping groups were derived using basic statistical review of metal grades within each domain, with each group having a specific grade cap applied. A summary of uncapped and capped raw assays (length weighted) by geological domain is given in Table 14-40.

The QP is of the opinion that the treatment of high grades is reasonable.

Table 14-40: Porvenir Capping Statistics (Au, Ag, and Zn)
Mineros S.A. – Hemco Property

Domain	Cap Group	Gold Grade (g/t Au)					Silver Grade (g/t Ag)					Zinc Grade (% Zn)				
		No. Capped	Cap Value	% Metal Loss	Un-capped Mean	Capped Mean	No. Capped	Cap Value	% Metal Loss	Un-capped Mean	Capped Mean	No. Capped	Cap Value	% Metal Loss	Un-capped Mean	Capped Mean
PSE	3	4	25	1.2%	3.33	3.29	12	76	4.9%	16.08	15.30	7	15	2.3%	3.00	2.93
PN2E	5	1	20	1.2%	1.65	1.63	1	50	1.8%	6.58	6.46	0	22	0.0%	1.86	1.86
PNE	2	9	35	12.4%	3.48	3.05	7	100	2.5%	13.44	13.10	3	26	0.3%	2.94	2.93
PS1	8	0	9	0.0%	1.26	1.26	0	21	0.0%	7.19	7.19	1	8	3.5%	3.17	3.06
RM	1	2	40	37.0%	10.02	6.31	7	71	7.0%	19.95	18.56	5	7	14.0%	1.50	1.29
PNHW1	5	1	20	1.4%	2.23	2.20	1	50	0.2%	5.48	5.47	1	22	2.1%	2.39	2.34
PNHW	5	2	20	1.8%	1.68	1.65	2	50	5.1%	3.54	3.36	1	22	3.7%	1.87	1.80
PN1	5	3	20	7.7%	2.61	2.41	2	50	1.9%	7.58	7.44	0	22	0.0%	2.69	2.69
PN2	9	4	1	38.0%	0.50	0.31	3	7	12.9%	2.64	2.30	3	0.5	64.5%	0.31	0.11
PN3	5	0	20	0.0%	1.45	1.45	0	50	0.0%	4.46	4.46	0	22	0.0%	3.59	3.59
PN4	5	0	20	0.0%	1.42	1.42	0	50	0.0%	5.49	5.49	2	22	4.4%	3.63	3.47
RM1	6	4	10	6.0%	1.82	1.71	1	26	1.0%	5.77	5.71	3	7	2.1%	1.41	1.38
PSFW	8	3	9	9.0%	2.00	1.82	4	21	8.4%	5.23	4.79	6	8	10.2%	2.55	2.29
ZDPS	10	1	9	3.5%	0.57	0.55	1	50	2.1%	3.35	3.28	0	13	0.0%	0.94	0.94
ZDPN	10	0	9	0.0%	0.50	0.50	2	50	0.9%	3.53	3.50	2	13	1.3%	0.75	0.74
OROFINO	7	2	8	2.9%	0.69	0.67	0	20	0.0%	1.55	1.55	1	7	0.0%	0.38	0.38
PSHW	3	1	25	14.6%	3.77	3.22	0	76	0.0%	5.20	5.20	1	15	0.8%	1.27	1.26
PSHW1	8	2	9	11.8%	1.69	1.49	1	21	4.0%	5.78	5.55	1	8	4.4%	1.59	1.52
CAIMANERO	7	2	8	3.3%	1.23	1.19	4	20	3.6%	4.13	3.98	4	7	23.8%	2.44	1.86

Domain	Cap Group	Gold Grade (g/t Au)					Silver Grade (g/t Ag)					Zinc Grade (% Zn)				
		No. Capped	Cap Value	% Metal Loss	Un-capped Mean	Capped Mean	No. Capped	Cap Value	% Metal Loss	Un-capped Mean	Capped Mean	No. Capped	Cap Value	% Metal Loss	Un-capped Mean	Capped Mean
CATALINA	8	0	9	0.0%	1.43	1.43	0	21	0.0%	3.37	3.37	1	8	0.6%	1.59	1.58
VANESSA	4	6	4	33.1%	3.08	2.06	3	20	25.6%	11.83	8.80	1	15	2.9%	5.49	5.33

14.6.7 Block Model

The mineralization wireframes were filled using Vulcan software with cells measuring 2 m by 2 m by 2 m, sub-blocked to 0.25 m by 0.25 m x 0.25 m. The block model setup is given in Table 14-41.

Table 14-41: Porvenir Block Model Setup
Mineros S.A. – Hemco Property

Parameter	X	Y	Z
Origin (m)	752,600	1,546,000	-100
Block Size (m)	2.0	2.0	2.0
Sub-block size (m)	0.25	0.25	0.25
Number of Blocks	500	1,250	400
Rotation		320 of X axis around Z axis	

14.6.8 Dynamic Anisotropy

Given the varying geometries of the 21 individual domains, SLR opted to develop variable block orientations using DA modelling in Vulcan. This method served to populate the model with azimuth, dip, and plunge values to represent the variable orientation observed in each domain in any given block. These orientation variables were subsequently used during grade interpolation instead of using a single search ellipse orientation.

SLR used a two-surface approach whereby the hanging wall and footfall surfaces of each domain were used to perform the DA. A preferred major azimuth of 250° was applied to all domains to reflect the overall orientation of the deposit, and all domains were specific as having a plunge of zero, with no clearly observable plunge seen in the mineralization.

14.6.9 Interpolation Strategy

A three-pass interpolation strategy was used for all domains and elements. For all domains, assays for gold, silver, and zinc were interpolated into blocks using ID^3 (Table 14-42). SLR determined that hard boundaries between domains were appropriate.

The general ID^3 interpolation strategy for the mineralization domains of interest is as follows:

- DA used to define search orientations
- First pass ellipse radius of 3 m by 40 m by 40 m
- Second pass ellipse radius of 3 m by 80 m by 80 m
- Third pass ellipse radius of 30 m by 160 m by 160 m (with the exception of seven domains, detailed in Table 14-40 below)
- A minimum of four samples per block estimate for passes one and two and minimum of one sample for pass three
- A maximum of three samples per drill hole for passes one and two, with no maximum for pass three

Table 14-42: Porvenir Inverse Distance Interpolation Parameters
Mineros S.A. – Hemco Property

Pass	Domain	OROFINO	PSE	PSFW	PSHW	RM	ZDPN	ZDPS	All Other
Pass 1	Radius in X (m)	40	40	40	40	40	40	40	40
	Radius in Y (m)	40	40	40	40	40	40	40	40
	Radius in Z (m)	3	3	3	3	3	3	3	3
	Minimum Composites	4	4	4	4	4	4	4	4
	Maximum Composites	12	12	12	12	12	12	12	12
	Max. Composites per Drillhole	3	3	3	3	3	3	3	3
Pass 2	Radius in X (m)	80	80	80	80	80	80	80	80
	Radius in Y (m)	80	80	80	80	80	80	80	80
	Radius in Z (m)	3	3	3	3	3	3	3	3
	Minimum Composites	4	4	4	4	4	4	4	4
	Maximum Composites	12	12	12	12	12	12	12	12
	Max. Composites per Drillhole	3	3	3	3	3	3	3	3
Pass 3	Radius in X (m)	320	320	640	320	320	320	320	160
	Radius in Y (m)	320	320	640	320	320	320	320	160
	Radius in Z (m)	60	60	120	60	60	60	60	30
	Minimum Composites	1	1	1	1	1	1	1	1
	Maximum Composites	12	12	12	12	12	12	12	12
	Max. Composites per Drillhole	-	-	-	-	-	-	-	-

14.6.10 Validation

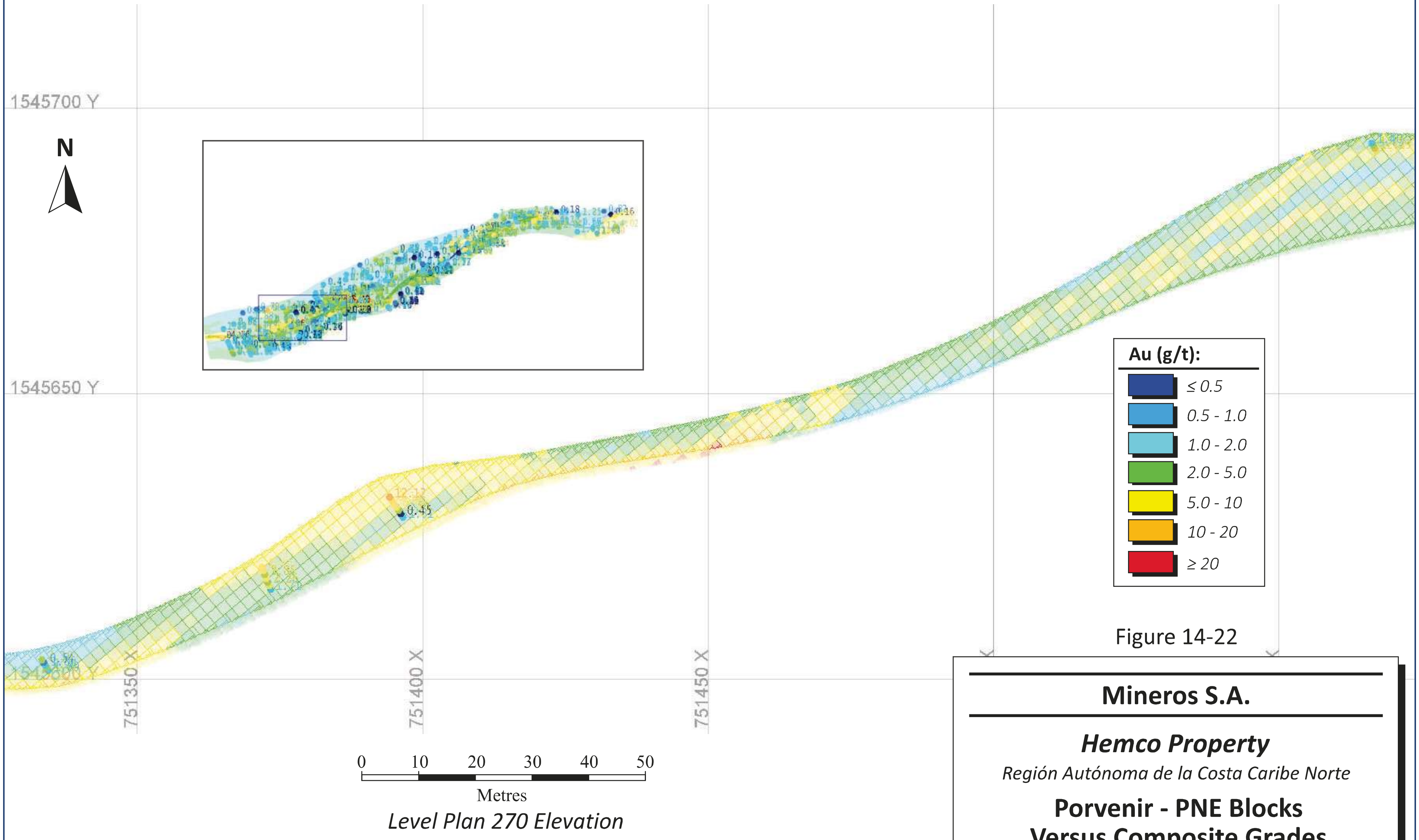
The Porvenir block models were validated by SLR using industry standard techniques including:

- Visual inspection of block versus composite grades on longitudinal, horizontal, and vertical sections (examples shown in Figure 14-22 and Figure 14-23)
- Comparison between capped and uncapped grades per domain (Table 14-40)
- Comparison between the estimate and the NN mean grades (included in Table 14-39)

- Swath plots (examples shown in Figure 14-24 to Figure 14-26)
- Checking that assays were selected properly by Vulcan

The QP noted the following from the validation process:

- In general, the estimates validate well.
- The swath plots and mean comparisons show a reasonable reproduction of the underlying composite data.
- There were minor mismatches between assay grades and composites due to the wireframes being generated in Leapfrog and the assays being selected for compositing in Vulcan.
- The final reclassified block model is reasonable and suitable to support the public disclosure of Mineral Resources.



Level Plan 270 Elevation

Figure 14-22

Mineros S.A.

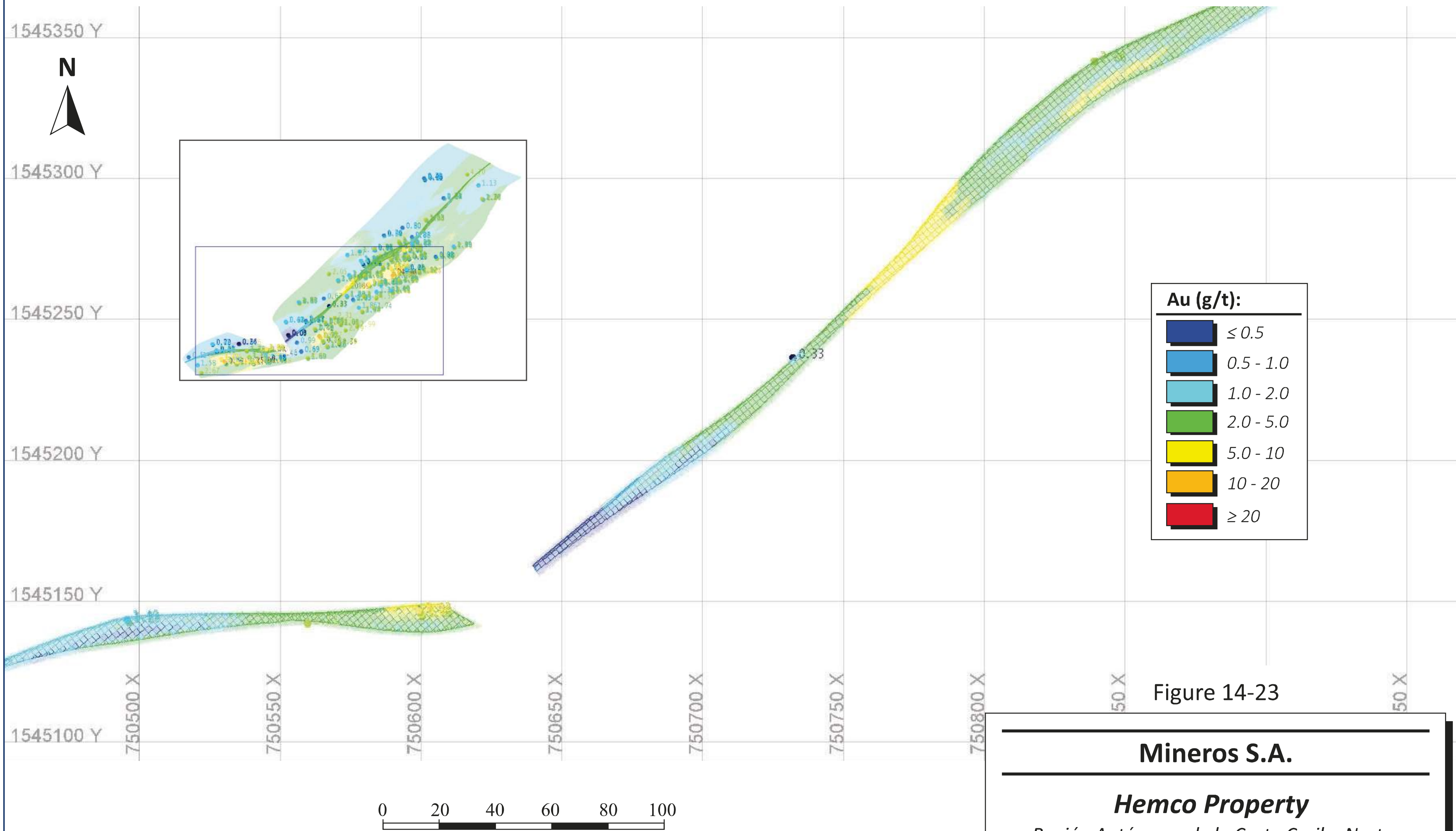
Hemco Property

Región Autónoma de la Costa Caribe Norte

Porvenir - PNE Blocks Versus Composite Grades

March 2023

Source: SLR, 2021.



Level Plan 280 Elevation

Figure 14-23

Mineros S.A.

Hemco Property

Región Autónoma de la Costa Caribe Norte

Porvenir - PSE Blocks Versus Composite Grades

March 2023

Source: SLR, 2021.

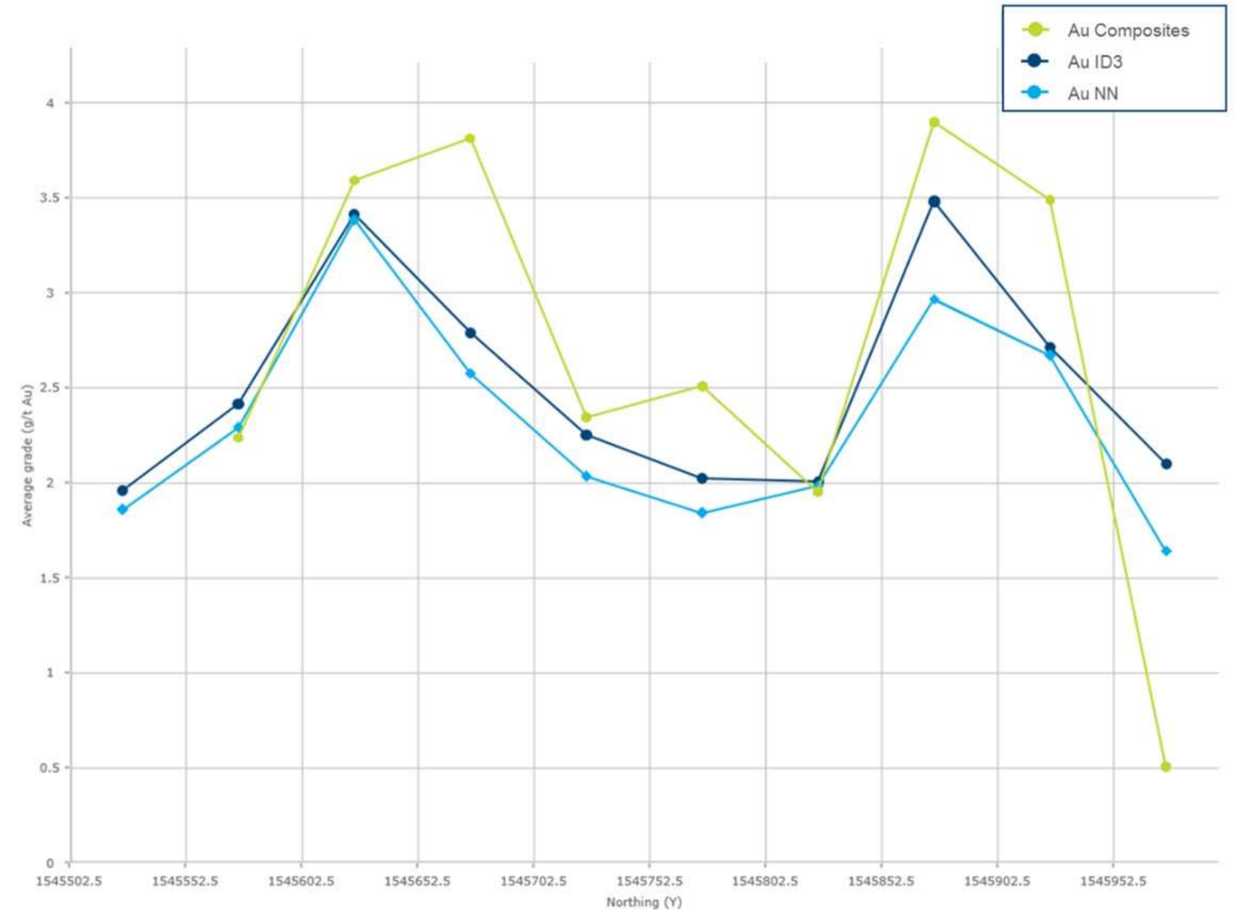


Figure 14-24: Porvenir - PNE Au Swath Plot

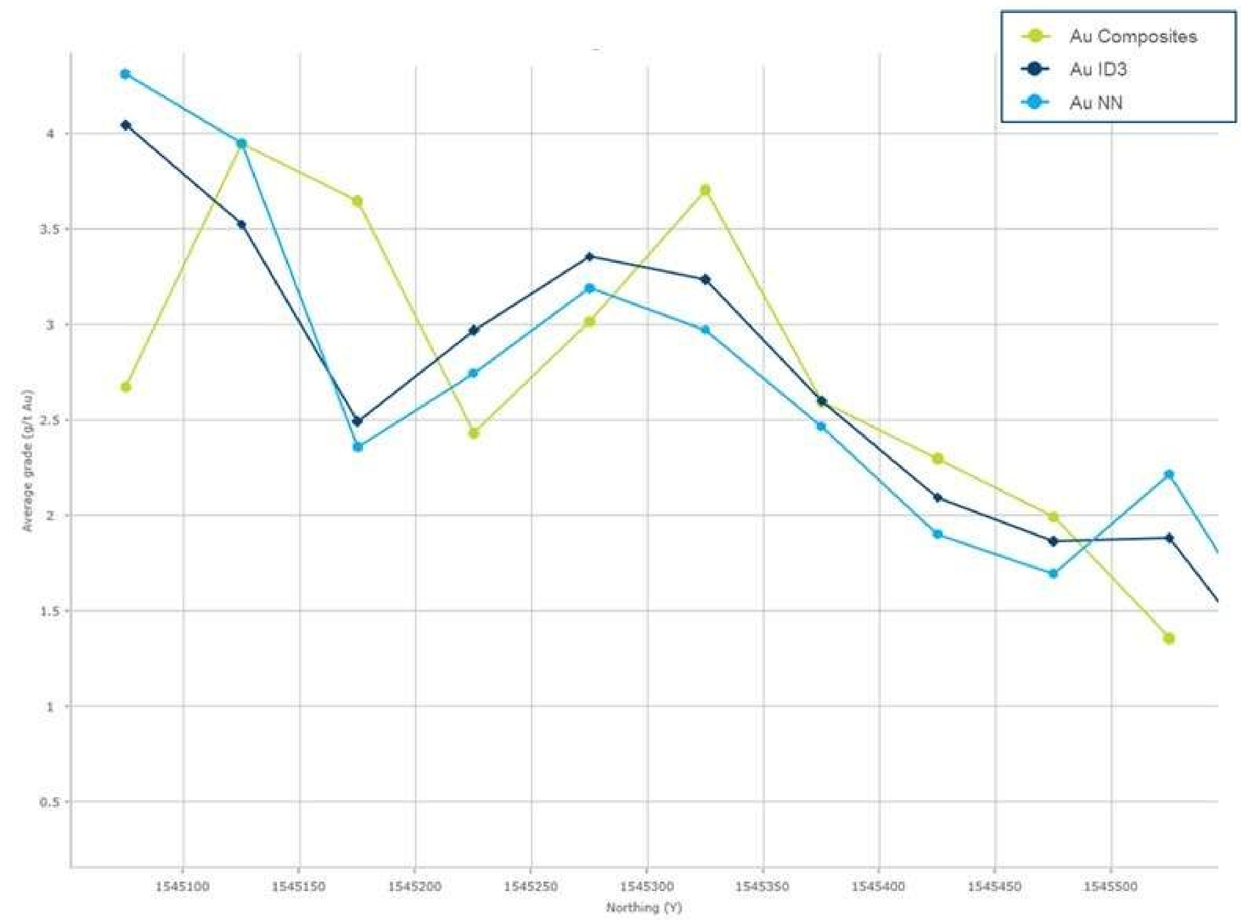


Figure 14-25: Porvenir - PSE Au Swath Plot

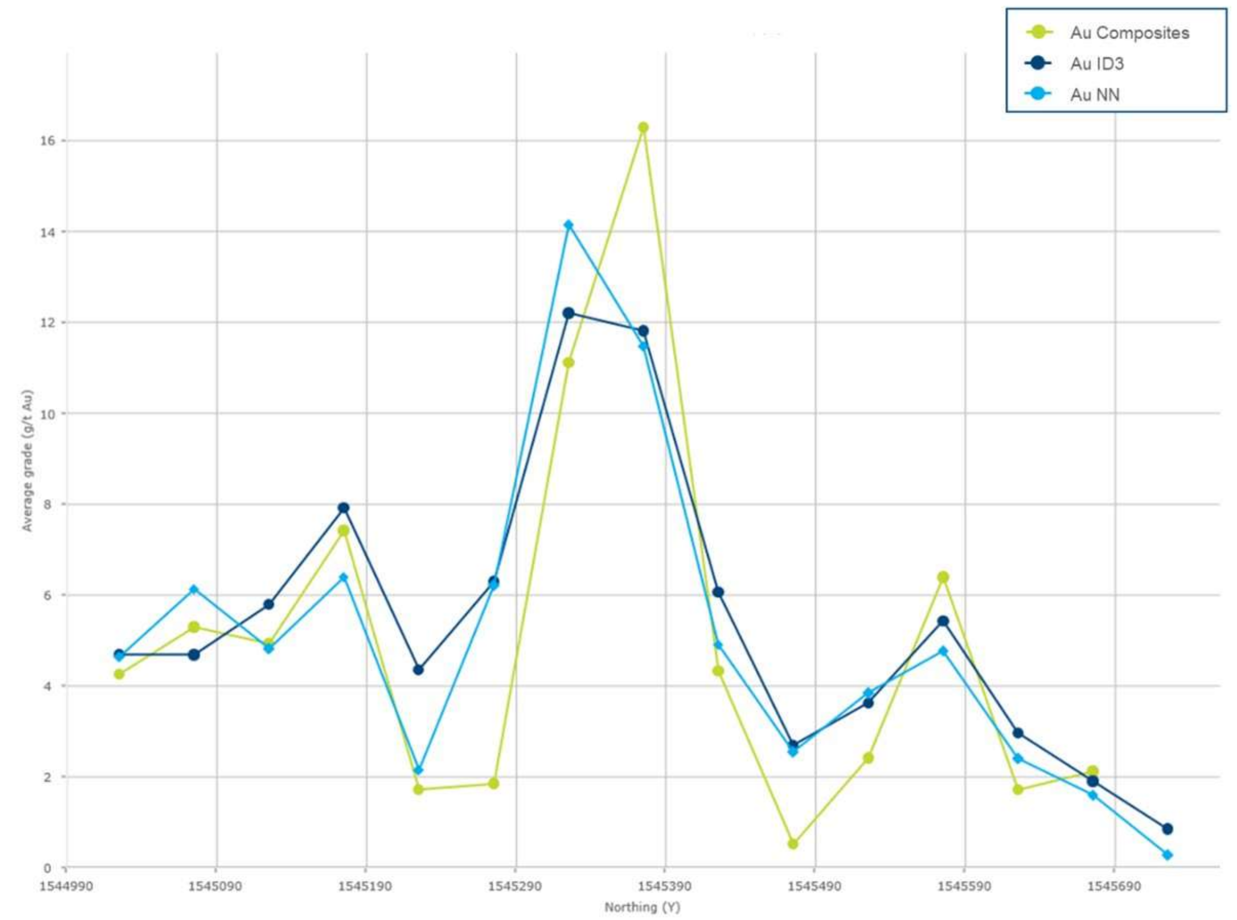


Figure 14-26: Porvenir - RM Au Swath Plot

14.6.11 Classification

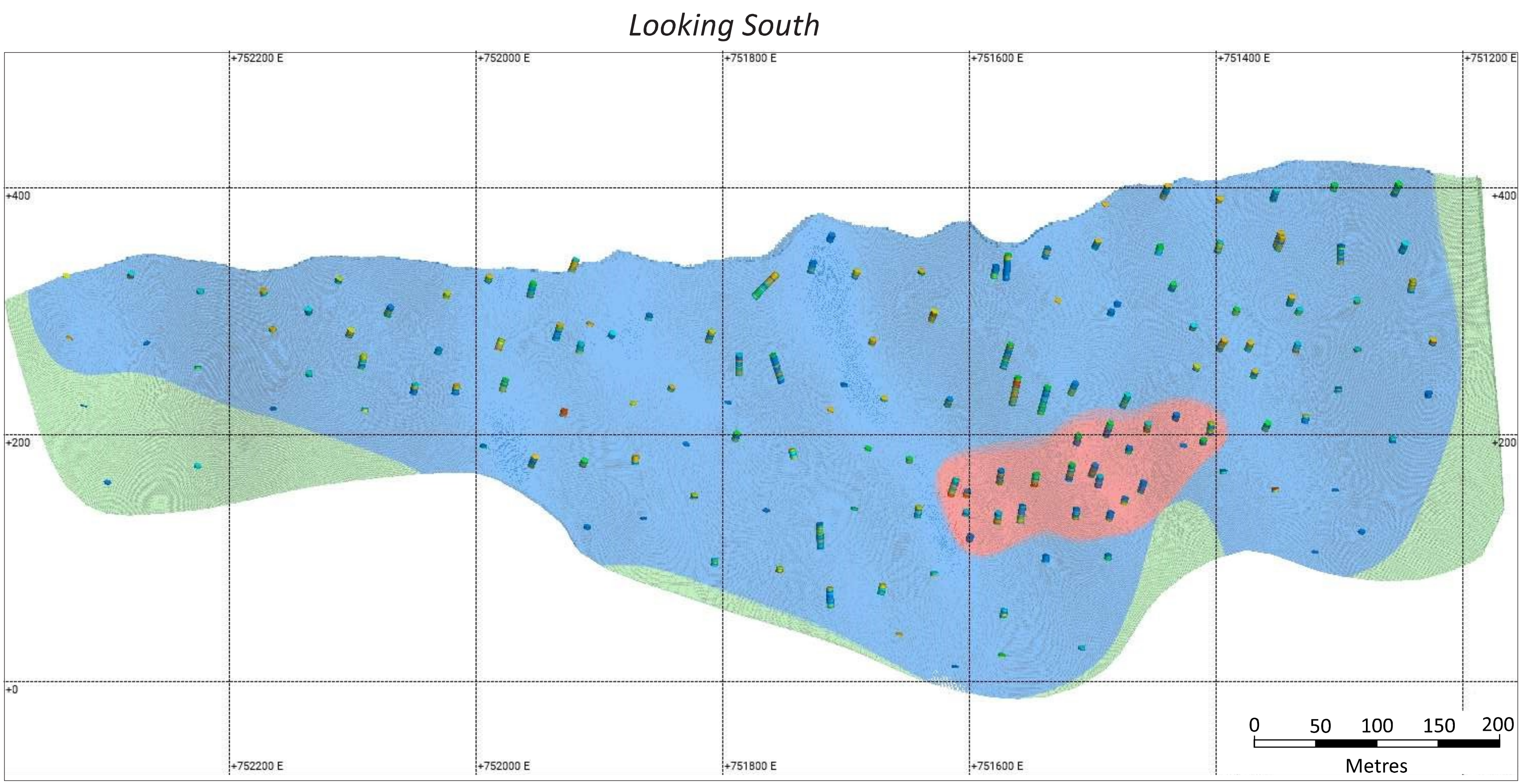
The classification was guided by drill hole spacing calculated for each domain. SLR built wireframes in Leapfrog representing Measured, Indicated, and Inferred Mineral Resource categories which encompassed the following nominal drill hole spacing criteria for each category:

- Measured: 20 m to 25 m
- Indicated: 40 m to 50 m
- Inferred: up to 80 m to the nearest sample

SLR reviewed the classification assigned and noted mean drill hole spacings of approximately 22 m, 38 m, and 48 m for the Measured, Indicated, and Inferred categories respectively.

The classifications for Measured, Indicated, and Inferred are exclusive of a 30 m exclusion zone from topographic surface to allow for artisanal mining.

The final Mineral Resource classifications for PNE, PSE, and RM are shown in Figure 14-27 and Figure 14-29.



Legend:

NSR ($/t):
- < 75
- 75 - 100
- 100 - 150
- 150 - 200
- 200 - 500
- > 500

Classification
- Measured
- Indicated
- Inferred

March 2023

Source: SLR, 2023.

Figure 14-27

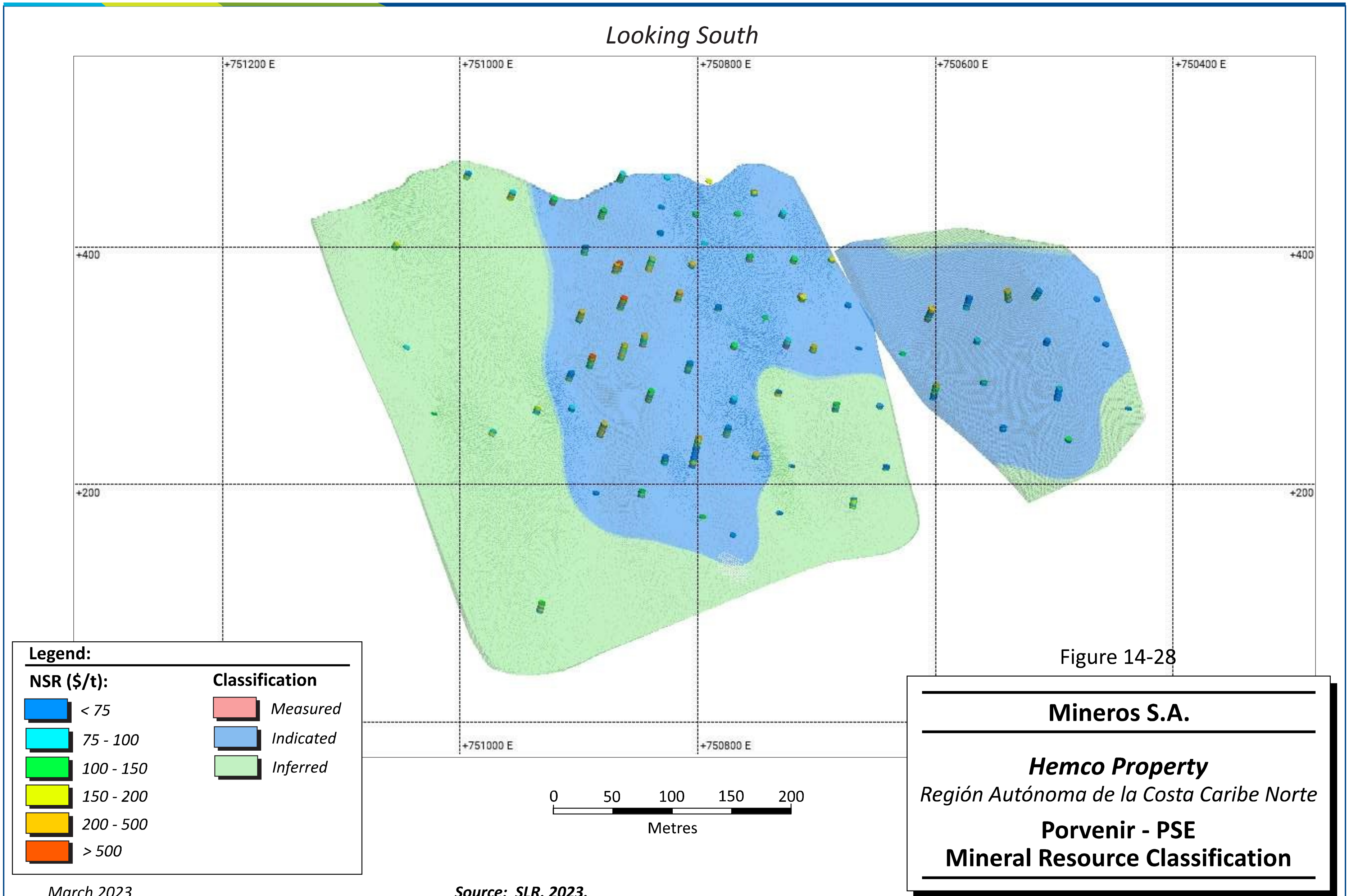
Mineros S.A.

Hemco Property

Región Autónoma de la Costa Caribe Norte

Porvenir - PNE

Mineral Resource Classification



Source: SLR, 2023.

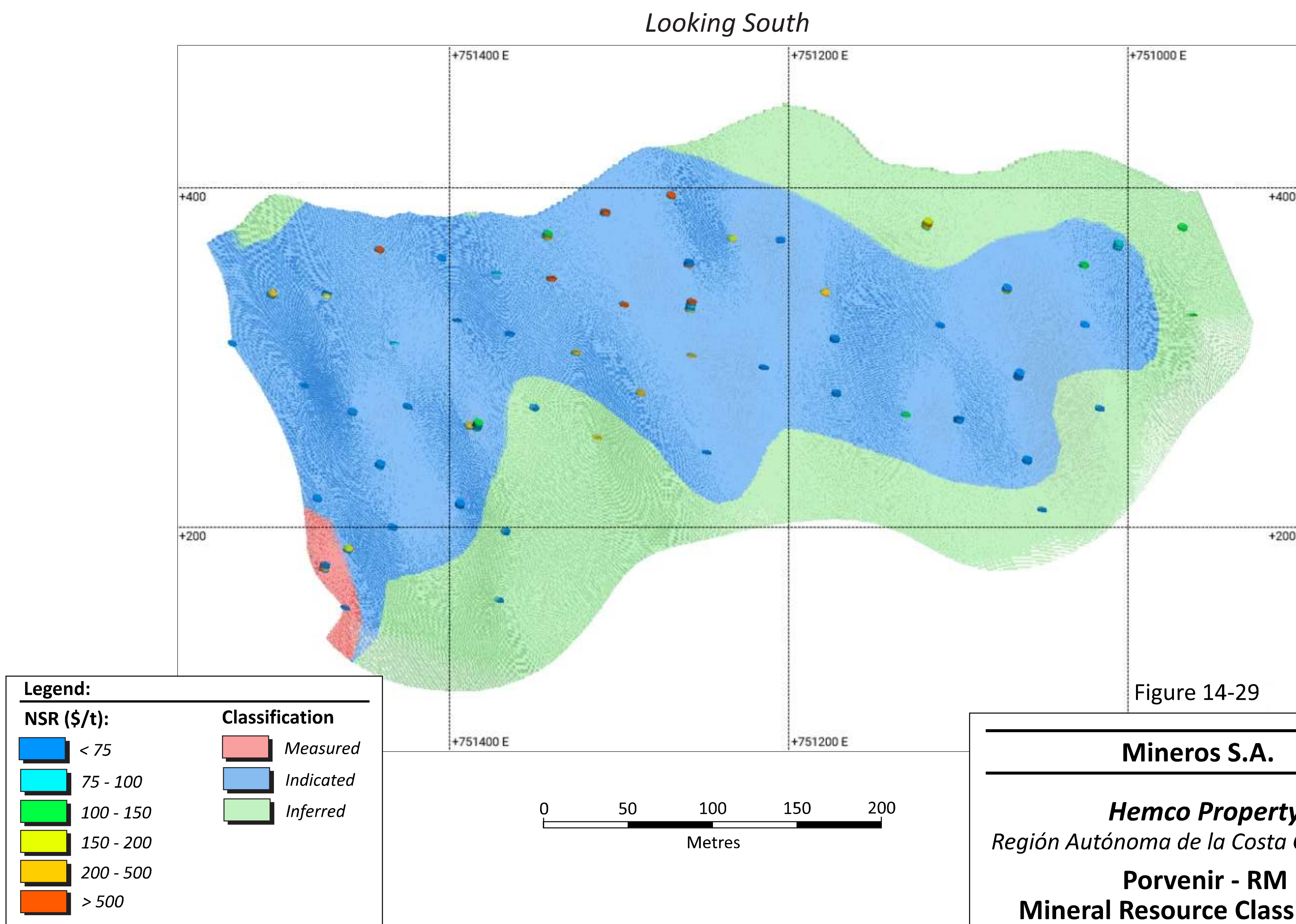
Figure 14-28

Mineros S.A.

Hemco Property

Región Autónoma de la Costa Caribe Norte

Porvenir - PSE
Mineral Resource Classification



March 2023

Source: SLR, 2023.

Figure 14-29

Mineros S.A.

Hemco Property

Región Autónoma de la Costa Caribe Norte

Porvenir - RM
Mineral Resource Classification

14.6.12 Mineral Resource Reporting

The Mineral Resource estimate for Porvenir, exclusive of Mineral Reserves, as of December 31, 2022, is summarized in Table 14-33. To demonstrate RPEEE, underground resource shapes were generated in DSO for reporting purposes (Figure 14-30 and Figure 14-31).

The remaining unclassified material at the borders of the resource shapes was split proportionally according to the tonnage of each Mineral Resource category. The resource shapes were built using an NSR cut-off value of US$82.30/t, and the Mineral Resource reporting satisfies the minimum size and continuity criteria.

The Mineral Reserve blocks, as well as underground excavations and the artisanal mining areas, were removed from Mineral Resources. The sill pillar between artisanal areas and constraining resource shapes was also considered as Mineral Resource.

The average internal dilution is approximately 6%, and it is mainly concentrated in the walls and edges of the resource shapes. There are blocks above the NSR cut-off that are not part of the Mineral Resources, due to the thickness that is smaller than the minimum thickness used for Mineral Resources estimation.

In the QP's opinion, the assumptions, parameters, and methodology used for the Porvenir underground Mineral Resource estimates are appropriate for the style of mineralization and mining methods.

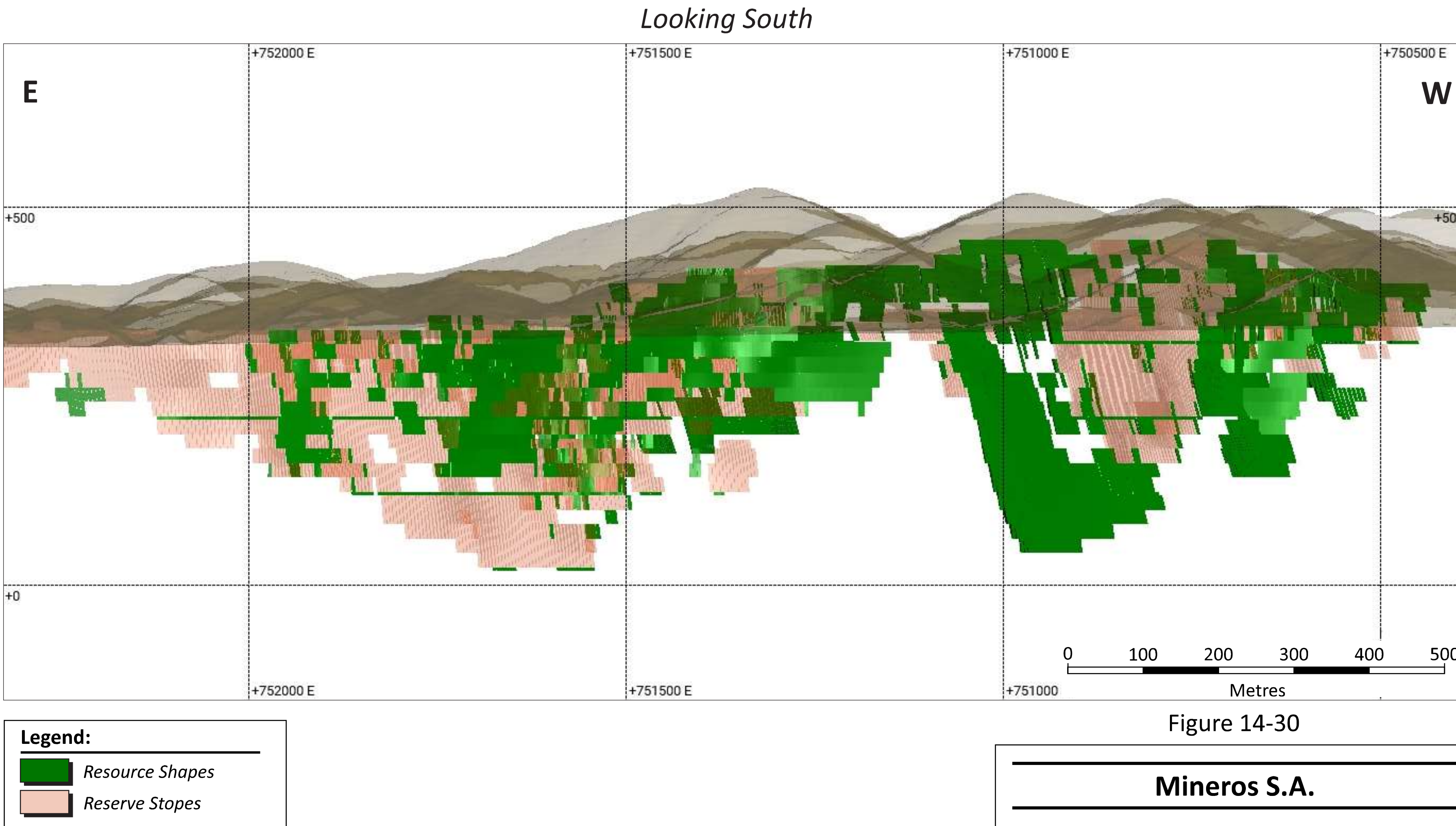


Figure 14-30

Mineros S.A.

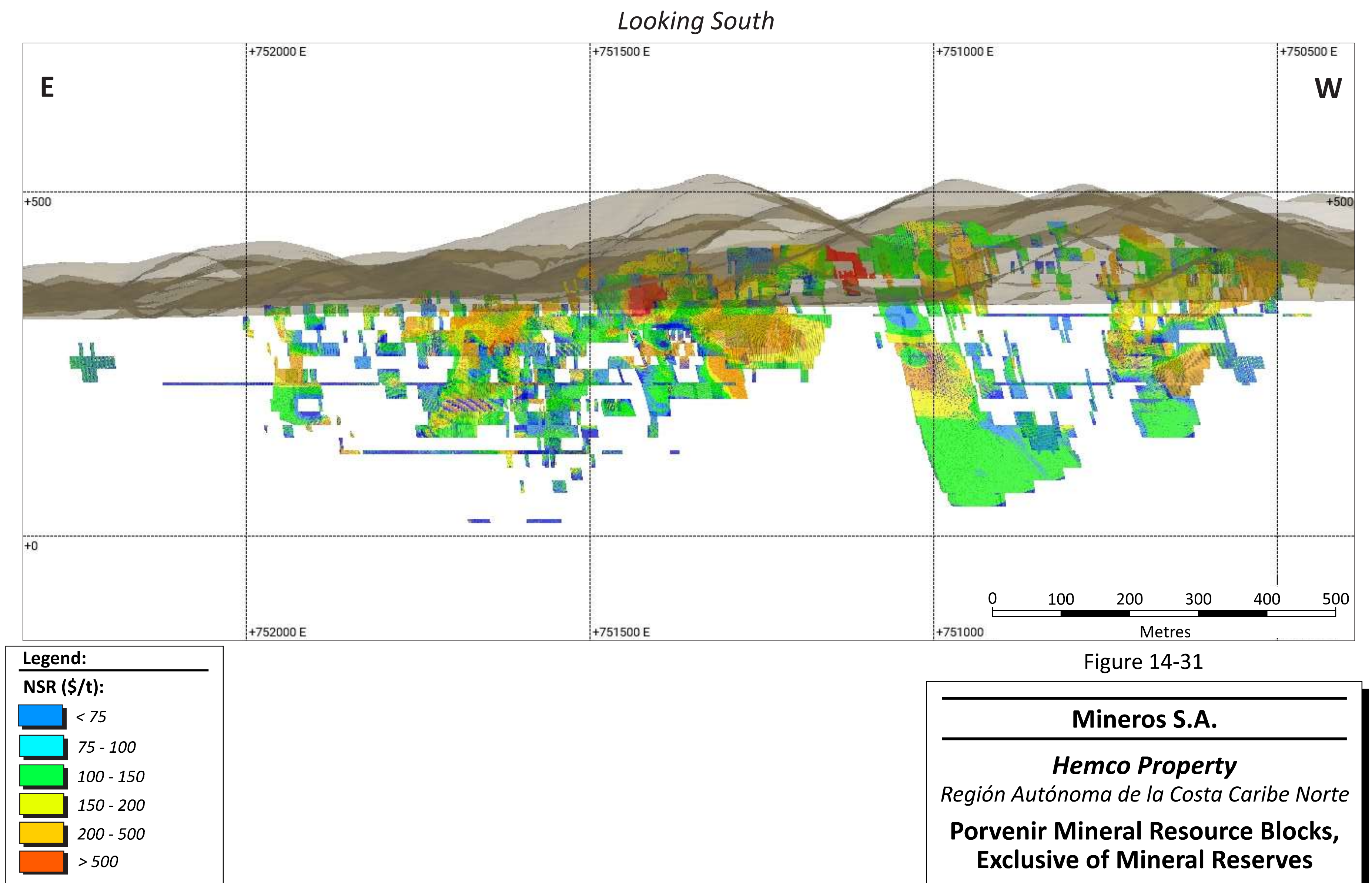
Hemco Property

Región Autónoma de la Costa Caribe Norte

Porvenir Resource Shapes and Reserve Stopes

March 2023

Source: SLR, 2023.



March 2023

Source: SLR, 2023.

Figure 14-31

Mineros S.A.

Hemco Property

Región Autónoma de la Costa Caribe Norte

Porvenir Mineral Resource Blocks, Exclusive of Mineral Reserves

14.7 Luna Roja

14.7.1 Summary

Mineral Resources have been estimated at Luna Roja, where gold mineralization is hosted by skarns associated primarily with selective replacement of carbonate rocks. The Luna Roja deposit has been explored by Mineros for several years prior to initiating mapping, surface sampling, followed by drilling in 2019.

The Luna Roja Mineral Resource estimate is based on 184 drill holes completed between 2019 and 2022, in addition to 108 surface channels and trenches taken between 2017 and 2021. SLR interpreted 15 resource domains within the main skarn body in Leapfrog Geo using raw assays and lithology. Assays were capped based on EDA and composited to five metre lengths. SLR interpolated gold grades into the block model using ID^2 in three estimation passes. Blocks were classified based on drill hole spacing. Where drill hole spacing was less than 30 m, the blocks were classified as Indicated. If the drill holes spacing was between 30 m and 60 m, the blocks were classified as Inferred. In areas where the drill hole spacing was greater than 60 m, blocks remained unclassified.

Luna Roja open pit and underground Mineral Resources are summarized in Table 14-43 and have an effective date of June 17, 2022.

Table 14-43: Luna Roja Mineral Resource Estimate by Zone – Effective June 17, 2022
Mineros S.A. – Hemco Property

Domain	Indicated			Inferred		
	Tonnes (kt)	Grade (g/t Au)	Contained Metal (koz Au)	Tonnes (kt)	Grade (g/t Au)	Contained Metal (koz Au)
Open Pit						
001	478	3.15	48.4	69	2.96	6.5
002	11	1.01	0.3			
003	37	1.40	1.6	24	1.24	0.9
004	22	1.62	1.2			
007	31	1.39	1.4			
008	143	1.83	8.5	8	1.53	0.4
009	32	1.37	1.4	34	1.28	1.4
010	31	1.96	1.9	19	1.24	0.7
011	53	1.15	1.9			
012	20	1.59	1.0	142	2.66	12.2
014	24	3.82	2.9			
supergene	259	2.04	16.9	18	1.81	1.1
OP Total	**1,140**	**2.39**	**87.6**	**314**	**2.30**	**23.2**

Domain	Indicated			Inferred		
	Tonnes (kt)	Grade (g/t Au)	Contained Metal (koz Au)	Tonnes (kt)	Grade (g/t Au)	Contained Metal (koz Au)
			Underground			
001	23	5.37	3.9	5	5.93	0.9
007				3	2.37	0.2
012				9	2.33	0.7
013				70	2.38	5.4
014	2	2.10	0.1	58	2.40	4.5
015				22	3.32	2.4
dilution				17	0.10	0.1
UG Total	**25**	**5.10**	**4.0**	**186**	**2.37**	**14.1**
			Open Pit + Underground			
001	500	3.25	52.3	74	3.15	7.4
002	11	1.01	0.3			
003	37	1.40	1.6	24	1.24	0.9
004	22	1.62	1.2			
007	31	1.39	1.4	3	2.37	0.2
008	143	1.83	8.5	8	1.53	0.4
009	32	1.37	1.4	34	1.28	1.4
010	31	1.96	1.9	19	1.24	0.7
011	53	1.15	1.9			
012	20	1.59	1.0	151	2.64	12.8
013				70	2.38	5.4
014	26	3.69	3.1	58	2.40	4.5
015				22	3.32	2.4
supergene	259	2.04	17	18	1.18	1.1
dilution				17	0.1	0.1
OP + UG Total	**1,164**	**2.45**	**91.6**	**500**	**2.33**	**37.4**

Notes:

1. CIM (2014) definitions were followed for Mineral Resources.
2. Open pit Mineral Resources are reported within an optimized pit shell above a cut-off grade of 0.87 g/t Au.
3. Underground Mineral Resources are reported within constraining volumes, built around continuous blocks above a cut-off grade of 2.0 g/t Au, and considering a minimum thickness of 2.0 m.
4. A minimum mining width of 2.0 m was used.
5. Average density of reported resources is 3.00 t/m^3 (open pit) or 3.15 t/m^3 (underground).
6. Mineral Resources are estimated using a long-term gold price of US$1,700 per ounce.

7. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
8. Numbers may not add due to rounding.

14.7.2 Resource Database

The drill hole database contains information including collar locations, downhole deviation surveys, assay results, lithological descriptions, density measurements, and structural observations and measurements. Table 14-44 summarizes the resource database as of June 17, 2022. Channel and trench samples were used only in block grade estimates in the supergene domain.

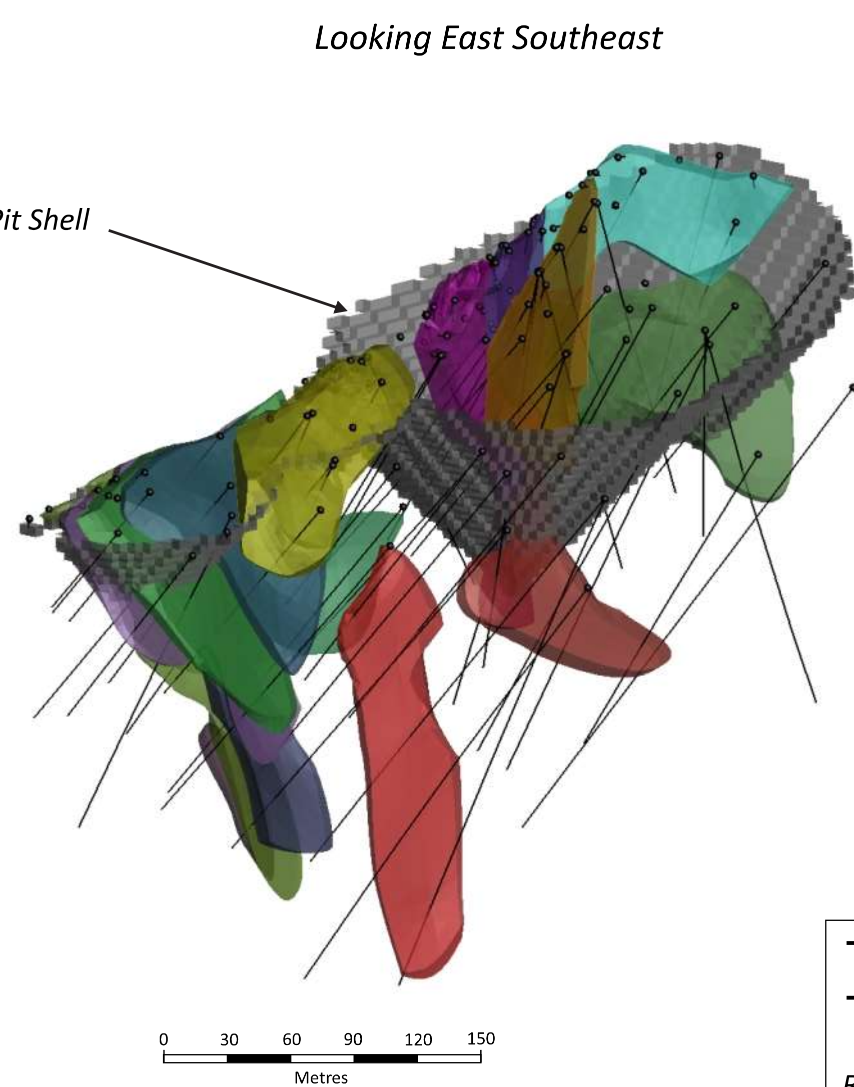
Table 14-44: Luna Roja Deposit Mineral Resource Database
Mineros S.A. – Hemco Property

Item	Record Count/Details
Drill Holes	76
Channels/trenches	108
Total Length Drill Holes (m)	12,268
Total Length Channel/Trenches (m)	282
Downhole Survey	543
Lithology	3,345
Structure	443
Assay Values	1,161
Total Length Assays (m)	8,494
Density	406

Section 12, Data Verification, describes the drill hole data verification steps made by SLR. In summary, no discrepancies were identified, and the QP is of the opinion that the drill hole database is valid and suitable to estimate Mineral Resources for the Porvenir deposit.

14.7.3 Geological Interpretation

Mineralized resource domains were constructed by SLR to constrain grade estimation at a nominal cut-off grade of 0.5 g/t Au. Resource domains are shown in Figure 14-32. A dilution domain was constructed to capture grade outside the mineralized domain. The near surface weathered zone that showed evidence of supergene enrichment (supergene domain) was modelled separately. SLR did not apply a minimum thickness to the resource domains as the block size used for grade interpolation and resource reporting within underground mining shapes ensured that RPEEE was met.



Legend:
- Drill hole collar
- Drill hole traces

March 2023

Source: SLR, 2023.

Figure 14-32

Mineros S.A.

Hemco Property
Región Autónoma de la Costa Caribe Norte

Luna Roja 3D View of Mineralization Wireframes

14.7.4 Density

The resource database includes 406 density measurements. These were flagged for statistical analysis based on lithology and a single value was assigned to each domain within the block model. Assigned density values are summarized in Table 14-45.

Table 14-45: Luna Roja Deposit Assigned Density Data
Mineros S.A. – Hemco Property

Litho Code	Lithology Description	Assigned Density (t/m^3)
MIN	Mineralized resource domains	3.18
SKN	Skarn	2.82
SED	Siltstone	2.81
SED2	Limestone	2.82
MRB	Marble	2.7
DIO	Diorite	2.7
Other	Supergene surface weathering	2.2

14.7.5 Capping and Compositing

Prior to compositing, SLR reviewed the resource assay histograms and probability plots within the domains, along with a visual inspection of high grade values. Outlier gold assays were capped at either 10 g/t Au or 16 g/t Au in 10 mineralized resource domains. Assays within the dilution domain were capped at 2 g/t Au and assays within the supergene domain were capped at 6 g/t Au. The capping level and basic statistics of raw assays against capped assays are shown in Table 14-46.

Table 14-46: Luna Roja Deposit Assay Statistics
Mineros S.A. – Hemco Property

Domain	Count	Minimum (g/t Au)	Maximum (g/t Au)	Uncapped		Capped		
				Mean (g/t Au)	CV	Cap (g/t Au)	Mean (g/t Au)	CV
001	386	0.001	25.30	3.19	1.38	16	3.05	1.27
002	109	0.003	21.70	1.78	2.01	10	1.49	1.60
003	25	0.014	2.97	1.06	0.71		1.06	0.71
004	86	0.001	19.50	0.93	2.98	10	0.77	2.43
005	46	0.007	4.30	0.75	1.03		0.75	1.03
006	37	0.003	2.95	0.51	1.30		0.51	1.30
007	38	0.031	3.97	1.34	0.79		1.34	0.79
008	107	0.016	16.33	1.57	1.34	10	1.51	1.16
009	100	0.001	22.40	1.55	2.27	10	1.30	1.71

Domain	Count	Minimum (g/t Au)	Maximum (g/t Au)	Uncapped		Capped		
				Mean (g/t Au)	CV	Cap (g/t Au)	Mean (g/t Au)	CV
010	71	0.001	20.20	1.72	1.84	10	1.52	1.39
011	103	0.024	4.48	0.87	1.07		0.87	1.07
012	71	0.007	15.00	2.12	1.32	10	2.05	1.23
013	42	0.003	12.40	1.85	1.39	10	1.80	1.32
014	58	0.014	15.30	2.48	1.25	10	2.37	1.15
015	17	0.208	9.14	3.10	1.02		3.10	1.02
dilution	7,806	0.001	8.84	0.06	5.09	2	0.05	3.77
supergene	521	0.001	22.40	1.10	2.63	6	0.81	1.92

Note.

1. CV – coefficient of variation

Greater than 90% of the resource assays were taken at lengths of one metre. Considering the resource domain thickness and block size used for grade estimation, SLR elected to composite assays to five metre lengths within each domain boundary. Outside of the resource domains, assays were composited based on lithology for grade interpolation into the dilution and supergene domains. Composite statistics are presented in Table 14-47.

Table 14-47: Luna Roja Deposit Capped Composite Statistics
Mineros S.A. – Hemco Property

Domain	Count	Minimum (g/t Au)	Maximum (g/t Au)	Mean (g/t Au)	CV
001	68	0.153	14.64	2.83	1.07
002	15	0.013	1.74	0.56	0.87
003	3	1.174	1.84	1.26	0.23
004	19	0.008	5.50	0.82	1.82
005	9	0.246	1.49	0.65	0.51
006	8	0.007	1.83	0.51	0.98
007	9	0.657	3.00	1.16	0.43
008	21	0.064	3.74	1.37	0.74
009	17	0.101	2.75	0.92	0.92
010	12	0.059	4.97	1.27	0.99
011	18	0.337	1.68	0.78	0.53
012	14	0.011	5.67	2.05	0.88
013	8	0.112	4.55	1.80	0.69
014	13	0.302	6.82	2.37	1.00

Domain	Count	Minimum (g/t Au)	Maximum (g/t Au)	Mean (g/t Au)	CV
015	3	0.621	5.45	3.10	0.84
dilution	2,334	0.001	2.00	0.05	2.98
supergene	161	0.001	6.00	0.81	1.74

Note.

1. CV – coefficient of variation

14.7.6 Block Model

The mineralized resource domains, supergene domain, and dilution domain were filled with cells measuring 5 m by 5 m by 5 m. The block model setup is summarized in Table 14-48.

Table 14-48: Luna Roja Block Model Setup
Mineros S.A. – Hemco Property

Parameter	X	Y	Z
Origin (m)	780,470	1,542,660	225
Block Size (m)	5	5	5
Number of Blocks	80	130	80
Rotation		340°	

14.7.7 Interpolation Strategy

SLR interpolated capped gold grades into blocks within the mineralized resource domain wireframes using ID^2 and a three pass search strategy. Capped gold grades and a two pass ID^2 interpolation strategy was used for the dilution domain and a single pass for the supergene domain. Dynamic anisotropy was used to align the search ellipse with all the domain wireframes. The influence of composites with grades greater than 3.0 g/t Au within the supergene domain was spatially restricted to a distance of 50% of the search distance using the Leapfrog outlier restriction clamp tool. Hard boundaries were used to limit the use of composites between different domains. Table 14-49 summarizes the interpolation strategies used for each domain at Luna Roja.

Table 14-49: Luna Roja Deposit Interpolation Parameters
Mineros S.A. – Hemco Property

Pass	1	2	3
Mineralized Resource Domains			
Major (m)	50	100	150
Semi Major (m)	25	50	75
Minor (m)	5	10	50
Minimum Number of Samples	3	2	2
Maximum Number of Samples	6	6	6

Pass	1	2	3
Dilution Domain			
Major (m)	80	160	
Semi Major (m)	80	160	
Minor (m)	10	20	
Minimum Number of Samples	3	3	
Maximum Number of Samples	6	6	
Supergene Domain[1]			
Major (m)	5		
Semi Major (m)	5		
Minor (m)	5		
Minimum Number of Samples	1		
Maximum Number of Samples	3		

Note.

1. The influence of composite samples >3 g/t Au were restricted to 50% of the search distance.

14.7.8 Validation

SLR performed industry standard block model validation procedures including:

- A comparison of wireframe and block volumes
- A detailed visual review of block grades versus composites in plan section and cross section.
- A visual and statistical review of block grades versus composites and assays in longitudinal section, comparison of the ID^2, NN, and composite means.
- The production of swath plots.

A longitudinal section of gold grades for Luna Roja is shown in Figure 14-33.

In the QP's opinion, the results of the validation procedures are reasonable.

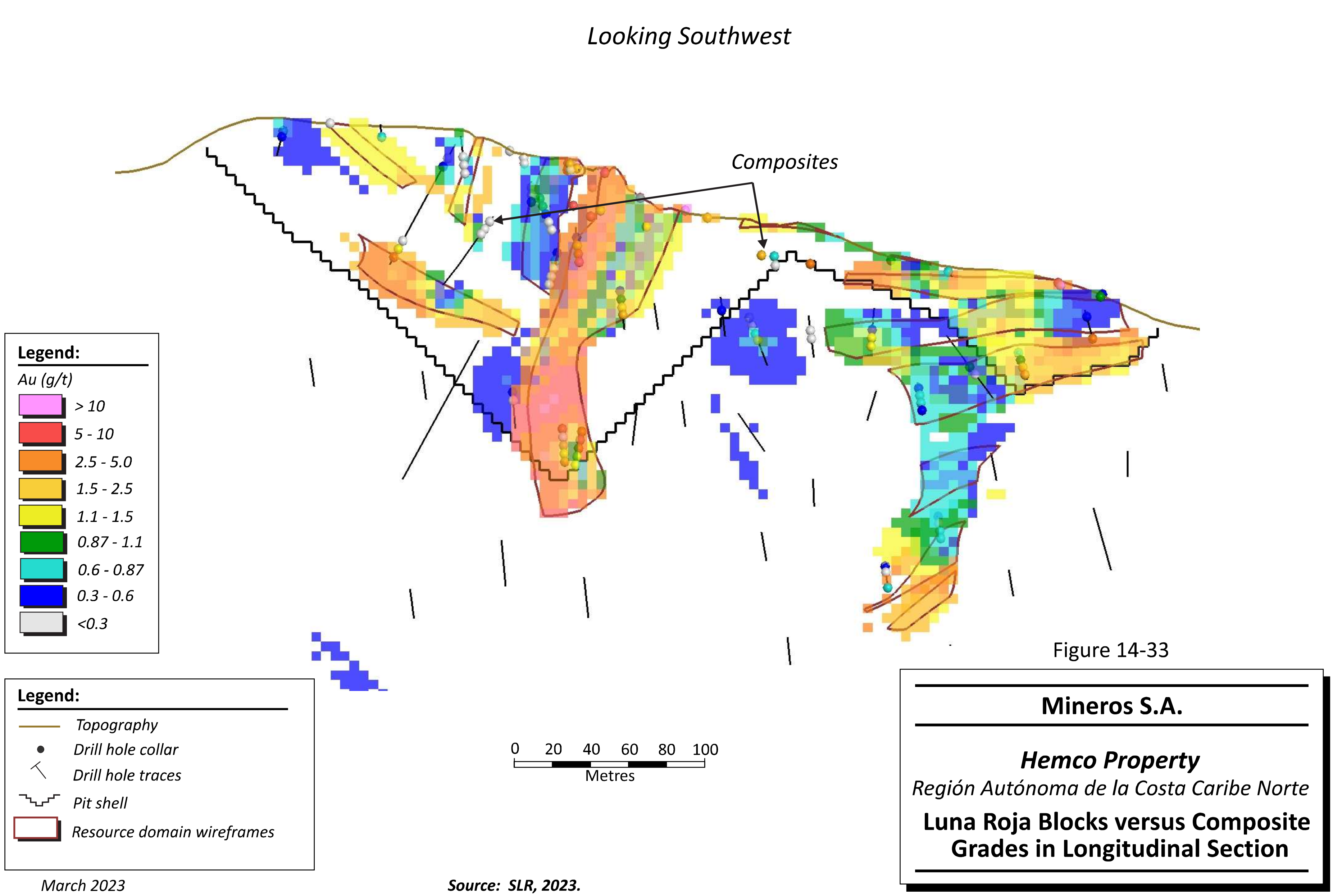


Figure 14-33

Mineros S.A.

Hemco Property

Región Autónoma de la Costa Caribe Norte

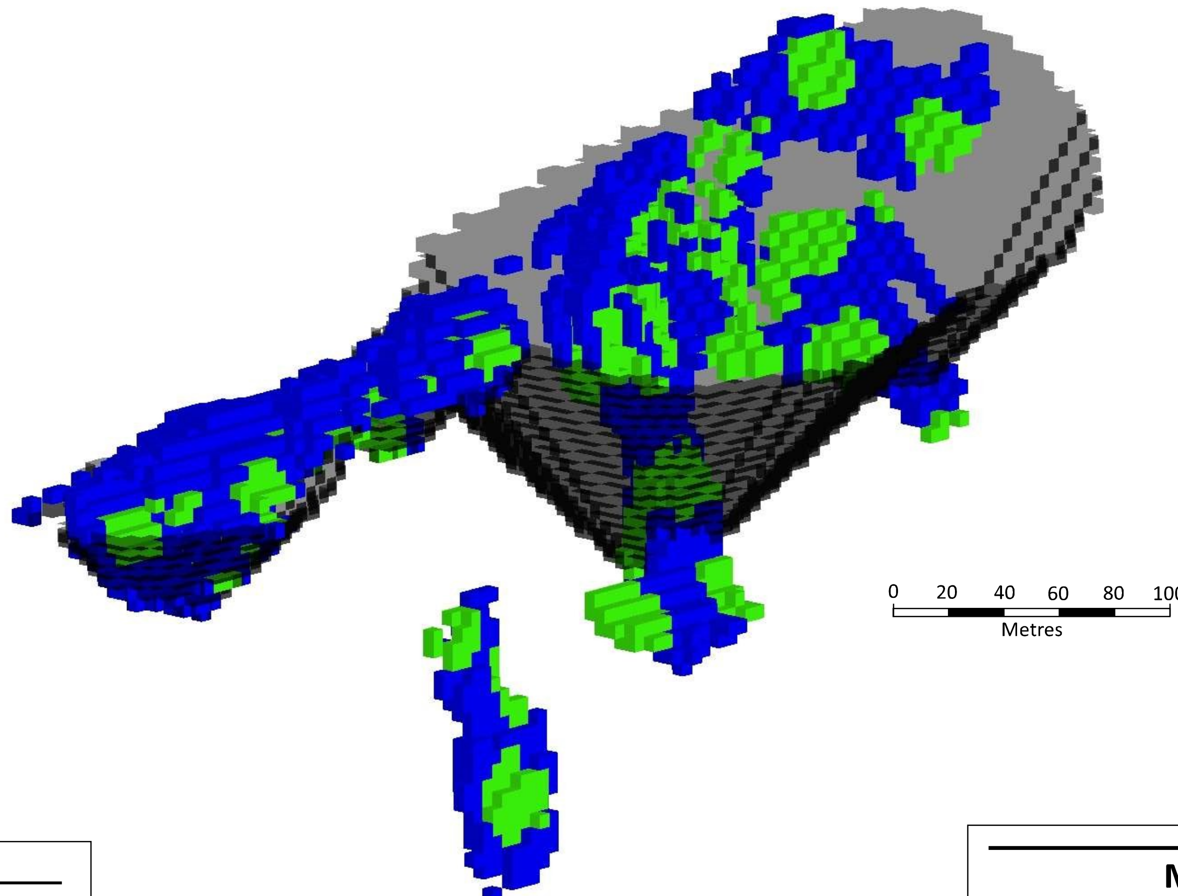
Luna Roja Blocks versus Composite Grades in Longitudinal Section

14.7.9 Classification

SLR classified Mineral Resources at Luna Roja as Indicated or Inferred based on distance-to-sample buffers at 30 m and 60 m, respectively. Interpolated blocks outside of the 60 m buffer were not classified. The classification of blocks reported as Mineral Resources at Luna Roja is shown in Figure 14-34.

The QP is of the opinion that the Mineral Resource classification for the Luna Roja deposit is acceptable.

Looking East Southeast



Legend:

Pit shell

Block Classification:

Exploration Potential

Indicated

Inferred

March 2023

Source: SLR, 2023.

Figure 14-34

Mineros S.A.

Hemco Property

Región Autónoma de la Costa Caribe Norte

Luna Roja Classification of Mineral Resource Blocks

14.8 Leticia and San Antonio Deposits

14.8.1 Summary

Mineral Resources have been estimated at San Antonio and Leticia. The San Antonio epithermal vein system has been explored and drilled by Mineros in 2015, 2018, and 2019, and the Leticia epithermal vein system has been historically mined by Neptuno in the 1950s and drilled by Mineros in 2019. The location of the San Antonio and Leticia vein systems is shown in Figure 14-1.

The Leticia Mineral Resource estimate is based on 31 drill holes, including historical drill holes from the 1950s, outlining 14 mineralized structures and reporting Mineral Resources from four main domains (Figure 14-35). Mineros interpreted the mineralized wireframes in Leapfrog Geo using raw assays and lithology. Assays were composited to 1.0 m lengths, and Au, Ag, and Zn were capped at varying levels based on EDA. Historical samples were not used in Mineral Resource estimation. Mineros interpolated Au, Ag, and Zn into blocks using ID^3 and three estimation passes. All blocks were classified as Inferred. Block grade estimates were validated using industry standard validation techniques. Overall, SLR found that the Mineros resource modelling work was well done and conforms to industry standard practices.

The San Antonio Mineral Resource estimate is based on 63 drill holes, both historical and more recent, completed by Mineros, outlining eight mineralized structures, and reporting Mineral Resources from six main domains (Figure 14-36). Mineros generated wireframes in Leapfrog Geo based on raw assays and lithology. Assays were composited to 1.0 m lengths, and all elements were capped at varying levels based on EDA. Historical samples were not used in Mineral Resource estimation. Mineros interpolated Au, Ag, Zn, and Cu into blocks using ID^3 or ID^4 using two or three estimation passes. All blocks were classified as Inferred. Block grade estimates were validated using industry standard validation techniques. Overall, SLR found that the Mineros resource modelling work was well done and conforms to industry standard practices.

The December 31, 2022 Leticia and San Antonio Mineral Resources reported at an NSR cut-off value of US$73.30/t are summarized in Table 14-50.

Table 14-50: Leticia and San Antonio Mineral Resource Estimate by Area and Vein – Effective December 31, 2022
Mineros S.A. – Hemco Property

Area	Vein	Tonnes (kt)	NSR ($/t)	Grade			Contained Metal		
				(g/t Au)	(g/t Ag)	(% Zn)	(koz Au)	(koz Ag)	(Mlb Zn)
Inferred Mineral Resources									
Leticia	Constancia	62.3	155.6	3.16	5.18	0.22	6.3	10.4	0.3
	Oriana SWNE	73.4	101.8	1.60	3.57	1.30	3.8	8.4	2.1
	Oriana	419.2	258.8	4.85	8.39	1.34	65.3	113.0	12.3
	Leticia Norte	31.3	166.7	3.45	1.93	0.14	3.5	1.9	0.1
	Subtotal	586.3	223.3	4.19	7.10	1.15	78.9	133.8	14.8
San Antonio	Nidia	128.4	104.0	2.13	7.21	0.03	8.8	29.8	0.1
	San Antonio 4	308.5	319.5	6.65	9.19	0.03	65.9	91.1	0.2

Area	Vein	Tonnes (kt)	NSR ($/t)	Grade			Contained Metal		
				(g/t Au)	(g/t Ag)	(% Zn)	(koz Au)	(koz Ag)	(Mlb Zn)
	San Antonio 5	45.8	135.4	2.83	2.39	0.04	4.2	3.5	0.0
	San Antonio NE	282.8	104.1	2.01	17.10	0.14	18.3	155.5	0.9
	San Joaquín	374.2	120.6	1.84	4.23	1.66	22.1	50.9	13.7
	Subtotal	1,139.6	169.0	3.26	9.03	0.59	119.3	330.8	14.9
Total		**1,725.90**	**187.45**	**3.57**	**8.37**	**0.78**	**198.24**	**464.56**	**29.74**

Notes:

1. CIM (2014) definitions were followed for Mineral Resources.
2. Grade, continuity, and thickness were used to demonstrate Reasonable Prospects for Eventual Economic Extraction.
3. Mineral Resources are estimated at an NSR cut-off value of US$73.30/t.
4. Mineral Resources are estimated using a long term gold price of US$1,700/oz Au, a silver price of US$20/oz Ag, and a zinc price of US$1.22/lb Zn.
5. Bulk density is 2.72 t/m^3 for Leticia and 2.75 t/m^3 for San Antonio.
6. Mineral Resources are exclusive of Mineral Reserves.
7. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
8. Numbers may not add due to rounding.

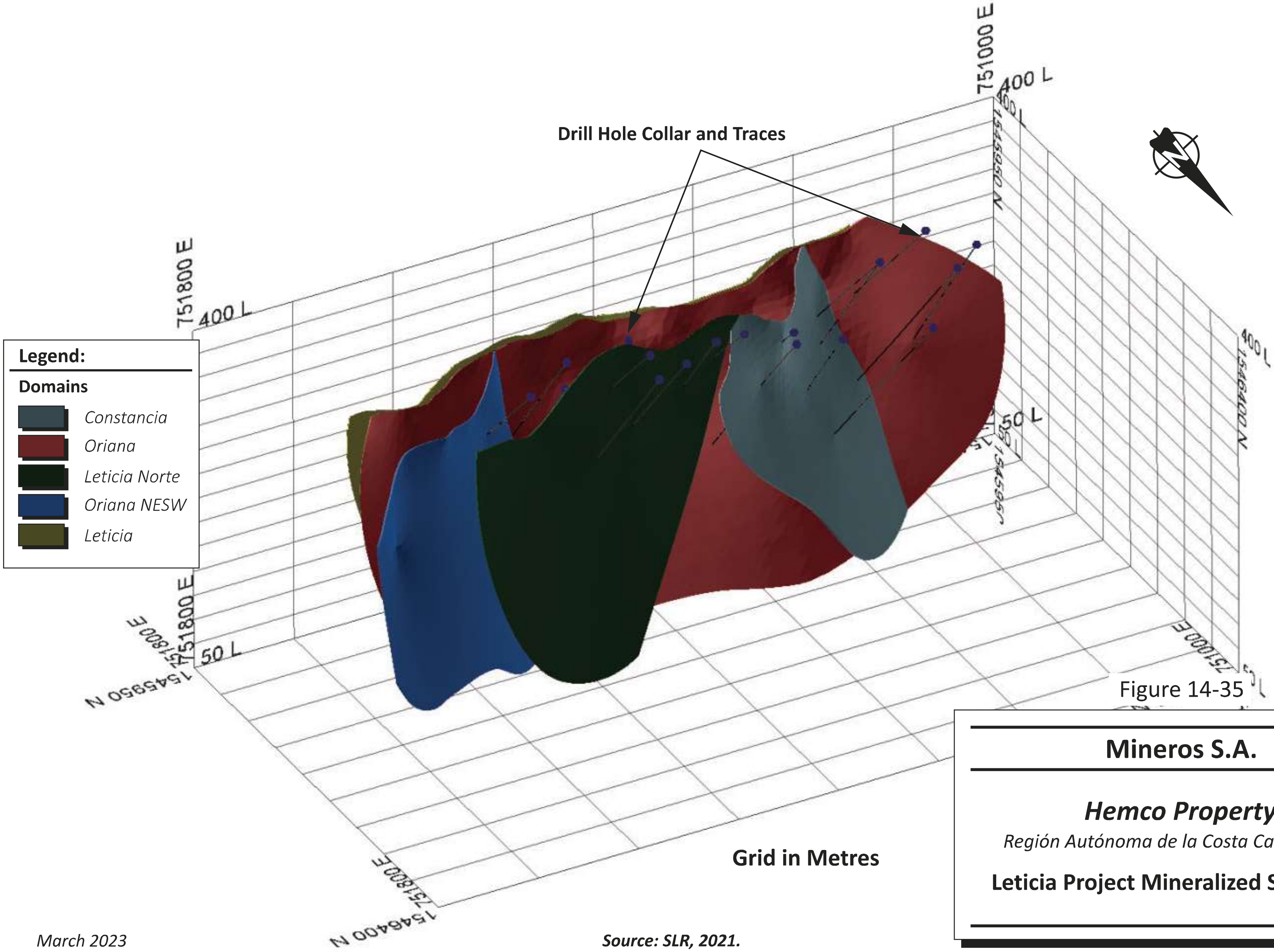


Figure 14-35

Mineros S.A.

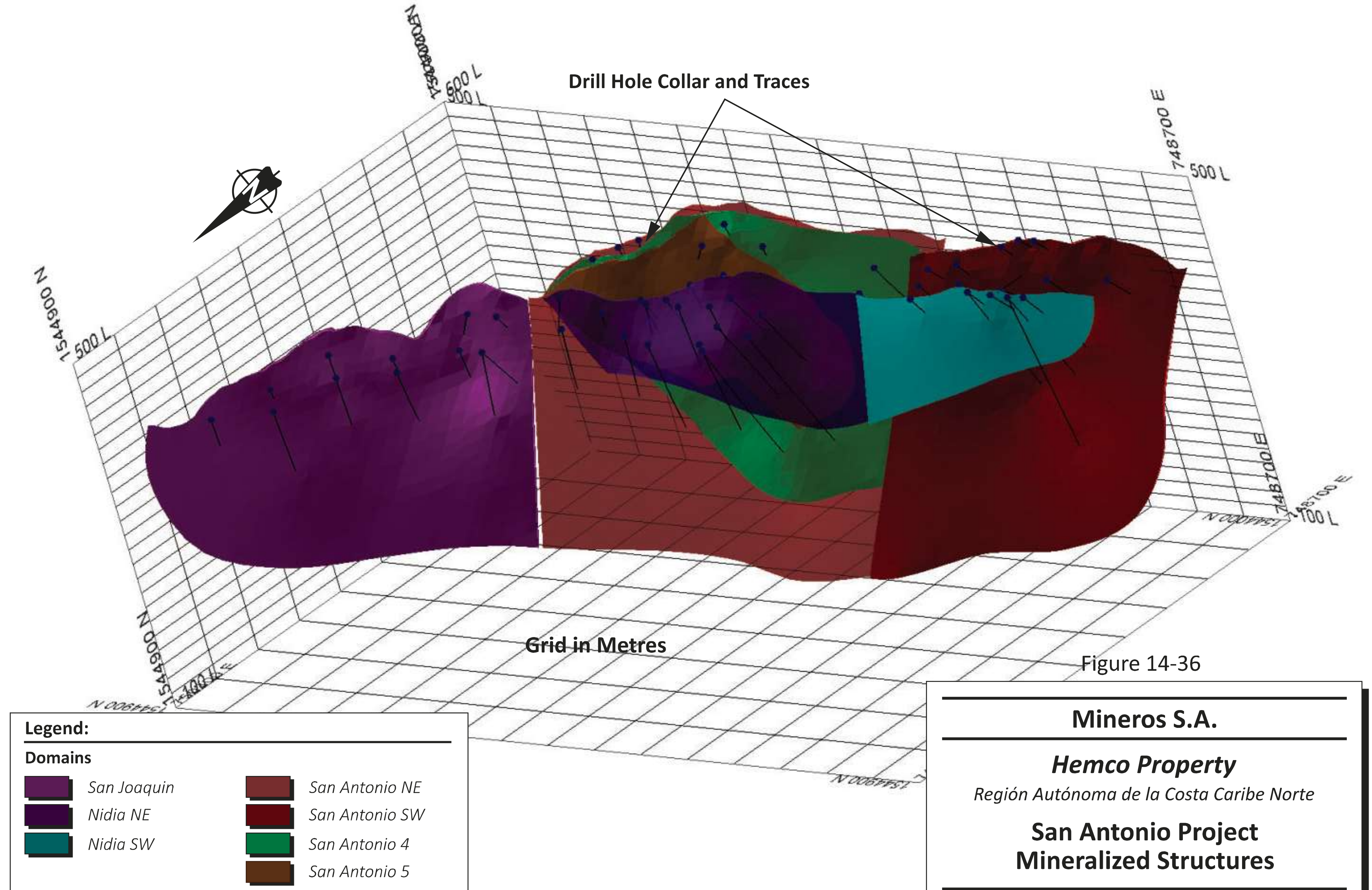
Hemco Property

Región Autónoma de la Costa Caribe Norte

Leticia Project Mineralized Structures

March 2023

Source: SLR, 2021.



March 2023

Source: SLR, 2021.

Figure 14-36

Mineros S.A.

Hemco Property

Región Autónoma de la Costa Caribe Norte

San Antonio Project
Mineralized Structures

14.8.2 Resource Database

The drill hole databases for Leticia and San Antonio contain information including collar location, downhole deviation surveys, assay results (multi-element including Au, Ag, Cu, and Zn), lithological logs, structural observations and measurements, and channel sample analyses. Historical drill holes do not have survey, lithology, or structure data, and only contain gold assay results. As of December 31, 2019, the resource database is summarized in Table 14-51.

In the QP's opinion, the Leticia and San Antonio databases are suitable to support Mineral Resource estimation.

Table 14-51: Leticia and San Antonio Mineral Resource Database
Mineros S.A. – Hemco Property

Vein Group	Item	Record Count/Details
Leticia	Drill Holes	18
	Total Length (m)	3,722.3
	Downhole Survey	143
	Lithology	820
	Structure	287
	Assay Values	1,351
	Total Length Assays (m)	1189.15
	Canales	31
	Total Length (m)	27.45
	Downhole Survey	0
	Lithology	31
	Structure	31
	Assay Values	31
	Total Length Assays (m)	27.45
San Antonio	Drill Holes	63
	Total Length (m)	9,681
	Downhole Survey	281
	Lithology	1,087
	Structure	496
	Assays	1,072

14.8.3 Geological Interpretation

Geological models were constructed by Mineros geologists using historical data, new drilling, detailed mapping, including digitizing old mine workings, and structural analysis. A minimum mining width was not applied to the vein models, and the wireframe boundaries were extrapolated along strike and down dip 100 m to 150 m beyond the last drill hole. A total of 14 mineralized domains were built at Leticia and eight at San Antonio.

The QP recommends considering minimum thickness during wireframing or reporting of Mineral Resources.

14.8.4 Density

No density data has been collected. At Leticia, a density value of 2.72 t/m^3 was applied based on data collected at Porvenir Norte. At San Antonio, a density value of 2.75 t/m^3 was applied based on data collected at Porvenir Sur.

14.8.5 Exploratory Data Analysis

SLR reviewed results of the EDA carried out by Mineros at Leticia and San Antonio. These included:

- Univariate and bivariate statistics
- Boxplots for structural domains and mineral zones
- Cumulative probability plots

Results confirm that the deposit was adequately domained during interpretation and wireframe construction and the wireframes can be used to constrain the grade estimation process.

14.8.6 Compositing and Capping

Considering the distribution of assay sample lengths and the width of the veins, Mineros chose to composite to one metre lengths starting at each domain boundary. Composites less than 0.5 m long were added to the preceding composite. Average assay and composite values are summarized in Table 14-52.

Table 14-52: Leticia and San Antonio Average Assay and Composite Values by Domain
Mineros S.A. – Hemco Property

	Average (g/t Au)		Average (g/t Ag)		Average (% Cu)		Average (% Zn)	
	Assays	Comps	Assays	Comps	Assays	Comps	Assays	Comps
Leticia Domain								
Oriana	5.27	5.7	8.94	9.07	0.22	0.22	1.72	1.75
Oriana SWNE	3.24	2.51	4.69	4.48	0.1	0.1	1.37	1.37
Leticia Norte	3.15	3.13	2.37	2.37	0.02	0.02	0.13	0.13
Constancia	2.58	2.67	5.1	5.23	0.17	0.18	0.56	0.59

	Average (g/t Au)		Average (g/t Ag)		Average (% Cu)		Average (% Zn)	
	Assays	**Comps**	**Assays**	**Comps**	**Assays**	**Comps**	**Assays**	**Comps**
San Antonio Domain								
Nidia	2.53	2.26	5.47	5.86	0.34	0.35	0.04	0.04
San Antonio 4	6.16	6.08	11.67	12.42	1.05	1.06	0.02	0.03
San Antonio 5	1.12	0.96	6.03	3.76	0.43	0.31	0.11	0.12
San Joaquin	1.31	1.13	3.27	2.66	0.06	0.05	1.04	1.16
San Antonio NE	1.24	1.21	14.12	14.56	1.23	1.22	0.07	0.08

Instead of capping raw assays, Mineros applied capping to the composites at various levels based on capping analysis performed by Mineros. For each main domain, Mineros identified outlier samples using scatterplots, cumulative probability plots, and percentile analysis

A summary of the capping levels for Au, Ag, and Zn at Leticia and San Antonio is provided in Table 14-53.

The QP is of the opinion that the treatment of high grades is reasonable, but recommends capping raw assays prior to compositing.

Table 14-53: Leticia and San Antonio Capping Statistics (Au, Ag, and Zn)
Mineros S.A. – Hemco Property

Leticia															
Domain	Gold Grade (g/t Au)					Silver Grade (g/t Ag)					Zinc Grade (% Zn)				
	Number Capped	Capping Value	% Metal Loss	Capped Mean	Uncapped Mean	Number Capped	Capping Value	% Metal Loss	Capped Mean	Uncapped Mean	Number Capped	Capping Value	% Metal Loss	Capped Mean	Uncapped Mean
Oriana	6	>18.47	19	4.63	5.71	4	>31	15	7.75	9.08	5	>4.72	44	0.97	1.75
Oriana SWNE	2	>3.1	31	1.74	2.51	3	>6.04	19	3.61	4.48	2	>1.82	28	1.12	1.38
Leticia Norte	-	-	-	-	3.13	-	-	-	-	2.37	-	-	-	-	0.13
Constancia	1	>8.29	15	2.27	2.67	2	>9.3	14	4.52	5.23	2	0.83	62	0.23	0.6

San Antonio															
Domain	Gold Grade (g/t Au)					Silver Grade (g/t Ag)					Zinc Grade (% Zn)				
	Number Capped	Capping Value	% Metal Loss	Capped Mean	Uncapped Mean	Number Capped	Capping Value	% Metal Loss	Capped Mean	Uncapped Mean	Number Capped	Capping Value	% Metal Loss	Capped Mean	Uncapped Mean
Nidia	4	>3.82	27	1.66	2.26	1	>22	10	5.28	5.86	1	0.08	32	0.03	0.05
San Antonio 4	3	>14.1	35	3.97	6.09	1	>25.62	28	8.9	12.43	1	0.08	37	0.02	0.03
San Antonio 5	-	-	-	-	0.96	1	>3.49	65	1.33	3.77	1	0.07	66	0.03	0.13
San Antonio NE	3	>3.36	10	1.09	1.2	3	>52.11	16	12.21	14.56	1	0.49	15	0.07	0.08
San Joaquín	1	>4.91	5	1.08	1.14	1	>13.78	13	2.32	2.66	3	4.24	19	0.95	1.17

14.8.7 Block Model

The mineralization wireframes were filled with cells measuring 1 m by 1 m by 2 m. A partial percentage field was stored for each block and each wireframe to record the proportion of each block inside each wireframe. The block model setup for Leticia and San Antonio is given in Table 14-54.

Table 14-54: Leticia and San Antonio Block Model Setup
Mineros S.A. – Hemco Property

Parameter	X	Y	Z
	Leticia		
Origin (m)	748,720	1,543,900	-110
Block Size (m)	1	1	2
Number of Blocks	1,550	1,100	300
Rotation	none		
	San Antonio		
Origin (m)	751,000	1,545,950	50
Block Size (m)	1	1	2
Number of Blocks	870	440	200
Rotation	none		

14.8.8 Interpolation Strategy

Vein wireframes were used to flag blocks on a centroid basis; flagged blocks then had metal grades interpolated into blocks using ID^3 for most of the veins and ID^4 for the San Antonio 5 vein. A two or three search pass strategy was used. The search ellipse was aligned with the dip and strike of the wireframes, with the maximum search radius parallel to the trend of the mineralization. Identical search parameters were used for Au, Ag, and Zn.

Table 14-55 shows a summary of the interpolation parameters used for each vein at Leticia and San Antonio.

Table 14-55: Leticia and San Antonio Interpolation Parameters
Mineros S.A. – Hemco Property

San Antonio	Domain				
Parameter	San Joaquin	San Antonio NE	Nidia	San Antonio 4	San Antonio 5
			Pass 1		
Radius in X (m)	90	80	80	80	120
Radius in Y (m)	80	80	80	80	120
Radius in Z (m)	20	25	15	25	15
Rotation in X	295	53	254	60	55

San Antonio	Domain				
Parameter	San Joaquin	San Antonio NE	Nidia	San Antonio 4	San Antonio 5
Rotation in Y	-55	0	0	0	0
Rotation in Z	-10	60	85	61	67
Minimum Composites	3	3	3	3	1
Maximum Composites	6	6	6	6	6
		Pass 2			
Radius in X (m)	180	160	160	160	220
Radius in Y (m)	160	160	160	160	220
Radius in Z (m)	20	25	20	30	20
Rotation in X	295	53	254	60	55
Rotation in Y	-55	0	0	0	0
Rotation in Z	-10	60	85	61	67
Minimum Composites	3	3	3	3	1
Maximum Composites	6	6	6	6	6
		Pass 3			
Radius in X (m)	270	240	240	240	
Radius in Y (m)	240	240	240	240	
Radius in Z (m)	20	25	20	30	
Rotation in X	295	53	254	60	
Rotation in Y	-55	0	0	0	
Rotation in Z	-10	60	85	61	
Minimum Composites	2	3	1	3	
Maximum Composites	6	8	8	8	

Leticia	Domain			
Parameter	Oriana	Oriana SWNE	Leticia Norte	Constancia
		Pass 1		
Radius in X (m)	80	80	80	80
Radius in Y (m)	80	80	80	80
Radius in Z (m)	10	10	10	10
Rotation in X	75	42	74	42
Rotation in Y	0	0	0	0
Rotation in Z	75	80	77	70

Leticia	Domain			
Parameter	Oriana	Oriana SWNE	Leticia Norte	Constancia
Minimum Composites	3	3	3	3
Maximum Composites	6	8	6	6
		Pass 2		
Radius in X (m)	160	160	160	160
Radius in Y (m)	160	160	160	160
Radius in Z (m)	15	15	15	15
Rotation in X	75	42	74	42
Rotation in Y	0	0	0	0
Rotation in Z	75	80	77	70
Minimum Composites	3	3	3	3
Maximum Composites	6	8	6	6
		Pass 3		
Radius in X (m)	240	240	240	240
Radius in Y (m)	240	240	240	240
Radius in Z (m)	15	20	15	20
Rotation in X	75	42	74	42
Rotation in Y	0	0	0	0
Rotation in Z	75	80	77	70
Minimum Composites	2	2	2	2
Maximum Composites	8	10	10	10

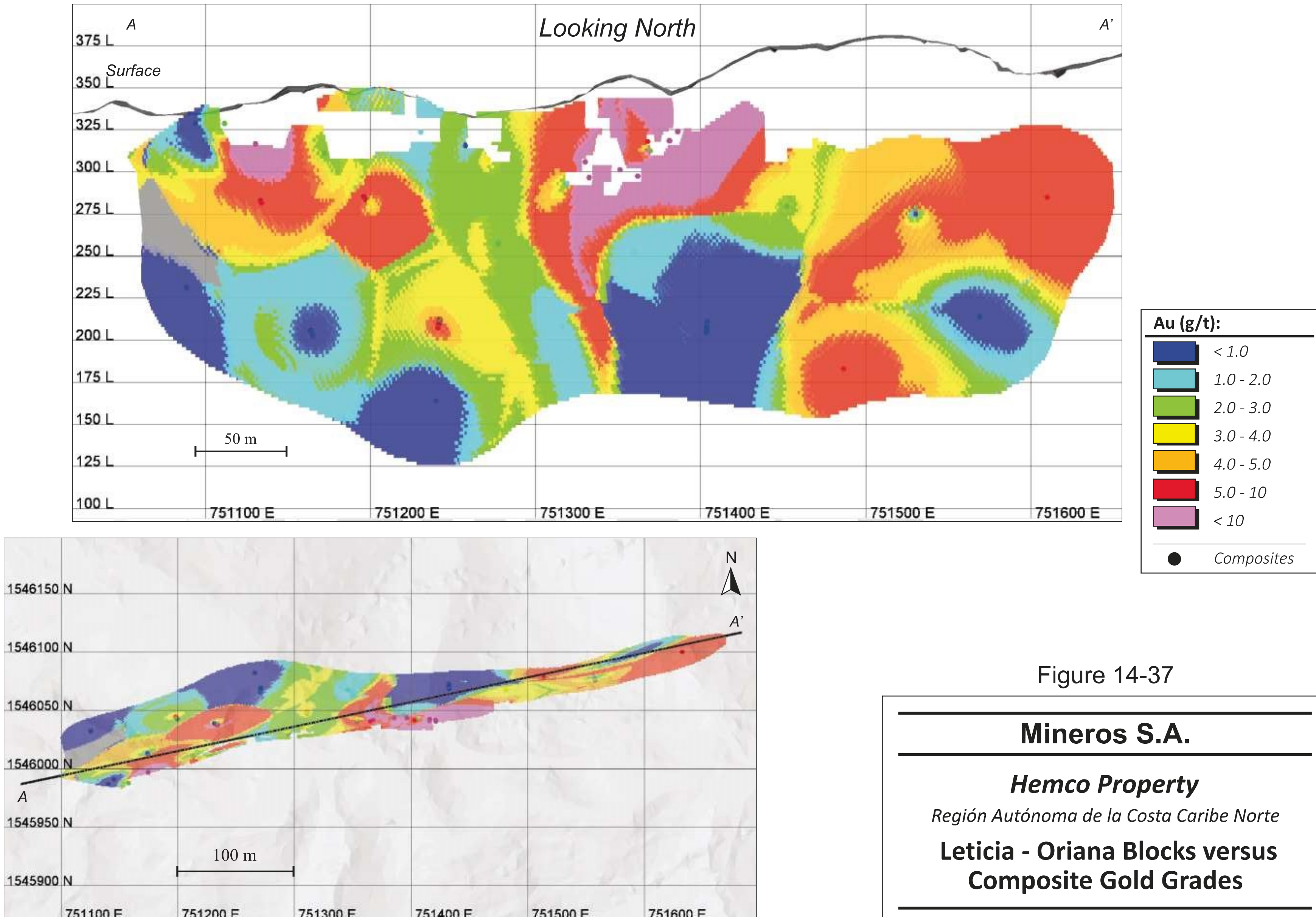
14.8.9 Validation

SLR undertook industry standard block model validation procedures including:

- A comparison of wireframe and block volumes
- A detailed visual review of block grades versus composites in plan section and cross section
- A visual and statistical review of block grades versus composites and assays in longitudinal section, comparison of the ID^2, NN, and composite means
- The production of swath plots along the strike of the larger veins

Examples of longitudinal sections of the Oriana (Leticia) and San Antonio 4 (San Antonio) veins showing block and composite gold grades are illustrated in Figure 14-37 and Figure 14-38.

SLR is of the opinion that the results of the validation procedures are reasonable.



March 2023

Source: SLR, 2021.

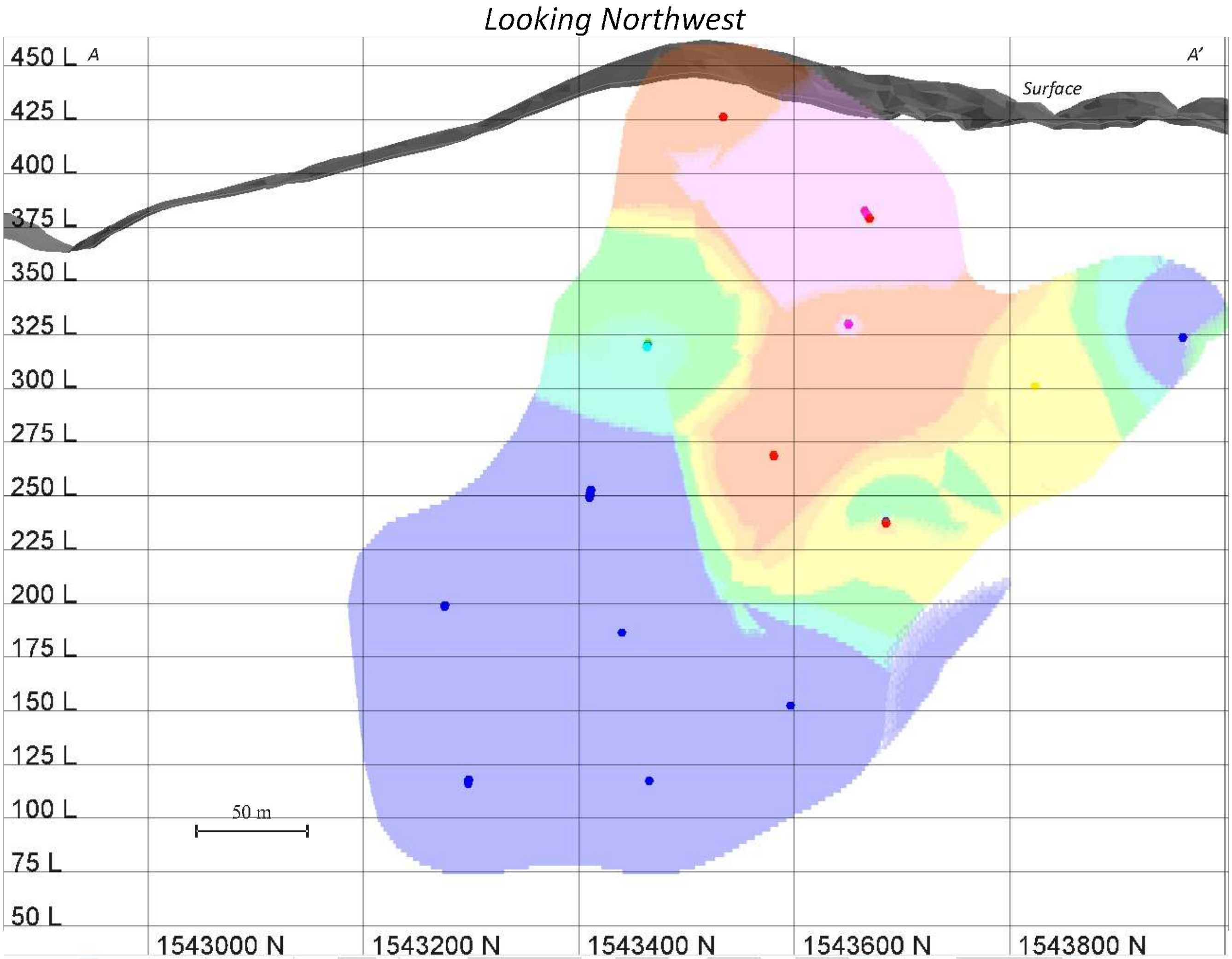
Figure 14-37

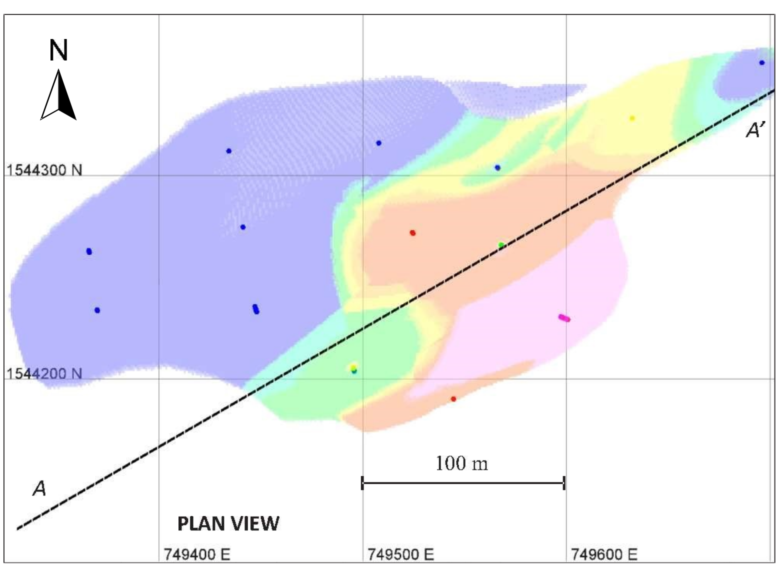
Mineros S.A.

Hemco Property

Región Autónoma de la Costa Caribe Norte

Leticia - Oriana Blocks versus Composite Gold Grades





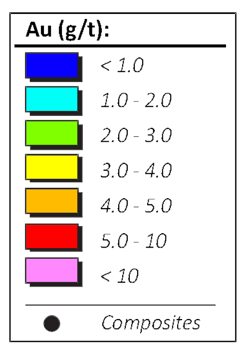


Figure 14-38

Mineros S.A.

Hemco Property

Región Autónoma de la Costa Caribe Norte

San Antonio 4 Blocks versus Composite Gold Grades

March 2023 ***Source: SLR, 2021.***

14.8.10 Classification

Mineros classified Mineral Resources at Leticia and San Antonio as Indicated or Inferred based on distance-to-sample buffers at 30 m and 45 m, respectively. Interpolated blocks outside of the 45 m buffer were not classified. Isolated areas were removed by manually digitizing Indicated and Inferred polylines around contiguous distance buffers. SLR noted that channel samples used for estimates were not regularly spaced and were often narrower than the vein wireframes resulting in extrapolation of high grades in some areas locally.

SLR downgraded all of the Indicated to Inferred at Leticia and San Antonio. The QP recommends that Mineros take channel samples at regular spacings and take shoulder samples in low grade and waste rock adjacent mineralization.

15.0 MINERAL RESERVE ESTIMATE

15.1 Introduction

The Hemco Property includes the Panama Mine, the Pioneer Mine, and the Porvenir Project, in addition to the indirect management and processing of substantial artisanal production. There are gold Mineral Reserves in the Panama and Pioneer mines and gold, silver, and zinc Mineral Reserves in the Porvenir deposit.

Table 15-1 summarizes the Hemco Mineral Reserve estimate at December 31, 2022.

Table 15-1: Summary of Mineral Reserve Estimate – December 31, 2022
Mineros S.A. – Hemco Property

Category	Deposit	Tonnes (kt)	Grade (g/t Au)	Grade (g/t Ag)	Grade (% Zn)	Contained Metal (koz Au)	Contained Metal (koz Ag)	Contained Metal (t Zn)	Contained Metal (Mlb Zn)
Proven	Panama	47	3.36	-	-	5	-	-	-
	Pioneer	110	6.06	-	-	21	-	-	-
	Porvenir	270	2.70	13.61	3.14	23	118	8	19
	Total	**428**	**3.64**			**50**	**118**	**8**	**19**
Probable	Panama	983	4.05	-	-	128	-	-	-
	Pioneer	427	4.53	-	-	62	-	-	-
	Porvenir	5,524	3.09	10.16	2.96	549	1,804	164	360
	Total	**6,934**	**3.31**			**739**	**1,804**	**164**	**360**
Proven + Probable	Panama	1,031	4.02	-	-	133	-	-	-
	Pioneer	537	4.84	-	-	84	-	-	-
	Porvenir	5,794	3.07	10.32	2.96	572	1,922	172	379
	Total	**7,362**	**3.33**			**789**	**1,922**	**172**	**379**

Notes:

1. Mineral Reserves for the Panama orebodies were depleted for production with mined out wireframes to September 30, 2022 and planned production to December 31, 2022. Pioneer orebodies were depleted for production with mined out wireframes to November 30, 2022 and planned stope wireframes to December 31, 2022.
2. CIM (2014) definitions were followed for Mineral Reserves.
3. Mining method:
   a. Panama and Pioneer: shrinkage stoping, sub-level open stoping (SLOS), and bench and fill.
   b. Porvenir: cut-and-fill stoping and sub-level stoping (SLS).
4. Minimum mining width:
   a. Panama and Pioneer: 0.90 m for shrinkage stoping and 1.80 m for mechanized mining methods.
   b. Porvenir: 1.55 m.
5. Cut-off grades and values:
   a. Panama and Pioneer: marginal and break-even cut-off grades of 2.80 g/t Au and 3.56 g/t Au, 2.12 g/t Au and 2.31 g/t Au, and 2.45 g/t Au and 2.78 g/t Au were applied to shrinkage, SLOS, and bench and fill mining methods respectively.
   b. Porvenir: based on NSR value per tonne determinations using metal prices, metal recoveries, and smelter terms, breakeven NSR cut-off values vary from $81.34/t to $83.10/t depending on the mining method.
6. Metallurgical recoveries:
   a. Panama and Pioneer: 90% for gold.

   b. Porvenir: were applied on a block-by-block basis and average 85.6% for gold, 52.8% for silver, and 91.1% for zinc.
7. Dilution:
   a. Panama and Pioneer: dilution skins of 0.25 m were applied to shrinkage stopes and between 0.6 m and 0.8 m to mechanized stopes.
   b. Porvenir: dilution skins 0.25 m thick on stope footwalls and 0.5 m thick on hanging walls.
8. Mining Extraction:
   a. Panama and Pioneer: a factor of 70% was applied to shrinkage stopes and between 75% and 95% to mechanized stopes.
   b. Porvenir: cut-and-fill - 78% to 90% and SLS - 90%.
9. Mineral Reserves estimated using an average long term metal prices of US$1,500/oz Au, $19.00/oz Ag, and $1.27/lb Zn.
10. Total silver and zinc grades were not calculated because it is not representative considering the total tonnage.
11. Totals may appear different from the sum of their components due to rounding.

The QP is not aware of any mining, metallurgical, infrastructure, permitting, or other relevant factors that could materially affect the Mineral Reserve estimate.

The Panama and Pioneer Mines are the only producing mines within the Hemco Property. The Panama Mine consists of Elefante, Cruzada, Toboba Grande, Tesoro, Neblina, Pluto, Neptuno, Eloisa, Foundling, Patricia, and Capitan veins. The Pioneer Mine consists of the Lone Star, Northeast (NE), Pioneer Northeast Extension (PNE), and Pioneer 3 veins. Much of the waste and ore development required to access the Lone Star mining areas has been completed using contractors, with small stopes blasted for test mining purposes. The Pioneer Mine is located 5.5 km from the Panama Mine and Hemco Plant. Production from Pioneer began in 2021 and supplies the Hemco Plant. The Porvenir Project is in the planning stage and is differentiated from the Panama and Pioneer mines in that it is further away and contains copper and zinc in addition to gold and silver. Porvenir is planned to be separate from the other Hemco mines and will have its own processing plant and related facilities.

Historical mining at the Panama Mine has primarily used shrinkage stoping mining method, however, over the past several years Mineros has incorporated long hole mining methods (sub-level open stoping and bench and fill) at several of the veins in production. The Panama Mine has two distinct production areas, informally divided by the 850 Level, with production above the 850 Level derived from non-mechanized shrinkage stoping and production below the 850 Level derived mainly from mechanized long hole stoping with a few areas (Neptuno and part of Tesoro) planned to be mined using shrinkage stoping. While Mineros will continue to mine shrinkage stopes above the 850 Level and identify new mining areas, they were not included in the current Mineral Reserve estimates, as their tonnage is not significant.

For the estimation of Pioneer Mineral Reserves, SLR has assumed that the mining method will be solely sublevel open stoping (SLOS).

In the past, plant feed has also been sourced from small open pits at the Panama Mine, however, the current mine plan includes underground mining only. Artisanal production, which has been excluded from the Mineral Resources, continues to supply a large portion of the ore processed.

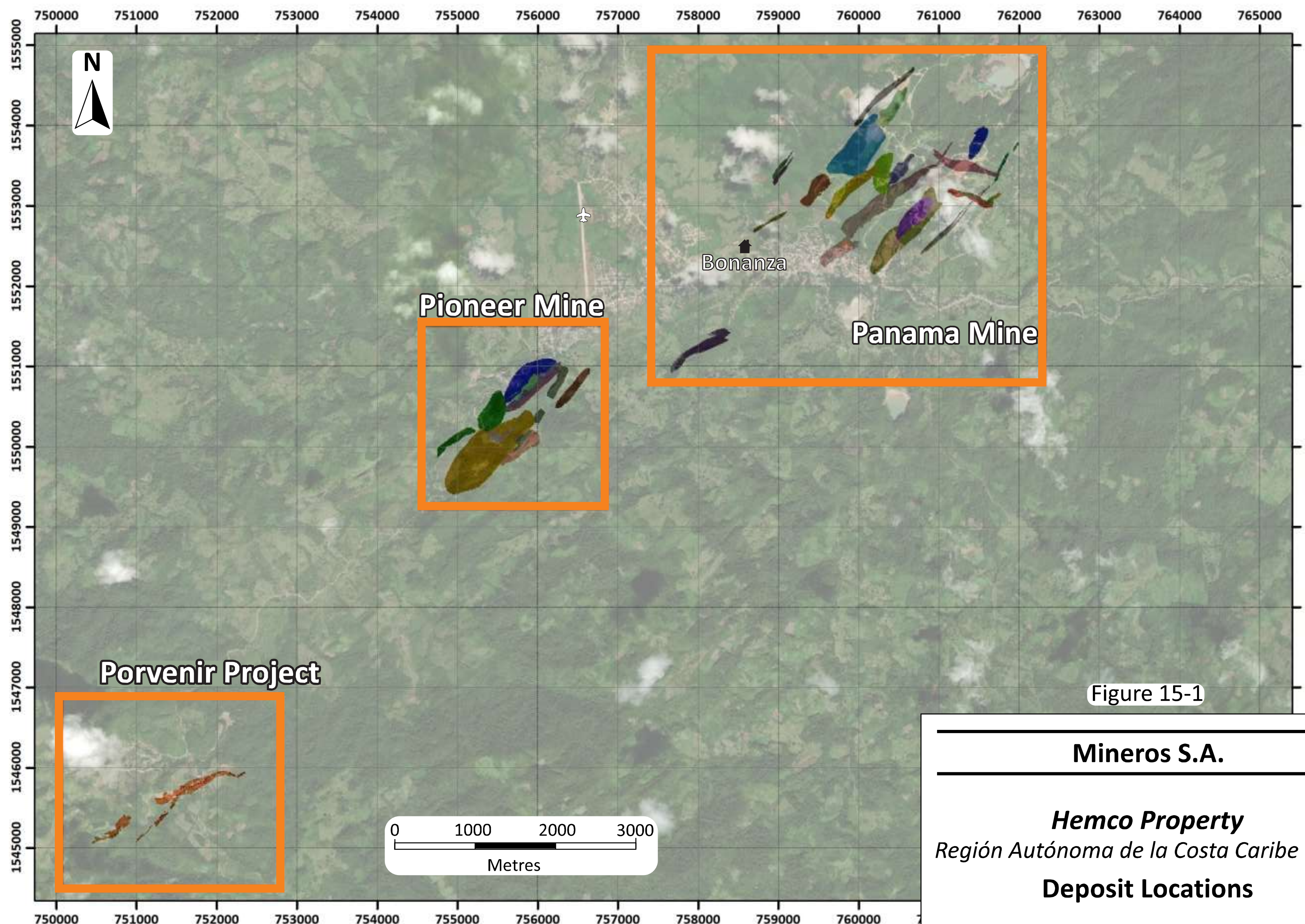
Mineral Reserves for the Panama Mine were prepared jointly by Mineros and SLR, while Pioneer Mineral Reserves were prepared by SLR with input from Mineros. The Porvenir Mineral Reserves were prepared by BISA and audited and accepted by SLR. The Porvenir Mineral Reserves are initial Mineral Reserve estimates for the Porvenir Project. The Hemco Property Mineral Reserve estimates are based on the development of basic engineered LOM plans.

The Hemco Property Mineral Reserve statement is based on the following:

- All Mineral Reserves are estimated with an effective date of December 31, 2022.

- All Mineral Reserves are estimated at a gold price of US$1,500/oz Au, a silver price of US$19.00/oz Ag, and a zinc price of US$1.27/lb Zn.
- All Mineral Reserves are estimated in terms of Run of Mine (ROM) grades and tonnage as delivered to the metallurgical processing facilities and are fully diluted.
- Mineral Reserves include only Measured and Indicated Mineral Resources with generally appropriate modifying factors applied and are used in the LOM plan.
- All references to Mineral Resources and Mineral Reserves are stated in accordance with the CIM (2014) definitions adopted by NI 43-101.
- All ounces referred to in this Technical Report are Troy ounces, equivalent to 31.10348 g.

The location of the Panama and Pioneer operations and Porvenir deposit is provided in Figure 15-1.



March 2023

Source: SLR, 2023.

Figure 15-1

Mineros S.A.

Hemco Property

Región Autónoma de la Costa Caribe Norte

Deposit Locations

15.2 Panama Mine

The Panama Mine was acquired by Mineros in 2013 and has steadily increased production over the years, doubling ore production in 2020. While small open pits have supplemented production in the past, these have been largely exhausted, and all mining operations are now from underground sources. The Panama Mine uses two mining methods for production – shrinkage and mechanized stoping. Mechanized stoping methods consist of sub-level open stoping (SLOS) with pillars and bench and fill mining methods. Underground production at Panama has largely been via shrinkage stoping, however, over the past several years Mineros has applied mechanized stoping to several mining areas.

15.3 Pioneer Mine

The Pioneer Mine intersects a cluster of veins, namely Lone Star, Pioneer 3, Pioneer Northeast, and Pioneer Northeast Extension. The current Pioneer Mine consists of a portal and adit, as well as accesses developed to the Lone Star vein and Pioneer Northeast. Mining is scheduled to continue at the Lone Start vein in 2023 and production from Pioneer Northeast will start in 2024, using a long hole stoping method. The Pioneer Mine is located approximately 5.5 km from the Panama Mine and Hemco Plant. Ore production from Pioneer will continue to be trucked to the Hemco Plant for processing.

15.4 Porvenir Project

The Porvenir Project is located approximately 14 km from the Hemco Plant. The Project has been the subject of technical studies culminating in the 2022 PFS completed by BISA. The PFS is based upon the mining and processing of ore from the Porvenir Project and is the basis for this initial Mineral Reserve estimate for the Project. There are numerous veins in the Mineral Resource estimate. Mineral Reserves have been estimated for the Real McKoy vein and two groups of sub-parallel veins, Porvenir Norte and Porvenir Sur. Mining is planned to be mechanized using cut and fill stoping and long hole stoping methods. Porvenir will operate as a separate underground mine with a new processing plant, tailings facility, and support infrastructure. Copper mineralization in the deposit was not included in the estimation of Mineral Reserves.

15.5 Artisanal Mining

A large proportion of the ore processed by Mineros at its Hemco Property is supplied by artisanal miners. Historically, 40% to 50% of the ore processed by the Hemco Plant has come from artisanal miners. In 2022, a total of 403 kt of artisanal ore at 8.04 g/t Au were processed at the Processing Plants, with the Hemco Plant processing 325 kt at 7.61 g/t Au. The Vesmisa and La Curva plants are two smaller satellite plants which are entirely supplied by artisanally mined ore.

Mineros takes an active role in assisting artisanal miners with production, including assistance regarding safety, geology and blasting, access road construction, and regular discussions through a production committee, in addition to substantial infrastructure and systems for ore receiving and sampling. Mineros and the artisanal production teams have demonstrated a mutually beneficial relationship and consider themselves partners in the development of the Hemco Property. Mineral Resources were not estimated for artisanal mining and therefore no Mineral Reserves are reported.

15.6 Mineral Reserve Estimation Process for Panama Mine

15.6.1 Geotechnical Parameters

The Panama Mine has two distinct production areas, informally divided by the 850 Level, with production above the 850 Level derived from non-mechanized shrinkage stoping and production below the 850 Level derived mainly from mechanized long hole stoping with a few areas (Neptuno and part of Tesoro) planned to be mined using shrinkage stoping. While Mineros will continue to mine shrinkage stopes above the 850 Level and identify new mining areas, production from these stopes were not included in the current Mineral Reserve estimates.

An extensive mining study, including geotechnical aspects, was completed in March 2019 by Varmin SAC (Varmin), a Peruvian mining consultancy, for portions of the planned mining below the 850 Level. The areas of focus were the Elefante, Toboba, and Tesoro veins. As these are close to the remaining veins that will be accessed by the Panama Mine, the geotechnical work completed is considered representative of the entire mine. Accesses have already been developed to these veins, and as such, rock conditions are reasonably well understood. The depth of these veins ranges from immediately below surface to 300 m below surface.

The objective of the Varmin geotechnical work was to identify the mining parameters for either bench and fill or SLOS, in addition to the general support requirements for development work.

Geotechnical evaluation used data from geotechnical holes and the mapping of substantial development in or near the veins to be mined. Industry standard methods were used to determine the geotechnical parameters, including numerical modelling.

While no exhaustive hydrogeological study has been undertaken, the relative shallowness of the proposed workings and the existing developments in the area allowed for some of the hydrogeological conditions to be estimated. Hydrogeological conditions are expected to have a low impact on mining. Water recharge is local and related to rainfall.

Rock Unconfined Compressive Strength (UCS) values range from 95 MPa to 170 MPa, while Rock Quality Designation (RQD) values vary from vein to vein but are generally medium to poor (50 to below 25). Some local faults are filled with saprolite and exhibit very poor rock quality. Overall, the host rock has Rock Mass Rating (RMR) values between 40 and 70 (fair to good) with some local alterations which bring the RMR values down to between 10 and 40 (poor to fair). Various geotechnical zones were identified and modelled, to determine the modified hydraulic radius utilized to estimate stope dimensions.

The mining method selected for production below the 850 Level was long hole stoping with fill, with 15 m interlevel spacing, a minimum mining width of 2.4 m, and a strike length of 15 m, with two metre rib pillars between stopes. A range of stope dimensions were estimated for mining without fill and for shorter interlevel spacing, however, the use of fill and larger interlevel spacing was selected for recovery and production considerations. The use of fill and some cable bolting allows a longer stope length. Rib pillars are designed for a width to height ratio of 1:0.8. While the use of continuous fill (longitudinal retreat mining) could allow the rib pillars to be removed, this was not considered in the current mine plan.

The geotechnical factors estimated for the Toboba, Elefante, and Tesoro veins were assumed to be applicable for the remaining veins in the Panama Mine. SLR is of the opinion that this is a reasonable assumption given the history of mining above the 850 Level and the amount of development below the 850 Level, which provide an adequate level of confidence in the geotechnical results.

To date, spot bolting has been used in development, with further support in areas of poor ground, which is expected to continue.

15.6.2 Dilution and Mining Recovery

Dilution and mining recovery factors are applied based on mining method. Planned or internal dilution is included within the stope designs. Unplanned or external dilution represents the material mined beyond stope designs limits due to overbreak. Unplanned dilution is applied by adding a dilution "skin" on the footwall and hanging wall of the stope.

For shrinkage stoping, dilution is determined for each stope considering the stope's width and dip. Shrinkage stopes are designed at a minimum mining width of 0.9 m. Stopes with a dip greater than 70° and a thickness greater than 0.9 m, have 0.1 m of equivalent linear overbreak/slough (ELOS) dilution added to the production tonnes. Stopes with a dip below 70° and a thickness greater than 0.9 m, have 0.2 m of equivalent linear dilution added. Dilution is applied at zero grade for all shrinkage stopes.

The extraction factor for shrinkage stopes was estimated at 70%. The mining losses account for the pillars left in the stopes and extraction efficiency.

Planned production data at Panama and Pioneer were compared against actual mill feed data at the Hemco Plant for 2022 and is presented in Table 15-2. The comparison shows good reconciliation in tonnes, however, actual gold grade mined is on average 11% lower than planned grades. Dilution for planned production is added at zero grade and the higher milled grade might be due to actual dilution carrying some grade. In SLR's opinion, the modifying factors used are appropriate based on the reconciliation data collected.

Table 15-2: Planned vs. Actual Reconciliation Data
Mineros S.A. – Hemco Property

	Unit	Total/Avg	Q1 2022	Q2 2022	Q3 2022
Budgeted Tonnes	t	303,095	76,201	75,872	73,960
Budgeted Au	g/t	4.55	4.05	4.75	5.04
Actual Tonnes	t	313,900	73,960	78,260	78,260
Actual Au	g/t	4.05	4.08	4.04	4.03
Reconciliation Tonnes	%	-4%	3%	-3%	-6%
Reconciliation Au	%	11%	-1%	15%	20%

A minimum mining width of 1.8 m was used for stope designs. Unplanned dilution in the form of ELOS of 0.6 m, was applied to all veins except for Toboba where a factor of 15% was added. Dilution for the Pluto SW, Capitan, Neblina Sur and Main, Patricia, Eloisa, Foundling, Tesoro, and Toboba was applied at zero grade. Dilution for Elefante and Cruzada was included in the stope optimization inputs and dilution grade was estimated from the resource model.

A mining recovery factor of 77% was used for all veins except Toboba, Elefante, and Cruzada where a factor of 90%, 95%, and 95% were used respectively. The other veins used a lower mining recovery factor as allowance for rib pillars were not included in the stope designs.

Mineros is currently consolidating the mine designs under a single platform, Deswik, to standardize the Mineral Reserve estimation process. The consolidation will include the use of stope optimization to generate stopes which would allow Mineros to update Mineral Reserves due to changes in the resource model or metal prices in a more dynamic manner.

SLR recommends expanding the reconciliation data collection to cover Panama and including stope survey data (cavity monitoring survey (CMS)) to gain a better understanding of dilution and extraction factors. Reconciliation data should be collected and reviewed by dedicated technical personnel. As Mineros is moving to a Deswik based platform for all veins, SLR recommends creating a standard operating procedure package for the Mineral Reserve process. SLR further recommends applying dilution within the designed stope shapes so that dilution grades can be estimated from the resource model.

Table 15-3 summarizes the minimum mining widths, dilution, and extraction factors used for the various Panama mining areas.

Table 15-3: Summary of Modifying Factors Used at Panama
Mineros S.A. – Hemco Property

	Minimum Mining Width (m)	Dilution (% or m)	Extraction (%)
Pluto SW	1.8	0.6 m	77%
Capitan FW	1.8	0.6 m	77%
Neblina Sur/Main	1.8	0.6 m	77%
Patricia	1.8	0.6 m	77%
Eloisa	1.8	0.6 m	77%
Foundling	1.8	0.6 m	77%
Tesoro	1.8	0.6 m	77%
Toboba	1.8	15%	90%
Elefante	1.8	0.6 m	95%
Cruzada	1.8	0.6 m	95%

15.6.3 Economic Parameters and Cut-Off Grades

The costs used to determine the cut-off grades for the planned production from the Panama Mine were generated separately for shrinkage stoping and long hole stoping. Mining operating costs were derived from 2021 and Jan 2022 to Aug 2022 actual costs. Break-even and marginal cut-off grades of 2.85 g/t Au and 2.35 g/t Au, respectively, were estimated for shrinkage stoping. A marginal cut-off grade was used for shrinkage stope designs due to the amount of development already completed.

Marginal and break-even cut-off grades of 2.12 g/t Au and 2.31 g/t Au, and 2.45 g/t Au and 2.78 g/t Au were used for SLOS and bench and fill mining methods respectively. Marginal cut-off grades were used to determine if incremental stopes and development in ore can be added to Mineral Reserves. Actual

2021 to Aug 2022 actual costs, prices, and factors supporting current cut-off grade estimates are provided in Table 15-4.

Table 15-4: Panama Mine – Cut-Off Grade Estimation
Mineros S.A. – Hemco Property

Description	Units	Shrinkage Stoping	SLOS	Bench & Fill Stoping
Gold Price	US$/oz	1,500	1,500	1,500
		Costs		
Full Mining	US$/t	81.64	27.30	47.70
Marginal Mining	US$/t	48.75	19.11	33.39
Processing	US$/t	30.23	30.23	30.23
G&A	US$/t	39.21	39.21	39.21
Refining, Transport, and Royalties	US$/t	3.47	3.47	3.47
Total Cost	US$/t	154.55	100.20	120.61
Total Marginal Cost	US$/t	121.65	92.02	106.30
Processing Recovery	%	90	90	90
Break even Cut-Off	g/t Au	3.56	2.31	2.78
Marginal Cut-Off	g/t Au	2.80	2.12	2.45

A long-term average gold price of US$1,500/oz Au, derived from the long-term price forecasts of the major banks, was used for the economic analysis in this Technical Report.

15.6.4 Mine Design

The Panama Mine consists of several veins and stope and development designs were prepared for all the veins planned to be mined, namely Pluto SW, Capitan FW, Neblina Sur, Neblina Main, Patricia, Neptuno, Tesoro, Eloisa, Foundling, Toboba, Elefante, and Cruzada. The current Mineral Reserve estimate includes the addition of several veins (Patricia, Eloisa, Foundling, Elefante, and Cruzada) with first time estimated Mineral Reserves. SLR prepared mine designs for the Elefante and Cruzada veins, while Mineros prepared the mine designs for the other veins. SLR has reviewed and validated the mine designs and Mineral Reserve estimates provided by Mineros.

Stope designs for Elefante and Cruzada were completed using a stope optimization tool – Deswik Stope Optimizer (DSO). Stope optimization was completed using marginal cut-off grades and the results were reviewed against development designs for inclusion of marginal stopes in Mineral Reserves. Unplanned dilution skin of 0.6 m, presented in Table 15-5, was included in the optimization inputs. Development designs were prepared to connect with existing development and access to all stopes.

Stope designs for the other veins were prepared in Minesight and followed the design criteria presented in Table 15-5. Rib pillars were accounted for in the stope designs for Elefante and Cruzada and a mining recovery factor of 95% were applied to all stopes. A mining recovery of 77% was applied to all other stopes to account for rib pillar allowance and mining recovery. Stoping blocks were interrogated in

Minesight and modifying factors were applied in MS Excel. The resulting diluted grades were reviewed against calculated cut-off grades.

Table 15-5: Panama Mine– Design Parameters
Mineros S.A. – Hemco Property

Description	Unit	Shrinkage	SLOS	Bench & Fill
Break-even COG	g/t Au	3.56	2.31	2.78
Marginal COG	g/t Au	2.80	2.12	2.45
Stopes Dimensions				
Minimum Mining Width (MMW)	m	0.9	1.8	1.8
Stope Height	m	30 to 60	12 to 18	12 to 18
Stope Length	m	25	25 to 30	10 to 15
Dilution	m	0.1 to 0.2	0.6	0.6
Rib Pillar Thickness	m		5	3
Mining Extraction Factor	%	70	77 to 95	77

Figure 15-2 and Figure 15-3 present the general layout of the existing mine development and the planned mechanized production.

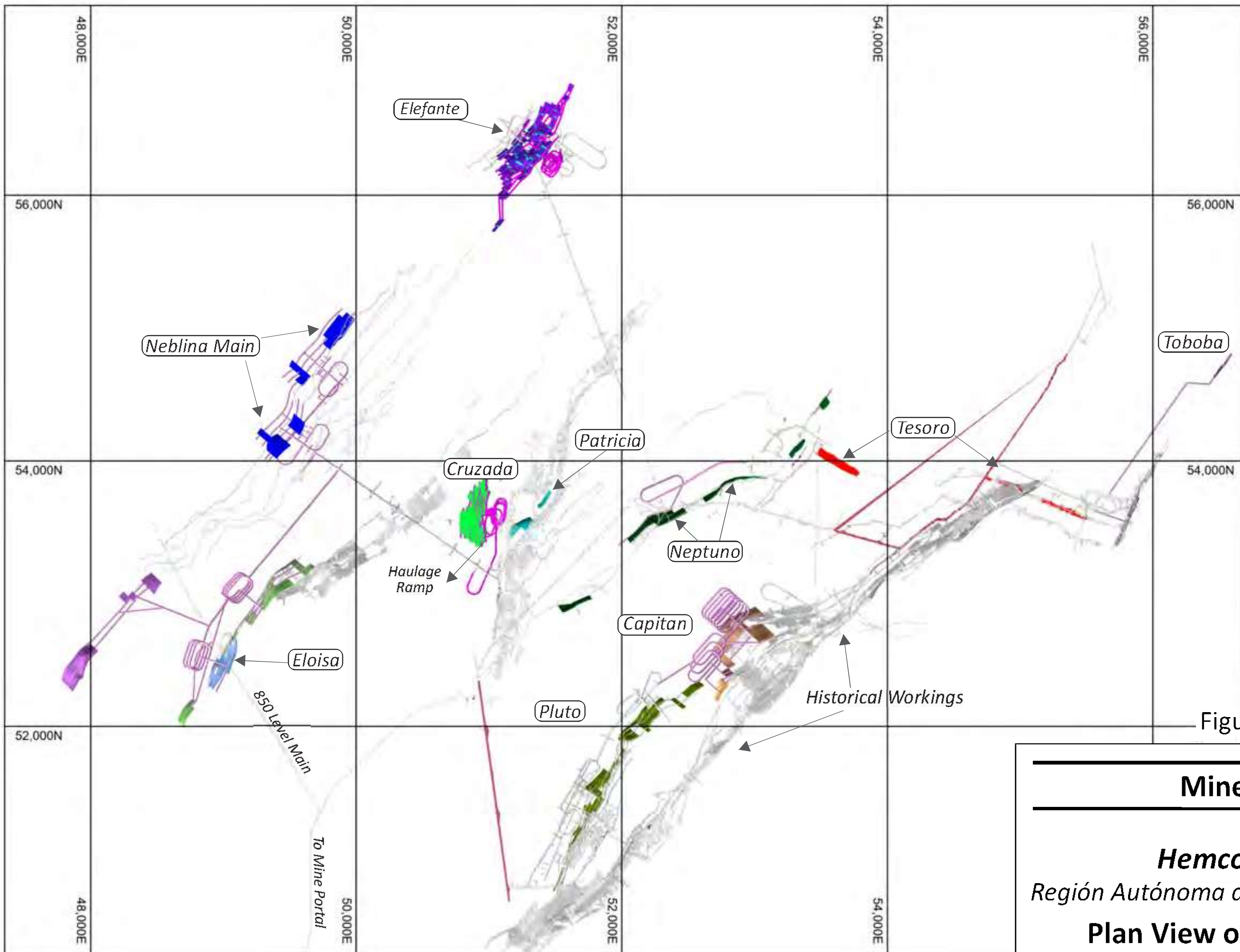


Figure 15-2

Mineros S.A.

Hemco Property

Región Autónoma de la Costa Caribe Norte

Plan View of Panama Mine

March 2023

Source: SLR, 2023.

Looking North

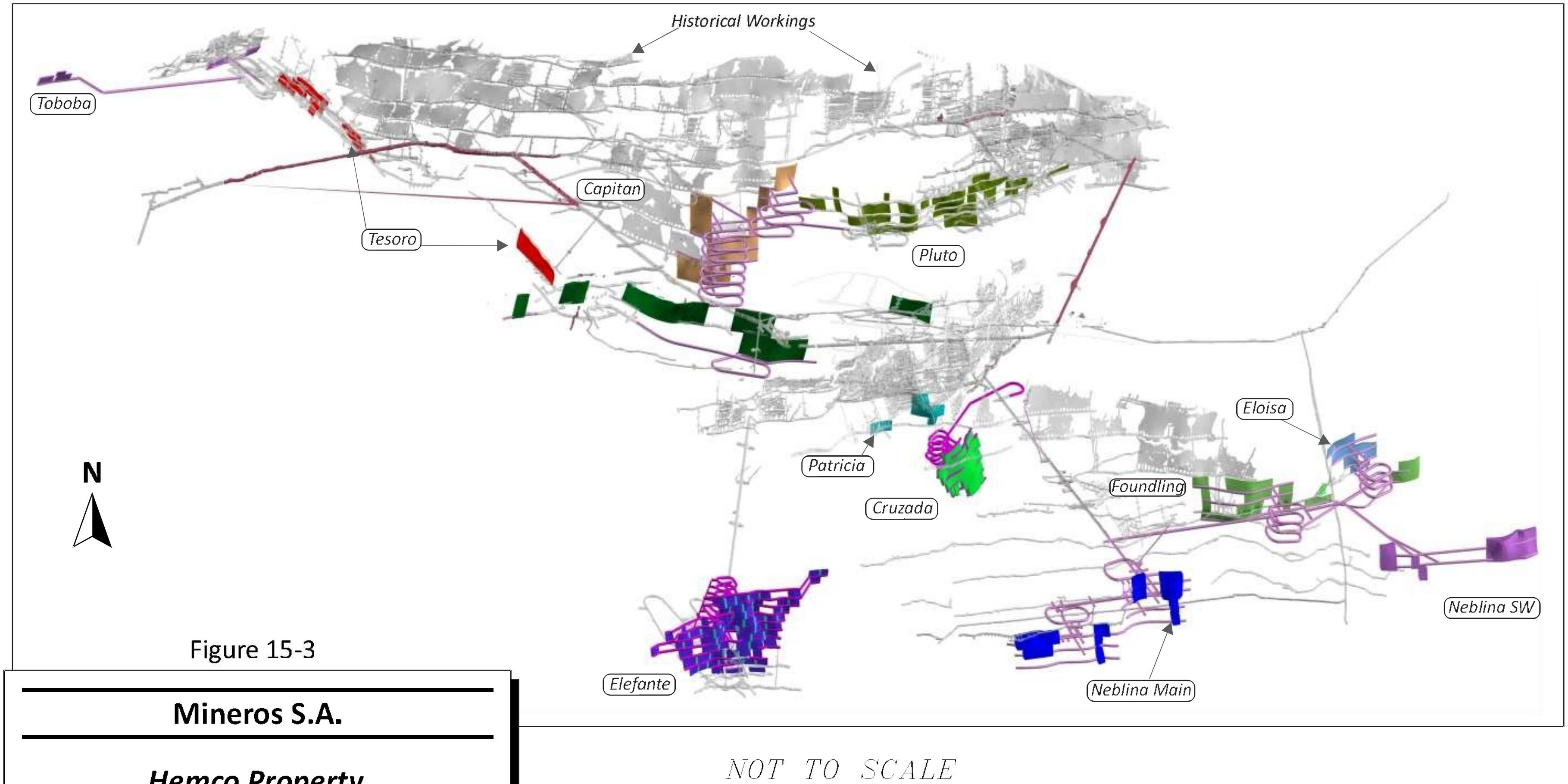


Figure 15-3

Mineros S.A.

Hemco Property

Región Autónoma de la Costa Caribe Norte

Isometric View of Panama Mine

March 2023

Source: SLR, 2023.

15.6.5 Panama Mine Recommendations

The QP recommends:

1. Expanding the reconciliation data collection to cover Panama and including stope survey data (CMS) to gain a better understanding of dilution and extraction factors.
2. Creating a standard operating procedure package for the Mineral Reserve process prior to fully moving on to the Deswik platform.
3. Applying dilution within the designed stope shapes so that dilution grades can be estimated from the resource model.

15.7 Mineral Reserve Estimation Process for Pioneer Mine

15.7.1 Geotechnical Parameters

The geotechnical conditions at the Pioneer Mine are similar to those at the Panama Mine, and the mechanized production method currently used is similar to that used below the 850 Level.

In February 2020, a geotechnical and mining study was completed by E-Mining Technology S.A., Chile (E-Mining) for some of the planned mining of the Pioneer deposit. The areas of focus were the Lone Star and Highland Mary veins, with a mine design completed for Lone Star. Given the geology and knowledge of the area, and as these are close to the remaining veins that will be accessed by the mine, the geotechnical work completed is considered representative of the entire Pioneer Mine. Accesses have already been developed to these veins, and as such rock conditions are reasonably well understood. These veins are located at an average depth of 150 m below surface.

The objective of the E-Mining geotechnical work was to identify the mining parameters for future production as well as the general support requirements for development work.

Geotechnical evaluation used data from geotechnical holes and the mapping of substantial development completed in or near the veins to be mined. Industry standard methods were used to determine the geotechnical parameters, however, no numerical modelling was completed.

While no exhaustive hydrogeological study has been undertaken, the relative shallowness of the proposed workings and the existing development in the area has allowed for some of the hydrogeological conditions to be estimated. Hydrogeological conditions are expected to have a low impact on mining. Water recharge is local and related to rainfall.

UCS values for the andesitic host rock range from 50 MPa to 90 MPa. Overall, the host rock has RMR values between 55 and 75 (normal to good). Various geotechnical zones were identified and modelled, to determine the modified hydraulic radius utilized to estimate stope dimensions. The Lone Star vein ranges in thickness from 1.3 m to 3.3 m, with an average of 2.2 m, and has an average dip of 69°.

For the preparation of the LOM plan, the rib pillars are considered to be permanent. A pillar will be left between the planned stopes and the near surface area allocated to artisanal mining, which will be mined independently of the main underground operation.

To date, spot bolting has been used in development with further support in areas of poor ground, which is expected to continue.

15.7.2 Dilution and Mining Recovery

The sources of dilution at Pioneer will be from the hanging wall and footwall contacts. Table 15-6 shows the reconciliation data collected by the mine in 2022. Planned production is developed assuming a dilution ELOS of 0.6 m which is applied to the widths of each stope. A mining recovery factor of 77% is used which includes allowance for rib pillars. SLR has reviewed the reconciliation data and based on the results, stopes were designed using a minimum mining width of two metres and an additional dilution skin of 0.6 m (0.3 m hanging wall and 0.3 m footwall) was added. In discussions with Mineros technical team, the low reconciliation in tonnages in Q1 2022 and Q3 2022 are due to operational difficulties experienced by the mine. Mineros is, however working towards improving mining and blasting activities as well as bringing in better equipment.

Table 15-6: Pioneer Mine- Reconciliation Data
Mineros S.A. – Hemco Property

	Unit	Total/Avg	Q1 2022	Q2 2022	Q3 2022
Budgeted Tonnes	t	87,204	32,250	30,080	24,874
Budgeted Au	g/t	5.04	5.00	4.95	5.19
Actual Tonnes	t	73,838	24,955	30,219	18,664
Actual Au	g/t	5.03	4.55	5.02	5.66
Reconciliation Tonnes	%	85%	77%	100%	75%
Reconciliation Au	%	100%	91%	102%	109%

Stopes are designed at 18 m high and 10 m long. The mine design includes the addition of five-metre-thick rib pillars where required. A mining recovery of 50% was applied to stope shapes that were assigned as pillars to represent the allowance for rib pillars. Additionally, an extraction factor of 90% was applied to all stopes as allowance for various losses due to mucking efficiency and inaccessible broken ore.

15.7.3 Economic Parameters and Cut-Off Grades

Pioneer has previously been mined using contractors however Mineros is planning to conduct all mining operations using its own personnel. Mineros has derived the mining, processing and G&A operating costs by averaging actual costs from Panama and Pioneer operations. Mineros estimated a break-even cut-off grade of 2.31 g/t Au and a marginal grade of 2.12 g/t Au. Marginal cut-off grades were used to determine if incremental stopes and development in ore can be added to Mineral Reserves. Costs, prices, and factors supporting these cut-off grade estimates are summarized in Table 15-7.

Table 15-7: Pioneer Mine- Cut-Off Grade Estimation
Mineros S.A. – Hemco Property

Description	Units	SLOS
Gold Price	US$/oz	1,500
	Costs	
Full Mining	US$/t	27.30

Description	Units	SLOS
Marginal Mining	US$/t	19.11
Processing	US$/t	30.23
G&A	US$/t	39.21
Refining, Transport, and Royalties	US$/t	3.47
Total Cost	US$/t	100.20
Total Marginal Cost	US$/t	92.02
Processing Recovery	%	90
Break even Cut-Off	g/t Au	2.31
Marginal Cut-Off	g/t Au	2.12

Mining operating costs were derived from 2021 and January to August 2022 actual costs. SLR has reviewed the costs and is of the opinion that the cut-off grade accurately reflects the actual costs experienced by the mine.

15.7.4 Mine Design

Stope designs for all veins at Pioneer were completed by SLR using DSO. The design parameters are based on geotechnical data compiled by E-Mining and using a cut-off grade of 2.13 g/t Au. The optimizer was run on Measured and Indicated material only, with a dilution amount of 0.3 m was added to both hanging wall and footwall. Development designs were laid out to access the resulting stopes and connect to existing development.

Rib pillars measuring five metres thick were included at 20 m to 30 m interval. Table 15-8 summarizes the parameters used for the mine design.

These results were combined with the Panama estimates and then scheduled to meet the planned production targets, using the expected productivities forecast for both Panama and Pioneer. This combined schedule was used to estimate the capital and operating costs over the LOM.

Figure 15-4 and Figure 15-5 present the general layout of the existing mine development and the planned mechanized production.

Table 15-8: Pioneer Mine– Design Parameters
Mineros S.A. – Hemco Property

Description	Unit	Value
Stopes COG	g/t Au	2.13
Ore Development COG	g/t Au	2.00
	Stopes Dimensions	
Minimum Mining Width (MMW)	m	1.80

Description	Unit	Value
Stope Height	m	18
Stope Length	m	10
Dilution	m	0.6
Rib Pillar Thickness	m	5
Rib Pillar Recovery Factor	%	50
Mining Extraction Factor	%	90

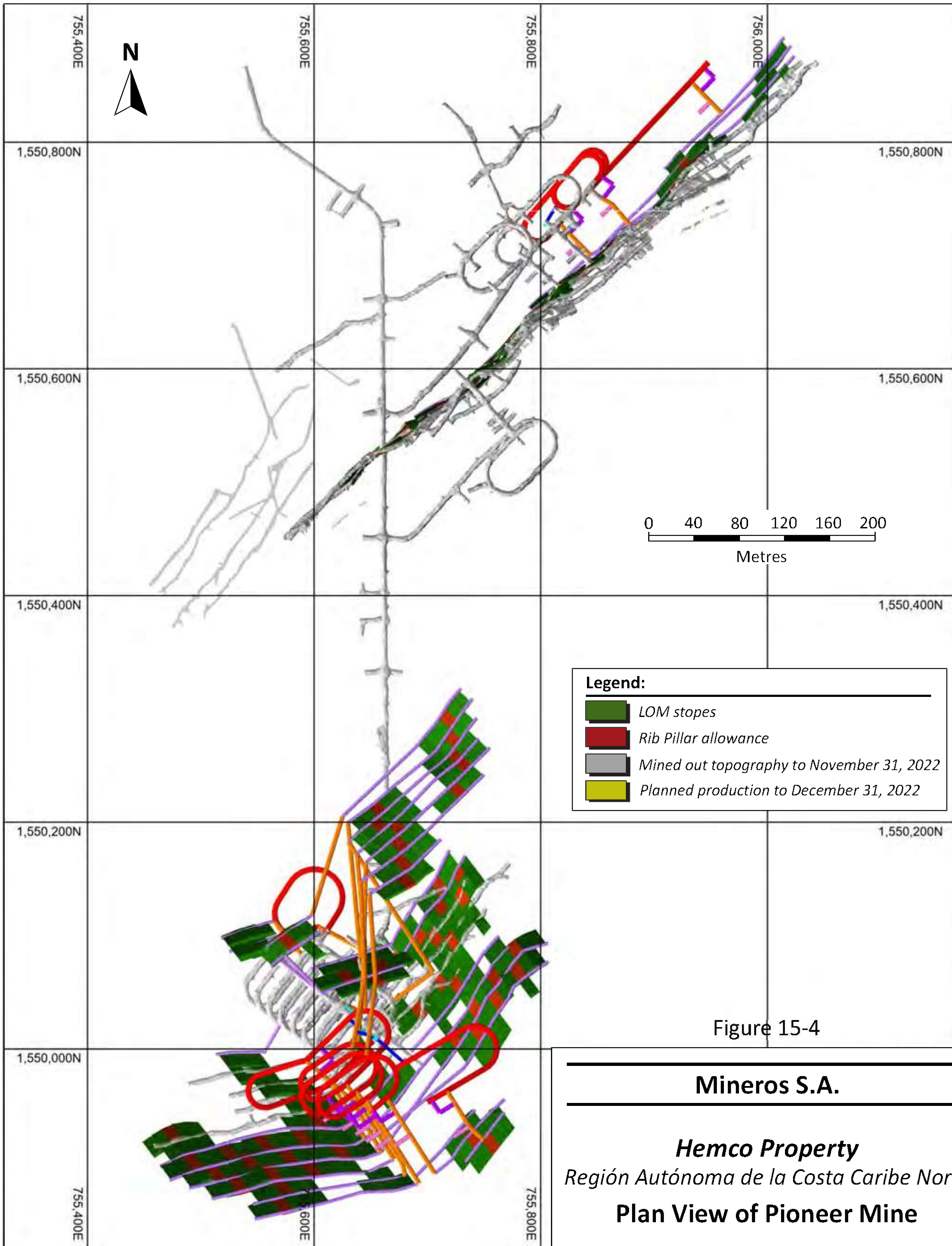


Figure 15-4

Mineros S.A.

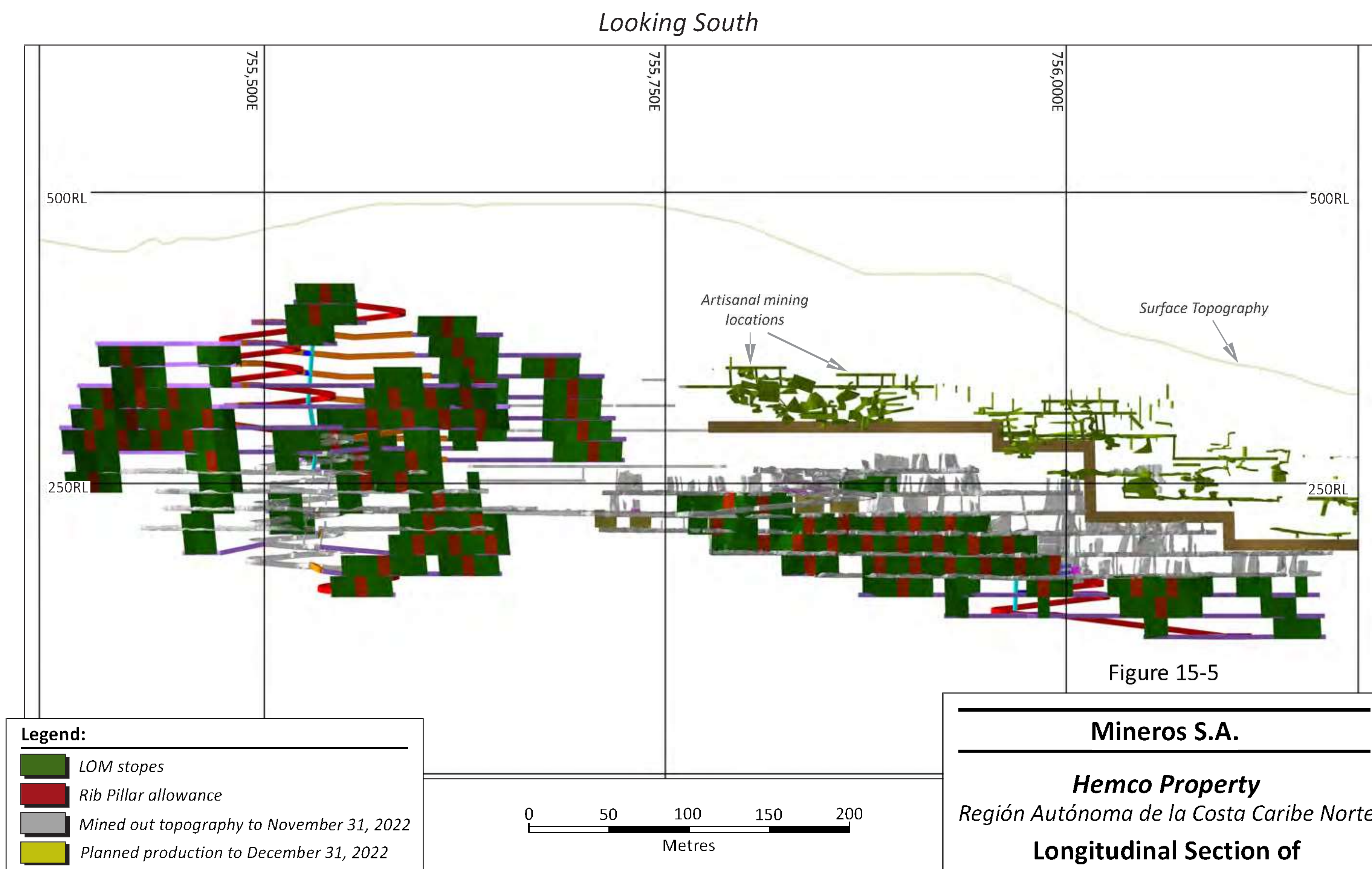
Hemco Property

Región Autónoma de la Costa Caribe Norte

Plan View of Pioneer Mine

March 2023

Source: SLR, 2023.



Source: SLR, 2023.

Figure 15-5

Mineros S.A.

Hemco Property

Región Autónoma de la Costa Caribe Norte

Longitudinal Section of Pioneer Mine

15.7.5 Pioneer Mine Recommendations

The QP recommends:

1. Consolidating the resource models for the Pioneer, Pioneer Northeast Extension, and Pioneer 3 mineralized zones to avoid overlapping and simplify stope optimization processes.
2. Upgrading the Pioneer 4 Mineral Resources to Mineral Reserves in the short term. The zone can be accessed from Lone Star development.

15.8 Mineral Reserve Estimation Process for Porvenir

The initial Mineral Reserve estimate for Porvenir is summarized in Table 15-9.

Mineral Reserves were estimated for the Real McKoy vein and the Porvenir Norte and Porvenir Sur zones. BISA completed a PFS for the deposit using and updating previous planning work and optimizing the development and production plans and capital cost estimates. The plan is based upon decline access and mechanized mining using bench and fill stoping and sub-level long hole stoping methods. Mineral Reserves were estimated by applying the parameters described in this report to the Mineral Resource estimate using DSO. Measured and Indicated Mineral Resources were converted to Proven and Probable Mineral Reserves. Inferred Mineral Resources were not converted to Mineral Reserves.

Table 15-9: Porvenir Mineral Reserve Estimate Summary
Mineros S.A. – Hemco Property

Category	Tonnes (000)	Au (g/t)	Ag (g/t)	Zn (%)	Contained Gold (000 oz)	Contained Silver (000 oz)	Contained Zinc (M lb)
Proven	270	2.70	13.61	3.14	23	118	19
Probable	5,524	3.09	10.16	2.96	549	1804	360
Proven & Probable	5,795	3.08	10.29	2.97	575	1918	380

Notes:

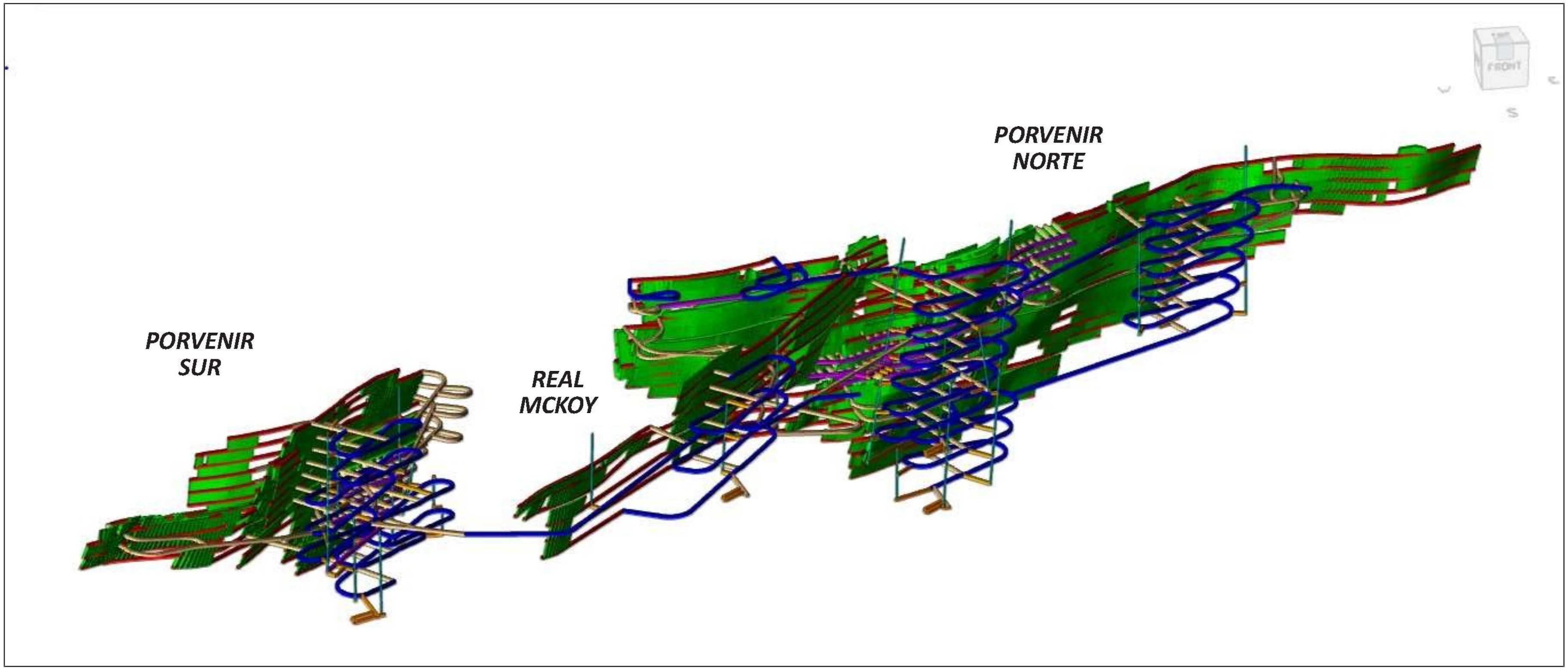
1. CIM (2014) definitions were followed for Mineral Reserves.
2. A minimum mining width of 1.55 m.
3. Based on NSR value per tonne determinations using metal prices, metal recoveries, and smelter terms, breakeven NSR cut-off values vary from $81.34/t to $83.10/t depending on the mining method.
4. Metallurgical recoveries applied on a block-by-block basis and average 85.6% for gold, 52.8% for silver, and 91.1% for zinc.
5. Dilution skins 0.25 m thick on stope footwalls and 0.5 m thick on hanging walls.
6. Mining extraction: cut-and-fill - 78% to 90% and SLS - 90%.
7. Mineral Reserves estimated using an average long term metal prices of US$1,500/oz Au, $19.00/oz Ag, and $1.27/lb Zn.
8. Totals may appear different from the sum of their components due to rounding.

The Proven and Probable Mineral Reserves by zones are shown in Table 15-10.

Table 15-10: Porvenir Mineral Reserve Estimate by Zone
Mineros S.A. – Hemco Property

Category	Tonnes (000)	Au (g/t)	Ag (g/t)	Zn (%)	Contained Gold (000 oz)	Contained Silver (000 oz)	Contained Zinc (M lb)	NSR (US$/t)
Real McKoy	281	6.11	13.16	1.18	55	119	7	246
Porvenir Norte	4,002	2.93	10.35	3.09	377	1,332	273	162
Porvenir Sur	1,511	2.88	9.7	2.96	140	471	99	154
Total	**5,794**	**3.07**	**10.32**	**2.96**	**572**	**1,922**	**379**	**164**

Porvenir Norte consists of the ZDPN plus sub-parallel PNHW1 and PNHW veins, while Porvenir Sur consists of the ZDPS plus sub-parallel PSHW and PSHW1 veins. There are other veins in the Mineral Resource that have not been included in the estimation of Mineral Reserves as they did not meet the criteria for Mineral Reserves. An outline of the Mineral Reserves and the mine development is shown in Figure 15-6.



NOT TO SCALE

Legend:
LOM stopes
Rib Pillar allowance
Capital development
Operating development

Figure 15-6

Mineros S.A.

Hemco Property

Región Autónoma de la Costa Caribe Norte

Schematic View of Porvenir Zones and Mine Development

March 2023

Source: SLR, 2023.

15.8.1 Geotechnical Parameters

Geological and geomechanical studies were previously undertaken by Hemco to complete the geotechnical evaluations of the deposit for use in determining suitable excavation dimensions and support designs. The Bieniawski (RMR) and Barton (Q) classification criteria were used for geomechanical classification. The study results were analyzed, and the conclusions are summarized in Table 15-11 and Table 15-12.

Table 15-11: Mineralized Zones and Main Discontinuities
Mineros S.A. – Hemco Property

Vein	Strike	Dip
Porvenir Norte zone	N76°E	71°NW
Main discontinuities 1	N56°E	73°NW
Main discontinuities 2	N46°W	39°NE4
Main discontinuities 3	N90°E	74°N
Porvenir Sur zone	N55°E	67°NW
Main discontinuities 1	N46°E	73°NW4
Main discontinuities 2	N11°E	71°NW
Main discontinuities 3	N35°W	46°NE
Real McKoy vein	N46°E	86°NW
Main discontinuities 1	N46°E	73°NW
Main discontinuities 2	N11°E	71°NW
Main discontinuities 3	N35°W	46°NE

Table 15-12: Rock Strength and Quality
Mineros S.A. – Hemco Property

Zone	UCS (MPa)	RMR89	Rock Quality
Porvenir Norte	14 to 129	55-60	Good
Porvenir Sur	114 to 129	50-55	Fair
Real McKoy	114 to 129	65-70	Fair

To assess the stability of the planned stopes and determine the maximum stope dimensions, the modified stability graph analysis was applied. For this analysis, the stability number (N') is estimated for the ground conditions of the back and walls and then plotted against the hydraulic radius (Hr) of the surface in question. The stability graph is based upon actual cases to assess the stability of the surface. The N' factor includes consideration of various factors applied to the modified tunnelling quality factor, Q'.

The estimated values of N' for the zones are listed in Table 15-13.

Table 15-13: Stability Graph Parameters
Mineros S.A. – Hemco Property

Zone	Surface	Q'	A	B	C	N'
Porvenir Norte	HW	7.15	1	0.22	8	11.1
Porvenir Norte	Back	9.25	1	0.2	6.2	4.3
Porvenir Norte	FW	11.26	1	0.22	2.3	19.8
Porvenir Sur	HW	11.39	1	0.22	8	14.5
Porvenir Sur	Back	10.24	1	0.2	5.8	5.1
Porvenir Sur	FW	9.07	1	0.22	2.5	16
Real McKoy	HW	16.9	1	0.2	7.8	26.3
Real McKoy	Back	35.3	0.8	0.2	2.1	12
Real McKoy	FW	17.5	1	0.2	3.5	12.3

The stope dimensions selected were within the "stable" regime of the stability graph. The stope dimensions selected for the mine design are shown in Table 15-14.

Table 15-14: Planned Stope Dimensions
Mineros S.A. – Hemco Property

Method	Block Length (m)	Level Interval (m)	Stope Length (m)	Stope Height (m)	Pillar Length (m)	Stope Width (m)
Bench & Fill (Pillars)	<280	100	30.5	20	5	1.55 – 7
Bench & Fill	n/a	100	25	15	n/a	7 – 12
Transverse SLS	varies	100	varies	15	n/a	12 – 20

15.8.2 Dilution and Mining Recovery

Planned dilution was included within the stope shapes and represents the material between the ore wireframe and the stope design. External dilution is that material beyond the design stope limits. Unplanned dilution estimates focused on the use of the empirical ELOS analysis which provides an estimate of the overbreak based upon the stability number and the hydraulic radius. The ELOS is the volume of overbreak in cubic metres divided by the wall area. In the ELOS analysis, the ELOS was estimated to be less than 0.5 m. In the ELOS graphical analysis, the lowest guideline is at 0.5. Capes (2009) noted that the Dilution Graph method only provides a relationship between the open stope geometry, rock mass conditions, and stope wall stability based on empirical data. The ELOS values selected for the dilution estimate are shown in Table 15-15. The ELOS graphical analysis minimum value is shown as simply less than 0.5 m; there is no interpretation of an ELOS of 0.25 m versus hydraulic radius.

Table 15-15: Estimate of ELOS by Zone
Mineros S.A. – Hemco Property

Zone	RMR	Average Width (m)	Height (m)	Area	ELOS (m)
Porvenir Norte	55-60	8.6	15	FW	0.25
				Back	0.50
Porvenir Sur	50-55	8	15	FW	0.25
				Back	0.50
Real McKoy	65-70	1.8	20	FW	0.25
				Back	0.50

SLR concurs with Capes that the ELOS method only provides a relationship between the open stope geometry, rock mass conditions, and stope wall stability based on empirical data. SLR is of the opinion that the dilution estimate is optimistic and further evaluation of the dilution estimate should be undertaken in the next stage of study as the current dilution estimate may not adequately consider the following factors:

- Small-scale variations in the ore location along strike and/or dip
- Overbreak due to poor drill hole alignment or placement
- Overbreak due to blasting
- Overbreak at the intersections of the wider sublevels and the narrow ore zones
- The lack of stoping experience at Porvenir.

There was no allowance for backfill dilution from backfill wall slough or from mucking of the floor.

SLR recommends that the mine planning and operations include:

- Monitoring of stope widths and ongoing mapping
- Monitoring of the use of slashes when developing sub-levels
- Ground control at the intersections of sub-levels and narrow stopes
- Quality control on backfill walls.
- Surveying of bench and fill stopes and comparison of design versus actual profiles including CMS as required.
- Calculation of a reconciliation of the mill production to mine production and to Mineral Reserve estimate.

The mining extraction by method was estimated as:

- Bench and fill with pillars 78%
- Bench and fill 90%
- Transverse SLS 90%.

15.8.3 Economic Parameters and Cut-Off Grade

Mineral Reserves were estimated using an NSR value per tonne on a block-by-block basis to evaluate blocks for inclusion as Mineral Reserves. The NSR value was estimated based upon the expected revenue using metal recovery estimates and smelter terms. The formula for the estimate of the NSR is:

NSR= Au grade (*g/t*) *x Rec Au*(%) *x* 46.859 + Ag grade (*g/t*) *x Rec Ag* (%) *x* 0.39 + Zn grade (%) *x Rec Zn*(%) *x* 1,588.05

- The estimated economic cut-off value including sustaining capital by mining method was (Table 15-16):
- Bench and fill with pillars US$81.34/t milled
- Bench and fill US$82.20/t milled
- Transverse sub-level stoping US$83.10/t milled

Table 15-16: Cut-off Grade Cost Details
Mineros S.A. – Hemco Property

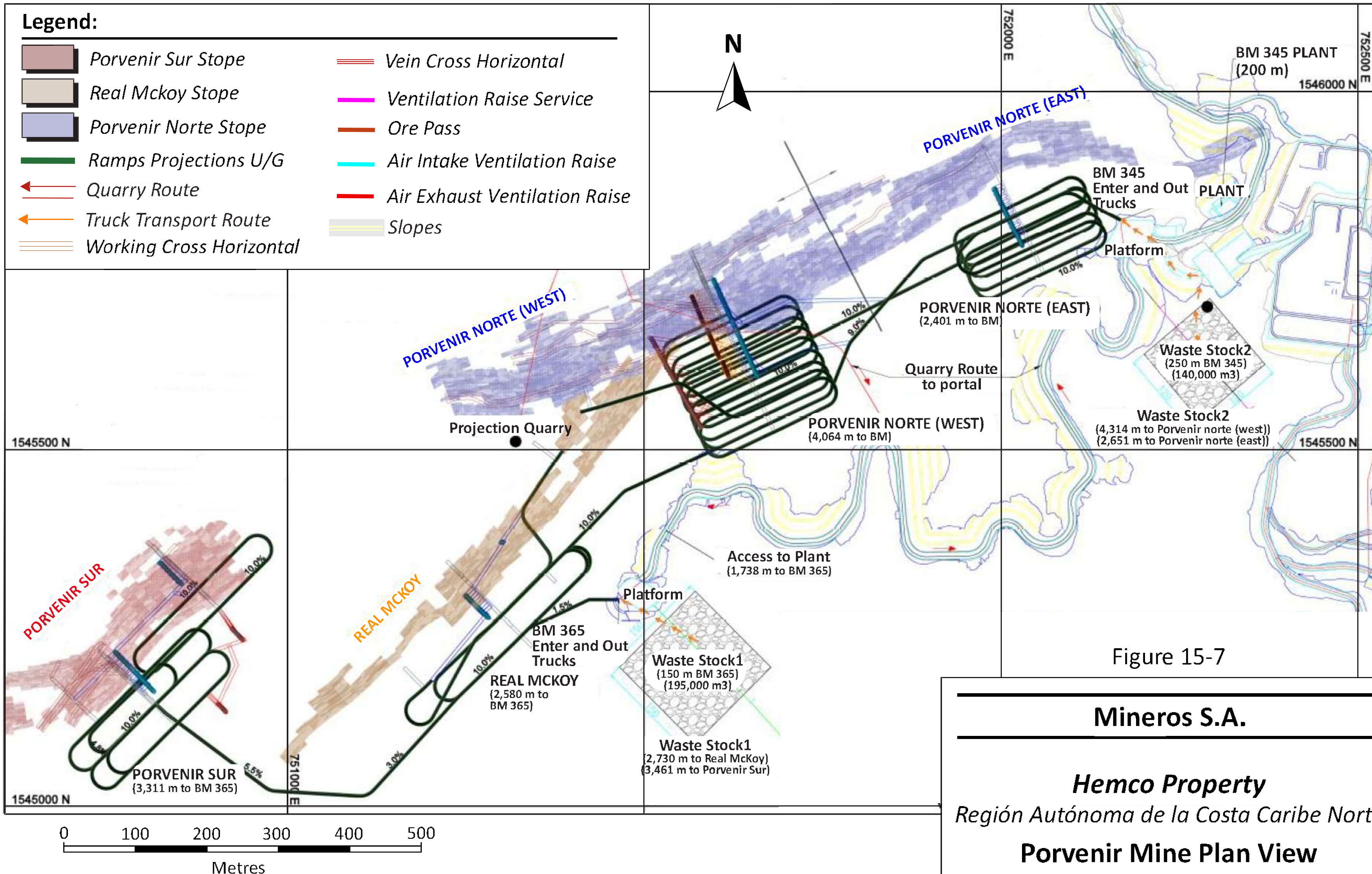
(US$/t)	Bench & Fill (pillars)	Bench & Fill (Avoca)	SLS
Fixed	9.21	9.43	9.56
Variable			
Drill & Load	5.54	5.54	5.54
Haulage	5.75	5.75	5.75
Backfill	2.24	5.78	7.97
Horizontal Development	7.68	4.61	3.07
Vertical Development	0.60	0.60	0.60
Services	0.19	0.19	0.19
Other	4.27	4.44	4.55
Plant	28.09	28.09	28.09
Energy	14.88	14.88	14.88
Tailing	2.89	2.89	2.89
Total	**81.34**	**82.20**	**83.10**

15.8.4 Mine Design

Stope designs were completed using DSO using the parameters described above. The optimizer was run on Measured and Indicated Mineral Resources, with a dilution amount of 0.25 m added to the footwall and 0.5 m added to the hanging wall. Development designs were laid out to access the resulting stopes and connect to existing development. Stope shapes were reviewed to ensure that planned stopes met the design criteria and that the NSR value was above the cut-off grade. Allowances were made for pillars and for stope extraction.

The development and stope designs were scheduled using the Deswik scheduler package with the objective of producing 1,000 tpd in the first year of production and expanding to 2,000 tpd in year 3 using the estimated productivities forecast for Porvenir. This schedule was used to estimate the capital and operating costs going forward.

Figure 15-7 presents the general layout of the planned mine development and production areas.



March 2023

Source: Mineros, 2022.

Figure 15-7

Mineros S.A.

Hemco Property

Región Autónoma de la Costa Caribe Norte

Porvenir Mine Plan View

15.8.5 Classification

Measured Mineral Resources were converted to Proven Mineral Reserves and Indicated Mineral Resources were converted to Probable Mineral Reserves. Inferred Mineral Resources were not converted to Mineral Reserves.

15.8.6 Porvenir Mine Recommendations

The QP recommends that Mineros:

- Review the dilution assumptions and consider the potential impact of mining practices on the level of dilution.
- Develop grade control and reconciliation procedures to monitor the mining performance and to compare to the Mineral Reserve estimates.
- Advance stope planning in the next stage of project design.

16.0 MINING METHODS

Hemco is actively mining and producing from the Panama and Pioneer mines. Porvenir is a separate mining project located approximately 14 km from the Hemco Plant.

16.1 Panama and Pioneer Mines

Mining at Panama and Pioneer currently accounts for all production from the Mineral Reserves. Ore production is from underground mining using shrinkage stoping and long hole mining methods. Historical underground production has been primarily from shrinkage stoping, however, over the past few years, Mineros has successfully transitioned to mechanized long hole stoping mining methods. Over the LOM, production from the Panama and Pioneer Mines accounts for approximately 40% to 50% of the ore processed at the Hemco Plant, with the remainder from artisanal sources and remaining shrinkage stopes.

Since Mineros' acquisition of the Hemco Property in 2013, the Panama Mine has produced a total of 2,002 kt of ore at an average grade of 3.24 g/t Au. The Panama mine production in 2022 amounted to 213 kt of ore at 3.98 g/t Au. Mining operations at the Pioneer Mine started in 2019 with ore production from development until stoping operations started in 2021. Pioneer has so far produced 196 kt of ore at an average grade of 4.27 g/t Au.

16.1.1 Mine Design

16.1.1.1 Panama Mine

The Panama Mine is a shallow operation comprised of the extraction of several veins, accessed by an adit. Workings are generally 1,300 m laterally into the Panama Mine and range from immediately below surface to 250 m deep. The Panama mine is accessed by a portal and ramp on the 850 Level. Production ore is transferred to ore chutes or truck loading stations where it is loaded onto 20 t trucks, then transported to surface to the Hemco Plant. The main haul level to surface is located on the 850 Level.

Mine designs for the Panama Mine were prepared by Mineros and SLR. SLR prepared mine designs for the Elefante and Cruzada orebodies, while Mineros completed designs for the other veins.

Stope and development designs for Elefante and Cruzada were prepared using DSO, while stopes for the other veins were designed in MineSight. Stopes were designed at a minimum mining width of 1.8 m for mechanized stoping and 0.9 m for shrinkage stopes. Stope heights varied between 12 m and 18 m for mechanized stopes and up to 60 m for shrinkage stopes. The primary mining method at Panama is SLOS where stopes are mined in 20 m to 25 m long panels and a five-metre rib pillar is left between each panel primarily to prevent dilution from backfill material. Bench and fill stoping is used at the Neblina SW and Neblina Main orebodies where veins have a shallow dip ranging between 30° to 40°. Stopes are mined in 10 m to 15 m panels prior to being backfilled with unconsolidated rock fill.

Development designs were completed to connect to existing development and provide access to all stopes. Ramps and accesses were designed at 4.0 m x 4.5 m, while cross cuts at 3.5 m x 3.5 m. Ore drives are narrower to reduce dilution, at 3.0 m x 3.5 m.

16.1.1.2 Pioneer

The Pioneer Mine consists of four mineralized veins that are spread over a strike length of approximately 1.9 km and have a maximum depth of 250 m below surface. The Pioneer Mine is currently accessed via a single portal and ramp located north of the Lone Star vein.

Stope and development designs for Pioneer were prepared by SLR using DSO at a minimum mining width of 1.8 m, a stope heigh of 18 m, and stope length of 10 m. SLOS is the only mining method used at Pioneer. Stopes are mined in 20 m to 30 m panels with a five-metre rib pillar left in between each panel. Mining progresses in a top-down sequence and each level is completely mined prior to mining advancing to the next level. Development designs at Pioneer follow the same standards as those used at Panama and described in Section 16.1.1.1.

16.1.2 Mining Method

16.1.2.1 Panama

The area below the 850 Level has been extensively developed with the intention of mining using long hole stoping methods, however, a few stopes have been planned to be mined using shrinkage methods primarily due to the narrow thickness of the orebody. Production and development mining is with a mechanized suite comprised of a long hole drill rig, face drill rig, load-haul-dump (LHD) trucks (4.2 yd^3 and 6.0 yd^3), and mine trucks.

Advance rates are 50 m to 70 m per face per month, depending on the number of available faces and priorities.

Stoping will be carried out using a long hole drill rig and completed in retreat fashion from the top level down. Planning was based on 300 tpd ramping up to 700 tpd.

Blasted material will be loaded by LHDs and either directly tipped into a mine truck or into a remuck bay, from where it will be rehandled into a truck. Loading points are planned where cross cuts intersect the ore drives. Trucks will haul the material out of the Panama Mine to the ore stockpile near the Hemco Plant, where it will be rehandled by a frontend loader as required for blending purposes. Where planned, unconsolidated fill from waste rock dumps on surface will be trucked into the cross cuts and loaded and delivered into the stopes by LHDs.

Production at Panama takes place over two eight hour shifts in the shrinkage stoping sections and two twelve hour shifts in the mechanized mining sections.

16.1.2.2 Pioneer Mine

Construction of the portal access to the Pioneer Mine commenced in 2018, and production began in 2021. Much of the development completed so far has focused on accessing the Lone Star stoping areas. All development and mining operations have been completed by a contractor group, Congemin Nicaragua S.A. Mineros has supplied the contractor with technical support and design parameters.

While SLR understands that Mineros will evaluate the feasibility of using company personnel for all or part of the mining operations at Pioneer in the coming years, currently it has expressed its intent to use mining contractors. SLR notes that the mine designs and LOM plan were completed with the assumption of contract mining.

The production approach for the Pioneer Mine resembles that of the mechanized areas of the Panama Mine. The mineralized veins will be mined using SLOS and will include permanent rib pillars. Stopes will be accessed via an undercut drift and will be mined in a retreat fashion towards the central access. Mining will commence on the uppermost level and progress down. Mineros does not envisage using backfill at Pioneer.

Production holes will be drilled using a long hole drill rig, and stopes will be drilled using uppers. Broken ore will be loaded on LHDs and then loaded onto a truck. Trucks will be loaded on the same level as the production level. The material will then be hauled to the stockpile yard and rehandled accordingly to feed the Hemco Plant.

The LOM plan was generated using productivity data from the Panama and Pioneer operations. Stope mining is based on a production rate of 200 tpd per LHD. Jumbos have been assigned a development rate of 3.5 m/day per face and a maximum number of two faces per day. The LOM plan averages approximately 270 m/month.

Mineros has also outlined a pillar area in the Lone Star vein where artisanal mining is currently ongoing. For the other veins, a minimum thickness of 30 m has been assumed for any artisanal mining activities and an additional 15 m pillar added for safety reasons.

Mineralization mined at the Pioneer Mine is trucked to the Hemco Plant near the Panama Mine. Waste material is dumped at a waste dump immediately outside the Pioneer Mine access.

16.1.3 Fleet

Currently, a mixed tracked and mechanized fleet is in operation at the Panama Mine. The tracked equipment consists predominantly of electric locomotives, hoppers, and rocker shovels. The mechanized equipment consists of drill rigs, LHDs, jumbos, and trucks. Both sets of equipment use dump trucks to haul ore and waste out of the Panama Mine.

The Pioneer equipment are supplied by contractors. Over the Pioneer LOM, it is anticipated that a maximum of two jumbos, two development LHDs, two production LHDs, two drill rigs, and four to five trucks will be required over the LOM.

The current production fleet, as well as the additional fleet required for the mechanized production which will be used for the remainder of the LOM, is provided in Table 16-1.

Table 16-1: Panama and Pioneer Underground Fleet
Mineros S.A. – Hemco Property

Item	Model	Units
Electric Locomotives	IMIM LB, GOODMAN ANX	12
Dump trucks	EIMCO 985, TAMROCK EJC416	4
Long hole rig	EPIROC SIMBA S7	2
Face Jumbo	EPIROC BOOMER 282, SANDVIK MERCURY	2
LHD	EPIROC ST1030 6YD, EPIROC 3.5, WAGNER 3.5, JS220	6
Telehandler	CATERPILLAR TL943	3

16.1.4 Mining Infrastructure

The Pioneer Mine infrastructure is currently able to support mining operations at the Lone Star vein. As other veins are accessed, and production rates increase, the infrastructure requirements will be expanded accordingly. Plans for future infrastructure will follow the same principles and use similar equipment as the infrastructure used for the Panama Mine.

16.1.4.1 Mine Water

Mine water is circulated, collected, and treated through a series of pipes, pumping, and treatment systems. Various collecting dams and distribution dams exist to enable the effective working of the system.

Water is drained from the 1,300, 1,100, 960, and 850 Levels to the Neptuno area on the 850 Level, which is a primary junction for various working areas. A 750 m^3 reservoir receives the water and some initial solids are settled out through a system of settlers. From here it is pumped by two Duerco 100 hp pumps to treatment dams at the Neptuno portal on the 1,275 Level.

The dams are connected sequentially and are equal in size, with a total capacity of 584 m^3. This allows the fines to settle out. A lime slurry is added, with an agitator tank, to the incoming water to treat and adjust the acidic pH. Treated water is pumped, using two Grundfo 40 hp pumps, to the reservoir at the Cruzada vein.

The Cruzada vein reservoir consists of one 180 m^3 concrete structure. From here, water is gravity fed to the various parts of the operation for use again.

16.1.4.2 Electricity Reticulation

The Hemco Property has its own hydroelectric plant with a maximum capacity of 5.3 MW and a backup generator set capable of producing 1.1 MW.

Incoming power is supplied to the Panama Mine at 11.4 kV where it reaches a transformer in the Marta area of the 850 Level. Here it is stepped down to 2.4 kV, where the power is distributed mine wide to a further 14 transformers, which step it down to 480 V.

The total power required for various pumping stations and compressors is 2.9 MW.

For the Pioneer Mine, incoming power is supplied at 11.4 kV, through a 750 kVA transformer, which steps it down to 480 V.

16.1.4.3 Compressed Air System

Compressed air is provided by five Ingersoll Rand compressors, of which three are operated and two are on standby. The operating machines have a capacity of 4,729 CFM each and a power of 250 hp to 350 hp. They are operated between 16 and 24 hours per day. The standby machines have a capacity of 1,704 CFM and a power of 100 hp to 250 hp.

The compressors are situated in the Portal Patricia area of the 1,300 Level and the Portal Guataza area of the 850 Level, which allows an effective distribution of compressed air. Compressed air is reticulated through four-inch high density polyethylene (HDPE) pipes. Pressure is measured every 300 m using manometers to ensure adequate operating pressures.

16.1.4.4 Ventilation

The Panama Mine operates a forced ventilation system with three ventilation circuits, each of which has a main Airtec fan. The first circuit has a 150 hp fan on surface that exhausts 56.6 m^3/s from part of the mechanized mining area at the 850 Level through ventilation Raise 1. The second circuit has a 150 hp fan located on surface, exhausting 18.9 m^3/s from the 960 and 1,100 Levels, though ventilation Raise 15. A third 150 hp fan is located at the surface near the exit to the 1,100 Level and is connected to the 697 Level by means of Raise 640, which ventilates the Toboba and Tesoro vein areas. The Pioneer ventilation circuit consists of a 150 hp Airtec main fan located at the main mine portal as well as ten auxiliary fans to ventilate levels and working areas. The details of these districts are provided in Table 16-2. The ventilation circuits are also supplemented by several smaller auxiliary fans ranging from 10 hp to 75 hp.

Table 16-2: Panama and Pioneer Underground Ventilation
Mineros S.A. – Hemco Property

Circuit	Mining Type	Main Fan Power	Levels and Ramps
PANAMA	Mechanized	300 hp	Elefante
PANAMA	Mechanized	150 hp	Nivel 850, Rampa Neptuno
PANAMA	Mechanized	150 hp	Rampa Pluto
PANAMA	Mechanized	75 hp	Rampa Neblina
PANAMA	Shrinkage	75 hp	Nivel 1100, Nivel 960
PIONEER	Mechanized	150 hp	Pioneer Next
PIONEER	Mechanized	300 hp	Pioneer LS
PIONEER	Mechanized	150hp	Pioneer NE

Development and auxiliary workings are ventilated by a set of fans with a power range of 20 hp to 100 hp. Some of the handheld and trackbound development ends are ventilated with compressed air powered units, such as a JetFan or venturi blower.

16.1.5 Labour

Table 16-3 lists the current labour used at the Panama Mine. A contractor is being used for the development and production work in the mechanized section of the Panama Mine and the development work on the Pioneer Mine.

Table 16-3: Panama and Pioneer Owner and Contract Labour
Mineros S.A. – Hemco Property

Department	Q4 2022	
	Mineros Personnel	Contractors
Administration	40	46
Production	311	15

Department	Q4 2022	
	Mineros Personnel	Contractors
Maintenance and Power (whole operation)	243	52
Technical Services	116	9
Processing	146	22
Support Work	409	596
Exploration drilling	82	53
Leave and Absenteeism Replacements	0	0
Total	1,347	793

16.1.6 Panama and Pioneer LOM Plan

A life of mine (LOM) plan and production schedule were prepared based on the underground mine designs and Mineral Reserve estimates. The Panama and Pioneer Mineral Reserve estimates support a 4.8 year production schedule until Q4 2027. Production from Panama will ramp up from 320 tpd to 700 tpd in Q3 2024. Mining from shrinkage stopes above the 850 Level will continue to supplement the mill throughout 2023, however, it will gradually phase out and be replaced by production from mechanized mining methods starting in Q1 2024.

Production at Pioneer will continue at the Lone Star vein while the other veins are being developed. The production rate will increase from approximately 300 tpd to 400 tpd in Q4 2024 as more stopes from the Pioneer Northeast Extension and Pioneer veins become available.

The LOM production assumes production rates based on actuals from 2022. Development advance rates of 3.5 m/day/face and a stope production rate of 150 t/d to 200 t/d were used. The Panama and Pioneer mines are projected to supply approximately 50% to 60% of the Hemco Plant mill feed and the remaining feed will be from artisanal mining and remaining shrinkage stopes.

The yearly Panama and Pioneer development schedule is presented in Table 16-4. The production schedule is presented in Table 16-5 and illustrated in Figure 16-1.

Table 16-4: Panama and Pioneer Development Schedule
Mineros S.A. – Hemco Property

Mine	Unit	Total	2023	2024	2025	2026	2027
Panama	m	23,112	3,829	6,990	6,948	5,104	240
Pioneer	m	8,219	3,868	2,313	1,349	689	-
Total	m	31,331	7,697	9,303	8,297	5,794	240

Table 16-5: Panama and Pioneer Production Schedule
Mineros S.A. – Hemco Property

Mine	Method	Description	Unit	Total	2023	2024	2025	2026	2027
Panama	SLS	Total Tonnes	kt	**934**	176	262	231	157	108
		Avg Au Grade	g/t	**4.00**	3.48	3.92	4.01	4.92	3.68
		Au Ounces	koz	**120**	19.7	33.0	29.8	24.7	12.8
	Shrinkage	Total Tonnes	kt	**97**	-	-	4	61	32
		Avg Au Grade	g/t	**4.21**	-	-	2.88	3.88	5.00
		Au Ounces	oz	**13**	-	-	0.4	7.6	5.2
Pioneer	SLS	Total Tonnes	kt	**537**	107	118	142	143	26
		Avg Au Grade	g/t	**4.84**	5.67	5.58	4.66	3.78	4.90
		Au Ounces	koz	**84**	19.6	21.2	21.2	17.4	4.1
					0.810	1.086	1.077	1.030	0.476
Total		Total Tonnes	kt	**1,568**	283	380	377	361	167
		Avg Au Grade	g/t	**4.30**	4.31	4.43	4.24	4.29	4.13
		Au Ounces	koz	**217**	39.2	54.2	51.4	49.8	22.1

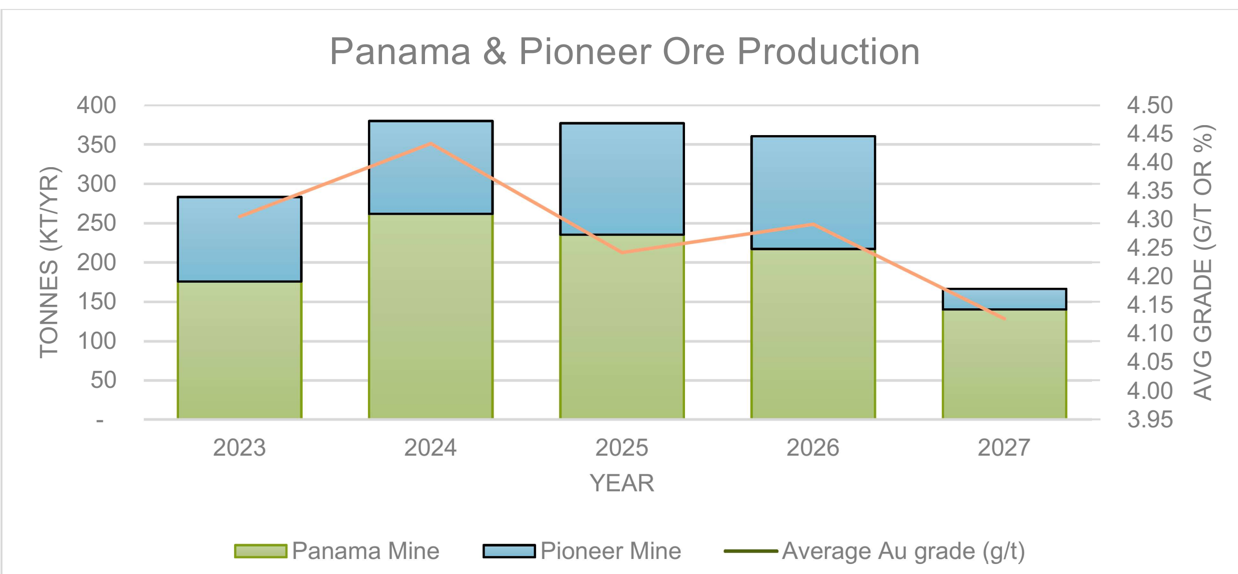


Figure 16-1: Production Schedule

16.2 Porvenir Project

The Porvenir Project will be a stand-alone mining operation with its own processing plant and infrastructure. The deposit was the object of earlier studies by Mineros and Hatch. Most recently BISA was engaged to prepare a PFS study with optimized planning and cost estimation. SLR has reviewed the plans for this report. The deposit is able to support a production rate of 2,000 tpd and mining plans are based upon underground trackless mechanized mining and truck haulage from the mine to a plant to be built at Porvenir. Following Mineros practice at the other Hemco mines, mine development, drilling, blasting, loading, and haulage will be done by contractors.

The Project has been split into three zones:

- Porvenir Norte is the largest zone by tonnage; the zone is up to 1,000 m along strike and 3.3 m to 30 m thick (14.2 m average) extending from the 0 m level to the 370 m level.
- Porvenir Sur is the second largest zone and is up to 600 m long on strike and 4.4 m to 15.9 m thick (10.7 m average) extending from the 150 level to the 430 m level.
- Real McKoy is the smallest tonnage but highest gold grade and highest NSR/t zone. It is up to 600 m long on strike and 0.5 m to 3.1 m thick (1.7 m average) extending from the 170 level to the 415 m level.

There is a portion between the Porvenir Norte and Porvenir Sur which has been mined by others and has been excluded from the Mineral Reserve estimate. Similarly, the uppermost areas which have been exploited by artisanal miners are not included in the reserves.

16.2.1 Mine Design

The Porvenir deposit is located within a hill and there is ready access to the deposit using drifts driven from surface. Decline access and truck haul were selected for the deposit and a system of declines to access the mining areas was designed (Figure 16-2). The complete ramp design is shown in Figure 16-3. A haulage study selected 30 t diesel powered haul trucks for rock haulage and decline designs were set to accommodate such units. Considering the production rates, the selected mucking units were 6 yd^3 and 9 yd^3 loaders. The planned heading dimensions are set to accommodate the planned fleet and are shown in Table 16-6.

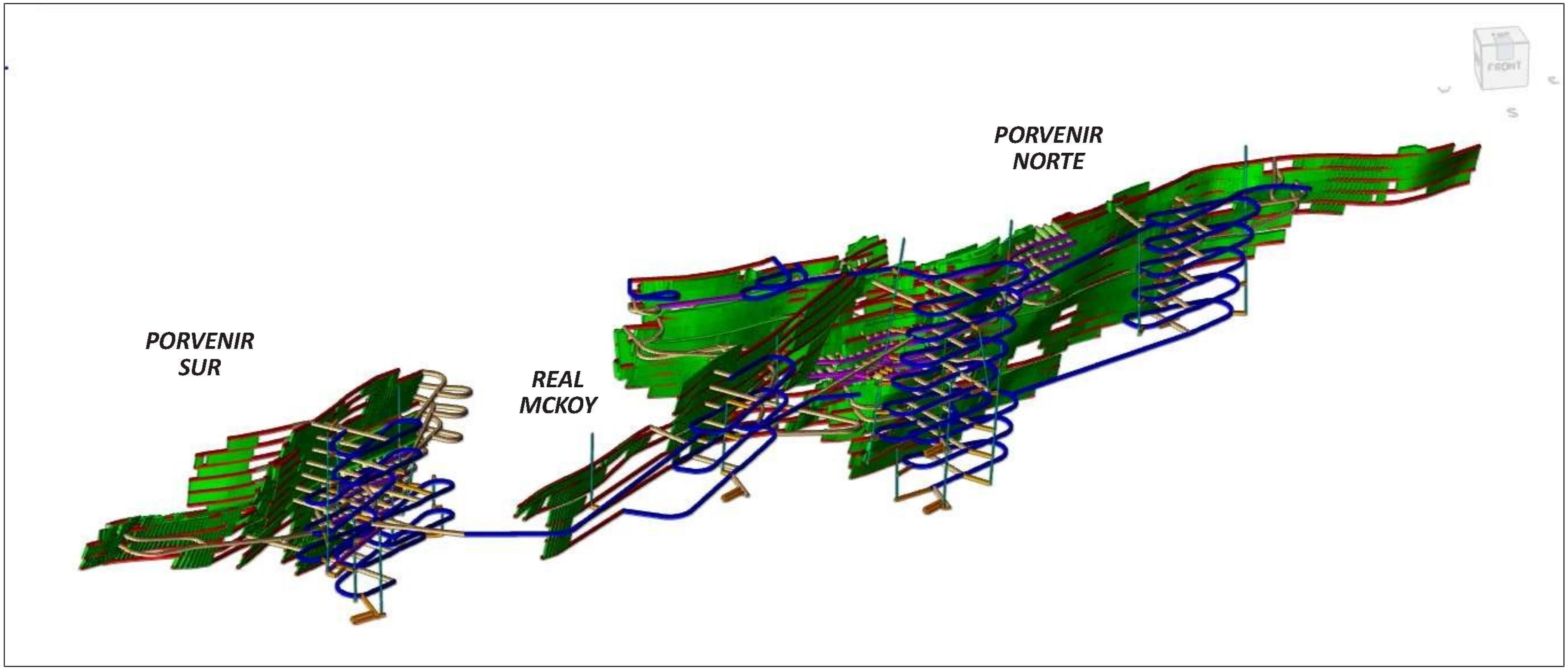
Table 16-6: Mine Heading Dimensions
Mineros S.A. – Hemco Property

Heading	Width (m)	Height (m)	Gradient (%)	Turn Radius (m)
Ramps	4.5	4.5	12%	20
Cross cuts	4.5	4.5	1%	n/a
Sub-levels	4	4	1%	n/a
Access	4	4	1%	n/a
Storage areas	4	4	1%	n/a
Personal shelter	2	2	0%	n/a
Ore pass	2.1m diameter			
Ventilation Raise	3.1 m diameter			

The 4.5 m wide main drives provide 1.9 m of side to side clearance based on the width of an FMX 20 m^3 haul truck and only 1.5 m of total clearance for a 9 yd^3 loader. SLR is of the opinion that these are minimum clearances, and this may impact upon the productivity of the operation. In the 4 m wide sub-level drives, the 6 yd^3 loaders are designed to have 1.5 m of clearance, which again may reduce equipment efficiency and may pose issues if the sub-level drive is sinuous to follow the vein. SLR recommends close review of the contractors' equipment fleets to ensure that the units can operate safely and efficiently in the designed headings.

Porvenir will have two portal entries, one in the north at the 345 m elevation and one in the middle at the 365 m elevation, close to Real McKoy and Porvenir Sur. Within the mine, there will be four decline systems:

- Central – connected to the north decline at the 320 m and 115 m levels and to the Real McKoy declines at the 330 m level. The decline extends from 390 m level to 10 m level.
- North - extends from the 345 m portal to the 150 m level. There are connections to the central ramp at the 340 m and 150 m levels.
- Real McKoy – this ramp extends from 170 m to 470 m levels. The decline is connected to the 365 m level portal. It is connected to the central ramp at the 320 m level and to the south ramp at the 350 m level.
- South – the south ramp extends from the 440 m to the 150 m levels and connects to the Real McKoy ramp at the 340 level.



NOT TO SCALE

Legend:

- *LOM stopes*
- *Rib Pillar allowance*
- *Capital development*
- *Operating development*

Figure 16-2

Mineros S.A.

Hemco Property

Región Autónoma de la Costa Caribe Norte

Porvenir Decline System Schematic View

March 2023

Source: SLR, 2023.

COORDINATES HYDRAULIC BACKFILL PLANT				
Components	East	North	Elevation	Distance to BM 345 (m)
Backfill Plant	752204.56	1545954.44	355	150

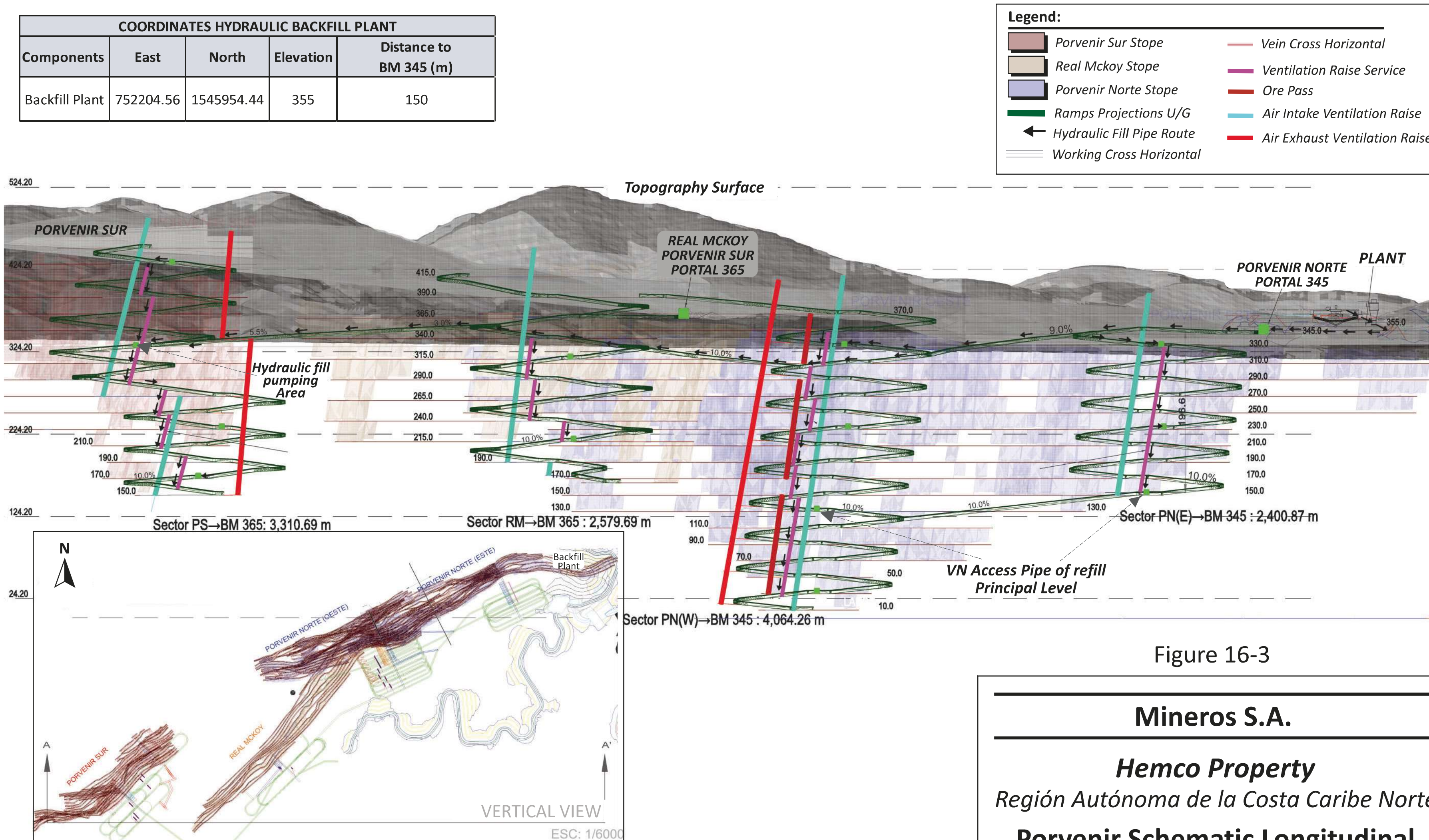


Figure 16-3

Mineros S.A.

Hemco Property

Región Autónoma de la Costa Caribe Norte

Porvenir Schematic Longitudinal Section View

March 2023

Source: Mineros, 2023.

16.2.2 Mining Method

The vein widths for the three zones were estimated from analysis of sections and are summarized in Table 16-7.

Table 16-7: Vein Widths
Mineros S.A. – Hemco Property

Structure	Minimum Width (m)	Maximum Width (m)	Average Width (m)
Real McKoy	0.54	3.08	1.7
Porvenir Norte	3.3	30.2	14.2
Porvenir Sur	4.4	15.9	10.7

The mining rate was selected based upon the resource tonnage per unit of vertical extent and applying general industry guideline to determine appropriate production ranges. Porvenir is considered to be capable of supporting a 2,000 tpd mining operation based on the reserve tonnes per vertical metre.

Considering the deposit dimensions, dip and shape, a number of methods were considered and three methods were chosen for the Project:

- Bench and fill with pillars for the Real McKoy and portions of Porvenir Norte and Porvenir Sur
- Avoca bench and fill (bench and fill con brazos) for Porvenir Norte and Porvenir Sur
- Transverse SLS for thicker portions of Porvenir Norte and Porvenir Sur

The designs for the various stoping methods are summarized in Table 16-8.

Table 16-8: Mining Method Details
Mineros S.A. – Hemco Property

Description	Bench & Fill with Pillars	Avoca	Transvers SLS
Zones	Real McKoy, Porvenir Norte, Porvenir Sur	Porvenir Norte, Porvenir Sur	Porvenir Norte, Porvenir Sur
Extraction (%)	78%	90%	90%
Widths (m)	1.55 to 7	7 to 12	20
Bench Heigh (m)	20	15	15
Span (m)	30.5	25	Variable (width of zone)
Pillar Width (m)	5	n/a	none
Backfill	hydraulic	Rock fill	
Proportion of Reserves (%)	37%	47%	16%

In the bench and fill with pillars, the stopes are mined in 25 m long by 20 m high blocks, with 5 m thick pillars between the 25 m blocks and 4 m thick sill pillars between stopes. Stopes are mined in a retreat from an end back to the entrance in 25 m sections. After mining, the stopes will be filled with hydraulic fill.

In the Avoca stopes, the stopes are mined in 18 m to 20 m high stopes with entries on each end. At the top of the stope, there is an access for the placement of rock fill, while access for mucking is on the lower level at the opposite end of the stope.

Transverse SLS will be applied where the stope is too wide for longitudinal stoping and mining will consist of a series of primary and secondary transverse stopes that are 15 m high, 20 m high and extend the width of the deposit. Primary stopes are filled with cemented hydraulic fill and then the intervening secondary stope is extracted from between the two backfilled primary stopes.

The selected methods are well known and suitable for the deposit.

16.2.3 Fleet

The mining equipment fleet for the first seven years of the Porvenir Project are summarized in Table 16-9. The fleet remains constant until the last production year. Mine development and operations are planned to be contracted activities.

Table 16-9: Mine Mobile Equipment Fleet
Mineros S.A. – Hemco Property

	Years						
	2025	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**
Jumbo	1	3	5	6	7	7	7
LHD	1	2	4	5	7	7	8
Scaler	2	2	2	2	2	2	2
Bolters	2	2	2	2	2	2	2
Shotcrete sprayer	2	2	2	2	2	2	2
Shotcrete transport	2	2	5	5	5	5	5
Service truck	1	1	2	2	2	2	2
ANFO loader	1	1	1	1	1	1	1
Trucks	2	2	4	5	7	7	7
Totals	**14**	**17**	**27**	**30**	**35**	**35**	**36**

16.2.4 Mining Infrastructure

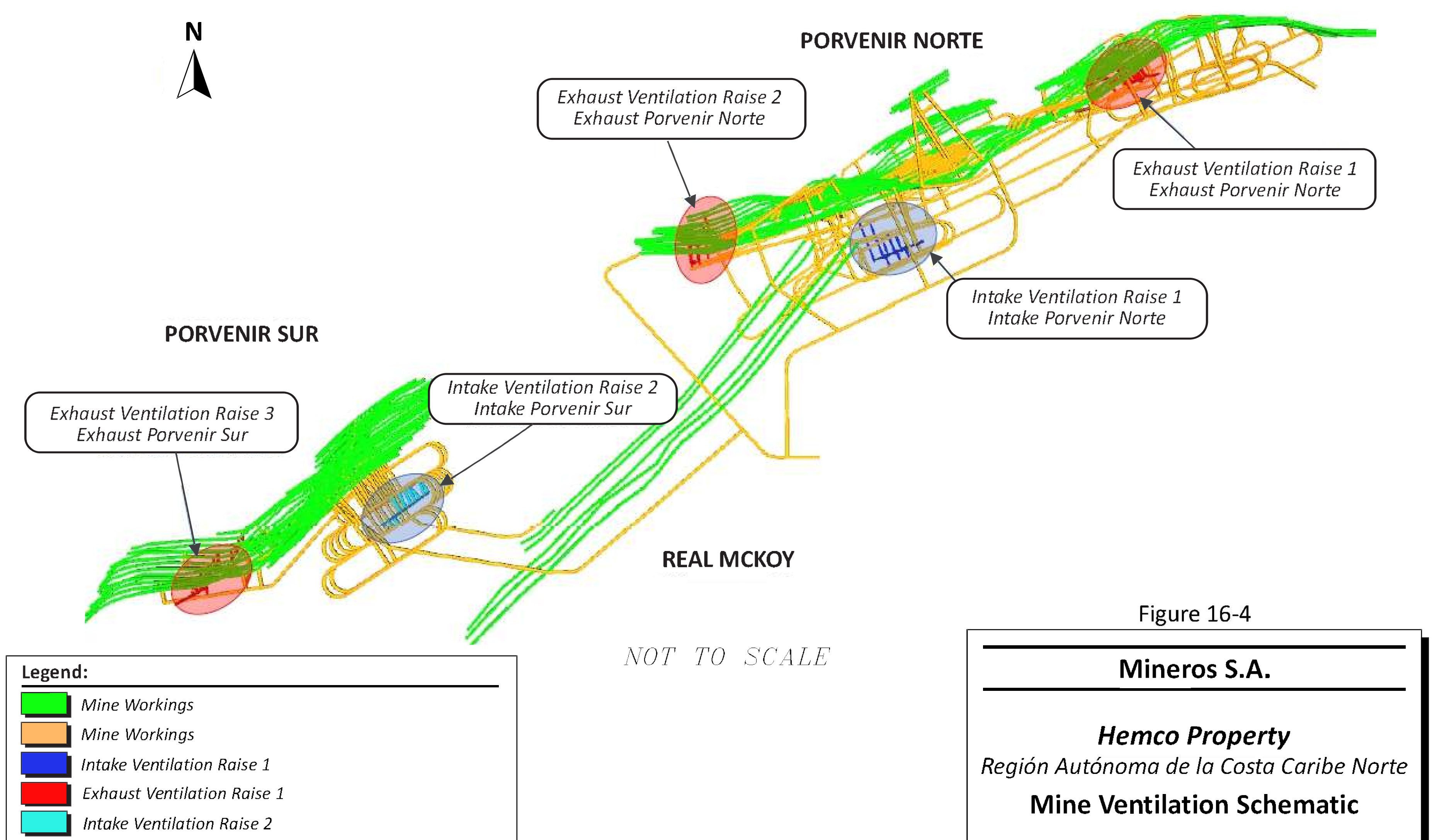
The mine will be supported by the necessary mine infrastructure including:

- Mine ventilation system
- Mine dewatering system

- Hydraulic backfill distribution system.
- Fuel tanker containment pad
- Surface and underground explosives magazines to store explosives for a week of operations.
- Centrally located maintenance shop
- 60-person capacity lunchroom, initially located in the north and then moved to the south as activity progresses
- Centralized compressed air distribution system.

16.2.4.1 Ventilation

Mine ventilation was designed considering the requirements for diesel equipment and personnel. A 75% simultaneity of equipment operation was used and a loss allowance of 10% was included. The mine ventilation airflow increases to 258 m^3/s in full production. The mine will be ventilated using the portal entries and five ventilation raises as shown in Figure 16-4.



March 2023

Source: Mineros, 2022.

Figure 16-4

Mineros S.A.

Hemco Property

Región Autónoma de la Costa Caribe Norte

Mine Ventilation Schematic

The plan is to use the two portals and the two ventilation raises for intake air and install exhaust fans on the three exhaust raises. A summary of the key parameters of the design are shown in Table 16-10.

Table 16-10: Primary Ventilation Key Features
Mineros S.A. – Hemco Property

Fan	Location	Flow (m^3/s)	Pressure (Pa)	Motor Power (kW)
Fan 1	Extraction raise 1	65	461	38
Fan 2	Extraction raise 2	65	440	36
Fan 3	Extraction raise 3	130	1,194	194

Secondary ventilation will be installed as needed using ventilation ducting and portable fans.

16.2.4.2 Dewatering

The results of the underground flow model obtained from the hydrogeological study were used for designing the mine dewatering system. The dewatering concept is designed to collect the water in sumps in the mine and then pump it to surface using 35 hp to 50 hp pumps. The water will be "dirty" as there are no significant settling ponds in the mine. Three independent drainage systems or networks were designed for the Porvenir:

- Northwestern Drainage Ramp: Maximum depth level 150, exit Portal 345
- Southwestern Drainage Ramp: Maximum depth level 120, exit Portal 345
- Porvenir Sur Drainage Ramp: Maximum depth level 210, exit Portal 365

A summary of the groundwater and industrial water to be handled by each system is shown in Table 16-11.

Table 16-11: Mine Dewatering Quantity
Mineros S.A. – Hemco Property

Circuit	Industrial Water (L/s)	Seepage Water (L/s)	Total (L/s)
Northwest	1.28	22.17	23.43
Southwest	2.07	39.64	41.71
South	2.13	21.75	23.88
Total	**5.48**	**83.56**	**89.02**

Water will be collected in sumps in the mine and pumped to receiving ponds on surface. The sump and surface pond volumes are summarized in Table 16-12 together with an estimate of the retention time.

Table 16-12: Mine Storage Volumes and Water Retention Times
Mineros S.A. – Hemco Property

Location	Vein	Circuit	Quantity	Pond Unit Volume (m^3)	Total Pond Volume (m^3)	Flow (L/s)	Retention Time (hr)
In mine	Porvenir Norte	Porvenir NorteNE	4	55.8	223.2	23.4	2.6
In mine	Porvenir Norte	Porvenir NorteSW	4	99.6	398.3	41.7	2.7
In mine	Porvenir Sur	Porvenir Sur	3	56.8	170.4	23.9	2.0
surface	Porvenir Norte	345 Portal	1	232.9	232.9	65.1	1.0
surface	Porvenir Sur	365 Portal	1	85.2	85.2	23.9	1.0

SLR recommends further review of the mine dewatering system to reassess the industrial water volumes including backfill drainage and a review of the storage capacity to provide more time for the settling of solids.

16.2.4.3 Backfill

The selected mining methods require the use of backfill to provide wall support and/or a working platform for mining. Three types of backfill are proposed for Porvenir:

- Rock fill obtained from the mine development.
- Hydraulic fill from the plant tailings.
- Cemented surface quarry rock.

A summary of the annual backfill requirements together with the mine waste rock volumes is shown in Table 16-13. Over the LOM, there is more waste generated than can be placed as backfill. In the first four years of the project, there is significantly more waste produced than is consumed for backfill. SLR recommends a review of the mine development quantities and the fill requirements together with the locations of the development and the filling to develop a well coordinated development and backfill schedule.

Table 16-13: Annual Backfill and Development Rock Volumes
Mineros S.A. – Hemco Property

Year	Total (m^3)	Cement (m^3)	Hydraulic (m^3)	Rock (m^3)	Waste Development (m^3)	Surplus Waste (m^3)
2025	-	-	-	-	59,287	59,287
2026	-	-	-	-	137,592	196,879
2027	121,476	-	88,074	33,402	105,495	268,972
2028	224,848	41,933	64,316	118,599	148,034	298,407
2029	280,204	65,637	36,648	177,919	128,246	248,734

Year	Total (m^3)	Cement (m^3)	Hydraulic (m^3)	Rock (m^3)	Waste Development (m^3)	Surplus Waste (m^3)
2030	315,473	21,679	132,887	160,907	137,599	225,426
2031	312,075	-	136,593	175,482	127,055	176,999
2032	318,922	-	144,411	174,512	139,273	141,760
2033	322,846	-	118,002	204,843	154,756	91,672
2034	298,165	62,086	83,688	152,390	102,061	41,343
2035	288,751	-	207,084	81,667	20,654	(19,669)
Total	**2,482,759**	**191,335**	**1,011,703**	**1,279,721**	**1,063,173**	**(236,218)**

16.2.4.4 Mine Fuel

The fuel use for the Project is estimated to be up to 830 m^3 per year as shown in Table 16-14. Under regulations, the fuel cannot be stored in the mine but can be supplied by tanker truck provided it is used on a suitable containment pad.

Table 16-14: Annual Fuel Consumption
Mineros S.A. – Hemco Property

Area		Year										
		2025	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**
Production	m^3	-	-	242	386	504	504	504	504	504	504	504
Development	m^3	320	328	220	134	72	164	122	114	10	103	132
Underground	m^3	320	328	462	520	576	667	626	617	513	606	635
Surface	m^3	66	121	170	169	163	163	141	118	105	96	92
Total	**m^3**	**386**	**449**	**632**	**689**	**738**	**830**	**767**	**735**	**618**	**703**	**727**

16.2.5 Labour

The mine manpower for the first seven years of the Porvenir Project is shown in Table 16-15. These are planned to be contracted personnel.

Table 16-15: Porvenir Mine Manpower
Mineros S.A. – Hemco Property

Stage	Area	Year						
		2025	2026	2027	2028	2029	2030	2031
Development	Jumbo	6	18	24	24	24	24	24
	LHD	3	6	6	6	9	6	9
	Scaler	12	12	12	12	12	12	12
	ANFO loader	9	9	9	9	9	9	9
	Shotcrete sprayer	6	6	6	6	6	6	6
	Shotcrete transport	6	6	15	15	15	15	15
	Services	15	15	30	30	30	30	30
	Bolter	12	12	12	12	12	12	12
	Trucks	6	6	6	3	3	3	3
	Subtotal	75	90	120	117	120	117	120
Production	Jumbo	0	0	6	12	18	18	18
	LHD loading	0	0	3	6	9	9	9
	LHD fill	0		3	3	3	6	6
	ANFO loader	9	9	9	9	9	9	9
	Trucks	0		6	12	18	18	18
	Subtotal	9	9	27	42	57	60	60
Total		**84**	**99**	**147**	**159**	**177**	**177**	**180**

16.2.6 Porvenir LOM Plan

Development is planned to commence with the two declines for access to the deposit. The development will focus on Real McKoy and Porvenir Norte as the initial production targets. The annual development schedule is provided in Table 16-16.

Table 16-16: LOM Development Schedule
Mineros S.A. – Hemco Property

Year	Ramp (m)	Access (m)	Bypass (m)	Stopes (m)	Sublevel (m)	Crosscut (m)	Ore Pass (m)	Raise Bore (m)	Total (m)
2025	1,516	286	-	70	82	-	-	46	2,000
2026	1,705	1,492	10	229	1,380	-	-	334	5,150
2027	407	656	108		5,917	-	-	-	7,088

Year	Ramp (m)	Access (m)	Bypass (m)	Stopes (m)	Sublevel (m)	Crosscut (m)	Ore Pass (m)	Raise Bore (m)	Total (m)
2028	834	1,029	716	126	2,950	1,317	-	138	7,110
2029	985	814	640	224	2,875	1,398	34	363	7,333
2030	1,158	1,135	17	140	4,039	419	89	154	7,151
2031	1,136	649	-	518	4,591	-		520	7,414
2032	1,167	1,811	114	159	3,479	120		83	6,933
2033	1,286	1,645	558	356	2,524	478		448	7,295
2034	1,145	399	182	124	3,187	918		335	6,290
2035	156	125		136	550	-		160	1,127
Total	**11,495**	**10,041**	**2,345**	**2,082**	**31,574**	**4,650**	**123**	**2,581**	**64,891**

The mining strategy for the project is based upon two years of mine development and the commencement of production in the third year, followed by a ramp-up of production until the fifth year. The production plan is summarized in Table 16-17 and Table 16-18.

Table 16-17: Porvenir LOM Production
Mineros S.A. – Hemco Property

Year	Total Ore Mined (ROM) (000 t)	Bench and Fill (000 t)	Avoca (000 t)	Sub level Transverse (000 t)	Au Grade (g/t)	Ag Grade (g/t)	Zn Grade (%)
1	360	233	127	-	3.92	11.62	2.60%
2	540	139	208	193	3.13	10.99	3.44%
3	720	134	280	306	3.48	11.35	3.23%
4	720	270	346	104	3.39	11.71	2.98%
5	720	273	447	-	2.77	10.29	3.19%
6	720	304	416	-	2.56	8.51	2.88%
7	720	256	459	5	2.86	9.12	2.48%
8	720	206	242	272	3.00	8.91	2.92%
9	576	397	179	-	3.07	11.16	2.98%
Total	**5,794**	**2,210**	**2,705**	**880**	**3.08**	**10.29**	**2.97%**

Table 16-18: Porvenir Production Schedule by Ore Type and Area
Mineros S.A. – Hemco Property

Year	Stoping Ore (kt)	Development Ore (kt)	Total Ore (kt)	Real McKoy (kt)	Porvenir Norte (kt)	Porvenir Sur (kt)
1	233	127	360	187	173	0
2	473	67	540	96	443	0
3	620	100	720	0	720	0
4	640	80	720	0	720	0
5	626	94	720	0	720	0
6	639	81	720	0	615	105
7	656	64	720	0	260	460
8	623	97	720	0	129	591
9	566	10	576	0	206	369
Total	**5,078**	**718**	**5795**	**283**	**3,986**	**1,526**

16.3 Combined Life of Mine Plan

The combined Panama, Pioneer, and Porvenir LOM production schedules are presented in Table 16-19. The preliminary project schedule for Porvenir assumes detailed engineering starting in January 2025, construction starting in July 2025 including some underground development. The required capital and operating development required to access and mine the first sets of stopes will be completed in 2026 including setting up of all mechanical and electrical infrastructure. Ore will be mined starting Q1 2027 and production will ramp up to optimal production rate in 2028.

Table 16-19: Combined Life of Mine Plan
Mineros S.A. – Hemco Property

Description	Units	Total	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Combined Production															
Ore Production - Au	kt	7,363	283	380	377	361	527	540	720	720	720	720	720	720	576
	g/t Au	3.34	4.31	4.43	4.24	4.29	3.99	3.13	3.48	3.39	2.77	2.56	2.86	3	3.07
	koz	791	39	54	51	50	67	54	81	78	64	59	66	69	57
Ore Production - Ag and Zn	kt	5,795					360	540	720	720	720	720	720	720	576
	g/t Ag	10.29					11.62	10.99	11.35	11.71	10.29	8.51	9.12	8.91	11.16
	% Zn	2.97					2.6	3.44	3.23	2.98	3.19	2.88	2.48	2.92	2.98
	koz Ag	1,918					134	191	263	271	238	197	211	206	207
	Mlb Zn	380					21	41	51	47	51	46	39	46	38
Operating Development	m	60,851	2,345	3,395	4,019	5,376	7,117	5,794	5,734	5,791	5,226	5,453	5,091	4,836	675
Capital Development	m	74,160	4,859	5,885	8,896	8,805	7,117	5,794	5,734	5,791	5,226	5,453	5,091	4,836	675
Panama Production															
Ore Production	kt	1,031	176	262	235	217	140								
	g/t Au	4.02	3.48	3.92	3.99	4.63	3.98								
	koz	133	20	33	30	32	18								
Operating Development	m	7,271	809	1,867	2,398	1,956	240								
Capital Development	m	15,734	2,528	5,100	4,780	3,326									

Description	Units	Total	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Pioneer Production															
Ore Production	kt	537	107	118	142	143	26								
	g/t Au	4.84	5.67	5.58	4.66	3.78	4.9								
	koz	84	20	21	21	17	4								
Operating Development	m	4,903	1,536	1,529	1,252	586									
Capital Development	m	3,316	2,332	784	97	103									
Porvenir Production															
Ore Production	kt	5,795					360	540	720	720	720	720	720	720	576
	g/t Au	3.08					3.92	3.13	3.48	3.39	2.77	2.56	2.86	3	3.07
	g/t Ag	10.29					11.62	10.99	11.35	11.71	10.29	8.51	9.12	8.91	11.16
	% Zn	2.97					2.6	3.44	3.23	2.98	3.19	2.88	2.48	2.92	2.98
	koz Au	575					45	54	81	78	64	59	66	69	57
	koz Ag	1,918					134	191	263	271	238	197	211	206	207
	Mlb Zn	380					21	41	51	47	51	46	39	46	38
Operating Development	m	48,677			368	2,833	6,877	5,794	5,734	5,791	5,226	5,453	5,091	4,836	675
Capital Development	m	16,214			1,632	2,317	211	1,316	1,599	1,361	2,189	1,479	2,205	1,453	452

17.0 RECOVERY METHODS

17.1 Hemco Plant

Prior to 2011, the Hemco Plant had a rated capacity of 750 tpd, which, through various upgrades and changes in operating procedures, has since increased to the current 1,750 tpd. Mineros is planning various operational upgrades between 2023 and 2026 to increase Hemco Plant nominal capacity from 1,750 tpd to 2,200 tpd.

Table 17-1 presents the total average daily production from the three Processing Plants since 2016.

Table 17-1: Annual Average Daily Production
Mineros S.A. – Hemco Property

Year	Average Daily Production (tpd)
2016	1,319
2017	1,546
2018	1,515
2019	1,557
2020	1,701
2021	1,961
2022	1,952

The milling process consists of the following:

- Three crushing stages
- Two stages of grinding
- A primary thickener
- An agitated cyanide leach stage comprising nine agitated leach tanks
- A Counter Current Decantation (CCD) area comprised of eight thickeners with solutions running counter current to slurry
- A Merrill-Crowe process for treating the gold bearing or pregnant solution (precipitation)
- Smelting of the Merrill-Crowe precipitate, to recover doré (silver and gold), at a silver to gold ratio of 2.63 for 2022

Overall recovery for the Hemco Plant in 2022 was 91.1% gold, while overall recovery from all three Processing Plants was 89.3% gold. Figure 17-1 shows the Hemco Plant flow sheet.

17.1.1 Crushing

17.1.1.1 Primary Crushing

Ore delivered from underground and artisanal miners is sent over a 14” grizzly feeding a coarse ore bin. The ore is then fed to a double deck scalping grizzly. Three products are derived from this screening process, -3/8" undersize, + 3/8 x -3”, and +3” oversize.

The -3/8" material is directed to a spiral classifier for further size classification. The classifier coarse fraction is sent directly to the fine ore bin for further grinding, while the fine fraction is pumped to a set of hydrocyclones. Hydrocyclone overflow (fine fraction) proceeds directly to the primary thickener while the underflow (coarse fraction) is split between the primary and secondary ball mill. The +3/8” x -3” material and the +3" material from the scalping grizzly reports to a primary jaw crusher and is conveyed to a primary screen.

17.1.1.2 Secondary Crushing

Oversize material from the primary screen is fed to a secondary cone crusher, while undersize material from the primary screen is sent to the spiral classifier.

The product from the secondary crusher is combined with tertiary crusher product for screening on a secondary double deck vibrating screen. Oversize material from this screen is conveyed to tertiary crushing, with the undersize being the final product directed to the fine ore bin.

17.1.1.3 Tertiary Crushing

Tertiary crushing comprises a single tertiary cone crusher in closed circuit with the secondary screen. The material (screen oversize) is conveyed to the tertiary crusher and crushed further, while the secondary screen undersize is sent to the fine ore bin.

17.1.1.4 Crushing Upgrades

In 2019, the crushing area was upgraded at a cost of US$1.7 million. The Hemco Property crusher area upgrades included:

- New Primary Jaw Crusher Feed Screen
- New Spiral Classifier Feed Pump
- New Spiral Classifier
- New Primary Jaw Crusher
- New Primary Jaw Crusher Discharge Screen
- New Secondary Cone Crusher
- New Distributor Car
- New Dust Collection System
- New Transformer

The upgrade increased capacity from 100 tons/hr to 150 tons/hr.

17.1.2 Grinding

Historically, there have been five ball mills installed in the grinding circuit. In mid-2011, the No. 3 ball mill was removed to provide replacement parts for a similarly sized mill in the Vesmisa Plant. Various changes in operating procedures in 2011, in addition to the commissioning of the 2.5 MW hydroelectric generator in late 2011 allowed the grinding circuit throughput to increase to approximately 900 tpd by the end of 2011.

In late 2012, a new primary ball mill was installed, with the remaining four ball mills configured to operate as parallel secondary mills.

In 2014, at a cost of approximately US$1.2 million, an additional Dominion 11'x14' - 750 kW ball mill was installed as the primary mill, and the existing five mills were retained as secondary grinding mills.

A single bank of four hydrocyclones classifies the discharges from all six mills (one primary, five secondary), with the underflow being split according to the individual mill’s capacity and availability, and the new primary mill operating in open circuit. The cyclone overflow, at approximately P_{80} of 75 µm, reports to the primary thickener.

Grinding is carried out in the presence of cyanide solution, which is added to the hydrocyclone underflow.

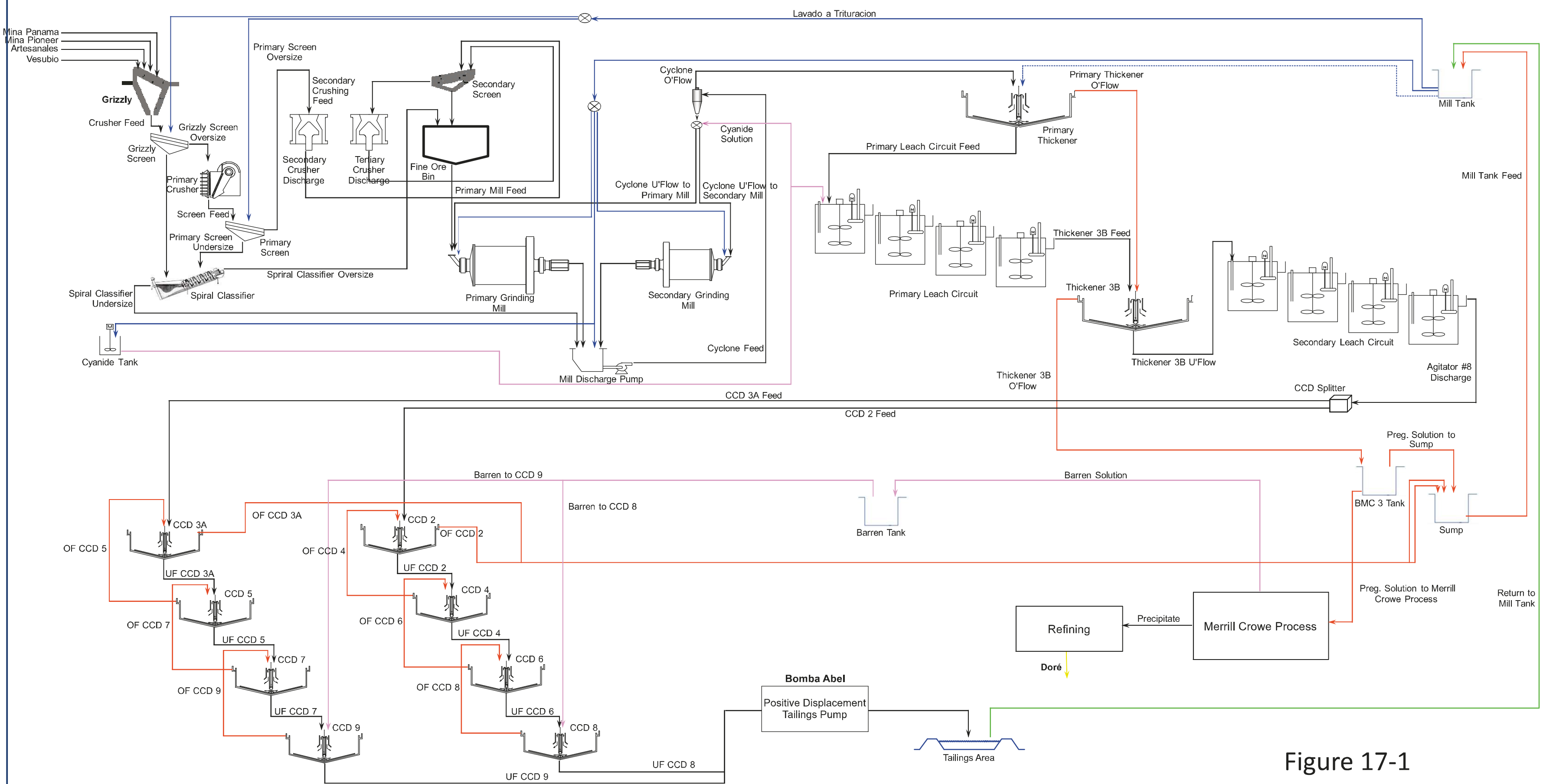


Figure 17-1

Mineros S.A.

Hemco Property

Región Autónoma de la Costa Caribe Norte

Hemco Process Flow Sheet

March 2023

Source: Mineros, 2022.

17.1.3 Leaching

The slurry produced from the secondary grinding circuit is pumped to the primary thickener where it is thickened to approximately 45% solids to 50% solids by weight and pumped to the first of five agitated leach tanks in series. The primary thickener overflow (solution) is sent to a secondary thickener (3B). According to Mineros, an agitated leach tank No. 0 was included in the circuit in 2022. Cyanide solution is added to leach tank No. 0. Lime is also added to maintain the pH in the range of 11.0 to 11.5.

The slurry from the No. 0 leach tank flows by gravity to leach tank Nos. 1, 2, 3, and 4 in series. After passing through leach tank No. 5, the slurry is sent to the secondary thickener (3B). The clear liquid overflow solution from the 3B thickener is pumped to the clarifying tank (BMC3). The clarifying tank solution is then pumped to the Merrill-Crowe clarification circuit.

The underflow slurry from the intermediate clarifier is pumped to the second stage of leaching (leach tank Nos. 5, 6, 7, and 8 operating in series). Cyanide solution is added in leach tank No. 5, and the solids percentage is maintained at 45% to 50% solids. Lime in the form of quick lime is added to the leach circuit to maintain a pH of 11.0 to 11.5.

17.1.4 Counter Current Decantation

The CCD circuit is used to separate the liquid fraction from the solids fraction of the leach discharge slurry and maximize the recovery of gold, which is contained within the enriched or pregnant solution. The CCD circuit is comprised of eight 50 ft diameter Denver thickeners, or settling tanks, each 10 ft high. The thickeners are operated in two parallel circuits, each composed of four thickeners in series. The solids move through the series of thickeners away from the leach circuit and towards the tailings pumpbox where pumps move the final tailings to the tailings impoundment area. Fresh solution (relatively low in free cyanide and contained gold) is added to the last thickener in series and mixed with the thickened underflow from the previous (upstream) thickener. This fresh solution is a combination of barren (i.e., gold depleted) solution exiting the Merrill-Crowe circuit and water reclaimed from the tailings pond.

Overflow from this thickener is moved upstream to the previous thickener and mixed with the thickened underflow from the thickener upstream of that thickener. In this manner, the solution (overflow) moves counter current to the slurry (underflow), which contains the solids depleted of gold. The purpose is to rinse (or decant) the gold bearing solution present in the slurry as it is discharged from the leach circuit so that little, if any, gold in solution or free cyanide is discharged with the tailings. Tailings are derived from the thickened underflow from the last thickener in series. As a result, final tailings are comprised of leached solids (i.e., much of the gold has been leached out of the solid tailings) and solutions carrying relatively little free cyanide or gold in solution. The final thickener underflow (tailings) is pumped into a conditioning tank to feed two tailings pumping systems at the San José tailings dam. Each system has one positive displacement pump and independent pipe, with a capacity of 100 m^3/h.

17.1.5 Merrill-Crowe

The solution decanted from the intermediate clarifier is pumped to the clarification tank at the front end of the Merrill-Crowe clarification circuit. From the clarification tank the solution flows by gravity to the pregnant solution tanks from where it is filtered using pressure filters to remove very fine suspended solids. Cyanide and lead nitrate are added to the clarified pregnant solution in preparation for the gold precipitation step. The clarified pregnant solution is passed through a vacuum tower to deoxygenate the solution. Zinc powder is then added, and the solution pumped to a series of filter presses in parallel using two Gould pumps. The zinc powder displaces the soluble gold/silver complex, causing it to precipitate as a solid while the zinc dissolves in the solution. The precipitated gold and silver are retained in the filter presses and the barren solution is discharged back to the process.

17.1.6 Refining

The precipitated gold and silver accumulate in these filters and are removed weekly. The filter cake/precipitate is mixed with a flux comprised of sodium carbonate, borax, silica sand, and fluorspars. The combined mixture is then melted by heating to approximately 1,350°C in one of three horizontal tilting furnaces. The resulting molten mass is then poured into molds, to produce doré bars and slag. Due primarily to the different specific gravity (density) of the components of this molten mass, the precious metals (gold and silver) and some associated base metals (copper and zinc) separate from the impurities of the melt or slag. As the molten material cools and solidifies, the slag can be separated from the doré by simply chipping it away with a hammer. The percentage of gold in this doré varies from 18% Au to 30% Au and the silver from 43% Ag to 72% Ag.

17.1.7 Tailing Disposal

At present, the tailings are pumped to the new San José tailings area primarily using two 100 m^3/h positive displacement pumps and independent tailings pipelines. The area is completely lined with an HDPE liner.

Beginning in May 2010, tailings were deposited in the Aguas Claras tailings facility, however, this facility was taken out of service in March 2017. Aguas Claras is presently being used as a rainwater reservoir, with water being pumped to the Hemco Plant, if required.

The old tailing impoundment area (Concha Urrutia) contains approximately two million tons of tailings and was initially commissioned in 1996. The area is in the process of closure, including the removal of all equipment, and is no longer used to supply water to the Hemco Plant.

17.1.8 Laboratory

The Hemco assay laboratory (Hemco laboratory), located in the Hemco Plant area was deactivated at the end of 2021, when a new laboratory, located in the main office zone was established. A total of US$2.7 million was spent between 2020 and 2021 to build it. The Hemco laboratory had a 500 sample processing capacity per day, and the new laboratory increased the capacity to 800 samples per day. In addition, the work and safety conditions were also improved. The new laboratory has a power backup system including individual generators and a fire contingency system.

New equipment was acquired: smelting ovens, drying ovens, pulverizers, crushers, an atomic absorption spectrometer, and gas and lead extractor filters.

The new laboratory is capable of assaying gold and silver by fire assay and solutions by atomic absorption. The laboratory handles samples from artisanal mining, exploration, production samples from the mines, and the processing plant, including cyanide solutions and doré. The samples are coordinated through each department according to the laboratory capacity and priority.

Sample preparation begins with drying samples in electric ovens or hot plates. Samples are crushed to 100% passing (P_{100}) -1/4 in. with one of four jaw crushers in place. Samples from Hemco and artisanal mining are prepared separately. A dust extractor is used for ventilation, and cleaning of the crushers is by compressed air. Samples are then riffle split to separate out a 250 g sample. This sample is pulverized to P_{100} 200 mesh (74 µm) in a ring and puck mill. There are six pulverizer mills and 21 shaking machines in the laboratory.

The pulverizer mills are cleaned with pure silica sand and compressed air to avoid contamination between samples. Fire assay is carried out on one assay ton charges with flux of litharge, borax, soda, and silver solution. There are seven electric furnaces with a capacity of 24 samples each. Six furnaces are used for fusion at 1,100°C for 60 minutes and the seventh for cupellation at 950°C. The gold and silver content are determined by gravimetry using a high precision micro-balance.

The new laboratory has three atomic absorption machines to complete solution assays of cyanide solutions from the process plants.

17.2 Vesmisa Plant

In December 2010, Hemco commissioned the Vesmisa Plant, located approximately five kilometres southwest of the existing Hemco Plant. The Vesmisa plant has a capacity of up to 140 tpd of artisanal ore and consists of crushing, grinding, alkaline agitation cyanide leaching, Merrill-Crowe, and refining. Tailings are dewatered with a drum filter to recover cyanide solution. The filter cake is slurried and pumped to the tailings impoundment area. The Vesmisa Plant has its own truck scale and laboratory for weighing and assaying all artisanal miner ore. The Vesmisa laboratory had one jaw crusher, two shaking machines, 12 pulverizers, and two electric furnaces. According to Mineros, the Vesmisa laboratory is no longer in operation.

17.3 La Curva Plant

The La Curva Plant is operated to produce a gravity and flotation concentrate from artisanal ore feed only. The La Curva Plant consists of crushing, grinding, gravity recovery, and flotation and thickening unit operations. The concentrates are sent to the Hemco Plant for further processing.

Further information on the La Curva and Vesmisa plants is provided in Section 20 of this Technical Report.

The QP is of the opinion that the Processing Plants are operating well, considering the age of the equipment. Throughput has been increased over time, and ongoing optimization projects are continuing.

In general, current requirements for energy, water, and process materials are being met for all three plants and are not anticipated to be an issue in the future.

17.4 Porvenir Plant (Proposed)

The description of the Porvenir processing plant (Porvenir Plant) is based largely on information presented in Chapter 17 of the 2022 BISA Report (BISA, 2022b).

17.4.1 Process Description

Based on the metallurgical test program completed to date, the Porvenir process flowsheet has been developed by considering conventional technologies for gold and silver recovery and zinc as a separate concentrate. The material from the Porvenir underground mine will be treated in a 2,000 tpd plant by cyanidation and flotation under several unit operations. In Phase 1, the processing plant will have a mineral treatment capacity of 1,000 tpd and in Phase 2, it will achieve a capacity of 2,000 tpd. For both phases, the plant will include primary, secondary and tertiary crushing. In the grinding section, the first phase will operate only with a ball mill in a closed circuit and for the second phase, a second ball mill will be installed. The metallurgical process will allow two products to be obtained: doré bars produced by the cyanidation and Merrill-Crowe process, and a zinc concentrate containing copper, gold, and silver produced by flotation. The zinc concentrate will be sold on the open market. The process tailings will be treated via a cyanide destruction step before being sent to the Porvenir tailings dam for disposal. A simplified process flowsheet of the Porvenir Plant is shown in Figure 17-2.

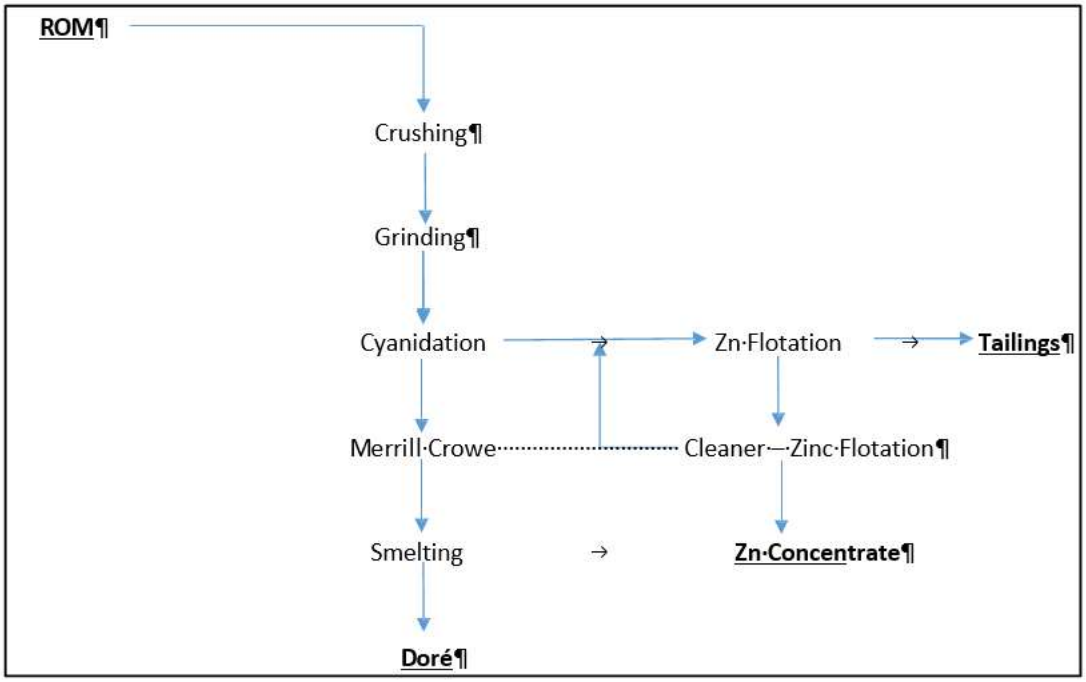


Figure 17-2: Porvenir Process Flowsheet

17.4.2 Ore Handling

ROM ore with a maximum size of 36 in. will be transported from the mine to the concentrator by trucks to a coarse ore hopper with a static grate with a 12 in. opening. In Phase 1, operators will assist with fragmentation of the ore. In Phase 2, a rock breaker will be installed adjacent to the static grate.

17.4.3 Primary, Secondary, and Tertiary Crushing

In Phase 1, the crushing plant will operate at a utilization of 35% for 8.4 h/day at a rate of 119 tonnes per hour (tph) of nominal flow. In Phase 2, the crushing plant will operate for 13.3 h/day with a utilization of 55.6% at a rate of 150 tph.

Material in the coarse ore hopper will be transferred by a belt feeder to a 3 ft x 5 ft Grizzley scalping screen. The oversize ore (+70 mm) from the Grizzley scalper will feed a primary jaw crusher. The undersize ore (-70 mm) and the crushed ore from the primary crusher will be loaded on a conveyor belt, which will feed a 5 ft x 12 ft secondary double-deck vibrating screen. Magnets and metal detectors on the conveyor belts will reject any metallic materials entrained in feed prior to crushing.

The oversize material from the upper deck (+50 mm) and from the lower deck (+28 mm) of the secondary vibrating screen will feed a secondary cone crusher. The undersize material (-28 mm) from the secondary vibrating screen will be conveyed to feed a 6 ft x 20 ft tertiary double-deck vibrating screen. The oversize material from the upper deck (+23 mm) and the lower deck (+12 mm) of the tertiary vibrating screen will feed the tertiary cone crusher.

Crushed ore from the secondary and tertiary cone crushers will load onto a series of conveyor belts and will be transferred to a 1,000 t capacity hopper. Another fine ore hopper of the same capacity will be installed in Phase 2.

17.4.4 Grinding

In Phase 1, a ball mill will be operated in closed circuit with a pump box and set of hydrocyclones for classification. The underflow product from the hydrocyclones will be returned to the ball mill, while the overflow product (P_{80} of 75 µm) will be screened and thickened before transfer to the cyanidation circuit.

In Phase 2, a secondary grinding circuit will be installed like the equipment in Phase 1. The hydrocyclone overflow (from Phase 1 installation) will operate at a P_{80} of 400 µm and will feed the secondary grinding circuit.

For both phases, the milled product that will feed the cyanidation stage will contain approximately 33% solids by weight and will be sampled using a metallurgical sampler.

Depending on the operational requirements, gravity concentration will be utilized intermittently. The gravity concentrator will have the capacity to process 25% of the underflow product from the Phase 1 and Phase 2 hydrocyclones. The gravity concentrate recovered will be processed via an intensive cyanidation step and the gravity tails will be directed to agitated cyanidation.

17.4.5 Cyanidation

Both agitated cyanidation and intensive cyanidation (ILR) will be used for gold extraction.

After grinding, the thickener underflow product is thickened to 55% solids and delivered to four agitated cyanidation tanks (Phase 1) connected in series for leaching. In Phase 2, a secondary cyanide leaching circuit will be installed like the equipment in Phase 1.

Intensive cyanidation will be used to leach the gravity concentrate and will be operated in batch mode, depending on whether gravity concentration will be utilized. The product from intensive cyanidation will be sent to the rich solution tank, while the waste will be reprocessed via the grinding stage.

17.4.6 Counter Current Decantation

The overflow from the cyanidation tanks will feed the CCD washing circuit consisting of four high rate thickeners operated in series in Phase 1 and 2. The arrangement is such that:

- The underflow of the washing thickener will be pumped to the next back wash thickener connected in series to thickener No. 1, the underflow of thickener No. 2 will feed thickener No. 3, and the underflow of thickener No. 3 will feed thickener No. 4.
- The thickener overflow, which constitutes the solution rich in gold and silver, will operate opposite to the underflow. The overflow from thickener No. 4 will enter thickener No. 3, overflow from thickener No. 3 will enter thickener No. 2, and overflow from thickener No. 2 will enter thickener No. 1. Overflow from the first backwash thickener, which contains the most concentrated gold and silver solution, will be sent to the rich solution tank for the Merrill-Crowe process.
- Four CCD washing thickeners will operate for both Phase 1 and 2; the differences being: the feed tonnage to the first thickener, the concentrated solution (overflow) sent to the rich solution tank,

and the quantity of washing solution. The washing solution is expected to be 139 m^3/h for Phase 1 and 278 m^3/h for Phase 2.

17.4.7 Merrill-Crowe

The purpose of the Merrill-Crowe stage is to process the rich solution in sequential processes of clarification, filtration, deaeration, and precipitation. The process is as described above in Section 17.1.5 for the Hemco Plant. Equipment will be sized accordingly for Phase 2 production to follow the various process steps and capacity to produce the gold and silver precipitate for the Porvenir Plant.

17.4.8 Refining

The process is as described above in Section 17.1.6 for the Hemco Plant. Equipment will be sized accordingly for Phase 2 production to follow the various process steps and capacity to produce doré for the Porvenir Plant.

17.4.9 Cyanide Destruction

Prior to flotation, cyanide destruction will be carried out in a mix tank with the addition of sodium metabisulphite solution and milk of lime to the underflow from the CCD back wash thickener No. 4. The method follows the INCO cyanide destruction process, but the chemical reactions rely on the use of sulphite salts as a reagent instead of SO_2. The objective is to reduce the remaining cyanide concentration in the pulp to a concentration of less than 1 ppm.

For Phase 2, the cyanide destruction process will be carried out in two tanks (one more tank will be added compared to Phase 1) in series with a volume of 452 m^3 per tank with a total residence time of six hours. After cyanide destruction is completed, the pulp will be pumped to the zinc conditioning tank.

17.4.10 Zinc Flotation

The flotation circuit consists of several stages of primary zinc flotation. The zinc conditioning tank has a volume of 50 m^3, and the pulp will be adjusted to 32% solids with the addition of water and conditioned by adding reagents.

The feed to the primary zinc flotation stage will be 46.3 tph of nominal flow. The primary flotation stage will use five flotation cells (20 m^3 tanks) arranged in two banks with two cells and the last bank has one cell. The flotation tailings will be pumped to the tailings thickener. The flotation concentrate will be pumped to the first cleaner flotation stage.

The first cleaner flotation will use five flotation cells (5 m^3 tanks) arranged in two banks with two cells and the last bank contains one cell. Tailings from this stage will go to cleaner scavenger flotation, which consists of four flotation cells (5 m^3 tanks) arranged in two banks with two cells. The tailings from cleaner scavenger flotation will be pumped to the tailings thickener. The flotation concentrate collected from scavenger cleaner flotation will be recirculated to feed the first cleaner flotation.

The concentrate obtained from the first cleaner flotation will be pumped to the second cleaner flotation, which consists of three flotation cells (5 m^3 tanks) arranged in one bank with two cells and the last bank has one cell. Tailings from second cleaner flotation will be recirculated as feed to first cleaner flotation. The concentrate collected from second cleaner flotation will be diverted to third cleaner flotation.

The last stage of zinc flotation will be third cleaner flotation using a column cell (2.4 m in diameter, 12 m in height, with a cross-sectional area of 4.5 m^2). Tailings from column flotation will be recirculated as feed to second cleaner flotation. The concentrate produced from column flotation will be sent to the concentrate thickener.

For Phase 2, the feed to primary zinc flotation stage will be 92.6 tph of nominal flow. Equipment will be sized accordingly for Phase 2 production to follow the various flotation steps and capacity to produce the zinc concentrate for the Porvenir Plant.

17.4.11 Concentrate Thickening and Filtration

The zinc concentrate from flotation will be pumped to an 8.5 m diameter high rate concentrate thickener. The underflow of the thickener is expected to be 50% solids by weight and the material will be pumped to a 50 m^3 filter feed tank. Concentrate from the filter feed tank will be delivered to a plate filter press (with nine plates installed in Phase 1 and 18 plates installed in Phase 2, each plate will be 0.7 m x 0.7 m) for dewatering. The filter cake is expected to contain 8% moisture (92% solids) and the filtrate will be discharged into the reclaimed water tank. The filter cake will be transferred to the zinc concentrate yard for subsequent shipment.

Water from the reclaimed water tank will be distributed to the cyanide-free process water tank to recirculate water to the zinc concentrate thickener.

For both Phase 1 and 2, the thickening area and feed tank to the filter will operate with the same equipment, while the filter press will operate with the respective number of plates in each phase.

17.4.12 Tailings Thickening and Filtration

The tailings from zinc flotation will be sent to a 22.5 m diameter high rate thickener to obtain a pulp of 55% solids in the underflow. The thickener underflow material will be pumped and deposited in the tailings dam.

Water is expected to be recovered from the tailings dam by suction pump and transported to the East tank for recovered water (flow is estimated to be 28.54 m^3/h in Phase 1 and 57.09 m^3/h in Phase 2) to the 2,800 m^3 cyanide-free process water tank. This water is expected to be distributed by transfer pump to zinc flotation, counter current washing, and filter washing.

The thickener overflow solution (72.9 m^3/h in Phase 1 and 145.8 m^3/h in Phase 2) is also delivered to the cyanide-free process water tank.

17.4.13 Excess Wastewater Treatment

From the East tank for recovered water (15 m^3 capacity), excess water from the tailings dam will be diverted to a wastewater treatment plant, at a nominal flow rate of 122.5 m^3/h in Phase 1 and 204.4 m^3/h in Phase 2). The wastewater treatment plant will reduce the remaining cyanide to values less than 1 ppm following the INCO cyanide destruction process, followed by a pH adjustment, as well as additional treatment to reduce the metals in solution below maximum permissible limits for discharge.

17.4.14 Air Supply

It is estimated that the consumption of high pressure air in the plant will be 154 Nm^3/h for Phase 1 and 307 Nm^3/h for Phase 2. Consumption of low pressure air is estimated to be 92 Nm^3/h for Phase 1 and 183 Nm^3/h for Phase 2.

18.0 PROJECT INFRASTRUCTURE

18.1 Panama and Pioneer Mines

Selected project infrastructure for Panama and Pioneer is shown in Figure 18-1. Elements of the infrastructure inside the mine are discussed in Section 16, while some items relating to tailings and water treatment are discussed in Section 20.

18.1.1 Automotive Workshop

The automotive workshop provides maintenance services to the diesel and gasoline equipment, as well as welding, electrical repairs, tire repair, bodywork, and painting. The objective of the workshop is to provide preventive and corrective maintenance to Caterpillar equipment (excavators, tractors, trucks, loaders, backhoes, graders and compactors), including MAK, CKD, MTU, CAT C-27, C-18, and C-32 diesel generator engines, and a CAT 3406 diesel engine used for emergency power at the processing plant.

18.1.2 Industrial Workshop

The industrial workshop provides maintenance services for reconstruction and/or manufacture of parts of conventional underground equipment (pneumatic drills, pneumatic rocker shovels, mining cars, and compressors), the water-driven turbines of the hydroelectric power generators, and water pumps. The industrial workshop is equipped with lathes and milling machines, as well as offering welding and blacksmithing services to meet the needs of the mine. It should be noted that Mineros manufactures its own mining carts.

18.1.3 Electrical Workshop

The electrical workshop provides technical support to the electrical and automated equipment of the processing plants, winding of electric motors, maintenance of air conditioning and refrigeration, and maintenance of the residential electrical system of the entire camp and offices.

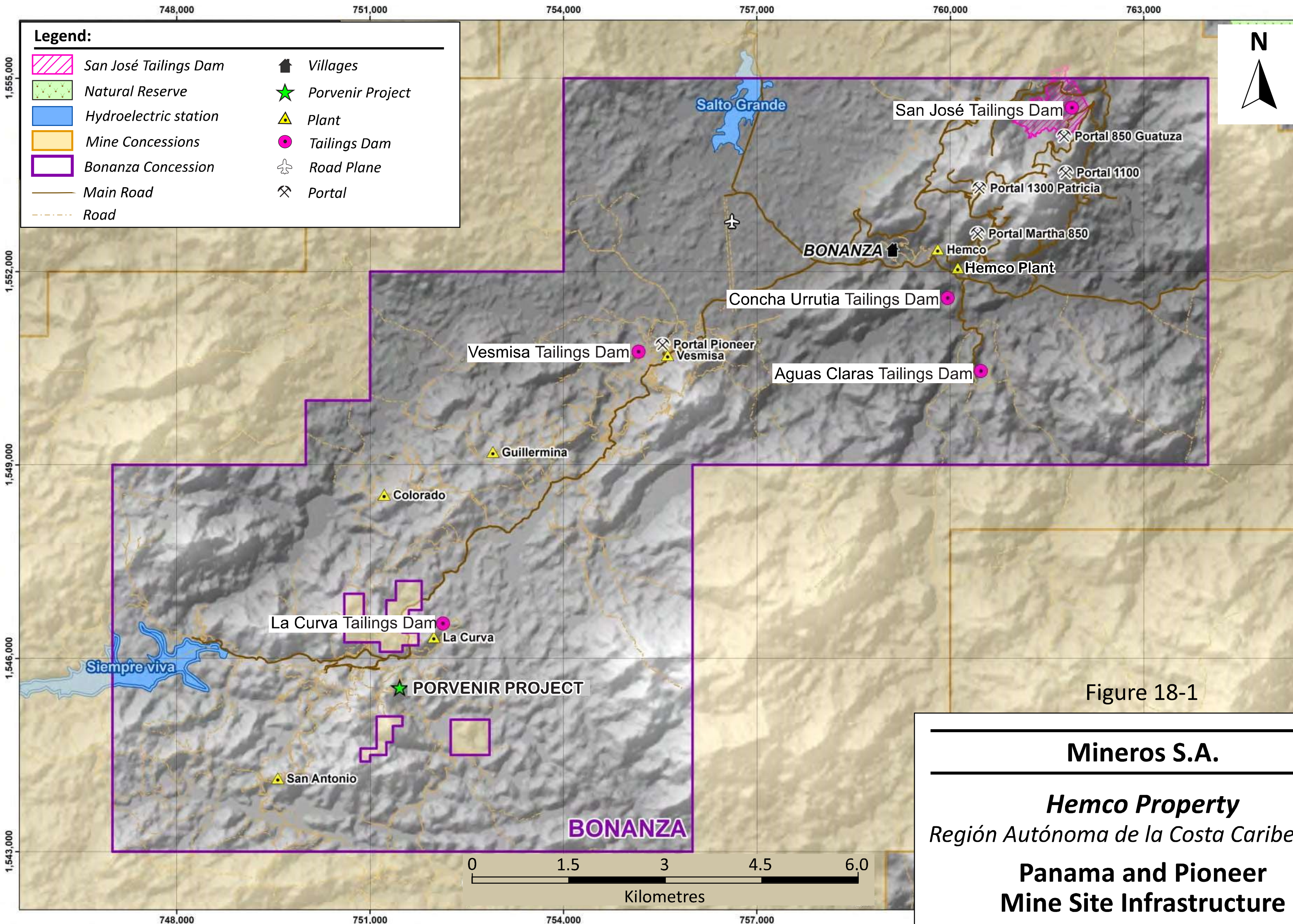


Figure 18-1

Mineros S.A.

Hemco Property

Región Autónoma de la Costa Caribe Norte

Panama and Pioneer Mine Site Infrastructure

March 2023

Source: Mineros, 2021.

18.1.4 Mine Maintenance Workshop

The mine maintenance workshop is mainly engaged in the repair and maintenance of underground electric locomotives, including motors, transmissions, electronic controls, batteries and battery chargers, mining carts, pneumatic drills, and exploration drills, as well as maintenance of the electrical system inside the mine. A total of thirteen electric locomotives are maintained at the mine.

18.1.5 Carpentry Workshop

The carpentry workshop focuses primarily on the construction and repair of wooden structures. The workshop is equipped with brushes, miter saws, circular table saws, and routers. The carpentry workshop prepares the wood products to meet the requirements of the underground mine, while maintaining the infrastructure of the processing plant, workshop buildings, administration offices, and company homes. Of the 57 mine buildings in the mine, 48 are made of wood and nine are made of concrete. As part of Mineros' social networks assistance programs, the carpentry workshop provides scrap wood for home repairs and even makes coffins for economically disadvantaged members of the community.

18.1.6 Sewage Treatment System

Over the last two years, sewage collection and treatment system facilities have been upgraded at the Hemco Property. The new system and wastewater and sewage plant facility were designed to treat flows generated by approximately 600 site personnel. The system consists of a grease trap, an activated sludge system, a disinfection system, and drying beds, with water discharge in compliance with the regulatory limits.

18.1.7 Waste Management Facility

Wastuná Sanitary (Waste Management) Complex, opened in July 2018, was built to meet the needs of adequate management of solid waste generated from all the processes of the operations, and to promote and support substitution, reduction, reuse, recycling, and adequate storage of Mineros' wastes. The Waste Management Complex is the only facility of its type in the region and was designed with the purpose of managing an approximately 1,000 tpa of domestic, recyclable, hazardous, and organic waste, which are separated at source by Mineros' personnel in different bag colours and confined, donated, incinerated with companies certified, and/or transformed according to their characteristics.

18.1.8 Additional Site Components

Roads to the Hemco Property facilities, including the hydroelectric facilities and open pits, total approximately 50 km and are maintained by Mineros.

Potable water supply from the Neblina reservoir, located in the La Mars gallery, capturing approximately 300 m^3/d of which 20 m^3/d is potable.

The Wastuna Ecological Complex is the site where the company's waste and residues are stored, donated, confined, transformed, commercialized and/or managed. The Hemco Property generates four types of waste and residues: domestic, recyclable, organic, and dangerous, which are separated from the generation at the source, guaranteeing proper management and final disposal according to their characteristics. This waste comes from all stages of the company's operation, from exploration, exploitation, processing, and supply chain. Additionally, waste from contractors is managed. In 2022, there was a 9% increase in the generation of hazardous waste, due the inclusion of new projects and contractors, and 78% of the total waste were recycled, donated, or reused, mainly due to programs to enhance the reuse and reduce the consumption of plastic, decreasing the generation of domestic waste by 16%. There also was a significant reduction in organic waste, reaching 22%, as a result of non-waste food campaigns. Hemco has national recognition as a leading company in the donation of recyclable waste, granted by the "Association of Parents with Children with Disabilities, Los Pipitos, sending in a total of 44 tons for 2022, and during 2022 Hemco started an alliance with the Network of Recyclers of Nicaragua (REDNICA) and associated companies. Through donation programs to the community and other foundations such as Los Pipitos and Rednica, Hemco has contributed positively to the well-being of the region and the social inclusion of people with different abilities in the country.

There is an approved powder magazine and 21 light vehicles on site.

In addition to the structures listed above, there are 25,000 m^2 of warehousing and inventory storage, an on-site medical clinic, dining hall, two employee residences with 45 rooms, 13 employee houses, an administration building, a 315 m^2 engineering office, and a mining operation building.

Communications have greatly improved over the years and the mine has land line communications, cell phone service, and high-speed internet access. Portable radios are also used throughout the mine.

Transportation in the area is mainly by road, with a rudimentary airport available for small to medium propeller driven aircraft.

An approved fuel storage facility at the Panama Mine holds 30,000 gallons of diesel fuel.

18.1.9 Pioneer Mine

As a satellite mine with ore processed at the Hemco Plant, the Pioneer Mine has a relatively small surface footprint (Figure 18-2). Surface facilities include a mechanical maintenance building with an adjacent open air wash bay sump facility, a project office building, a site storage building, an electrical transformer station, miscellaneous tanks and piping, a mine portal gatehouse, a laydown pad, and water drainage ditches.

Google Earth, 2023

Figure 18-2: Pioneer Mine Site – Aerial View

18.1.10 Power Generation

Mineros owns and operates its own energy generation and distribution system made up of three sources of supply, the most important being hydroelectric with an installed capacity of 5.4 MW. The second source of energy supply consists of diesel power plants, which have a combined capacity of approximately 8.6 MW, and the third source is the purchase of energy from the commercial network, which is currently capped at 1.2 MW. The average annual energy demand during 2022 was 5.7 MW.

Depending on the rainfall and water levels in the reservoirs, Mineros can generate up to 5.4 MW in two hydroelectric plants that operate in series on the Pis Pis River with three generators both in the Siempre Viva plant (17 km away) and at the Salto Grande plant (seven kilometres away).

During the dry season, or any extended period of low rainfall, there may not be enough water to run all six generators. To compensate for any deficit in hydroelectric generation, Mineros has a diesel generation plant where two CAT C32 units with a capacity of 750 kW each, a CAT C27 unit of 500 kW, CKD unit (Czechoslovakia) of 750 kW, and a MAK unit of 2.2 MW are installed. In addition, it has equipped the most important processes of the operation, such as the plants and mine, with generators that can support each particular process and can be synchronized to the local network to support the entire operation from its location.

Historically, Hemco provided its employees living in the city of Bonanza with up to 400 kW of power. In March 2010, the national network was extended to Bonanza. The distribution and maintenance of the electrical system within the city is now the responsibility of the National Electric Company (ENEL). At the end of 2011, a connection was made between the Hemco Property and the ENEL system and at the beginning of 2012, an electrical energy monitoring and control system was installed. This allows Mineros to sell excess energy to the national grid during high rainfall periods and to buy power from ENEL during the dry season.

18.1.10.1 Salto Grande Hydroelectric Plant

There are three horizontal axis Francis turbines in the Salto Grande powerhouse, all equipped with individual control systems with manual and automatic operation. At the time of the 2017 site visit, the turbines and generators were found to be operating efficiently and well maintained. All three units have been equipped with new generators, a modern digital governor and an exciter static. Power is generated at 2.4 kV and transmitted at 11.4 kV. Unit 1 has a power of 600 kW. Units 2 and 3 are rated at 800 kW and 600 kW respectively.

18.1.10.2 Siempre Viva Hydroelectric Plant

The Siempre Viva Reservoir supplies water to two horizontal axis Francis turbines and one Leffel vertical axis turbine at the power plant at this location. Both Francis units are rated at 500 kW and have been retrofitted with modern digital regulators and static exciters, with the high-voltage compartments in good condition. Siempre Viva's generation capacity was increased by another 2.4 MW at the end of 2011 with the installation of a 2.4 MW Leffel vertical axis turbine with a Weg generator. The voltage level of the generation units is 2.4 kV and that of the transmission is 11.4 kV. Power is generated at 2.4 kV and transmitted at 11.4 kV.

18.1.10.3 Diesel Power Plant

Power is supplied by the main generation central plant and a number of generators installed in various locations to support particular processes.

The main generation central plant has a total installed capacity of 4.95 MW, which consists of one MAK generator rated at 2.2 MW, two CAT C32 generators rated at 750 kW each, one CAT C27 generator rated at 550 kW, and a CKD generator (Czechoslovakia) rated at 700 kW. All CAT units have a rated voltage of 470 V and 1,800 RPM and are synchronized to the grid through 480 V/2.4 kV transformation. Power is generated at 2.4 kV and transmitted at 11.4 kV.

The total installed capacity of generators supporting different processes at the Hemco Property is 4.45 MW. These generators are installed at the following locations and include:

- Neptuno 1275 Portal: two CAT C18 generators rated at 500 KW each and one CAT C27 generator rated at 550 KW. The three generators have a rated voltage of 480 V and 1,800 RPM, are synchronized to the local grid, and have a transfer panel.
- Hemco Plant: two IGSA POWER generators rated at 800 kW, 480 V, 1,800 RPM, each having its own synchronization and transfer system.
- Pioneer Mine: one CAT C27 generator rated at 550 KW, 480 V, 1,800 RPM, with synchronization and transfer systems.
- Vesmisa Plant: one CAT C18 generator rated at 500 KW, 480 V, 1800 RPM, with synchronization and transfer systems.
- La Curva Plant: one CAT 3406 generator rated at 250 KW, 480 V, 1800 RPM, with a transfer system and no synchronization system.

All generators have the option of synchronizing to the Hemco network or working in isolation mode. Except for the generator of the La Curva Plant, the generators are in continuous operation.

SLR is of the opinion that the power facilities are being run well and producing electricity in an economic and consistent fashion.

18.1.11 Ring Road

Hemco, in consortium with the town of Bonanza, have undertaken the construction of a five kilometre road on the west side of the town. The road is currently used by artisanal trucks to bring their ore to Hemco's plants – La Curva, Vesmisa, and Hemco Plant. The road has helped alleviate traffic passing through the centre of town and also connects to Hemco's Pioneer and Porvenir sites. The ring road will also be used by Hemco to transport Pioneer ore to the Hemco Plant.

18.1.12 Artisanal Ore Sampling Plant

Mineros completed the construction of a sampling plant in March 2018 which is used to sample ore from artisanal mining operations. The sampling plant uses an automated process to sample, bag, and apply barcodes to all artisanal ore. The process allows for increased transparency between Mineros and artisanal miners as to how the contained and payable gold is determined.

The sampling plant can accommodate approximately 100 trucks per day (eight working hours) and consists of four sampling stations. The first sampler takes a sample of 3,500 lb (1,590 kg) and the unsampled material is conveyed back to the truck. The sampled material is then passed through a sieve and material greater than one inch goes through a crusher and recirculated through the sieve until the desired size reduction has been attained. The second sampler takes approximately 440 lb (200 kg) of material from the original 3,500 lb of sampled material and the unsampled material is conveyed back to the truck. The material is then sent to a third sampler which takes a 60 lb (27 kg) sample. The sampled material is then further crushed to a size of 0.5 in. and divided into four portions of seven pounds (3.18 kg) each: two for gold analysis, one for moisture analysis, and one for storage and safeguard. Each sample is hermetically bagged, and a barcode applied.

18.2 Porvenir Project

The general site layout of the Porvenir Project is shown in Figure 18-3.

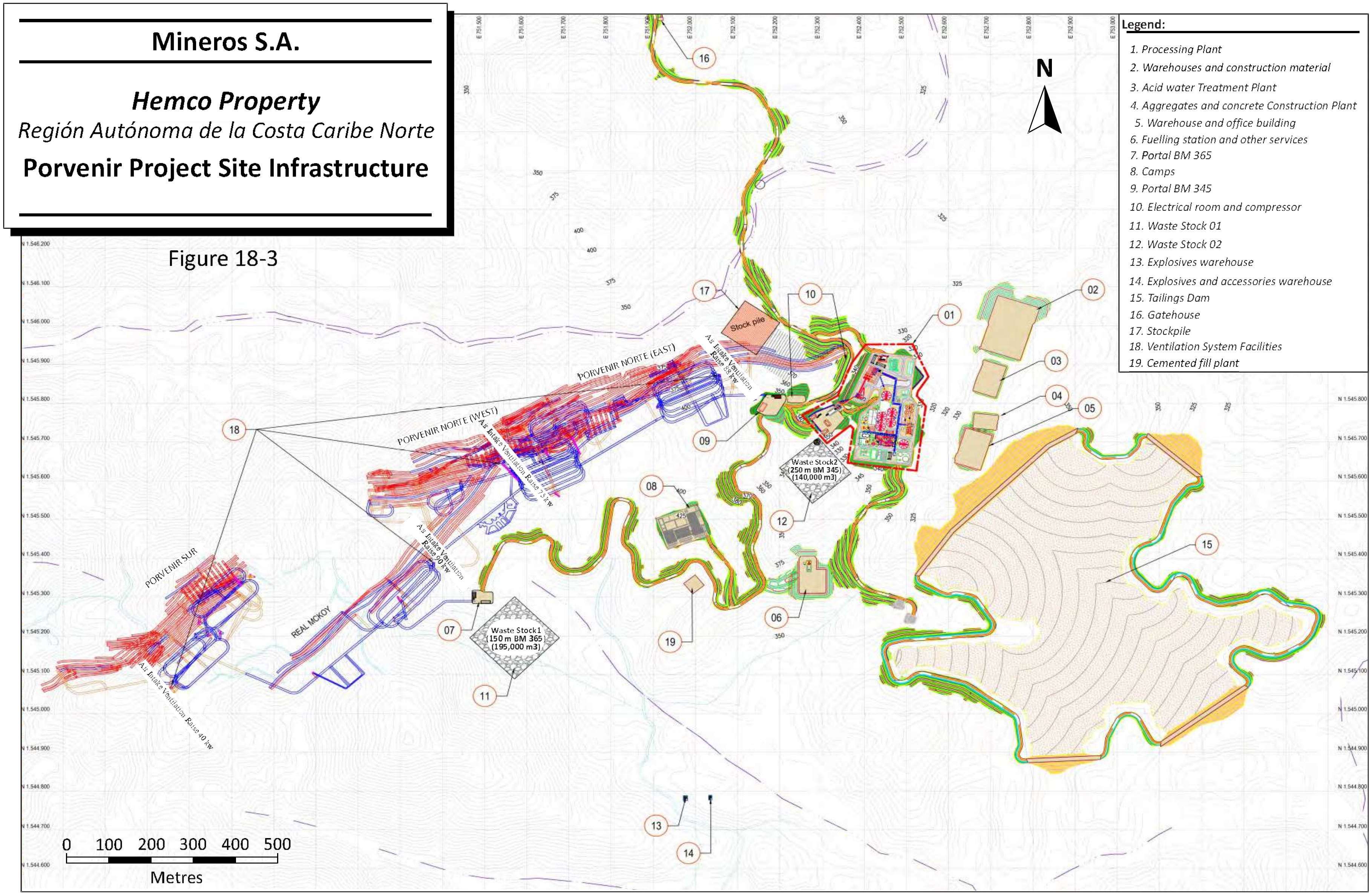


Figure 18-3

March 2023

Source: Mineros, 2022.

18.2.1 Roads

Site roads are designed to be 7 m wide and with maximum gradient of 12%. The site access road is approximately 2 km long and there are an additional 4.4 km of road to be built at the site for access to and between the portals, to the tailings area, to the plant, and other minor roads. The topography is steep and there are cuts up to 25 m high in several areas. The roads will require 308,000 m^3 of cut and use 80,000 m^3 of fill for a net 228,000 m^3 spoil surplus.

The site roads between the portals and to the plant will be surface haul roads for the ore. The main site access road will be used for all traffic to the site including all incoming freight and personnel and all outgoing zinc concentrate.

SLR notes that the 7 m wide roads do not meet typical North American standards of three times a vehicle width for two way traffic. The 12% gradients are also steeper than generally used for surface haulage ways. SLR recommends that Mineros either consider the use of single lane traffic and the controls required for such operation or widen the roads for two way traffic.

Proposed access roads for the Porvenir Project are shown in Figure 18-4.

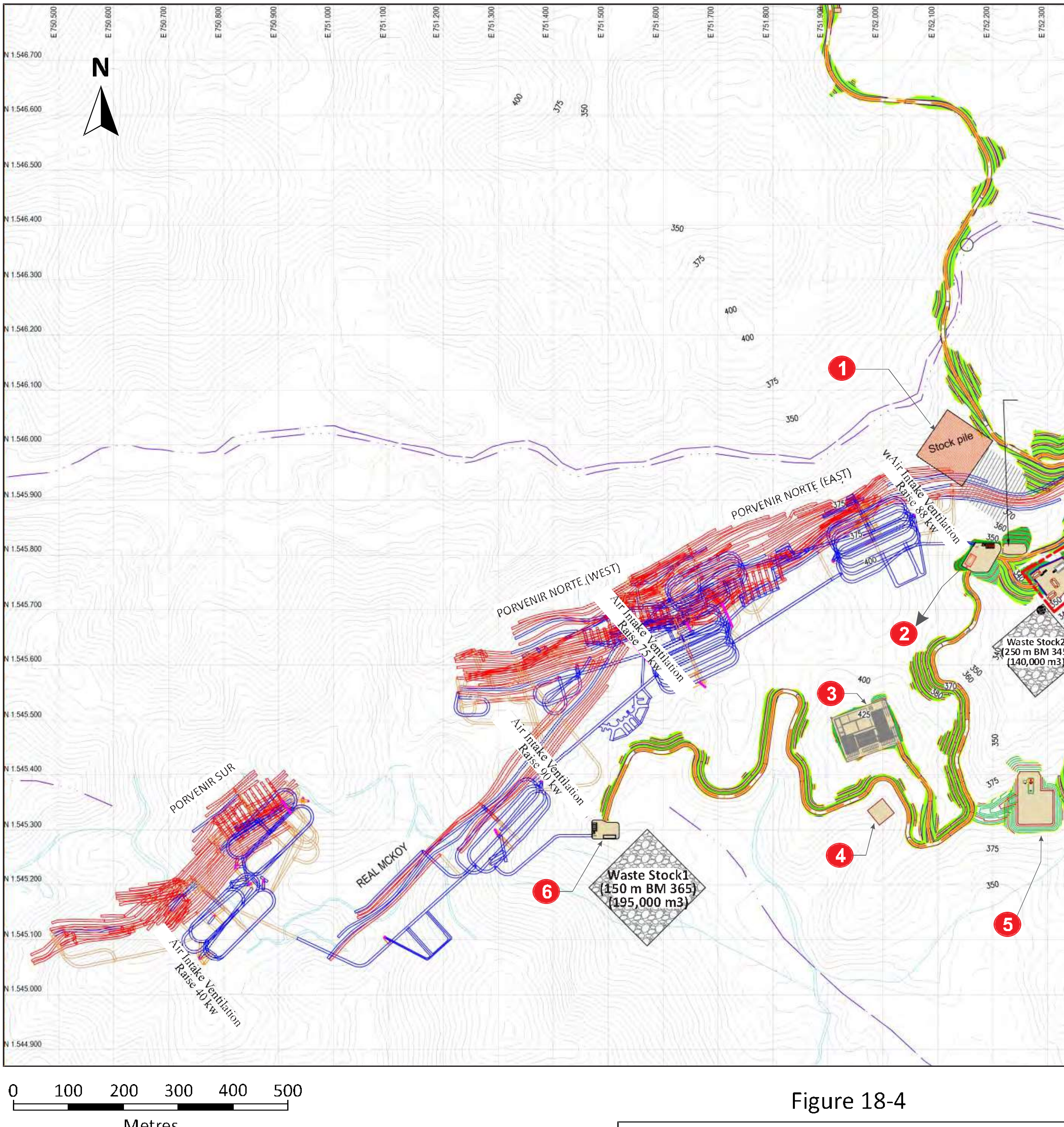


Figure 18-4

Legend:

1. *Stockpile*
2. *Portal BM 345*
3. *Camps*
4. *Cemented fill plant*
5. *Fuelling station and other services*
6. *Portal BM 365*

Mineros S.A.

Hemco Property

Región Autónoma de la Costa Caribe Norte

Access Roads

March 2023 ***Source: Mineros, 2022.***

18.2.2 Electrical Power

Electrical power will be supplied to Porvenir from the local distribution line at 24.9 kV and distributed from a 24.9/4.16 kV main transformer as required on the project. Backup generators to supply critical plant loads will be included in the system; similarly, two backup generators will be installed to supply mine power as needed.

Additionally, there is a project underway, the Rosita Line, to allow interconnection with the 138 kV national grid system from Rosita via Bonanza. This project includes a connection to the national grid, 29.54 km transmission line to Bonanza, and then a 14 km interconnection line to Porvenir.

18.2.3 Camp

The camp, in general, is made up of the accommodation area, which has a capacity for 132 people divided into four modules, and common areas with a dining room with capacity for 80 people (987 m^2), multipurpose court (500 m^2), sports centre (500 m^2), gym (220 m^2), social club (140 m^2), laundry (72 m^2), infirmary (47 m^2), sentry box (5 m^2), and green areas. In addition, there will be a one-story staff category module, which will house 12 people and will have an occupied area of 254.67 m^2, a two-story supervisor category module, which will house 24 people and will have an occupied area of 239.23 m^2, and two two-story contractor's modules with 16 rooms to provide accommodation for 48 persons each.

18.2.4 Waste

Waste management will follow the procedures set up by Hemco as described above in Sections 18.1.7 and 18.1.8.

18.2.5 Fresh Water

Fresh water will be taken from a catchment point on the Waspanona River or the El Limon River. Water will be purified at the camp while process water will be taken directly to the plant.

18.2.6 Tailings

The tailings will be stored in a new tailings storage facility (TSF) located to the southeast of the plant location at an elevation of 454 m (Figure 18-5). The TSF will have the capacity to store 6.99 Mt (4.51 Mm^3), which is considered sufficient for the Porvenir Project life. The TSF is designed following international guidelines including International Council on Mining and Metals (ICMM, 2020), Canadian Dam Association (CDA, 2019), International Commission on Large Dams (ICOL, 2019), and Mining Association of Canada (MAC, 2019). The dam stability analysis is based upon:

- 1 in 10,000 Peak Ground Acceleration (PGA) of 0.29 m/s^2
- Seismic coefficient for pseudostatic analysis of 0.5 PGA
- Minimum Factor of Safety (FOS) for pseudostatic slope stability = 1.0
- Minimum FOS for static slope stability = 1.5

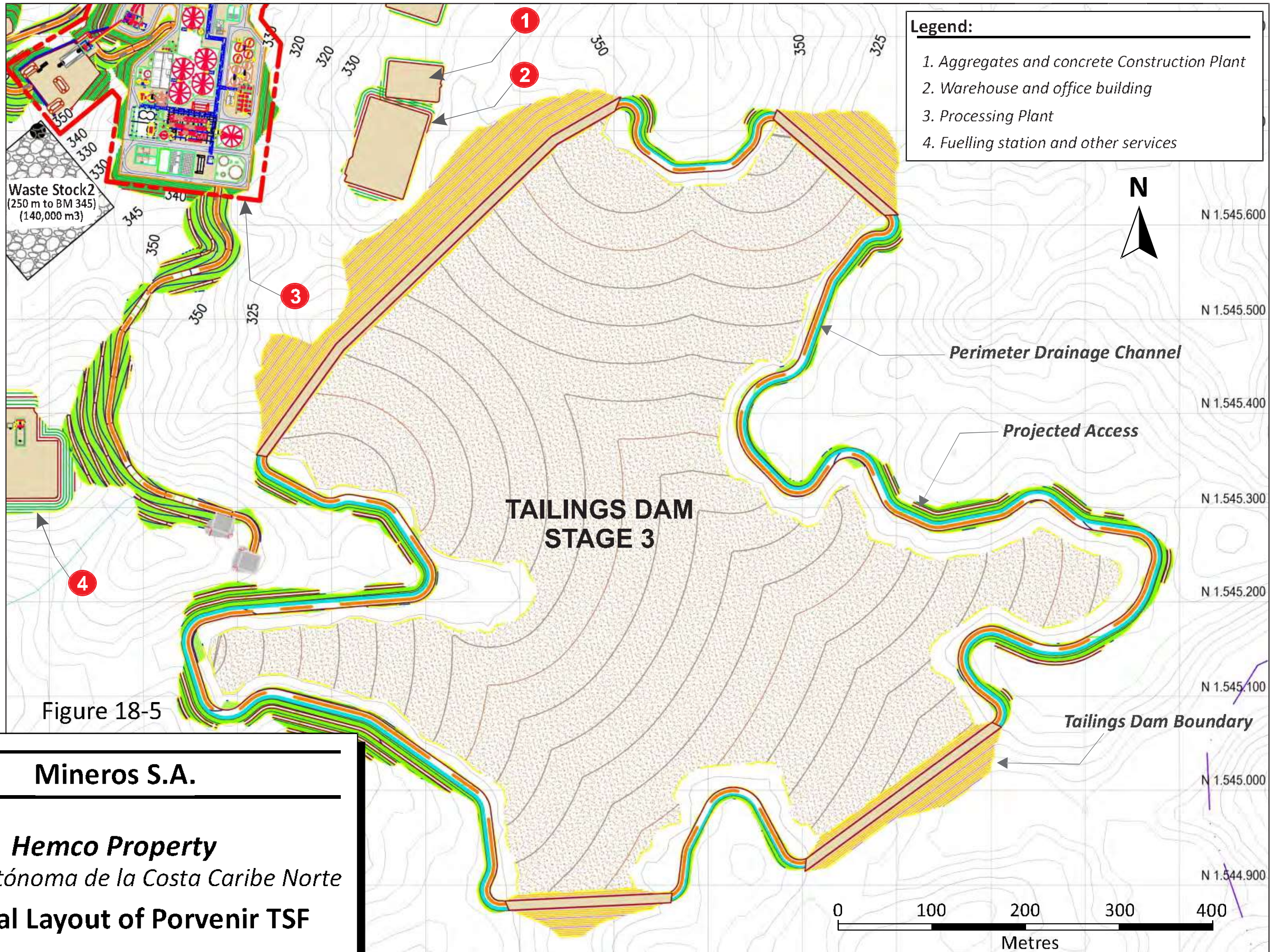


Figure 18-5

Mineros S.A.

Hemco Property

Región Autónoma de la Costa Caribe Norte

General Layout of Porvenir TSF

March 2023

Source: Mineros, 2022.

The dam is planned to be constructed in three stages. The key parameters related to the TSF are shown in Table 18-1.

Table 18-1: Porvenir TSF Details
Mineros S.A. – Hemco Property

Item	Units	Design
Life	years	9
Storage Volume	Mm^3	4.51
Stage 1 dam Elevation	MASL	336.5
Stage 2 dam Elevation	MASL	343.5
Stage 3 dam Elevation	MASL	350.5
Crest Width	m	10
Freeboard	m	2
Deposition Slope		0.5%
TSF Lining		
Clay (K-1x10-8 cm/s)	m	0.30
HDPE Textured Geomembrane	mm	1.5
Hydrological Parameter		
PMP (24hr)	mm	569
Dam Classification		Extreme

The selected design factors for stability and precipitation are consistent with a tailings facility with an extreme classification. SLR recommends a review of the TSF dam classification to ascertain the requirements at the next stage of study.

18.2.7 Concentrate Handling

Of the ports available on the Atlantic and Pacific coasts, Corinto Port, on the Pacific coast, was selected as the best option as this port handles much more cargo per year than any of the other choices and it has the necessary storage and handling facilities. The port has an 11 m draft and can handle vessels up to 60,000 t. There are nearby storage facilities that can be rented.

Concentrate will be trucked 508 km from the site to the port. Nicaraguan regulations limit highway truck haulage to 20 t loads. A comparison of haulage between containers and bulk shipment favours the use on bulk transport in 4,800 t lots. Porvenir will generate up to 48,000 tpa, or 130 tpd.

In the next stage of study, SLR recommends that the haulage logistics be further investigated.

19.0 MARKET STUDIES AND CONTRACTS

19.1 Markets

The principal commodity for the Panama and Pioneer mines is gold, which is freely traded, at prices that are widely known, so that prospects for the sale of Mineros' gold production are virtually assured. Part of the gold production from the Hemco Property for 2023 is sold under a forward contract with Aurамet International LLC. This contract is in place until year 2023. Mineros will review the contract at the end of 2023 to decide whether the contract needs to be renewed for year 2024 and thereafter. The assumption for this Technical Report is that remaining gold production after year 2023 will be sold at Mineral Reserve prices.

Gold, silver, and zinc are the principal commodities for the Porvenir mine. The gold and silver will be doré similar to the product from Hemco but richer in silver. As above, the prospects for the sale of gold and silver from Porvenir are virtually assured.

Zinc demand is mainly driven by the production of galvanized steel, which is extensively used in numerous sectors from construction, infrastructure, and automobiles to home appliances, machinery, and shipbuilding. A forecast for zinc supply and demand is shown in Table 19-1. The estimates project a minor excess of demand over supply.

Table 19-1: Zinc Supply and Demand Forecast
Mineros S.A. – Hemco Property

(000 t)	2022 Estimate	2023 Forecast	2024 Forecast	2025 Forecast	2026 Forecast	2027 Forecast
Supply	13,591	13,787	14,264	14,750	15,185	15,540
Demand	13,848	14,011	14,459	14,896	15,281	15,602
Balance	-257	-223	-195	-146	-96	-62
3M Price ($/t)	3,440	3,371	3,112	3,050	2,980	2,920

Sources; S&P Global Market Intelligence (2023), London Metal Exchange

Zinc from Porvenir will be sold in concentrates. Those sales could be through offtake agreements with traders such as Trafigura or Glencore or through direct sale to zinc smelters. In either case, the concentrates will have to be transported from the site and then by sea to their final destination. China, South Korea, and Japan are considered likely to remain as the key undersupplied regions.

The sale of zinc concentrate and the precise terms are a function of the concentrate quality and the level of impurities in the concentrate.

The base case metal prices used in this Technical Report are based on Mineral Reserve prices shown in Table 19-2.

Table 19-2: Base Case Metal Price Assumptions
Mineros S.A. – Hemco Property

Metal	Gold ($/oz)	Silver ($/oz)	Zinc ($/t)
Assumed	1,500	19.00	2,800

19.2 Contracts

19.2.1 Panama and Pioneer Mines

Mineros has contracts with Argor Heraeus Switzerland (Argor Heraeus) and Asahi US (Asahi) for doré refining. Seventy-five percent of doré is sent to Argor Heraeus, and twenty-five percent of doré is sent to Asahi. SLR has reviewed the contract terms and is of the opinion that they are within industry norms. Off-site doré charges, including transportation and shipping, and refining, total US$1.24/oz doré.

Mineros has a precious metals forward contract for gold production from the Hemco Property with Auramet International LLC. Material terms are as follows:

- Year 2023: 1,000 oz Au/ month contracted with a call price between US$1,700/oz Au and US$1,870/oz Au.

This contract allows Mineros to mitigate the risk of low spot prices and will ensure revenue until year 2023 at prices above the Mineral Reserve price of US$1,500/oz Au but could limit the upside in the current market of high spot prices. Mineros will review the contract at the end of 2023 to decide whether to renew the contract for year 2024 and thereafter.

Another significant contract in place is for mining operation services with Congemin Nicaragua S.A. (Congemin), for underground mechanized development, preparation and production work for the Panama and Pioneer mines. Contract terms for Congemin's services are reflected in the mine operating costs disclosed elsewhere in this Technical Report.

SLR has reviewed the terms of all the foregoing contracts and considers them to be within industry norms.

19.2.2 Porvenir Project

There are no contracts in place for any of major cost or revenue elements of the Porvenir Project. Mining development and operations are assumed to be contracted and terms similar to those negotiated for the adjacent Hemco operations have been assumed for the BISA PFS.

The sales contracts assumed for this Technical Report are based upon the Hemco terms for gold and silver. For zinc, the assumed smelter terms are based on typical zinc smelter contracts. There is a small amount of payable gold within the Porvenir zinc concentrate.

Contracts for the land transport of concentrates for the 508 km to the Corinto Port include covered storage at the port, handling at the port, and then ocean shipping to the final port. There is covered storage approximately one kilometre from the Corinto Port, which would be available as well as services to handle concentrates from the storage to the port.

20.0 ENVIRONMENTAL STUDIES, PERMITTING, AND SOCIAL OR COMMUNITY IMPACT

The information presented in this section has been developed through site visits to Hemco operations in April 2017 and August 2021, discussions with site environmental and operations staff during these visits, and review of environmental and operational information as requested and provided for 2019, 2020, 2021, and 2022 on the status of: the operation, authorizations and permits, corporate social responsibilities and artisanal miner and small-scale miner relationships. Information provided and reviewed has included corporate documents and presentations; technical documents and presentations; government correspondence; authorizations and permits; environmental assessments; conceptual, feasibility, and engineering documents and reports; and strategic plans and presentations, sustainability reports and presentations.

Based on the review of information provided and site visit observations, SLR concludes that there are no material environmental issues at the time of this Technical Report and that Hemco operations are generally conforming with the applicable regulatory requirements for protection of the environment and Hemco's corporate social responsibilities.

20.1 Environmental Considerations

Hemco first assumed responsibility for the environmental impacts associated with the operation of the mine in 1995. The first major environmental measure implemented was to eliminate the dumping of tailings from the Hemco Plant into the Tunki River, which had been polluted by more than 50 years of tailings discharge and sediments contaminated with cyanide and other metals and pollutants. As a result of the measures undertaken by Hemco, aquatic life has returned to the Tunki River.

Up to 2016, the environmental compliance framework within which Hemco operated was complicated and extensive, with multiplicative reporting requirements. Permits were required on activity specific basis rather than by primary business processes which resulted in inefficient environmental management, poor coordination and communication, and generally increased environmental and legal risk. Until 2016, the annual regulatory requirements included development and compliance with:

- 157 Annual Environmental Compliance Reports
- 2,889 Environmental Requirements associated with
  - 15 Environmental Impact Assessments (EIA) in force
  - an Environmental Management Plan (EMP)
  - 26 Environmental Authorizations
- 60 Active Environmental Permits

Starting in 2017, Mineros began working with SERENA to rationalize the permitting and reporting process into a more holistic approach based on the four primary business lines of Exploration, Exploitation (Mining), Beneficiation (Milling), and Supply Chain. The general goal was to harmonize and standardize the different legal compliance instruments with the objective of ensuring effective control by the responsible authorities and the company in each of its processes. For this purpose, it was crucial to develop joint actions and coordination between the parties for the planning of current and future environmental strategies, ensuring the strengthening of organizational controls and environmental legal compliance.

The specific objectives of the harmonization effort include:

- Integrate and articulate components necessary for responsible natural resource use.
- Promote better company environmental performance through effective use of environmental management tools and organizational programs.
- Ensure that environmental legal requirements are clear and operationally feasible so that the company can implement them and ensure the control of any potential environmental impacts.
- Increase trust between all parties while seeking continuous improvement and guaranteeing environmental responsibility.
- Identify organizational gaps that need to be addressed to fully comply with legal environmental requirements.

During 2017, Mineros developed the "Harmonization and Standardization Legal Strategy" working in co-operation with the environmental authorities. The mechanisms established for the harmonization and standardization of the different instruments of environmental compliance were designed to achieve a more comprehensive control of each of the company's processes, including not only the requirements attached to each of the environmental impact studies, but also reflecting the operational reality and the existing environmental regulations.

Using this approach allows for responsible natural resource use, promotes better company environmental performance through effective use of environmental management tools and organizational programs, ensures that environmental legal requirements are clear and operationally feasible, so that the company can implement them and ensure control of any impacts, increases trust between all parties seeking continuous improvement and guaranteeing environmental responsibility, and identifies organizational gaps that need to be addressed to fully comply with legal environmental requirements.

Through this strategy environmental compliance reporting was decreased from 157 annual environmental compliance reports to four bi-annual environmental compliance reports, one for each of the primary operations: exploration (greenfield and brownfield), exploitation (open pit and underground mining), beneficiation (milling), and supply chain (energy, industrial supplies, and maintenance).

At present, the environmental organizational structure of the company is divided into four fundamental areas: Environmental Control and Monitoring, Recovery and Biodiversity, Water and Air Resources, and Environmental Legal Management. The structure is led by the Environmental Director and an Environmental Superintendent.

Currently, Hemco's Environmental Department is charged with developing and maintaining four EMPs, in accordance with the new strategy. These plans focus on preventing, mitigating, monitoring, and compensating environmental impacts through appropriate environmental management during operation followed by reclamation of impacted areas, and reforestation of areas unrelated to mining activities. Key operational aspects include education of employees on environmental matters; monitoring the soil, water, and air quality; monitoring biodiversity; and ensuring compliance with all legal and administrative requirements as imposed by national, regional, and municipal authorities.

20.2 Environmental Management Plans and Permits

20.2.1 Environmental Management Plans

The EMPs are included in each of the environmental permits and arise from the analysis of the impacts of the environmental studies and the strategies to prevent, mitigate, control, and/or compensate them. EMPs currently exist for each of the four primary operational processes:

- exploration (greenfield and brownfield)
- exploitation (open pit and underground mining)
- beneficiation (milling)
- supply chain (energy, industrial supplies, and maintenance)

At the request of the authorities, Hemco is developing additional EMPs in support of expanded operations and ultimately there will be 12 EMPs related to the four primary operational processes as noted below.

- Exploration: EMPs for: 1) Greenfield exploration; and 2) Brownfield exploration activities
- Exploitation: EMPs for: 3) Panama Underground Mining; 4) Pioneer Underground Mining; 5) Artisanal Ore Storage and Sampling; and 6) Ventilation and Filling
- Beneficiation: EMPs for: 7) Mills; and 8) Tailings Dams
- Supply chain: EMPs for: 9) Hydrocarbon and Fuel Management, 10) Health Complex, 11) Energy; and 12) Domestic Treatment Systems

Table 20-1 to Table 20-4 below summarize the nature and content of the EMPs.

Table 20-1: Exploration Related Environmental Management Plans
Mineros S.A. – Hemco Property

Management Plan		Code	Name of the Program
Environmental Supervision Plan	Physical	MMF1	Control of Conditions and Operation of Surface Trenching and Drilling Operations
		MMF2	Hazardous Waste Control
		MMF3	Non-Hazardous Waste Control
		MMF4	Control of Chemical Substances
		MMF5	Signaling Control
		MMF6	Equipment Maintenance
		MMF7	Stormwater Control
		MMF8	Domestic Water Control
		MMF9	Control of Drilling Sludge
		MMF10	Emissions Control, Air Quality and Noise Levels
		MMF11	Access Control
	Biotic	MMB1	Control of Water Bodies Adjacent to Exploration
		MMB2	Wildlife Management - Flora and Fauna

Management Plan		Code	Name of the Program
	Social	PGS1	Environmental Education Program for Internal Personnel, Communities and Contractors
		PGS2	Management of Relationship with Communities
		PGS3	Archaeological Findings Management
Monitoring and Environmental Monitoring Plan	Water	PMS1	Water Quality Monitoring for Surface Water Bodies
		PMS2	Monitoring of Domestic Waters
		PMS3	Monitoring of Drilling Sludge
		PMS4	Groundwater Monitoring
	Air	PMS5	Monitoring of Emissions, Air Quality and Noise Levels
	Management	PMS6	Follow-up to Environmental Management
Business Contingency Plan			
Occupational Health and Industrial Safety Plan			
Closure and Abandonment Plan			

Table 20-2: Mining Related Environmental Management Plans
Mineros S.A. – Hemco Property

Management Plan		Code	Name of the Program
Environmental Supervision Plan	Physical	MMF1	Ground Stability Control
		MMF2	Hazardous Waste Control
		MMF3	Non-Hazardous Waste Control
		MMF4	Sterile Material Control
		MMF5	Control of Chemical Substances
		MMF6	Signaling Control
		MMF7	Equipment and Infrastructure Maintenance
		MMF8	Stormwater Control
		MMF9	Control of Domestic and Industrial Waters
		MMF10	Control of Emissions, Air Quality and Noise
	Biotic	MMB1	Control of Surface Water Bodies Adjacent to the Operation
		MMB2	Forest Compensation
		MMB3	Wildlife Management
	Social	PGS1	Control of the Environmental Education Program for Internal Personnel, Communities and Contractors

Management Plan		Code	Name of the Program
Monitoring and Environmental Monitoring Plan	Water	PMS1	Water Quality Monitoring for Surface Water Bodies
		PMS2	Monitoring of Domestic and Industrial Waters
	Air	PMS3	Monitoring of Emissions, Air Quality and Noise Levels
	Management	PMS4	Follow-up to Environmental Management
Business Contingency Plan			
Occupational Health and Industrial Safety Plan			
Closure and Abandonment Plan			

Table 20-3: Milling Related Environmental Management Plans Mineros S.A. – Hemco Property

Management Plan		Code	Name of the Program
Environmental Supervision Plan	Physical	MMF1	Stability Control for Plant, Dams or Related Works
		MMF2	Hazardous Waste Control
		MMF3	Non-Hazardous Waste Control
		MMF4	Control of Chemical Substances
		MMF5	Signaling Control
		MMF6	Equipment and Infrastructure Maintenance
		MMF7	Stormwater Control
		MMF8	Domestic Water Control
		MMF9	Industrial Water Control
		MMF10	Control of Emissions, Air Quality and Noise
	Biotic	MMB1	Control of Water Bodies Adjacent to the Operation
		MMB2	Forest Management
		MMB3	Wildlife Management
	Social	PGS1	The Environmental Education Program for Internal Personnel, Communities and Contractors
		PGS2	Management of Archaeological Findings
Monitoring and Environmental Monitoring Plan	Water	PMS1	Water Quality Monitoring Surface for Water Bodies
		PMS2	Monitoring of Industrial Waters
		PMS3	Domestic Water Monitoring
	Air	PMS4	Monitoring of Emissions, Air Quality and Noise Levels
	Ground	PMS5	Follow-up to the Stability Control of Plant, Dams or Related Works

Management Plan		Code	Name of the Program
	Management	PMS6	Follow-up to Environmental Management
Business Contingency Plan			
Occupational Health and Industrial Safety Plan			
Closure and Abandonment Plan			

Table 20-4: Supply Chain / Energy Related Environmental Management Plans
Mineros S.A. – Hemco Property

Management Plan		Code	Name of the Program
Environmental Supervision Plan		MMF1	Hazardous Waste Control
		MMF2	Non-Hazardous Waste Control
		MMF3	Control of Chemical Substances
		MMF4	Signaling Control
		MMF5	Control of Domestic and Industrial Waters
		MMF6	Control of Noise Levels
	Biotic	MMB1	Control of Energy Generation Reservoirs
		MMB2	Wildlife Management - Flora and Fauna
	Social	PGS1	The Environmental Education Program for Internal Personnel
Monitoring and Environmental Monitoring Plan	Water	PMS1	Water Quality Monitoring of Reservoirs
		PMS2	Monitoring of Domestic and Industrial Waters
	Management	PMS3	Follow-up to Environmental Management
Business Contingency Plan			
Occupational Health and Industrial Safety Plan			

20.2.2 Environmental Permits

The evaluation, control, and monitoring of environmental legal obligations in Nicaragua is carried out by MARENA and SERENA. The environmental assessment system (EAS) in Nicaragua, establishes five categories of activities requiring an Environmental Permit from MARENA. Activities at the Hemco Property require Category II, III and IV Environmental Permits. For more information regarding the permit application process, see Section 4.5 of the report.

Permits for forest exploitation and the use and discharge of wastewater are also managed through the competent authorities such as National Forest Institute (INAFOR) and National Water Authority (ANA) respectively.

Permitting activities in 2022 were as follows:

- New Permits.
  - Resolution No. 54-27-10-2022 Environmental Permit Siuna I Geological Exploration Project

- Resolution No. 55-27-10-2022 Environmental Permit Siuna II Geological Exploration Project
- Resolution No. 56-27-10-2022 Environmental Permit Bambanita Geological Exploration Project
- Resolution No. 57-27-10-2022 Environmental Permit Rosita V Geological Exploration Project
- Environmental Authorization No. 01-12-2022-140 for the transport of pulp from the Vesmisa Camp to the Hemco Plant
- Environmental Authorization 30-09-2022-125 Special Forestry Plan
- J0000015083 Special Forest Permit for Marta 850 and Venus Collection Yard 5
- J0000015247 Special Forest Permit for Pioneer Raise Boring
- RAE-ANA-DGRH-044-2022 Domestic Wastewater Discharge Permit
- RAE - ANA -DGRH -004 -2022 Permit Use of Domestic and Industrial Water HEMCO - ANA

* Renewed Permits.
  - Administrative Provision 21-12-2022-07 Environmental Permit Renewal for Panama Group Geological Exploration
  - Environmental Authorization 25-05-2022-48 Renewal of environmental authorization for the Elephant Fill Ventilation and Inlet Duct Project, Raise Boring System
  - Environmental Authorization 20- 12-2022-143 Renewal of the Environmental Authorization Portal XC Patricia 1300 Project
  - Environmental Permit 22-12-2022-05 General of Environmental Permit for Pioneer Group Underground Exploitation Project
  - Environmental Authorization No. 08-09-2022-119 Special Plan for the Use of 11.4 K, design and assembly of substation in Pioneer Pit
  - Environmental Authorization 01-12-2022-139 Renewal of Environmental Authorization for Operation of Storage Yards, Truck Parking, and Alternate Access for artisanal mining ore haulage equipment at Marta 850 and Venus - Collection Yard 5 Expansion
  - Environmental Permit 20-12-2022-04 Environmental Permit for San José Dam Tailings Project
  - Environmental Permit 02-12-2022-03 Environmental Permit Renewal for Tailings Storage with geotubes
  - Environmental Permit 21 - 12 - 2022 – 06 Renewal of the Hemco Plant Environmental Permit
  - Certificate for Permanent Use and Exploitation of Water to produce hydroelectric energy from the Bonanza Mayor's Office
  - Environmental Authorization No. 30-11-2022-135 Environmental Authorization Renewal for Hydrocarbon Storage System with capacity of 55,383 gal
  - Environmental Authorization 30-11-2022-136 Environmental Authorization Renewal for Hemco Fuel Station
  - Environmental Authorization 31 - 08 - 2021-130 Renewal of Environmental Authorization for the Hemco Camp Domestic Wastewater Treatment System

- Certificates of No Objection, Mechanisms Validation Prospecting, Projects (18): Monte Fresco I and II; Siuna I, II and III; RB I and II; HB V and VI; Bonanza II, III, IV, V and VI; Rosita IV; Roca Larga, El Mayo and Magdalena / SERENA - GRACCN.

- In the process of revision by SERENA - GRACCN:

  During 2022, Hemco applied for two new permits, which are currently in the process of revision, and four other permits:

  - Environmental Permit for Tailings Dam Project VESMISA III
  - Aguas Claras TSF Closure Plan
  - Concha Urrútia TSF Closure Plan
  - Environmental Permit for Rosita – Bonanza Transmission Line
  - Neblina Pit Closure Plan
  - Closure Plan for Capitan Central, North and South Pits

During 2022, Hemco operated under a total of 85 environmental permits. Of these, 79 were in force, six in process, and none had expired (Figure 20-1).

The status and distribution of the permits across the four primary operational units as of the end of 2022 was as follows:

- 31 exploration-related permits,
- 13 exploitation (mining)-related permits (Note Patricia Portal permit being replaced),
- 14 beneficiation (milling)-related permits, and
- 12 environmental supply chain permits.

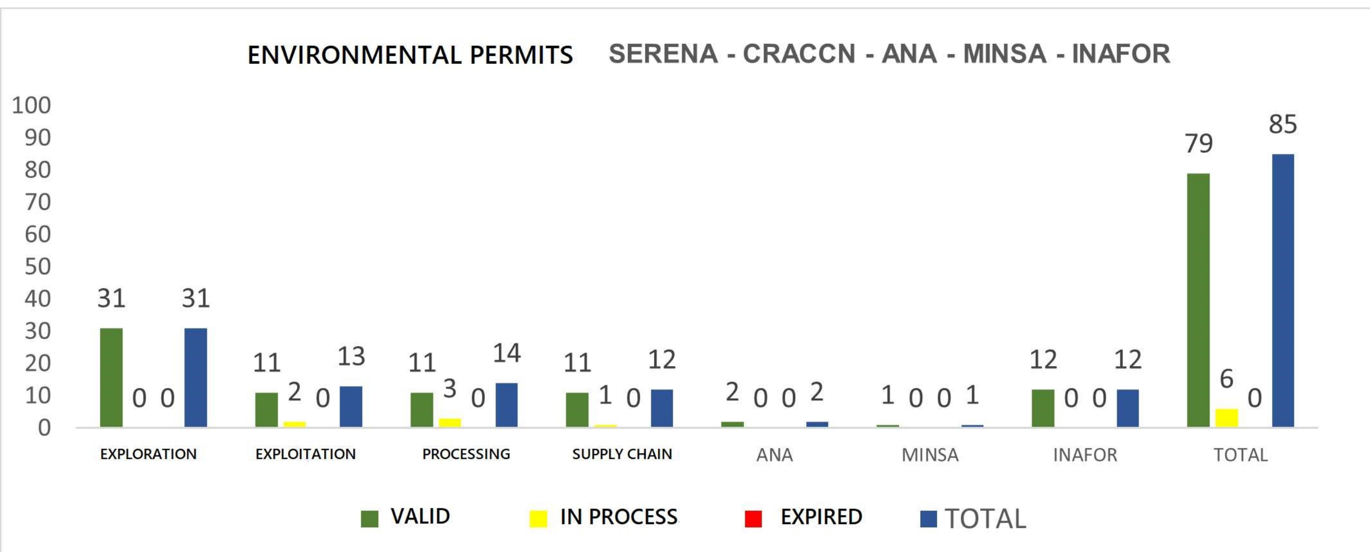


Figure 20-1: Environmental Permits

The full list of permits is provided in Table 20-5 to Table 20-11.

20.2.2.1 Exploration

During the year 2022, 19 environmental permits and authorizations related to the exploration process were renewed, among which one was for geological exploration and 18 were for prospecting. Additionally, four new exploration permits were managed. Overall, Hemco has a total of 31 environmental permits and authorizations (13 for exploration and 18 for prospecting), all of which are in effect. Details are provided in Table 20-5.

Table 20-5: Exploration Related Environmental Permits
Mineros S.A. – Hemco Property

	#	Project	Code	Expiration	Type of Permit	Status
SERENA -CRACCN	1	Panama Group Exploration (Bonanza Concession)	Administrative Provision 21-12-2022-07	December 21, 2025	Renewal of the Environmental Permit Geological Exploration Panama Group	In effect
	2	Pioneer Exploration - Constancia II (Bonanza Concession)	Administrative Provision 24-07-2020-06	July 24, 2023	Pioneer and Constancia II Environmental Permit	In effect
	3	Bonanza H1 Exploration	Administrative Provision 13-04-2021-09	April 13, 2024	Bonanza H1 Exploration Environmental Permit	In effect
	4	Rosita I Exploration (Rosita 1 Concession)	Administrative Provision 13-04-2021-10	April 13, 2024	Rosita I Environmental Permit	In effect
	5	Nueva America Exploration - Silva (Rosita V Concession)	Administrative Provision 24-07-2020-07	July 24, 2023	Rosita V Environmental Permit – Nueva America - Silva	In effect
	6		Administrative Provision 10-28-09-2017	September 28, 2022	Exploration Environmental Permit Nueva America - Rosita V	In effect
	7	Rosita V Exploration	Resolution No. 57-27-10-2022	October 27, 2027	Environmental Permit Geological Exploration Nueva America Concession Rosita in 673.4 Ha., Lote Rosita V, Municipio Siuna, RACCN	In effect
	8	Luna Roja Exploration (Monte Carmelo I and Monte Carmelo II Concessions)	Administrative Provision 30-04-2019-02	April 30, 2024	Monte Carmelo I and II Exploration Environmental Permit	In effect
	9	Rosita VI Exploration	Administrative Provision 30-04-2019-01	April 30, 2024	Rosita VI Exploration Environmental Permit	In effect
	10		Environmental Certificate 26-04-2021-06	_____	Environmental guarantee for use RAB machine type Portable Hornet	In effect

#	Project	Code	Expiration	Type of Permit	Status
11	Siuna Exploration I	Resolution No. 54-27-10-2022	October 27, 2027	Environmental Permit Geological Exploration Siuna I-Prospecto Oro Fino Sur, Yuoya Sur and Surroundings, Mining Concession Hemco Siuna I	In effect
12	Siuna II Exploration	Resolution No. 55-27-10-2022	October 27, 2027	Environmental Permit Geological Exploration Siuna II-Prospect Yuoya Norte and Surroundings, Mining Concession Hemco Siuna II	In effect
13	Bambanita Exploration (Monte Fresco I and II Concession)	Resolution No. 56-27-10-2022	October 27, 2027	Environmental Permit Bambanita Geological Exploration, Monte Fresco I and II Concessions in the Municipality of Rosita	In effect
			Prospecting		
14	Monte Fresco I Prospecting	Proof of no objection 26-08-2022-68	August 26, 2023	Proof of No objection	In effect
15	Monte Fresco II Prospecting	Proof of no objection 26-08-2022-69	August 26, 2023	Proof of No objection	In effect
16	Siuna I Prospecting	Proof of no objection 26-08-2022-59	August 26, 2023	Proof of No objection	In effect
17	Siuna II Prospecting	Proof of no objection 26-08-2022-60	August 26, 2023	Proof of No objection	In effect
18	Siuna III Prospecting	Proof of no objection 26-08-2022-61	August 26, 2023	Proof of No objection	In effect
19	RB – I Prospecting	Proof of no objection 26-08-2022-63	August 26, 2023	Proof of No objection	In effect
20	RB – II Prospecting	Proof of no objection 26-08-2022-64	August 26, 2023	Proof of No objection	In effect
21	HB - V Prospecting	Proof of no objection 26-08-2022-65	August 26, 2023	Proof of No objection	In effect
22	HB - VI Prospecting	Proof of no objection 26-08-2022-66	August 26, 2023	Proof of No objection	In effect
23	Bonanza II Prospecting	Proof of no objection 26-08-2022-53	August 26, 2023	Proof of No objection	In effect

#	Project	Code	Expiration	Type of Permit	Status
24	Bonanza Prospecting III	Proof of no objection 26-08-2022-54	August 26, 2023	Proof of No objection	In effect
25	Bonanza IV Prospecting	Proof of no objection 26-08-2022-55	August 26, 2023	Proof of No objection	In effect
26	Bonanza V Prospecting	Proof of no objection 26-08-2022-56	August 26, 2023	Proof of No objection	In effect
27	Prospecting VI Bonanza	Proof of no objection 26-08-2022-57	August 26, 2023	Proof of No objection	In effect
28	Rosita IV Prospecting	Proof of no objection 26-08-2022-58	August 26, 2023	Proof of No objection	In effect
29	Magdalena Prospecting	Proof of no objection 26-08-2022-70	August 26, 2023	Proof of No objection	In effect
30	Roca Larga Prospecting	Proof of no objection 26-08-2022-67	August 26, 2023	Proof of No objection	In effect
31	El Mayo Prospecting	Proof of no objection 26-08-2022-62	August 26, 2023	Proof of No objection	In effect
	TOTAL, EXPLORATION AND PROSPECTING PERMITS			31	

	New permit (2022)
	Renewed permit (2022)

20.2.2.2 Mining (Exploitation)

During 2022, four environmental permits and authorizations were renewed including:

- Environmental Authorizations: Portal Patricia 1300, Artisanal mining storage yards, Ventilation Duct and Elefante Fill Inlet - Raise Boring System.
- Environmental Permit: Pioneer Group Underground Exploitation Project.

Currently, Hemco has a total of 13 environmental permits and authorizations for mining, of which 11 are in effect and two are pending (Neblina open pit closure, Venus Foot Wall/Capitán Central, Norte and Sur open pit closure); and no expired permits. The permit list and details are presented in Table 20-6.

Table 20-6: Exploitation (Mining) Related Environmental Permits
Mineros S.A. – Hemco Property

	#	Project	Code	Expiration	Type of Permit	Status
SERENA -CRACCN	1	Panama Group Underground Mine	Environmental Authorization 06-15-06 Nov 2015	June 15, 2025	Update of the term of validity of the Environmental Authorization 011 of 2013, for the mining operations of the benefit plant, Concha Urrutia tailings dam, chemical laboratory, underground mine, maintenance workshops, warehouse, hydroelectric dams of the company HEMCO Nicaragua	In effect
	2		Environmental Authorization 25-05-2022-48	May 25, 2023	Renewal of environmental authorization for the Elephant Fill Ventilation and Inlet Duct Project, Raise Boring System	In effect
	3	Panama Group Underground Mine Portals and mining workings in Marta 850 and Atlas 650	Environmental Authorization 03-15-06 Nov 2015	June 15, 2025	Update to the Environmental Authorization for the development of portals and mining workings in Marta 850 and Atlas 650 and its annex the gallery called Pluto 851	In effect
	4	Panama Group Underground Mine Portal Patricia 1300	Environmental Authorization 20-12-2022-143	December 20, 2023	Renewal of the Environmental Authorization Portal XC Patricia 1300 Project	In effect
	5		Environmental Permit 22-12-2022-05	December 22, 2025	Renewal of Environmental Permit underground exploitation project - Pioneer Group	In effect
	6	Pioneer Group Underground Mine	Proof of No Objection 12-08-2021-31	--	No objection certificate for shaft construction by the Raise Boring method for ventilation in Pioneer UG mine sector	In effect
	7		DIGAM Land Use Permit - BZA	September 22, 2023	Special Plan for the Use of 11.4 K, design and assembly of substation in Pioneer Pit	In effect
	8	Pioneer Pit Group	Administrative Provision CRACCN 08-10-2019-1	October 8, 2024	Renewal of Environmental Permit for exploitation of Pioneer Group pits	In effect
	9		No objection guarantee	Indefinite	Modification to the EIA for Pioneer Pit to use the sterile and organic material generated during the development of the project for the closure of environmental liabilities inherited from old pits located in the concession and present within the area of direct influence	In effect

#	Project	Code	Expiration	Type of Permit	Status
10		Environmental Authorization No. 08-09-2022-119	September 8, 2022	Special Plan for the Use of 11.4 K, design and assembly of substation in Pioneer Pit	In effect
11	Neblina Open Pit	TDR request for the closure of the Neblina Pit	August 28, 2019 (Application)	Validation of preliminary activities - closing	In process
12	Open Pit Venus Footwall / Captain Central, Norte and Sur	Validation of preliminary activities closure - exploitation of material	Requested January 29, 2019	Validation of preliminary activities closure - exploitation of material	In process
13	Artisanal mining collection yards	Environmental Authorization 01-12-2022-139	December 1, 2023	Renewal of environmental authorization for the project operation of storage yards, truck parking and alternate access for artisanal mining ore haulage equipment in Marta 850 and Venus - Collection Yard 5 Expansion	In effect
	TOTAL, OPERATING PERMITS			13	

(yellow)	In process permit (2022)
(grey)	Renewed permit (2022)

20.2.2.3 Beneficiation (Milling)

During the year 2022, the environmental evaluation process of the VESMISA III Tailings Dam Project continued and the process of requesting an Environmental Permit for the Project Construction and operation of the Rosita - Bonanza Substation Electric Transmission Line began. Hemco currently has a total of 14 environmental permits and authorizations for processing, 11 are in effect and three are in process; there are no expired permits. A new Environmental Authorization was processed for the Tailings Transfer Project from the Vesmisa Plant to the Hemco Plant, and three Environmental Permits were renewed. The details are presented in Table 20-7.

Table 20-7: Beneficiation (Milling) Related Environmental Permits
Mineros S.A. – Hemco Property

	#	Project	Code	Expiration	Type of Permit	State
	1	Aguas Claras Tailings	Aguas Claras Tailings Closure Plan	November 1, 2018 (Terms of Reference delivery)	Terms of Reference awarded for dam closure	In process
	2	Concha Urrutia Tailings	Concha Urrútia Tailings closure plan	November 1, 2018 (TDR delivery)	Terms of Reference awarded for dam closure	In process
	3	Tailings San Jose	Environmental Permit 20-12-2022-04	December 20, 2025	Environmental Permit Renewal San José Tailings Dam Project	In effect
	4	Tailings Vesmisa II	Proof of No Objection 24-07-2020-30	--	Proof of no objection for the enhancement of the tailings dam Vesmisa II	In effect
	5		Environmental Permit 02-12-2022-03	December 2, 2025	Environmental Permit Renewal for Tailings storage with geotubes	In effect
	6		Environmental Authorization No. 01-12-2022-140	December 1, 2023	Project Transfer of pulp of Vesmisa Camp to Hemco Camp	In effect
SERENA - GRACCN	7	Tailings Vesmisa III (1A y II)	Vesmisa III Dam Environmental Permit (1A and II)	--	EIA review by of the Authorities	In process
	8	Hemco Equipment	Proof of No Objection 12-08-2022-32	--	Proof of no objection for the replacement of obsolete equipment in the grinding area of the Hemco camp	In effect
	9		Environmental Permit 21 - 12 - 2022 - 06	December 21, 2025	Environmental Permit Renewal	In effect
	10	Vesmisa Complex	Resolution 83-29-05-2009	Indefinite	EIA Vesmisa Campus Complex Approval	In effect
	11		Environmental Authorization 044 of 2009	Indefinite	Addendum to EIA Vesmisa, Tailings Dam	In effect
	12		Acceptance endorsement Vesmisa closure plan	Indefinite	Proof of acceptance of the closure plan of the Vesmisa I Dam and the start of activities is granted	In effect
	13	Equipment La Curva	Administrative Provision 24-07-2020-08	June 14, 2023	Environmental permit for Modular Beneficiation Plant and La Curva-Vesubio Tailings Dam	In effect

#	Project	Code	Expiration	Type of Permit	State
14	Management plan for lead oxide, lead acetate and lead nitrate (Qco Laboratory and Mill Complex).	Environmental Authorization 08-15-06-2015	June 15, 2025	Environmental Authorization Lead oxide handling, lead acetate and lead nitrate (Qco Laboratory and Mill Complex).	In effect
	TOTAL BENEFITIATION PERMITS			14	

	New permit (2022)
	Renewed permit (2022)
	In process permit

20.2.2.4 Supply Chain

Currently, the supply chain process has nine environmental authorizations, all of which are in force. During 2022, four environmental authorizations were renewed: domestic wastewater treatment plants, hydrocarbon management and fuel station, and proof of use of water to produce hydroelectric power by the Bonanza Mayor's Office as per Table 20-8 below.

Table 20-8: Supply Chain Environmental Permits from SERENA Mineros S.A. – Hemco Property

	#	Project	Code	Expiration	Type of Permit	Status
SERENA - GRACCN	1	Salto Grande and Siempre Viva Hydroelectric Facilities	Environmental Authorization 06-15-06 of 2015	June 15 Nov 2025	Update of the term of validity of the Environmental Authorization 011 of 2013, for the mining operations of the processing plant, Concha Urrutia tailings dam, chemical laboratory, underground mine, maintenance workshops, warehouse, hydroelectric dams of Hemco in Nicaragua	In effect
	2		Certificate for use of water to produce hydroelectric energy by the Mayor's Office Bonanza	2023	Renovation of CNO for the use and exploitation of water resources to produce hydroelectric energy through the three plants Siempre Viva and Salto Grande	In effect
	3	Reduction of Losses in 11.4 KV Vesubio, Bonanza, RACCN Transmission Line	Environmental Authorization 30-09-2022-125	September 30 Nov 2023	Environmental Authorization Special Forest Use Plan granted by SERENA to Hemco	In effect
	4	Rosita - Bonanza transmission line	Environmental Permit	TDR 18-01-2023	TDR issued for EIA preparation on 18 - 01 - 2023	In process

#	Project	Code	Expiration	Type of Permit	Status
5	Hydrocarbon management	Environmental Certificate 05-12-2017-15	Indefinite	Validation of closure plan and disposal of environmental liabilities 1,100 gallon fuel storage tank	In effect
6		Environmental Certificate 08-08-2019-43	Indefinite	Environmental Certificate for the use of a Distribution Cistern in Industrial Zones and surrounding projects	
7		Environmental Certificate 08-08-2019-44	Indefinite	Proof of environmental compliance for the use of a 400 gallon tank at the Pioneer Mine, within the granted capacity of 1,300 gallons	
8	Fuel Station	Environmental Authorization No. 30-11-2022-135	November 30 2022	Renewal Environmental Authorization Project Hydrocarbon Storage System with capacity of 55,383 gallons	In effect
9		Environmental Authorization 30-11-2022-136	November 30, 2022	Renewal Environmental Authorization for Hemco Fuel Station Project	In effect
10	Artisanal Miner Replacement Agreement	Administrative Provision 04-02-2019-02	Indefinite	Through which the implementation of the Strategic Alliances Model for forestry development with artisanal miners, indigenous communities and farm owners is validated by the Regional Government	In effect
11		Environmental Authorization 30-08-2021	Indefinite	Environmental Guarantee is granted by SERENA for the implementation of the model of strategic alliances for forestry development with artisanal miners, farm owners and indigenous communities	
12	Health Complex	Authorization 17-04-2020-55	April 17, 2031	The operating permit of the sanitary complex for the life of the project	In effect
13	Treatment System Domestic Wastewater	Environmental Authorization 31 - 08 - 2021-130	August 31, 2022	Renewal of the environmental authorization for the Hemco camp Domestic Wastewater Treatment System project	In effect
TOTAL SUPPLY CHAIN ENVIRONMENTAL PERMITS				**12**	

(light blue)	New permit (2022)
(grey)	Renewed permit (2022)
(yellow)	In process permit

20.2.2.5 Permits Water Use and Discharge National Water Authority

During the year 2022, the company processed with the ANA permits for the discharge of domestic water and the use of groundwater - surface water. Permits are currently valid for five years until 2027 (Table 20-9).

Table 20-9: Domestic Waste, Domestic and Industrial Water Use Permits from ANA
Mineros S.A. – Hemco Property

#	Description	Issuer	Holder	Code	Date	Status	Remarks
1	Domestic dumping	ANA	Hemco	RAE-ANA-DGRH-044-2022	February 22, 2022	In effect for 5 years	Renewed in November 2026
2	Concession title for groundwater use of 4 tunnels and use of surface water from 7 intakes	ANA	Hemco	RAE - ANA - DGRH -004 - 2022	January 12, 2022	In effect for 5 years	Renewed in November 2026
	TOTAL, USE AND DISPOSAL OF WATER PERMITS						**2**

New permit (2022)

20.2.2.6 Sanitary Licence for Drinking Water

The sanitary water licence is valid until 2023 with the Ministry of Health (Table 20-10).

Table 20-10: Sanitary and Drinking Water Licence
Mineros S.A. – Hemco Property

#	Description	Issuer	Holder	Code	Date	Validity	Expiration	Status
1	Sanitary Licence	MINSA	Hemco	Ls-18-9130-943	August 27, 2021	2 Years	August 27, 2023	In Effect
	TOTAL, SANITARY AND DRINKING WATER LICENCE							**1**

20.2.2.7 Compliance with Environmental Obligations

Exploration, Mining, Milling and Supply Chain

Hemco has provided copies of regulatory correspondence from SERENA confirming that Hemco has met its environmental obligations as related to its exploration, mining, milling, and supply chain activities.

Forest Harvesting Permits

Hemco currently has a total of 12 forest permits. Two of these were granted in 2022, and their environmental replacement (1/10) will be carried out in 2023. The plants associated with the environmental replacement of 10 of the 12 permits have been planted and are within four years of follow-up. A total of 309,750 native replacement plants have been planted to date. Permit details are provided in Table 20-11.

Table 20-11: Forest Harvesting Permits
Mineros S.A. – Hemco Property

#	Project	Type of Permit	Dossier	Code	Number of Trees	Date	Status	Number of Replacement Trees	Status of Replacement Planting
1	San Jose Stage 2. Section 2	Special Use Permit	1601-PE-18-003	J000001 2812	7,391	August 15, 2018	Awarded	73,910	Complete
2	San Jose Stage 2. Section 1	Special Use Permit	1601-PE-18-002	J000001 2647	8,153	May 10, 2018	Awarded	81,530	Complete
3	Pioneer Pit	Special Use Permit	1601-PE-18-001	J000001 2522	8,158	February 27, 2018	Awarded	81,580	Complete
4	Underground Pioneer (Portal)	Special Use Permit	1601-PE-17-004	J000001 2386	1,023	December 13, 2017	Awarded	10,230	Complete
5	Vesmisa 2 (tailings area)	Special Use Permit	1601-PE-2017-001	J00000-12021	599	May 16, 2017	Awarded	5,990	Complete
6	Aguas Claras Tailings Dam	Special Use Permit	1601-PE-12017-001	J000001 1917	351	January 17, 2017	Awarded	3,510	Complete
7	Central Neblina Pit	Special Use Permit	1601-PE-2015-001	00000-11598	571	November 25, 2015	Awarded	5,710	Complete
8	San José Tailings Dam Stage 1. Section 2	Special Use Permit	1601-PE-2014-001	J000001 1006	2,831	December 10, 2014	Awarded	28,310	Complete
9	Capitán Central, Norte and Sur Pits	Special Use Permit	CAPTAIN'S CUT	CA TAJO CAPITÁ N	167	August 4, 2014	Awarded	1,670	Complete
10	San José Tailings Dam Stage 1. Section 1	Special Use Permit	1601-PE-2013-001	J000001 0279	1,731	July 31, 2013	Awarded	17,310	Complete
11	Marta 850 and Venus Collection Yard 5	Special Use Permit	1601-PE-22-002	J000001 5083	78	July 22, 2022	Awarded	785	Complete
12	Pioneer Rise Boring	Special Use Permit	1601-PE-22-003	J000001 5247	140	November 24, 2022	Awarded	1,400	IN PROCESS
	TOTAL FOREST HARVESTING PERMITS						**12**		

New permit (2022)

20.2.3 Porvenir Project

Environmental management will be carried out in accordance with existing Hemco Corporate EMPs. If any new requirements are identified as the project evolves, additional EMPs would be developed as appropriate.

Activities to date have been carried out under an exploration permit. Applications for construction, mining, milling, and other project related permits will be made after the project moves through the environmental assessment process and as feasibility and engineering designs allow. Note that a prior application for environmental assessment was withdrawn due to revisions to the Project Plan.

20.3 Mining, Milling, Tailings

20.3.1.1 Surface Mines and Waste Rock Dumps (Capitan, Elefante, and Washington)

The Capitan, Elefante, and Washington exploitation areas are essentially exhausted and in various stages of decommissioning. In general, pit walls and waste rock dumps have been, and are being prepared for reclamation (stabilization, covers, and seeding) and closure in accordance with the approved closure plans for these areas. Further information regarding the status of individual areas is provided below.

20.3.1.2 Elefante Pit

During 2017, 2018, and 2019, the Elefante Pit was closed. The material used for the closure of this mining pit came from the Neblina Pit project. The total volume of material used for the closure was 258,160 m^3. During 2020, activities included site earthworks and soil compaction, maintenance to surface water management and runoff systems, and monitoring of water quality.

During 2022, activities continued including maintenance on surface water management and runoff systems, and monitoring of water quality.

20.3.1.3 Washington Pit

During 2017, the Washington Pit was closed. The material used for the closure of this pit was from the Neblina Pit project. The total volume of material used for closure was 185,116 m^3.

During 2022, activities were limited to site monitoring as no physical or maintenance works were required.

20.3.1.4 Capitan Pit

The Capitan Pit is composed of three subareas: North, Central, and South. During 2017, 2018, and 2019, closure activities in these areas were as follows.

- Capitan North Pit - during the year 2018, the closure process began in the Capitan North Pit, the material used to close the pit came from the San José Tailings Dam Expansion project. At the end of 2018, approximately 90% of reclamation had been completed and the remainder was completed in 2019. The total volume of material used for the closure was 76,370 m^3.
- Capitan Central Pit - the pit was closed in 2014 as one of the first stages of reclamation and is now in a closed and revegetated state.
- Capitan South Pit - A preliminary closure of the zone began in 2018 at the south side to stabilize slopes. During 2019, the closure works continued including monitoring activities to ensure sediment controls are in place to mitigate the release of solids during earthworks and preventing the generation of acidic rock drainages. In 2022, maintenance activities were carried out on site water drainage and treatment systems as well as continued water monitoring.

The closure activities described above are designed to mitigate the production of acid drainages by reducing exposure and oxidation of sulphide minerals and limiting the flushing of oxidation products. The results of the monitoring to date have shown the stabilization of the pH downstream of each project after closure.

20.3.1.5 Hemco Plant

20.3.1.5.1 Hemco Plant and Facilities

The Hemco mine, milling, and industrial facilities are located in the western portion of the town of Bonanza within RACCN of northeastern Nicaragua, Central America. The facilities include the mine, processing plant, administration, and support buildings and related infrastructure including chemical laboratory, mine portal facilities, ore storage and laydown areas, maintenance workshops, storage yards and storage facilities, mine cafeteria and recreational facility, and worker and guest housing complexes. It is noted that pursuant to a March 2022 ISO 14001 Audit, Hemco operations are ISO 14001 and ISO 45001 certified.

Mineros expanded plant capacity and in 2017 submitted an EIA entitled "Expansion of Hemco Plant Capacity from 1,200 to 1,750 tpd ("*Ampliación Capacidad Instalada Plantel Hemco De 1200 a 1750 Tpd, Hemco Bonanza – RACCN, Nicaragua, Enero De 2017*") in support of this expansion program.

The Hemco Plant site complex includes all the necessary support facilities required for the mining and milling operation. During the June 2017 site visit, SLR observed that these facilities were in reasonable condition and operations were generally in accordance with reasonable standards of practice, e.g., solid and hazardous waste management, storage handling and disposal of reagents, chemicals, oils, and lubricants.

SLR noted, however, that many of the plant site facilities and practices are dated and could be modernized and improved, in particular, cyanide handling in the mill. For example, within the mill, much of the cyanide handling and mixing is done manually. At the time of the 2017 site visit, with the exception of a few buildings with septic fields, much of the sewage effluent was released untreated into local drainages on the east and west side of the property, that then flow to the stream that passes through the town. In 2018, the first stage of a new sewage collection and treatment system was installed; the second stage was planned for and completed in 2019.

Since 2020, major project plant site initiatives and activities to modernize various aspects of the operation included:

<u>Construction Activities</u>

a) Construction of the new Fuel Station in compliance with current regulations regarding fuel management and supporting best practices and safe infrastructure.
b) Construction of a new chemical analytical laboratory complete with all necessary environmental and health and safety systems as needed for the treatment of acid gases and particulate matter.
c) Raising of the Vesmisa II Tailings Dam by means of a five metres in gabion wall that allows the dam to operate up to elevation 262 MASL. The engineering of the project was carried out by S&R Ingeniería and endorsed by the authorities through the Certificate of Non-Objection 24-07-2020-30.

<u>Engineering Activities</u>

a) Engineering for the San José Detoxification System Expansion project started in 2020 to significantly increase the capacity of the existing system and to provide state-of-the-art automated instrumentation and controls to optimize plant performance and ensure compliance with environmental regulations and discharge limits. In 2021 the project started site works and procurement of plant and equipment. Construction of the plant continued in 2022 and it is expected that the plant will be in operation by August 2023.

b) The Casting Furnaces project was created in 2020 with the objective of improvements to the system through safety enhancements and automated collection and treatment of gases. Engineering began in 2021.

c) Engineering development to increase the capacity of the Hemco Plant and the San José tailing dam.

Assessment Activities

a) The assessment of the potential application of the CN Code was initiated in 2020. Through this initial diagnosis, which was carried out in 2021, Hemco assessed the requirements of the various aspects of the Cyanide Code as related to the shipping, storage and use of cyanide at the Hemco, La Curva, and Vesmisa facilities. In 2022, Hemco continued to assess potential improvements to cyanide management at its operations. Hemco notes that full Cyanide Code Certification may not be possible as the Nicaragua Port Facility is not compliant with Code requirements.

Additional discussion on these major projects is provided in the following subsections.

20.3.1.5.2 New Analytical Laboratory

The new chemical analytical laboratory project consisted of the design and construction of civil, mechanical and electrical works, and the installation of equipment to create a facility that can carry out 800 fire assays and 450 chemical solution tests per day in two eight-hour shifts. The project will improve working conditions for the staff and provide state of the art environmental controls for the management of gaseous emissions, solid waste, and dust.

This project began its planning in 2017 and was put into execution in the same year. In 2018, the project was put on standby due to the public order situation that Nicaragua was going through, which prevented the continuous execution of the project. At the end of 2019, the project was reactivated, and construction began in mid-2020. In 2021, construction was completed and the facility was commissioned.

The laboratory has state-of-the-art furnaces, environmental control and dust control systems, fire network system, autogenous generation plant, fingerprint access controls and licence, among others. The main objective of the project is to increase the reliability of the laboratory process with technical improvements and infrastructure under international standards.

20.3.1.5.3 Sewage Treatment Improvements

During 2018, a plan was developed to treat domestic and sewage waters at the Hemco Plant complex. The Domestic Residual Water Treatment of Hemco Camp Project plan is designed to treat domestic wastewater and sewage from approximately 570 personnel on site. The system consists of a grease trap, an activated sludge system, a disinfection system, and drying beds. The sewage treatment plant was designed to replace the existing treatment systems and eliminate the release of raw sewage from the site. Initially, the plan included three plants, however, during 2019, adjustments were made to the connections to optimize resources and treat domestic wastewater only in two treatment plants. The first plant was built in 2018 and the second was constructed in 2019 becoming operational in 2020.

The first priority phase of the Hemco Property which was to service areas not previously serviced or where the system was in poor condition was completed in 2018. The first treatment plant started operations in August 2018, and 3,090 m^3 were treated during the five months of operation. In 2019, the second plant was built and 8,496 m^3 were treated in the year.

Due to a variety of reasons, the treatment plants had occasional discharges that did not comply with regulatory limits during the early periods of operation.

For isolated locations in the Hemco Plant industrial area, portable toilets, or fixed sanitary systems with eco-digesters are currently in use. At present, internal control monitoring is carried out daily, and external laboratory monitoring is carried out every six months.

In 2020, additional improvements were made to the existing new sewage treatment system including the addition of a dedicated backup power system and the construction of sludge drying beds. In addition, the domestic wastewater treatment plant, located in Sector I, started operations, ensuring that all domestic water discharges in the Hemco facility meet the permissible limits of current regulations.

In 2022, the sewage treatment plants treated a total of 10,842m^3. The current parameters of plant operation are summarized in Table 20-12.

Table 20-12: Design Basis Parameters
Mineros S.A. – Hemco Property

Parameters	Sector I	Sector II
Number of Inhabitants (Persons)	189	399
Flow Rate per Person (litres per day - average)	37.50	59.14
Daily capacity (m^3/d)	7.25	23.6
Maximum Hourly Capacity (m^3/h)	0.96	2.97

At the time of the 2021 site visit, SLR noted that the system has been operating effectively and in accordance with regulatory requirements. There was no change in design or status of operations in 2022.

20.3.1.5.4 Hemco Plant Tailings Areas (Concha Urrutia, Aguas Claras, San José)

Prior to 1995, tailings from the Hemco Plant were released without treatment to the environment into the Tunki River, locally known as the Rio Sucio. In 1995, this practice was stopped as tailings facilities were designed and constructed. The following is a summary of the past and present tailings systems.

- Concha Urrutia, the original tailings basin, was built in 1995 and contains approximately 2.25 Mt of tailings. It is in the first stage of closure and no longer in active use for tailings storage, as per the SERENA approved 2010 closure plan.
  - At present, Concha Urrútia is totally isolated from the tailings system and in 2018 equipment dismantling and monitoring activities were started. In 2019, the final closure plan was submitted and approved, and final closure works are expected to occur during the summer periods of 2020 and 2021. During 2020 and 2021, activities included ongoing monitoring of the facilities, rainwater management works, and surface and underground water monitoring.
- The Aguas Claras tailings basin was built in 2010, with a design storage of approximately 1.4 Mt of tailings for a design life of 4.5 years. While essentially full, it still had limited capacity for use

under emergency conditions until a second tailings pipeline was constructed from the Hemco Plant to the San José tailings area. Since installation of the second tailings line to San José in 2018, all tailings lines have been removed and work is underway to assess final closure needs.

- After the construction of a second tailings line to the new San José tailings basin was completed in 2018, the process of decommissioning the Aguas Claras tailings facilities was initiated. Mineros has suggested to authorities that the site itself could be preserved as a community water reservoir for future use, including possible use as a contingency water supply source during summers to support community needs or for emergency use in case of fires. In 2019, all the studies requested for the development of this proposal were underway. In 2019, the authorities accepted use of the dam for community water storage for a period of five years, after which the final closure plan must be presented.
- The new San José tailings dam is a state-of-the-art tailings facility that started to receive tailings in 2018. The San José facility is located approximately 3.3 km northeast of the Hemco Plant site and has a design capacity of approximately 27.5 Mt of tailings for a design life of more than 50 years. The facility consists of engineered lined ponds, complete with underdrains and seepage collection systems and testing. A recycle pond piping system is used to pump excess water back to the mill for mill use or cyanide destruction when water discharge is needed during the rainy season (approximately seven-month period).
- The tailings facility is designed to be constructed in a series of lifts as follows:
  - Stage I Lift 210 m to Elevation 235 m
  - Stage II Planned Lift to Elevation 255 m
  - Stage III Planned lift to Elevation 275 m
- To the end of 2022, 3,442,924 m^3 of tailings have been placed and the water level elevation was 238.5 MASL. Remaining Stage I capacity is 413,833 m^3 allowing for ongoing discharge to the San José tailings dam for 620 days at current milling rate. Construction on next lift is planned to begin in June/July of 2024 and will add approximately seven years of capacity.

In 2021, Hemco initiated a tailings dam hazard assessment study for the Concha Urrutia, Aguas Claras, and Vesmisa I tailings dams through contracts with ANDDES Associates SAC, a Peruvian consultant firm. The scope of the work included a tailings dam failure analysis, an emergency response plan, and a design report to establish the civil, hydraulic and geotechnical design criteria for the closure of these tailings facilities. In 2022, Hemco received draft copies of these plans and they are undergoing review.

20.3.1.5.5 Hemco Plant Tailings Line

Tailings from the Hemco Plant are presently pumped to the new San José tailings site via a 3.8 km long slurry pipeline. Approximately 2,200 m of the line is installed in the underground drifts and approximately 1,600 m on surface. During site visits, SLR observed that most of the surface pipeline had no secondary containment and minimal protection against surface accidents. The high-pressure portion of the pipeline (approximately 1,000 m) is constructed using six-inch diameter rubber lined steel pipe, while the remainder of the pipeline is constructed using five-inch diameter HDPE pipe. The tailings are pumped using a positive displacement pump at a pressure of approximately 320 psi. The pipe is inspected and monitored on a continuous basis. In the event of a spill, the pump will be shut off automatically by an instrumentation control system that is triggered by variations in flow and/or pipeline pressure. Plant operators and the tailings line will drain to either the tailings or plant site areas.

At the time of SLR's 2017 site visit, the HDPE tailings pipeline to the Aguas Claras was functional and could be used to convey tailings to that facility if needed on an emergency basis. Free water overflow from the basin drains by HDPE pipe to the Concha Urrutia water pond from where it can be pumped via HDPE pipe back to the Hemco Plant site for use as process water. At that time there was a connection between Aguas Claras and the Hemco Plant, but Concha Urrútia was isolated and in the process of closure, according to terms of reference by the authorities.

In 2018, a second tailings line was installed from the plant to the San José tailings basin. The addition of this second line allows for the routine and regular care and maintenance of each of the lines and provides for emergency responses if failure occurs on one of the lines.

Given the addition of the second line to San José, all former tailings and recycle lines to Concha Urrutia and Aguas Claras could then be decommissioned and removed. During 2019, the tailings lines were removed with the exception of one standby makeup water line from Aguas Claras to the plant.

20.3.1.5.6 Excess Tailings Water Treatment Plant

Tailings supernatant is recycled to the process plant by means of recycle pump and HDPE pipeline. During high rainfall periods, it may be necessary to discharge part of the recycle flow (i.e., excess water discharge). In these circumstances, water is discharged after it has been treated in a multi-stage cyanide destruction plant so that the discharge complies with the current Nicaraguan regulations (Decree 21 of 2017). To ensure compliance, daily monitoring of total cyanide and free cyanide is carried out with specialized equipment and verified through sampling programs using certified laboratories.

During 2021, approximately 502,605 m^3 of tailings solution was recirculated from the San José tailings facility for reuse in the Hemco Plant. In addition, during the winter season (July – October) approximately 529,003 m^3 of excess water was treated and discharged.

In 2022, 694,595 m^3 of tailings solution was recirculated from the San José tailing facility and 97,090 m^3 was recirculated from the Vesmisa tailing facility. Approximately 270,011 m^3 of excess water was treated and discharged from the San José tailings facility and 72,361 m^3 of excess water was treated and discharged from the Vesmisa tailings facility. respectively were treated and discharged from the San Jose and Vesmisa tailings storage facilities.

The detoxification expansion project began in the first quarter of 2020, in keeping with the need to treat more precipitation water that will result from the increased surface area of the San José tailings basin due to construction of the second stage of the dam. The expanded area will require the management of significantly more excess surface water during the wet season. The expansion project will have a treatment processing capacity of 300 m^3/h. Conceptual engineering was initiated in 2020 and included include basic and detailed engineering, equipment specification and purchases. Construction was initiated in 2021 with general earthworks and excavations to establish yard grading for foundations, slabs, and laydown areas. The construction of the detoxification expansion project was continued through out 2022.

20.3.1.5.7 Treatment and Recirculation of Underground Water

During 2018, Mineros carried out a project for the treatment and recirculation of underground mine water. The objective was to allow for reuse of mine water, to reduce the quantity of underground water to be discharged on surface, while complying with water quality discharge limits for the operation. In particular, the Hemco Property addresses the need to treat acid waters, and the retention of sediments and hydrocarbons.

The acid water treatment system was installed at the Neptuno 1275 portal and includes lime addition to a series of three agitator tanks to increase the pH of mine waters. The tanks have a total storage capacity of 584 m^3, with capacities of 193.09 m^3, 195.8 m^3, and 195.8 m^3 respectively. The solution flows by gravity decant through the system with lime slurry dosing and agitation mixing to ensure the acid water complies with the limits according to Decree 21 of 2017 (pH: 6 to 9).

After treatment the water is recirculated back to the mine to be used in operation. Weekly internal pH monitoring is carried out to ensure treatment effectiveness, and monitoring is conducted every six months through a certified laboratory ensuring compliance with regulations. During 2021, approximately 402,230 m^3 of underground water was handled by the system. During 2022, approximately 290,175 m^3 of underground water was handled by the system.

During the 2021 site visit, Hemco staff stated that they are considering concepts to replace the existing system with updated facilities to improve operational control and energy efficiency in future years. In 2022, no changes were made to the design or operation of the system but a project is being developed to improve the treatment efficiency.

20.3.1.5.8 La Curva Plant and Tailings Area

La Curva Plant is a 110 tpd modular plant and tailings area. Its primary purpose is to recover gold through a combination of flotation and gravity separation from the sulphur-bearing material supplied by artisanal miners. Mineros uses modern milling technologies to improve the recovery of gold, which benefits the artisanal miners who rely on the La Curva Plant, as well as the Hemco Property. This approach is a positive socio-environmental cooperative approach to integrating local artisanal and small-scale mining in the area with Mineros, and provides a significant reduction in environmental impacts from the mineral processing conventionally used by small-scale and artisanal miners.

The modular plant serves as regional milling centre for the Porvenir district. The La Curva location was selected due to its strategic socio-economic environmental location. The growth in the surrounding communities and its proximity to the areas of artisanal and small-scale mining and extraction activities reduces transportation distances, as well as the use of mercury in the region.

Ore extracted by artisanal and small-scale miners in the district is transported in ten ton haul trucks to the plant site laydown area where it is sampled and assayed prior to processing in the modular plant. The modular plant components include a two-stage grinding circuit combined with gravimetric concentration and flotation systems. The concentrates are transferred to the Hemco Plant for further processing by direct cyanidation.

Plant tailings are deposited in a local temporary tailings area. The dried tailings are subsequently excavated and transported to the Hemco Plant for reprocessing and final disposition in the San José tailings area.

La Curva Plant was developed in compliance with the Nicaraguan legal framework for environmental and labour regulations and standards. The Environmental Impact Statement (EIS) “Construction of La Curva-Vesubio Modular Beneficiation Plant and Dam” (Projecto “Planta Modular de Beneficio y Presa de Colas La Curva – Vesubio”, Bonanza, Región Autónoma del Atlantico Norte, 2012) summarizes all relevant project information.

20.3.1.5.9 Vesmisa Plant and Tailings Areas

The Vesmisa Plant facility is located in the High Land Mary community of the municipality of Bonanza, which is approximately five kilometres southwest from the town centre. The plant is a conventionally constructed facility (i.e., not modular) which operates at approximately 140 tpd. The main process stages are crushing, milling, leaching, filtration, precipitation, smelting, and tailings management. The tailings generated in the last stage of the process are either a pulp with 50% solids and 50% of moisture, which is filtered to obtain a solid material with between 18% and 25% moisture, or between 75% and 82% solid in pulp. The filtered tailings are managed by means of a tailings pumping system consisting of one repulp tank where the filtered tailings are mixed to 30% of solids with recirculated solution from the tailings dam, one pulp pump, and one 550 m long 3" HDPE pipeline that discharges into the current Vesmisa II tailings dam.

The Vesmisa Plant uses a Merrill-Crowe cyanide gold recovery process, with bulk cyanide storage located at the main Hemco site cyanide storage facility. Cyanide required at Vesmisa is brought from the main Hemco storage facility in one ton bag boxes as needed based on plant consumption. Plant consumption typically is in the order of one ton per eight hour shift. Cyanide is stored at Vesmisa in a small wooden locked shed. All areas where cyanide is stored, handled, and used are placarded with controlled access to reduce health and safety risks.

In 2017, the existing tailings facility was nearing its design life capacity, and a new tailings area was in the process of being developed by Mineros. The environmental aspects of this tailings expansion are assessed in the document entitled "Environmental Impact Study, Construction of the Vesmisa Tailings Treatment System, dated January 2017”. The EIS identified the benefits and risks and concluded that the potential negative physical environment, biological, human interest, and health impacts of the project were moderate and could be mitigated or avoided, with the implementation of appropriate environmental prevention measures and/or controls. The socio-economic and environmental benefits of supporting artisanal and small-scale industrial mining, in addition to the associated reduction of environmental impacts including the reduction of mercury, were significant positive contributions to the region.

In April 2018, the new Vesmisa tailings dam started operation. The dam is an engineered synthetic lined impervious system basin receiving and recycling tailings supernatant through HDPE piping system. The capacity of the dam is 125,000 m^3 and it had a lifetime of 3.3 years to 2021.

During 2019, closure works including regrading, stabilization, and vegetation of the downstream slope as well as the placement of a cover over the tailings surface were carried out at the Vesmisa I tailings facility. After completion of the works, the area was converted into a storage yard for artisanal miners. The closure works were reviewed and approved by the competent authorities and complied with required stability standards.

In 2020, the capacity of the Vesmisa II Tailings Dam, was expanded through the construction of concrete and gabion wall of up to five metre height that raised the crest elevation from 257m to 262 m. This allowed for an additional 1.5 years of tailings deposition in the facility. The engineering of this project was carried out by the company S&R Ingeniería and endorsed by the authorities through the Certificate of Non-Objection 24-07-2020-30. At the end of 2022, the facility was near capacity. The water level in VEMISA II was at 261.5 MASL and remaining tailings storage capacity was 193,013 m^3 allowing for 546 days of discharge at the current plant production rate into the facility. Hemco has the necessary environmental permits for the VESMISA III (1A) project and is planning to start discharge of tailings into the VESMISA III (1A) tailings facility between October and December of 2023.

20.3.1.5.10 Pioneer Mine Portal

Project development began in 2018 with preparation, development, and construction of local support surface works. The construction was completed in 2019. In 2020 and 2021, the Pioneer Mine continued to be developed and is producing between 100 tpd to 150 tpd depending on mineral development activities. Surface facilities are small, compact, well designed, neat, and clean and include appropriate environmental controls for collections of oils and greases at the storage, repair, and wash facility. Runoff from the site and underground mine is monitored downgradient from the portal. Plans are being developed to expand sediment controls for underground waters through the construction of a new sediment pond near the portal entrance. During 2022, no environmental issues were recorded in association with Pioneer mining activities.

20.3.2 Porvenir Project

The Porvenir Project is located approximately 14 km to the southwest of the town of Bonanza and the Hemco Panama Mine and Plant in the district of Vesubio. Vesubio has a population of 1,653 people living in 250 houses, while the community of El Limón registers 528 people, 10 families, and 80 houses. The main economic activity of Vesubio is artisanal mining, which takes place mainly in the buffer zone of the Bosawás Biosphere Reserve. The next most important activities are small-scale mining activities (mills to process brush with the use of mercury), trading, and subsistence agriculture.

The project has a relatively small surface footprint with surface disturbances associated with the beneficiation facility, the tailings storage facility, three quarries to supply material, a dump, storage yards, internal roads, and infrastructure. The Porvenir underground mine will have two mine portals, ventilation shafts, surface storage yards, and auxiliary facilities. The utilities include a freshwater pipeline from a collection point on the Waspanona River or El Limón River. Electrical power will be obtained from the proposed Rosita-Bonanza-Porvenir transmission line.

Project concepts and designs as developed to date are generally in keeping with good industry practices, regulatory expectations, and local and international environmental guidance frameworks. In this respect, SLR notes that:

- Water use and discharge will be minimized through recycling of process water. Any waters discharged to the environment will be treated prior to discharge.
- Cyanide destruction will be carried out at the mill prior to discharge of tailings slurry to the TSF. This is best practice.
- The TSF is located in close proximity to the mill thus reducing length of surface pipelines.
- The TSF will be constructed as an engineered lined facility, with underdrains and surface water diversion channels. This is best practice.
- The TSF containment dams will be lined earthen dams built in three stages using downstream construction techniques. This is best practice.
- Process water will be returned to the mill for reuse in gold recovery circuits.
- Mine development rock will be reused as backfill during mining, and as such, surface waste rock storage requirements will be minimized and will not present material challenges to mitigate potential environmental concerns.
- Clean water diversion and contact water collection systems will be constructed to minimize impacts to surface waters.

- Closure of the facilities should be relatively straightforward.

SLR's review of the proposed Porvenir underground mine and mill project did not find any environmental or social fatal flaws. Review of engineering concepts and designs, to the extent that they are developed, found that they are generally reasonable and appropriate to minimize impacts on the environment for the nature and setting of the proposed operation.

It is noted that the mine and mill sites are located in areas already disturbed by artisanal and small-scale mining. This limits the extent of new disturbance by the project while also ensuring that the previously disturbed areas are reclaimed and made safe.

Environmental and social corporate commitments for the development of the project are in keeping with existing Hemco policies and practices and should result in improvements to the local "brownfield" environment which has been impacted by many years of artisanal and small-scale mining activities.

20.4 Power Generation

20.4.1 Siempre Viva Reservoir and Power Hydroelectric Plant

The Siempre Viva reservoir and power plant were constructed in the mid-1940s. The construction of the dam and reservoir has resulted in the creation of a relatively large lake in the southwestern portion of the Porvenir district of the Bonanza concession. The lake has a water depth of 30 m under normal conditions, however, at the time of SLR's site visit 2017, water levels were low with a depth of only 18 m. Water from the reservoir is directed through an open channel and intake pipeline to the Siempre Viva power plant which contains one relatively new 2,400 kW turbine built in 2011, as well as two older 500 kW turbines which have been in use since the 1950s when the plant was constructed at its current location. At the time of SLR's site visit, the plant and site conditions were neat and clean with only the 2,400 kW generator being in operation due to the low water level.

From site observations of the general local topography, and the specific contours at the dam site, it appears that additional storage capacity could easily be added by raising or replacing the existing dam. An EIS would be required to assess potential impacts. Initial observations indicate that any impacts would appear to be manageable.

During 2020, the Company initiated a project to analyze the capacity of the Siempre Viva and Salto Grande reservoirs. Currently, this project is in planning and development stage.

20.4.2 Salto Grande Reservoir and Power Hydroelectric Plant

The Salto Grande hydroelectric power plant was constructed in 1940 at a location about seven kilometres northwest of the Hemco Plant complex. The reservoir is just north of the Bonanza airstrip and was created by construction of a small dam at the north end of the reservoir. An intake structure draws water into a 200 m long tunnel through the hillside to the north and connecting it to the penstock feeder pipes for the three turbines, two 600 MW units and one 800 MW unit. Recent plant additions include new motor controls in 2010 and new transformers in 2011 and 2016. The plant and site conditions were tidy and clean.

At the time of the 2017 site visit, the water level in the reservoir was low at 4.1 m compared to a normal water level of 5.9 m. Due to low reservoir water levels, a portion of the historical creek bed was dry for approximately 600 m between the location of the intake tunnel and the point where the power plant discharge intersected the original creek bed. Given the age of the plant, this condition has likely occurred regularly over the years during the dry season.

During 2020, Hurricanes Eta and Iota caused damage to the system resulting in the need to replace 80 m of conveyance piping and related facilities, the restoration of a warehouse in a diesel generation plant, and the design and construction of stabilization work for the Salto Grande powerhouse. The work commenced in December 2020 and was completed in mid-May 2021. No changes were made in 2022.

20.4.3 Cesar Richard Diesel Power Plant

In addition to its hydroelectric facilities, Mineros also operates a diesel power generation plant within the community of Bonanza. During the 2017 visit, SLR noted that the plant had two 700 kW diesel generators that operate during the dry seasons to supply 1.4 MW of power to the operation. The facility was rather dated and requires upgrading to meet modern worker occupational standards. Each of the generators consumes approximately 110 gallons per hour, resulting in power costs higher than hydroelectric or government grid power costs. The power plant is nonetheless required during the dry season from January to June when hydroelectric power production from Siempre Viva and Salto Grande is only approximately 2.5 MW compared to the Hemco operational demand of 5.1 MW. Power purchases are capped at 1.2 MW from the national grid.

Starting at the end of 2019, Hemco initiated a project to create a new diesel-powered power generation plant with a capacity of 2.3 MW to improve operational efficiency and reduce fuel consumption. The project began with the acquisition and subsequent manufacture of main equipment in China and Germany. During 2020, civil works were carried out for the expansion of the existing main building and a new substation. Logistics for the transfer of equipment was carried out in parallel to the integration engineering for the project area concluding with the installation of all equipment and auxiliary systems in June 2021. The expanded facilities centralize diesel operations, improving yields in fuel consumption and plant efficiency, and increases available diesel power generation by 34% from 6,700 kW to 9,000 kW.

20.4.4 Rosita Electrical Transmission Line

The Rosita transmission line project started in 2019 driven by the projected increased energy requirements and the objective to decrease power operating costs and environmental impacts. However, socio-political issues delayed permits issuance that year and the project was put on standby.

In 2021, after validating the re-activation of works with the government, communication was established with the MEM and a supply agreement of 10 MW at 24.9 kV was reached. This made it possible to reactivate the Rosita Transmission Line project, which includes a connection to the national grid at Rosita, a 30 km transmission line, and a substation in Bonanza. The project was in the engineering and planning phase in 2021 and 2022. The EIA for the project will be submitted for review in 2023, with the expectation that subject to no issues with approval, the line will be in place by 2025.

20.4.5 Energy Management, Reduction and Sustainability

As part of its sustainability initiatives, Mineros monitors and manages supply and demand. The company has extensive landholdings surrounding its hydroelectric plants which, in addition to providing hydrological basin source security, also provide biodiversity protection in the region. Energy consumption was reduced by 5% in 2019 as a result of a variety of initiatives including high efficiency lighting and equipment replacements, photocell lighting controls, and corporate wide implementation of energy saving policy. A total of 46,465,198.89 kW/h was consumed by Hemco in 2019.

In 2020, a total of 50,080,081 kW/h was consumed, which corresponds to an increase of 7.8% in energy consumption. SLR notes that the 2020 energy consumption increase relates to new projects and the expansion of many of the existing facilities, some of which include: collection yards at Hemco and Vesmisa Plant complexes, the domestic wastewater treatment plant, development and operation of the Pioneer and Marta 850 mine, in addition to the expansion of crushing plant at Hemco campus, which increased energy consumption from 1.2 kW/h to 1.9 kW/h. These operational energy requirements were supplemented mainly with diesel energy.

In 2022, Hemco continued to look for opportunities to ensure a sustainable supply of energy in the future with the focus on clean energy. The use of the renewable energy increased in 2022 by 7% (From 50% in 2021 to 57% in 2022). In addition, the use of diesel energy was reduced by 34% and electricity use increased by 83%.

20.5 Corporate Social Responsibility

Hemco has a comprehensive and effective Corporate Social Responsibility (CSR) Plan and various subsidiary strategic plans (e.g., the Plan for Urban Development and Development's (PODU), the Bonanza Model, Ordnance Plan for Artisanal Mining (PODMA), etc.), Policies and Procedures that encompass all aspects of corporate governance in regard to federal, regional and local interactions and initiatives with the full range of stakeholders including: individual inhabitants; rural and urban communities; individual, small-scale, and collective artisanal miners; regional and federal institutions and services. Hemco (and Mineros) develops and monitors strategic and annual plans and has a proven record of positive contribution and enhancements. Reporting on the performance of Hemco's social and environmental programs is carried out at various levels including Hemco Quarterly CSR reports, Annual Sustainability Reports, and through Global Reporting Initiative Index reports.

The following subsections provide insight into recent community initiatives.

20.5.1 Bonanza Community Initiatives

Hemco has a strong record of community engagement and support to activities and projects that provide beneficial and sustainable contributions to individual and community well-being. Hemco is cognizant of its setting and position both locally and within the broader region in which it carries out its activities. As a result, systems are in place to communicate with the community at all levels to ensure that community needs and desires are understood and to establish appropriate frameworks for the provision of enabling frameworks and support to specific projects on a priority and long term basis.

Hemco's objective is to comply with social commitments in a responsible manner and contribute to the sustainable growth of communities in the area of influence, through social programs and synergies that guarantee the development of the region. Hemco's community relations are distinguished by supporting municipal development programs with a focus on education, health care, culture, sport, citizen security, urban planning, rural development, indigenous communities, diversification, and support to biodiversity and the environment. In 2022, Hemco spent approximately US$1.3 million on CSR activities as summarized below.

20.5.1.1 Education

The Bonanza Municipal Library project is part of a program that consists of several educational projects, under which Hemco has been working to support the municipal library, promoting reading and research, since 2015.

Hemco supports the operation of the Child Development Center (CDI), Cristina Rugama of the city of Bonanza, for infants in their early stages of cognitive development, as a social service to mothers and fathers of working families, including care, protection, feeding, and teaching preschool programs. This is recognized by the Ministry of Education and is part of the comprehensive education of the children residing in the municipality.

Support for cultural development includes the construction of the Municipal Auditorium, a project that began in 2022 and is underway, articulated to the cultural and recreational development of the municipality with ideal spaces for local art and culture.

Hemco provides support to the local music school; a music teacher was hired in 2021 to teach musical instruments to children and young people from the city and communities.

Hemco provided support for the construction of two modules at Higher Education BICU University (Bluefields Indian and Caribbean University), a community university that provides special education (Electromechanics), and covered the cost of a professor in electromechanics. The graduates could be opting for job opportunities with the company. Project construction started in 2019 and was completed in 2022. The education program was inaugurated in 2023.

20.5.1.2 Health Care

Permanent support is provided to the municipal hospital through payment of stipends to three health technicians and two specialist physicians. Additional support is provided through equipment maintenance. Operational support is provided for the Maternal House that cares for women from rural areas. Medical brigades and humanitarian aid were provided throughout the community to assist with needs associated with the COVID-19 pandemic to assist in minimizing its impact. Hemco also provided support to community awareness programs through radio, audiovisual, graphic, billboard campaigns; and provided and distributed personal protective equipment such as masks and sanitization materials, etc., in coordination with the local ministry of health.

As part of its health care support program, Hemco's activities include support to the operation of the Bonanza Maternity Home, where all women from the urban and rural areas of the municipality come for regular check-ups by hospital doctors, are attended to during labour, and receive other medical care. Hemco's support consists of paying the Maternity Home staff, related infrastructure improvements, etc.

Hemco is also supporting a health program, which consists of improvement and maintenance of the operating room, support for specialized personnel, etc., at the Bonanza hospital.

Hemco also provides social support including health care, medications, death care services, etc., to the municipal population that requires social support, e.g., retired miners.

20.5.1.3 Development and Infrastructure

Activities included: support to Bonanza's Planning and Development Plan; improvement in urban streets and access roads to indigenous and mestiza communities within a range of 63 km, and construction of 1,190 m^2 of cobbled street in Los Cocos; investment in water access projects in the urban area of Pioneer and Vesubio; support for the management of communal waste; and donation of 843.71 MW power to the water pumping systems that serve the urban area of Bonanza. These efforts have benefited more than 60,000 inhabitants of the municipality.

20.5.1.4 Ring Road

Together with the Mayor of Bonanza, Hemco and the town carried out the “Ring Road Construction Project”. The objective of the project is to reduce traffic congestions in the town of Bonanza. The approximately five kilometre ring road is a gravel topped, rock based, bypass road to the west of the town that includes 10 culverts, three bridge boxes, and reconstruction of one bridge and was built in approximately four months and created 10 direct construction jobs. The road is expected to be used by approximately 200 heavy artisanal ore trucks daily and by Hemco staff when travelling between the various operations (Hemco, La Curva, Vesmisa, Pioneer, and in the future, Porvenir). The road was completed in July 2020 and will greatly reduce and decongest the main routes of the city of Bonanza.

20.5.1.5 Sports and Recreation

In 2022, activities included improvement of the municipal park, including a monument to the Miskito and Mayagna indigenous race, starting in mid-2022 with significant progress; financing of the baseball teams from the area of Hemco’s operations; support to the Caribbean series that takes place annually in the region where the company’s operations are located, where Hemco ensures that local teams participate in these regional events; and the rehabilitation and construction of multipurpose courts for basketball, fast soccer, volleyball, etc., in neighborhoods and communities of the municipality.

20.5.1.6 Diversification

Hemco has initiated and supports ongoing programs aimed at providing additional economic opportunities to local and regional communities. Areas of diversification supported in these programs include beekeeping, growing of grains and roots, minor and major cattle, spices, fruits, and ecotourism. These programs were active in 2022.

20.5.1.7 PODU Administration Program

Through this program, Hemco pays salaries of managers and technicians directly associated with carrying out the management and administration of the PODU program by its municipal counterpart.

20.5.1.8 Rural Road Construction Projects

Hemco continues to support rural road improvements in the neighborhoods of Bonanza. In 2022, Hemco paid for construction labour and equipment for 200 m stone road improvements in the main roads of the city of Bonanza.

20.5.1.9 Water and Sanitation Program

In 2022, Hemco continued to support development of topographic mapping of the city of Bonanza and its regional areas. This in turn supports the ongoing development of studies for water and sanitation projects for the city and the region of more than 60,000 people.

20.5.1.10 Emergency Response - Public Support

Over the last several years, Hemco has provided water, food and fuel support to municipalities most affected by severe weather disasters in the area. Community disaster support has been provided to:

- El Rama - affected by Hurricane Julia

- Waspán - affected by Coco River floods
- Rosita - affected by floods in Rio Bambana
- Prinzapolka – affected by flooding of the Prinzapolka River

In 2022, Hemco continued development of emergency response plans to support the local and regional inhabitants through the provision of fuel, means of mobilization, accommodation, food, other supports that may be required in response to the impacts of hurricanes and severe storms.

20.5.1.11 Other Relevant Activities

20.5.1.11.1 Relations with Indigenous Communities

Hemco has developed communications and relations with two indigenous groups, the Mayagna Sauni located northeast of Bonanza and the Mayagna in the Matumback territory. Hemco has developed mechanisms of dialogue and coordination with the leaders of each one of these territories, and through which, together with the municipality, projects are brought forward for infrastructure and rural road developments for the benefit of these populations.

20.5.1.11.2 Relationship Programs with Local and Regional Institutions

Hemco's CSR team maintains good working relationships with municipal, regional and national institutions that allows for the development of an effective dialogue between institutional leaders and their technical teams. There are also well-established high-level relationship at a regional and state level to allow for effective communications in the municipality and across the region.

20.5.1.11.3 Processes for Attention to Complaints and Claims

Addressing complaints and claims is an important activity in Hemco's CSR system. When complaints or claims are raised and brought to Hemco's attention they are treated with respect and processed in accordance with the nature of the issues. Hemco's complaint resolution system allows Hemco to establish conversation links between the complainant and the company. Through this mechanism, Hemco reviews the validity of their complaints and claims and participates in a negotiation process to resolve the complaint/claim. Once appropriate actions have been agreed to by both parties, agreements are signed and solutions are implemented. In 2022, the following was reported:

- 12 Complaints or claims received
- 8 Complaints or claims resolved
- Average 20 to 30 days to close a complaint or claim.

20.5.2 Forestry

The Mineros forestry activities include implementation of a Joint Forestry Development and Training Project, with the participation of the Bonanza Mayor's Office, the National Technological Institute (INATEC), the National Institute Forestry (INAFOR), the Forestry Cooperatives of Bonanza, and community and artisanal miners Mineros Forest Development

Table 20-13 summarizes Mineros' proprietary forest and advances in forestry development. Additional discussion of each forest development type is provided on the following pages.

Table 20-13: Forest Development Summary
Mineros S.A. – Hemco Property

Restored or Protected Areas (Active)	Size (ha)	Location	End State of Area	Third-Party Collaborations
Private Wildlife Reserve Wastuna	130	Sector Waspanona	Protection and conservation	MARENA- HEMCO Convention
Environmental replenishment or compensation (artisanal miners)	91	Communities of: San Antonio, La Colonia, El Picón and La Gloria Sectors: Foundling, Tesoro, Chiquero, Tigre Negro, Highland Mary, San José -Guatuso, Neblina and Muruwas	Reforestation, protection, and conservation	Proposal: Strategic alliances with artisanal miners and communities
Environmental replenishment or compensation (HEMCO properties)	330	Sectors: Waspanona and La Reforma 2, Tigre Negro and San José	Reforestation, protection, and conservation	None
Plantations commercial (Teca)	153	Sectors: Luna & Noche, Salto Grande, La Curva and Siempre Viva	Protection and Conservation	None
Plantations commercial (Pine)	31	Sector: La Curva	Protection and Conservation	None
Restoration	56	Bonanza	In process of Recovery	None
Plantations commercial (Rubber)	38	Bonanza	Protection and Conservation	INTA - HEMCO
Conservation	1,546	Sector Siempre Viva/Bonanza	Preserved	Bonanza Township - Territorial Planning Plan

20.5.2.1 Conservation Forests

Mineros has 1,605 ha of private land for conservation, located in the buffer zone of Bosawás Biosphere Reserve. This area forms the headwaters of the Pis Pis River, a valuable resource in the region and a tributary of the Coco River, which is one of the main North Caribbean Coast Rivers and serves as the natural border between Nicaragua and Honduras.

Wastuná is a 130 ha Private Wildlife Reserve located within these areas. The name Wastuná is derived from the Mayagna language meaning "where the water is born" and reflects the importance of this area as the location of the headwaters of both the Aguas Claras and Concha Urrutia rivers, which in turn feed the Tunki River, which is recognized as an important water resource for the municipality and is a tributary of Prinzapolka River (one of the major rivers of Nicaragua).

Conserving these areas contributes to the preservation of Bosawás Biosphere Reserve and the biodiversity of the region and provides protection to the main water resources in Bonanza and supports the development of sustainable mining activities. Accordingly, these areas are included in the Environmental Conservation Priorities (Category 1 and 2) of the Municipal Land Ordinance Plan and are part of the National Strategy for Avoidance of Deforestation (ENDE-REDD).

20.5.2.2 Replacement/Environmental Compensation Forests

For Mineros, the responsibility for creating replacement/compensation forests goes beyond the legal requirements. Its strategy includes and is focused on deforestation mitigation initiatives, the establishment of new productive alternatives, and the preservation and enhancement of regional biodiversity through strategic partnerships with interest groups (property owners, artisanal miners, indigenous communities, environmental organizations, among others) so as to increase the supply of environmental goods and services to neighbouring communities and encouraging a sense of belonging and environmental awareness at the municipal level.

Native species are used in the creation of replacement/compensation forests ensuring forest biodiversity and mitigating the impact of timber extraction. In addition, these replacement/compensation areas are included in the Environmental Conservation Priorities (Category 1 and 2) established in the Municipal Land Ordinance Plan. The results of these activities are a positive example of Mineros' commitment to responsible sustainability and environmental commitment at both an operational and regional level.

In 2019, 202,542 native broad-leaved forest species were planted and 100% of these plants came from municipal cooperatives, establishing new production alternatives and encouraging conservation and environmental awareness in the municipality. These species were: Caoba del Atlántico (Swietenia macrophylla King.), María (Calophyllum brasiliense Camb.), Cedro Macho (Carapa guianensis), Cedro Real (Cedrela odorata), Genízaro (Samanea saman), Guanacaste (Enterolobium cyclocarpum (Jacq.) (Griseb.), and Guapinol (Hymenaea courbaril L.). According to data supplied:

- Approximately 84,100 plants were used at Mineros properties to meet legal replacement requirements tied to stage 2 of the San José tailings dam.
- Approximately 76,300 plants were used for enrichment in artisanal miners' properties, the purpose was to accomplish the legal replacement and to involve all the municipality economic groups in the reforestation and preservation plans in these areas.
- Approximately 38,500 plants were planted as a contribution to the replacement during 2015-2018.
- Approximately 3,600 plants were donated to environmental authorities for protection activities in the Concha Urrútia river basin.

Additionally, alliances were established with 14 property owners and artisanal miners in order to involve all the municipality economic groups. These alliances were endorsed by the regional government and SERENA through Administrative Provision 04-02-2019-02 and Environmental Guarantee 04-02-2019-01, respectively, in 2019.

As a result of the Hurricane Eta and Iota (2020), approximately 37% of native species planted for forest replacement were damaged, Efforts related to recover the damaged areas for the Huracan continued through to 2022. Complying with a current legal commitment, with the environmental agreement of shared responsibility with artisanal miners, with the recovery of conservation areas affected by hurricanes ETA and IOTA, with the reforestation of basins and with the forest replacement of the year 2022 Hemco planted 100,250 native plants, distributed as follows:

- Replanting HEMCO Properties: 47,465 native plants
- Recovery of conservation areas: 22,354 native plants
- WASTUNA Wilderness Private Reserve: 15,031 native plants
- Replant Areas of Artisanal Miners: 14,100 native plants

- Forest Replacement Plan (Marta 850 - Collection Yard 5): 1,300 native plants

20.5.2.3 Commercial Plantations

In 2019, Mineros made progress in the development of commercial plantations for teak, pine, and rubber trees. The purpose of these plantations is to contribute to local development, create new productive forest alternatives, and to continue the forest development strategies included in the Municipal Land Ordinance Plan.

In 2018, the company had started a pilot test of 30,000 rubber trees which continued into 2019. Rubber trees are indigenous to the region and were sought after many years before mining activities began. Rubber trees are sustainable in that they do not need to be cut to be productive. In addition to generating economic benefits through its latex, rubber trees also contribute to regional biodiversity and global warming mitigation. Through these plantations, Mineros is making the community aware of different productive alternatives that exist for regional development.

In 2022, Mineros continued to carry out maintenance of teak and pine plantations, specifically of 153 ha of teak and 31 ha of pine. Mineros intends to continue the Rubber Project as well as the development for the pine and teak plantations to ensure that they will support reforestation throughout the period of mining.

Ecological outreach activities continued with various groups and individuals belonging to the Guardabarrancos Environmentalist Organization, part of the following educational institutions:

- Instituto Nacional Maestros Autóctonos (INMA)
- Santa Teresita del Niño Jesús School
- Moravo School
- Rafaela Herrera School

The above efforts continued in the period of 2020 through 2022.

20.5.3 Sanitary Complex

The Wastuná Sanitary (Waste Management) Complex, opened in July 2018, was built to meet the needs of adequate management of solid waste generated from all the processes of the operations, and to promote and support substitution, reduction, reuse, recycling, and adequate storage of Mineros' wastes. The Waste Management Complex is the only facility of its type in the region. It was designed with the purpose of managing approximately 1,000 tpa of domestic, recyclable, hazardous, and organic waste, which are separated at source by Mineros' personnel in different bag colours and confined, donated, incinerated with companies certified, and/or transformed according to their characteristics. The success of the Waste Management Complex depends on environmental awareness and the commitment of Mineros personnel. The Waste Management Complex is contributing to the well-being of all workers in the company by improving order and preventing the spread of waste within the facilities and consequently, associated odours, vectors, and diseases.

The facility name is associated with the sanitary landfill location and a set of processes that contribute to waste transformation for reuse/managed disposal. The processes include:

- A recycling collection centre for donations of recyclable materials to the Association of Parents with Children with Disabilities
- Composter of organic waste to convert it into fertilizer for soil recovery

- Domestic waste disposal centre (domestic waste disposal buried trenches/cells)
- Special waste management (donated to community wood, pipes, tires, etc.)
- Hazardous waste management (collected, incinerated by certified companies)
- Leachate treatment system for liquids collected from trenches/cells

The Waste Management Complex was inaugurated on July 31, 2018 with a project cost of approximately US$282,000. The facility has a design life of approximately 12 years, while the confinement trench had a design life of four years.

In 2022, the landfill was expanded to add another 2,400 m^3 capacity as well as increasing the capacity of the landfill wastewater treatment system, and construction of infrastructure for composting. Other initiatives included new warehouses for storage and segregation of waste and hazardous waste from aerosols, hospital and NaCN packaging.

The Waste Management Complex not only complies with waste regulations, but also illustrates Mineros' commitment to the environment and natural resources and promotes effective waste management to the community and region. Approximately 1,400 workers who work at the Hemco Property live in the community and through this project they and their families are pioneers of a new culture of proper waste management and environmental awareness in Bonanza.

In 2019, a 40% reduction in the generation of hazardous waste was achieved, despite the inclusion of three new projects. Recyclable waste decreased by 76% mainly due to programs that enhanced reuse and reduced the consumption of plastic, decreasing the generation of domestic waste by 26% and a significant reduction in organic waste, reaching 67% as a result of non-waste food campaigns. Hemco has national recognition as a leading company in the donation of recyclable waste as granted by the "*Association of parents with children with disabilities Los Pipitos*". In 2019, a total of 46 tons of materials were sent for donation. Through its donation programs to the community and Los Pipitos, Hemco has contributed positively to the well-being of the region and the social inclusion of people with different abilities in the country.

In 2020, the generation of non-hazardous and hazardous wastes was below the 2019 level despite the execution of five new projects (chemical laboratory, fuel station, CKD expansion, reconstruction of infrastructures and warehouses, Pioneer underground mine and others). Recyclable registered waste increased significantly by 9% over 2019, providing a positive indicator of good management of separation of recyclable waste. This was mainly related to programs for potentiation reuse of plastic. Organic waste decreased by 6.42% compared to the 2019, thanks to non-food waste campaigns and training for employees.

During the year 2020, new sustainable projects were developed with the COOPSAMWAS cooperative. One of these was the establishment of an ecological garden for vegetables. This project provided for knowledge exchange and took advantage of the organic fertilizer generated by the Wastuná complex. Foods grown in 2020 included apple chili, chives, chiltoma, cucumber, and lettuce crops and these are currently consumed by diners at the Hemco company dining room.

During the year 2022, the generation of hazardous waste was increased by 9 % due the inclusion of new projects and contractors. Overall, 78% of the total waste was either recycled, donated, or reused, mainly due to programs to enhance the reuse and reduce the consumption of plastic, decreasing the generation of domestic waste by 16%. There was a significant (22%) reduction in organic waste, as a result of non-waste food campaigns. Hemco received national recognition by the "Association of Parents with Children with Disabilities, Los Pipitos, as a leading company in the donation of recyclable materials, by sending them a total of 44 tons for 2022. During 2022 Hemco started an alliance with Network of Recyclers of Nicaragua (REDNICA) and associated companies. Through these community donation programs and other foundations such as Los Pipitos and REDNICA, Hemco has contributed positively to the well-being of the region and the social inclusion of people with different abilities in the country.

20.5.4 Artisanal Mining

20.5.4.1 Strategic Plan Incorporating Artisanal Mining

There is a very long history of artisanal and industrial mining in the northeastern region of Nicaragua (known as the Mining Triangle). This history has provided unique challenges and opportunities for the integration of artisanal and small-scale mining with large-scale mineral resource development. Mineros has made significant strides in developing a positive working relationship with local artisanal and small-scale miners. This includes providing numerous social and economic benefits to individuals and communities in the region directly and indirectly, while advancing safe work practices and reducing environmental impacts associated with mineral extraction and processing. A summary timeline of the mineral discovery and exploitation by small and large-scale mining operations is provided below:

- 1880 - Rubber seekers discover gold in the streams of Bonanza.
- 1889 - The Mestizo town of San Pedro de Pis Pis is founded, and a mining company is established that works the La Constanza group of veins.
- 1894 - Additional gold mining concessions are granted, and operation commences at approximately 20 small facilities.
- 1902-1906 - Large companies become active, e.g., Chas Lobner, Constancia, Hidden Treasure, Edén Mining Company.
- 1909 - Mining concessions are granted to US investors.
- 1914-1922 - Panama Mining Company closes operations. Small companies and individual exploit Edén and Neptuno veins of the Pioneer and Panama groups.
- 1928 to 1930 - Civil war destabilizes mining activity and gold production is reduced.
- 1930 - Mining Triangle operates as an enclave with very little interaction or relationship with artisanal mining or the community.
- 1930 to 1934 - Rosario Mining Company creates Luz Mining subsidiary; American Smelting and Refining Co. forms Neptune and purchases the Pis Pis concession.
- 1953 - Polymetallic deposits of lead, copper, and zinc are discovered. At this time, gold reserves were deemed depleted, and operations were suspended.
- 1979 - INMINE takes over mining operations. Nationalization weakens industrial operations and artisanal mining gains strength and becomes the largest producer of gold in Bonanza. The first artisanal miners cooperative “MINARBON” is organized.
- 1995 - Hemco acquires the Bonanza concession. Artisanal and industrial mining activities are carried out independently resulting in tense relationships.
- 1997 - Hemco signs a contract with cooperatives for the purchase and sale of ore. The first parameters for the harmonious development of both activities are established at this time.
- 2010 - The Vesmisa Plant is commissioned and is the first industrial facility for exclusive use of artisanal mining. Its capacity is 150 tpd and generates work for 1,000 artisanal miners. Through its use, artisanal pollution of the environment is greatly reduced.

- 2012 - Hemco builds La Curva, a modular plant for use by artisanal mining. Its state of the art technology allows better ore recovery. It processes 110 tpd which employs 1,000 miners in the Porvenir region, and its processing eliminates the use of mercury and industrial waste otherwise generated.
- 2013 - The Bonanza Model, PODMA (Ordnance Plan for Artisanal Mining) is consolidated, derived from one of the Plan for Urban Development and Development's (PODU) strategic lines. The Municipal Government of Bonanza forms the Municipal Commission of Artisanal Mining (CMMA), and goals and objectives are outlined to promote the sector. Five new artisanal mining cooperatives are organized.
- 2013 - Mineros, the main Colombian gold producer, invests in Nicaragua and acquires a share in Hemco.
- 2015 - The program began with the expansion of ore storage yards, doubling the capacity of artisanal ore reception and storage.
- 2016 - The CMMA is strengthened to promote the proposal of sector development initiatives, such as validating authorized mineral extraction sites, monitoring established processes, develop and update regulations aimed at ordering the Bonanza Model, and meeting general needs of the sector.
- 2017 - Mineros concludes the expansion of storage yards and mechanized sampling system, while beginning the construction of the certified sample analysis laboratory.

In the context of the regional history, and the commercial and social success of its arrangements for the purchase and processing of ore from artisanal and small-scale miners, Mineros has developed the Bonanza Model, a strategic plan to cooperate with and incorporate artisanal and small-scale mining into its future activities in an ongoing and meaningful basis. The plan extends the current operational model to include planning for artisanal and small-scale miners at early stages in the exploration process and mine development process, and aims to ensure that appropriate worker health and safety and environmental practices are followed in the mining process. The plan provides a program for exploration and development of new areas of the concession in a manner consistent with existing social, community, and government goals, objectives, and plans for regional development and commercial growth and prosperity.

In October 2010, Hemco initiated the "First Forum of Artisanal Mining in Bonanza", which involved the main leaders of the artisanal mining and key governmental sectors such as the City Hall, MEM, Ministry of Environment and Natural Resources, through the BOSAWAS Technical Secretariat (MARENA-SETAB), the Costa Development Secretariat, the Nicaraguan Social Security Institute (INSS), the Ministry of the Family (MIFAMILIA), and the National Police. This was the first time both operations and government participants met to discuss the most sensitive issues affecting all. During the forum, the main issues were identified, and the first agreements were established, as follows:

- Labour insecurity due to the lack of a structured order and regulation of artisanal mining activity in the work zone.
- Low yield from extracted ore due to lack of efficient and environmentally friendly gold processing options and technology.
- High occupational health/safety and environment risks due to lack of training and equipment.
- Lack of social development programs that help address problems in education, health, child labour, food insecurity, housing, etc.

The key agreements that resulted from the forum were:

- Mineros will identify areas with gold potential to relocate artisanal miners who presently work in hazardous areas.
- Implementation of Housing Plan for those living in areas at risk.
- Establishing a specific regulation similar to a municipal ordinance for artisanal mining of Bonanza.
- Opening of an office for artisanal mining in the Bonanza City Hall.
- Agreeing that Mineros and the Association of Small-Scale Miners (ASPEMINA) will not receive material from restricted zones or other concessions.
- Mineros will carry out a baseline information survey of artisanal population in Bonanza for MEM.
- Eradication of child labour through a social project.
- Development of a technical-economic feasibility study to relocate processing from urban areas and improve its technology and environmental controls.
- Establishment of the CMMA, an interinstitutional organization that functions as the governing body for mining work.

20.5.4.2 Corporate Social Responsibility and Artisanal Mining

Holding the "First Forum of Artisanal Mining of Bonanza" represented a decisive step towards strengthening the relationship between artisanal mining and industrial mining in Bonanza. As a result, in coordination with MEM, Hemco created a framework that encompasses the accumulation of interests and sets the path to be followed in order to achieve a sustainable transformation. In this sense, Hemco proposed to create a development model that contains the policies and actions for the integral development of the mining in Bonanza. The framework is based on framework approach of the PODU, a unique municipal development strategy in the Caribbean, promoted since 2008 by the Mayor of Bonanza and Hemco as its strategic ally. The essence of the PODU is to provide a better quality of life for people in the Bonanza community. The Bonanza Model is based on four fundamental principles:

- Order and stability in the workplace
- Ore recovery and processing in environmentally responsible manner
- Technical assistance for occupational health and safety
- Development of a comprehensive social program for artisanal mining

The Bonanza Model arises from the vision of working in harmony with artisanal mining. For the first time, the rules and guidelines for a responsible activity were established in the Nicaraguan mining sector.

The plan began with a population census, which was the first study of artisanal mining in Nicaragua. Its goal was to determine the number of miners, their location, and their current and future requirements. The survey included leaders of collectives, leaders of cooperatives, and independents. This information will be supplemented with the results of the ongoing socio-economic reviews of the area.

Although the plan was structured legally in 2012, many of the Hemco projects have a history of up to ten years, such as the commercialization of the mineral at the international price of gold and the search for solutions to social issues. Through the PODU, 22 projects have been completed, including the first safe and healthy settlements of the town, many kilometres of urban streets, a maternal house, a 17ha municipal park, and connecting the municipality to the National Electric Power Interconnection System which benefited 1,400 urban dwellings that serve as home to 12,000 people who have continuous light for the first time in 73 years. In the coming years, PODU will build a Children Development Centre (CDI) for the children of artisanal miners, a commercial centre, an airfield terminal, a market, and other important projects in the area including drinking water and public sewerage.

Hemco will also continue to work on a strategy for mining in coordination with the Municipal Government and MEM. Through the Bonanza Model, the installed capacity to process the gold ore was expanded with the construction of the first industrial sites for exclusive use of artisanal mining, Vesmisa and La Curva. Its investment was US$6 million with a capacity of 200 tpd that generates employment for more than 2,000 artisanal miners.

Hemco is executing exploration programs to find new areas for artisanal and small-scale industrial mining. These efforts will include exploration drilling and reserve analysis of targets to a depth of 80 m to identify areas with gold grade of greater than 5 g/t Au. When these areas are defined, artisanal miners will be able to work the top 30 m from surface. Mineros will also drive drifts at the 50 m level from which small-scale mechanized miners can work 20 m above and 20 m below. All underground reserves below 70 m will then be mined by Mineros. To assist the development of these areas, Mineros will carry out road and infrastructure construction as needed to allow for access and mining activities of the artisanal and small-scale miners.

The impact of these projects has allowed the creation of a climate of trust and harmony between both sectors, since the Bonanza Model seeks to improve the quality of life for artisanal miners through initiatives, such as access to social security, own trucks to transport mineral and even a commissary, which benefits miners and their families.

Within the framework of the Bonanza Model for sustainability and interaction with artisanal mining, the 2018-2019 period achievements included:

- Modernization of the sampling plant for artisanal material with a capacity of 1,000 tpd.
- Construction of the parking lot at the Venus portal with capacity for 70 artisanal trucks.
- Expansion of the Venus ore storage yard to a capacity of more than 540 separate piles.
- Formation of the first artisanal cooperatives in Rosita.
- Approximately 80% of artisanal miners of the Bonanza Model purchased life insurance with the Growing Together Program of INISER.
- Opening the Atlas 680 level (former Neptune portal) to artisanal miners
- Creation of the first Artisanal Mining Production Units (UPMA) in Rosita and Bonanza.
- Initiation of the forest compensation agreement to reforest artisanal work areas.

The 2020 activities are described below according to the strategic pillars of artisanal mining.

Legal Stability and Artisanal Mining Management

- Location of 63 working groups at production sites, after geological exploration.
- Inclusion of 13 cooperatives in the direct payment system.
- Stabilization of blasting service in an average of 29,000 emulsions per month.
- Strengthening the Management of Artisanal Mining with the inclusion of the services of: Blasting, Artisanal Mining Accounting, Artisanal Mining Exploration Project, Environmental, Communications.
- Expansion of the collection capacity of the Venus courtyard.
- Opening of the collection yard of Vesmisa.

- Extension of the artisanal storage yard at La Curva.
- Improvements to truck dispatch yard infrastructure for added security.

Safety and good environmental practices

- Fifty-five field talks in 2020. 1,643 artisanal miners attended. Topics taught were: Occupational Safety, Environment, First Aid, Geological Guidance, Child Labour, and the Mines Act.
- Delivery of the following safety equipment to incentivize and motivate good practices:
    - 618 pieces of PPE (helmets, lenses, plugs and gloves)
    - 143 pairs rubber boots with steel toes
    - 56 mine lamps
    - 90 thermoses with safety messages
- Cleaning days: 40 in total with 294 m^3 of waste collected, mainly disposable bags with the participation of 521 artisanal miners.
- Closure of 751 environmental liabilities (wells and tunnels) on Hemco's properties with an investment of US$11,157 (manually closed).
- Closure of three machine excavated open pits to reduce environmental liabilities, with an investment of US$9,066.00 (Colorado 2, Black Tiger, Portal 1,450)

Sustainable Recovery and Processing

- Compliance with the artisanal mining production plan.
- Implementation of the Artisanal Mining Exploration Project, which allows better geological knowledge and usable resources for artisanal mining.
- 2019 certification of 79,000 oz Inferred material for artisanal mining.
- Exploration work for artisanal mining:
    - 41 trenches
    - 275 shafts sampled
    - 38 technical inspections in coordination with the MEM
    - Improvement of cleaner and more orderly mineral extraction and production practices, through the support of Hemco geologists
    - 58 geological inspections and advice
    - 41 technical sampling for advice to artisanal miners

Economic Diversification and Human Development

- Registration of 2,250 artisanal miners in the insurance system (Health, Life and Accidents).
- Campaigns on various topics on radio and collection yards.
- Preventing alcoholism.
- Workplace safety.
- Accident prevention in rainy season.
- Handwashing.

- Truck verification.
- Waste classification.

During 2021, implementation of Hemco's strategic plan for artisanal mining included the following initiatives:

- Registration of miners for insurance. A total of 2,249 miners have registered.
- Strengthening cooperative governments.
- Economic diversification through projects with profitable business plans.
- Development of a proposal for creation of a retirement fund for artisanal miners.
- purpose of certifying the resources of artisanal mining. There are already 100,000 certifiable ounces awaiting evaluation.
- Working with a financier to establish a trust so that artisanal miners and cooperatives can have access to a fund to promote projects.
- Strengthening communications and relations with miners who own properties where 85 ha of timber trees were planted as a forest compensation initiative.
- Support for the construction of an 8.6 km road in the community of Silví, in the municipality of Siuna, where an artisanal mining production unit (UPMA) will be opened in the concession of Siuna I.
- Strengthening communication with artisanal mining through information dissemination in the media (radio, email, social networks, murals).
- Strengthening the legal program.
- Developing a more advanced sampling procedure for Vesmisa and La Curva artisanal ores.

A summary of 2021 artisanal mining-related activities and interactions is provided below.

- There were 14 days of cleaning with artisanal miners at their work sites, where 176 miners have participated and have collected 110 m^3 of waste.
- Forty-eight talks were given to show artisanal miners the importance of good environmental practices.
- Forty-eight trainings have been given on topics of Security, Child Labour, Geological Aspects, and First Aid; in these talks PPE are given to artisanal miners as an incentive for their participation.
- In this period, 328 of the 1,131 sites with environmental liabilities generated by artisanal mining activity on Hemco's properties were closed.
- Constant safety and environmental inspections are carried out at the sites in coordination with the MEM and the CMMA.
- The inclusion of all cooperatives (19) and formalized independent artisanal miners in the direct payment system, i.e., Hemco does not pay independent miners that are not yet organized. Approximately 80% of the artisanal miners are under the cooperative model.
- Stabilization of the blasting service at an average of 38,000 emulsions per month.
- The expansion of the capacity of the Venus ore collection yard and the inauguration of the Capitan collection yard.
    - Regular meetings with cooperatives and CMMA.

- An ongoing communication process through WhatsApp, mail, TV, local stations and other media.

A summary of 2022 artisanal mining-related activities and interactions is provided as follows.

Sustainability

- 109 field training sessions with focus on occupational safety.
- 70 cleaning days.
- Promotion of the Bonanza Emprende Model program for diversification (four active projects).
- 487 legacy environmental liabilities closed and reforested.

Technical Support

- 36 geological inspections at artisanal mining locations to provide technical advice.
- 60 indicative samples.
- 20 technical conflict resolutions with the Municipal Artisanal Mining Commission (CMMA) in the three municipalities within Hemco's area of influence.
- 500 shafts were surveyed and topographically georeferenced.
- Quarterly topographic update of shafts in industrial zones (approximately 30 month).
- 15 new mining areas were identified for artisanal miners.
- 800 useful geochemical samples were identified from more than 350 koz of Inferred Resources from 1,200 m drilling for artisanal mining at Pis Pis.

Operation

- Met 100% of Hemco production plan. Supplied approximately 395,000 t and 101,000 oz versus the planned 380,000 t and 95,000 oz, respectively.

In summary, Mineros and Hemco have been instrumental in efforts that improved access to social and economic benefits for approximately 7,000 artisanal miners in the region. These improvements have been coupled with improved occupational health and safety, reduced environmental hazards and impacts, and economic benefits throughout the region and to the Hemco Property. SLR is of the opinion that this is at the forefront of industry best practice.

20.6 Closure Plan

Mineros has put in place financial provisions for future expenses related to the closing of its operations. To 2020, closure planning and provisional estimates for closure were addressed separately for the Hemco (Panama and Pioneer) and the Vesmisa facilities. In 2021, Hemco acquired 100% of the Vesmisa operations and Knight Piésold (KP) developed a draft Conceptual Closure Plan (CCP) that included all Hemco and Vesmisa mines and facilities. In 2022, a draft conceptual closure plan was developed for the Porvenir Project. This draft is a stand-alone document that provides information on closure activities and estimated closure costs should the project be developed and operated as described in the PFS study. In January 2023, KP updated the draft CCP for the Hemco and Vesmisa mines and facilities. Discussion of these 2020 and 2023 CCPs is provided below.

20.6.1 Hemco Closure Plan to 2020

On November 30, 2020, the Hemco closure plan was updated on behalf of Hemco by Lic. Dámaso Palaviciny. That closure plan included detailed inventory of facilities and equipment, and soil and earthwork quantities based on takeoffs from drawing and topography. Unit costs were based on cost information from operation managers and superintendents and industry standard rates from 2012, and the labour costs from the Nicaraguan Construction Chamber of September 2018, approved by the National Minimum Wage Commission. The estimate assumed that progressive reclamation of past, existing, and future pits and stockpiles and related facilities would have been completed prior to final closure. Final closure in 2032 (12 years from the time of that Closure Plan update) was expected to include surface works associated with the closure of nine portals, three vent raises, 21 open cuts, two sterile stockpiles, three tailings dams and impoundment areas and related systems, the Hemco Bonanza plant and equipment, 67 buildings, and various components of the electrical transmission system. The closure plan did not include costs for 32 open cuts inherited by Mineros for which Mineros intends to work with state authorities to carry out progressive reclamation. The closure plan for the LOM included expenses for the closure of the Panama and Pioneer underground operations, the Processing Plants (Bonanza and La Curva), industrial waste management facilities, disassembly of the equipment and machinery, as well as the dismantling and/or demolition of infrastructure at the time of closure. The closure plan assumed no cost for various components such as housing and related infrastructure (sewage treatment, solid waste management facility, etc.) which were expected to remain as they are important socio-economic elements of the region. The Hemco Closure Plan included costs associated with the closure of the La Curva facility, but did not include costs for the Rosita operation, which was closed in 2013, nor the Vesmisa facilities, with the exception of the Vesmisa II tailings pond.

The 2020 closure plan estimated a total of cost of US$22,926,629 at the end of 2032 consisting of total direct cost of US$10,725,908 (US$4,295,821 for progressive reclamation, US$6,430,087 for final closure and reclamation), and indirect costs of US$12,200,721. Based on this estimate, and the indirect factors assumed Hemco calculated a net present value (NPV) of US$6,729,540 for current closure liability.

From 2021, the Hemco Closure Plan was updated on behalf of Hemco by Lic. Knight Piésold.

20.6.2 Vesmisa Stand-Alone Closure (Plan to 2020)

A stand-alone Vesmisa Closure Plan dated November 30, 2020, was developed on behalf of Hemco by Lic. Dámaso Palaviciny. Section 20.3.2.9 of that plan provides descriptions of the Vesmisa Plant and tailings facilities that will need to be decommissioned at closure. Additional components to be addressed at closure in the complex include the water supply system, storm water management features, offices, warehouse buildings, generator, transformers, and transmission lines, all of which will need to be dismantled and removed/disposed of at closure. Due to the nature of the operation, limited progressive closure works will be undertaken. Closure of the Vesmisa I tailings facility is already substantially complete and costs for work on the Vesmisa II tailings facility are included with the Hemco closure costs. Thus, the closure works will consist mainly of facility decontamination, electrical disconnection, equipment removal/disposal, building demolition/removal, and relatively minor surface works.

The 2020 Vesmisa CCP estimated a total of US$1,137,401 as the closure cost at the end of 2032. This amount was based on a total direct labour cost of US$577,728 comprised of US$5,480 for progressive reclamation, US$572,248 for final closure and reclamation labour, and closure indirects of US$559,674. Based on the factors described above for the Hemco estimate, the NPV of the total end of life closure cost of US$1,137,401 was at US$333,840. Based on the review of the closure document, it appears that the closure plan is reasonable and appropriate for the Vesmisa facility.

20.6.3 Combined Hemco and Vesmisa Closure Plan (Update 2021, 2023)

Pursuant to the above, the Hemco and Vesmisa closure plans were updated and consolidated by KP's draft CCP, dated December 2021. The consolidated 2021 closure cost was estimated at US$27,502,742. The CCP cost estimate was updated in January 2023 to US$33,104,944 to include additions to the mill facilities at the Hemco site, the addition of the detoxification plant at the San Jose TSF; and to adjust for information on artisanal mining and progressive reclamation. The latest update includes all aspects of Hemco and Vesmisa operations and facilities as discussed above, in subsections 20.6.1 and 20.6.2, for the 2020 CCPs. Table 20-14 summarizes the combined closure costs for Hemco and Vesmisa. Porvenir Project closure costs are not included in this estimate, as they are provided in a separate project document as discussed in Section 20.6.4 below.

The capital cost considers the cost of implementation of the closure, and includes: the execution of civil closure works, that is, the activities related to the closure of the pits and dumps, the mills, the auxiliary facilities, the tailings dams, underground mines and artisanal mining liabilities. The "Indirect costs" during the development of the closure correspond to activities of mobilization of materials, personnel and machinery, as well as the supervision and control of these activities. A contingency of 30% is included in the estimate.

The following are some of the key components of the KP CCP cost estimate:

- 2022 US$ costs.
- Unit costs are based on rates as provided by Hemco.
- All closure related mining activities will be carried out by Hemco.
- No cost updates or currency variations have been considered.
- No adjustment for inflation, exchange rate variation, or future modifications (e.g. salary adjustments) have been considered in the estimate.
- Social closure costs are not included in the estimate.

The timelines considered in the CCP are:

- Progressive closure activities begin in 2022 and extend until 2035.
- Final closure activities are carried out in 2036 and 2037.
- Monitoring and maintenance will be carried out from 2038 to 2041 inclusive.

Table 20-14: Conceptual Closure Cost Summary
Mineros S.A. – Hemco Property

Cost Category	Hemco (US$)	Vesmisa (US$)	Hemco + Vesmisa (US$)
Direct	22,047,715	302,040	22,349,755
Indirect	1,140,240	15,670	1,155,910
Monitoring & Maintenance	1,933,111	26,566	1,959,677
Subtotal	25,121,066	344,276	25,465,342

Cost Category	Hemco (US$)	Vesmisa (US$)	Hemco + Vesmisa (US$)
Contingency	7,536,320	103,283	7,639,603
TOTAL	32,657,385	447,559	33,104,944

The draft 2023 CCP is a comprehensive document compiling existing site and monitoring data to built and expand on earlier CCP iterations. Of note is the summary of water monitoring data which shows many areas with acidic surface and mine waters concentrations.

Based on our review of the current CCP, SLR offers the following comments.

- The CCP is generally well thought out and appropriate for the current phase of the project.
- However, in SLR's opinion some uncertainties exist that have not been reflected in the plan as noted in the following points.

1. **Mine Water**

   Observation: Current mine and various surface waters are acidic. KP's CCP indicates that water quality improvements are expected after closure. No costs have been included for potential mine water treatment after closure.

   Recommendation 1: SLR recommends that until such time that Hemco can confirm that long term water treatment is not needed, Hemco should carry a cost allowance for water treatment or some capital works to prevent acidic water release to the environment.

   Recommendation 2: SLR recommends that the potential need for long term mine water treatment should be investigated and considered in future closure plans.

2. **Post Closure Monitoring**

   Observation: The CCP timeframe considered for post closure monitoring is four years. This is a relatively short period and based on industry practice for post closure monitoring.

   Recommendation: SLR recommends that Hemco extend the post closure monitoring period.

20.6.4 Porvenir Conceptual Mine Closure Plan

Hemco has retained the services of KP to develop a preliminary Porvenir Conceptual Closure Plan (PCCP). The philosophy of the PCCP is consistent with those of the CCP for the Hemco and Vesmisa operations. The PCCP has been developed in accordance with the Project's current pre-feasibility level of design and engineering. The PCCP addresses activities needed to achieve physical and chemical stability and considers future land use after the completion of mining and processing activities. The PCCP will be updated over time as the Porvenir project advances through design, engineering, construction, and operation. These updates will incorporate any project changes or modifications, include new requirements that may be identified, and adjust underlying assumptions if needed. These updated estimates will provide greater certainty on identified closure items and allow for a reduction in the estimating contingency.

The development of the PCCP is based on the following assumptions:

- Two years of closure works followed by a four year post-closure period.

- Final closure activities will begin when ore processing is complete.
- No current consideration of progressive reclamation. Planning for progressive activities will be addressed and developed in future PCCP updates.
- All infrastructure will be dismantled during closure activities. At present, it is not anticipated that any of the project infrastructure will be turned over for community use. However, consultations with responsible authorities and interested parties could be carried out to evaluate options of donating facilities with potential for alternative use or reuse.
- All hazardous waste, including contaminated soil, will be removed from the site by a licensed hauler and disposed of at a licensed facility.
- Decontaminated demolition debris will be disposed of as part of the underground mine backfill.
- The PCCP assumes that the exposed rock in the underground mine galleries will have the capacity to generate acid rock drainage (ARD). To avoid the need for post closure active water treatment, the underground mine will be sealed and flooded through the construction of concrete plugs and natural flooding of the galleries. The PCCP assumed that this closure option is technically and environmentally feasible. The PCCP measures for the main components of the Porvenir Project are presented below.

20.6.4.1 Tailings Storage Facility

The closure measures are aimed at achieving long-term physical and chemical stability, and include: removal, treatment and discharge of tailings pond water; drying and physical stabilization of tailings; levelling of dry tailings; installation of a engineered cover; reconfiguration of the non-contact water management system (perimeter channels); revegetation; and removal of all auxiliary facilities and surface conduction lines.

20.6.4.2 Beneficiation Plant

The closure of the mill facilities will include: removal of chemical products and reagents; cleanup, dismantling of facilities and demolition of structures; decontamination of process equipment; dismantling and removal of crushing, grinding and mineral processing equipment; and removal of modular equipment and facilities. After plant and related supporting facilities have been removed, the plant site area will be graded and revegetated.

20.6.4.3 Development Rock Storage Facilities

Underground development rock will be stored temporarily during operation as the material will be returned into the underground mine for use as backfill during mining operations. Closure measures include removal of residual development rock and the rock pads at time of closure prior to scarification and revegetation.

20.6.4.4 Ore Stockpile

It is assumed that all the stockpile ore will be processed during the operation of the Project, therefore the closure activities are related to the final cleaning of the site, scarification and levelling of the affected surface and revegetation.

20.6.4.5 Underground Mine and Related Facilities

At the end of mining equipment, machinery, transport/driving systems and facilities will be removed, whenever possible and safe, leaving no polluting elements inside. Dismantling and demolition activities will be carried out for the support facilities located outside the underground mine. The access portals and external platforms will be scarified and leveled. All mine horizontal (access ramps/adits) and vertical (ventilation system) mine openings will be sealed with concrete slabs and plugs to prevent access of people and animals to the underground workings. In addition, the PCCP proposes that the sealing of surface openings be done in such a manner as to control ARD generation by eliminating oxygen through the natural flooding of the galleries, and to prevent water drainage to the outside of the facility by sealing mine openings with concrete plugs designed for this purpose. The PCCP recognizes that specific studies must be carried out to validate the proposed hypotheses and develop the detailed engineering of the concrete seals to guarantee the physical and hydraulic stability of the system.

20.6.4.6 Auxiliary Facilities

In addition to the main facilities discussed above, the PCCP includes the closure of other supporting facilities associated with the Porvenir. Generally the closure measures will include, but not be limited to: dismantling of facilities and removal of perimeter fences, removal of modular structures, demolition of concrete structures, and scarifying, levelling, and revegetation.

20.6.4.7 Porvenir Conceptual Closure Costs

A preliminary CCP cost estimate has been developed based on the PFS level project concepts and designs as shown in Table 20-15.

Table 20-15: Porvenir Conceptual Closure Cost Summary
Mineros S.A. – Hemco Property

Cost Category	Cost (US$)
Direct	8,105,900
Indirect	567,413
Monitoring & Maintenance	1,400,000
Contingency (70%)	7,015,319
TOTAL	**17,124,632**

Based on our review of the current PCCP, SLR offers the following comments.

- Update/finalize preliminary designs for the tailings discharge and process water reclaim systems, fresh water supply, and process water treatment.
- Carry out sampling and analysis for ARD/metal leaching (ML) potential of underground development rock and ore, mill tailings, surface rocks from quarry areas, and general surface excavations associated with development of the mill/mine and tailings management area.
- Update the PFS closure concepts and closure estimate to reduce uncertainty in the estimate. In this respect, it is also recommended that Mineros consider:

- carrying out studies to assess the feasibility of sealing the mine to achieve flooding of the working to mitigate ARD/ML generation to avoid long term water treatment;
- carrying out studies including physical stability, the hydrogeological and hydraulic behaviour of the system to support the PCCP assumptions related to mine sealing and of flooding of the galleries to eliminate/reduce of oxygen will be effective;
- carrying out independent expert review of tailings dam slope designs for long term dam slope stability and erosion protection;
- extending the long-term maintenance and monitoring period beyond the six years

- A closing and post-closing period of six years is short - care and maintenance and monitoring may be required for a much longer period of time.
- Independent expert third party review of dam design should be carried out to assess if the 2:1 slopes are adequate to ensure long term dam stability and erosion protection, or to allow for additional design/construction of flatter slopes or toe berms to provide additional long term stability factors of safety.

21.0 CAPITAL AND OPERATING COSTS

21.1 Panama and Pioneer Mines

The capital and operating costs presented in this section (21.1) include only the costs required for mining and processing Mineral Reserves from Panama and Pioneer between 2023 and 2027. These costs were supplied to SLR by Mineros corporate and mine site technical teams. The capital and operating cost estimates were prepared based on recent operating performance for years 2021 and 2022 and the current operating budget for year 2023. SLR considers these cost estimates to be reasonable, as long as the production targets are realized. All costs in this section are expressed in Q3 2022 US dollars and assume an exchange rate of Nicaraguan Cordoba (NIO) 36.24 per US dollar.

21.1.1 Capital Costs

21.1.1.1 Expansion Capital

Mineros is planning various operational upgrades between 2023 and 2026 to increase the Hemco Plant nominal capacity from 1,750 tpd to 2,200 tpd. These Expansion Capital costs for the Hemco Plant have been estimated by Mineros to be US$18.4 million.

21.1.1.2 Sustaining Capital

The sustaining capital costs for the Panama and Pioneer underground operation are based on historical performance and the current operating budget for year 2023. Sustaining capital costs are estimated to be approximately US$53 million and assumed to support sustaining capital requirements for this Technical Report's LOM scenario based on Mineral Reserves. Sustaining capital requirements occur between years 2023 and 2026, including ramp and horizontal development, equipment replacement, growth capital projects, and brownfield exploration. A summary of the LOM sustaining capital costs for Panama and Pioneer mines is provided in Table 21-1.

Table 21-1: Life of Mine Capital Costs
Mineros S.A. – Hemco Property

Item	Total (US$ million)
Sustaining Capital	41.35
Brownfield Exploration	11.20
Total Sustaining Capital Costs	**52.55**

The following is excluded from the capital cost estimate:

- Working capital
- Sunk costs

21.1.1.3 Closure Costs

Mine closure costs for this Technical Report LOM scenario are based on the updated Hemco CPP from January 9, 2023 prepared by KP. The estimate includes concurrent reclamation and closure costs estimated to be US$32.7 million over the LOM. Concurrent reclamation activities occur between 2023 and 2035, and closure and post closure activities occur between 2036 and 2041.

21.1.2 Operating Costs

The operating cost estimates for Mineros' Panama and Pioneer underground operations were prepared based on recent operating performance for 2021 and 2022. SLR notes that Mineros implemented in 2020 a new Enterprise Resource Planning (ERP) cost system across its operations to make internal cost allocation clearer. The new system provided improved tracking of and distribution of operating costs to the different cost centres. SLR considers these operating cost estimates to be reasonable, assuming the production targets are realized.

Operating costs are reported for the following cost centres: underground mining costs, processing costs, and support and G&A costs.

Underground mine operating costs are based on the two mining methods that will be used for the exploitation of Panama and Pioneer underground.

Processing operating costs are based on Hemco Plant costs as per recent historical mine performance for years 2021 and 2022. Total LOM processing operating costs are estimated to average US$39.41 per tonne.

Support and G&A costs have been grouped together as per the current ERP setup. Support costs include power, maintenance, and some equipment costs for both mining and plant operations. G&A include costs for areas such as accounting, logistics, insurance, security services, clinic, environmental, and CSR. Support and G&A costs are estimated at approximately US$9.85 million per year.

SLR recommends grouping the support costs to the respective mine and plant cost centres and adjusting the costs allocation setup to include support costs to the respective mine and plant cost centres.

The operating costs to mine and process an estimated 1,568 kt ore over the LOM total US$160 million as shown in Table 21-2.

Table 21-2: Life of Mine Operating Costs
Mineros S.A. – Hemco Property

(US$ million)	Total LOM	2023	2024	2025	2026	2027
Underground Mining	**55.06**	9.16	12.28	12.37	14.41	6.84
Processing	**61.77**	11.17	14.97	14.86	14.21	6.57
Support	**44.13**	9.85	9.85	9.85	9.85	4.73
Total Operating Cost	**160.96**	30.18	37.10	37.08	38.46	18.14

Note. Totals may not add due to rounding.

Table 21-3 summarizes the LOM unit operating costs.

Table 21-3: Life of Mine Unit Operating Costs
Mineros S.A. – Hemco Property

(US$/t)	Total
UG Mining	35.12
Processing	39.41
Support	28.15
Total Operating Cost	**102.68**

21.2 Porvenir Project

21.2.1 Porvenir Initial Capital Cost

The capital cost estimate for the Porvenir Project was developed by BISA and Mineros and reviewed by SLR and found to be acceptable and reasonable representation of the project.

The total initial capital cost is estimated to amount to $177.9 million including a $19.5 million contingency and represents the initial capital and an expansion phase in years 1 and 2 of operation as summarized in in Table 21-4. The costs are stated on a Q3 2022 basis and there is no allowance for inflation.

The capital cost estimate meets the requirements of an AACE Class 4 as defined by the American Association for Cost Engineering (AACE International) with an accuracy of +-20-25%. The estimate has been structured following a Work Breakdown Structure (WBS) and discipline coding prepared by Hemco.

The initial capital cost represents the cost required for Stage 1 of construction enabling a processing capacity of 1,000 tpd and the Stage 2 expansion capital cost enabling an increase in processing capacity to 2,000 tpd.

Table 21-4: Capital Costs – Porvenir Project
Mineros S.A. – Hemco Property

(US$ million)	Initial Capital Cost	Expansion Capital Cost	Total
Mining	21.25	5.06	26.31
Processing	67.28	9.34	76.62
Power	9.05		9.05
Infrastructure	7.04		7.04
Tailings	10.48		10.48
Sub-total Direct Cost	**115.11**	**14.40**	**129.51**
Indirect Costs	21.31	1.26	22.57
Owner's Costs	4.77		4.77
Sub-total Indirects & Owners Cost	**26.08**	**1.26**	**27.34**
Total excluding contingency	**141.19**	**15.66**	**156.85**

(US$ million)	Initial Capital Cost	Expansion Capital Cost	Total
Contingency	19.52	1.57	21.08
Total Capital Costs	**160.71**	**17.22**	**177.93**

21.2.1.1.1 Direct Cost

Direct costs of completing the project include the cost of installed equipment, material, labour, and supervision directly or immediately involved in the physical construction of the permanent facilities.

The estimate of direct cost is structured following the project work breakdown structure (WBS) and is based on the PFS level engineering information including Process Flow Diagrams (PFD), Mechanical Equipment List (MEL), Electrical Equipment List (EEL), single line diagrams, plans, etc., used for the quantification of labour, material, and equipment by discipline required for the project scope.

The costs are based on a combination of firm and budgetary quotations from equipment suppliers, vendors, and contractors as well BISA cost databases from similar project and cost inputs provided by Hemco.

The capital cost is furthermore developed to reflect an Owner managed project execution strategy with the appointment of a consulting company to complete the Engineering and Procurement and direct appointment and management of key construction contractors for:

- Camp Supply
- Civil and Earthworks
- SMPE – Structural, Mechanical, Piping Electrical and Instrumentation
- Tailings Dam Construction
- Contract Mining

21.2.1.1.2 Indirect Cost

The project indirect cost includes the cost not directly attributable to the completion of the facilities and considers the costs which do not become a final part of the installation, but which are required for the orderly completion of the installation. This includes, but is not limited to items such as field administration, direct supervision, capital tools, startup costs, contractor's fees, insurance, taxes, etc.

The estimates indirect cost for the project include:

- Engineering, Procurement, and Construction Management (EPCM) costs are estimated at 12% of project direct cost.
- Freight cost estimates are based on 15% of imported equipment and 5% of locally purchased equipment.
- Vendor assistance at 5% of total mechanical equipment.
- First fills at 1% of total mechanical equipment.
- Spares at 6% of total mechanical equipment.
- Temporary Construction Facilities cost is estimated at 1.5% of direct cost.
- Pre-commissioning and Commissioning cost, estimated at 1.5% of direct cost.
- Operational Readiness & Owners cost, estimated at 4.5% of direct cost.

21.2.1.1.3 Contingencies

Contingency allowances are included in the estimate to allow for items, conditions, or events for which the state, occurrence, or effect is uncertain which will likely result in additional costs. The project contingency provisions have been determined as follows:

- Initial Capital Stage 1 - 1,000 tpd: 14.8% contingency
- Expansion Capital Stage 2 - 2,000 tpd: 10% contingency

Escalation does not provide for major scope changes; extraordinary events such as major strikes and natural disasters; management reserves; or cost escalation and currency effects.

21.2.1.1.4 Currencies

All costs estimated are shown in US dollars with the exchange rate of any specific local Nicaraguan Cordoba (NIO) cost based on 36.24 NIO: US$1.00.

21.2.2 Porvenir Sustaining Capital Costs

The sustaining capital cost estimate for the Porvenir Project was developed on the same basis as the initial and expansion capital cost by BISA and Mineros and reviewed by SLR and found to be acceptable and reasonable representation of the project.

The total sustaining capital cost is estimated to amount to $53.6 million including a $2.6 million (or 5%) contingency and represents the sustaining capital required in years 2 to 9 of operation as summarized in Table 21-5.

Table 21-5: Sustaining Capital Costs – Porvenir Project
Mineros S.A. – Hemco Property

(US$ million)	Total LOM	Years							
		2	3	4	5	6	7	8	9
Mining	26.13	3.70	3.47	2.60	4.27	4.31	4.13	2.79	0.86
Processing	1.50		0.50		0.50		0.50		
Infrastructure	2.94	1.49			1.45				
Tailings	20.43		3.14	3.14	3.14	3.67	3.67	3.67	
Contingency	2.55	0.26	0.36	0.29	0.47	0.40	0.42	0.32	0.04
Total Sustaining Capital Costs	**53.55**	**5.45**	**7.47**	**6.03**	**9.82**	**8.38**	**8.72**	**6.79**	**0.90**

21.2.3 Operating Costs

BISA has developed individual elements of the Porvenir operating costs according to the AACE International standard for Class 4 level engineering. These elements are subdivided into six major cost categories as described below:

- Labour – corresponds to the cost of remuneration for direct labour during the operation phase.

- Energy – corresponds to the cost of energy consumption of the equipment considered for the operation of the project.
- Consumables – corresponds to the cost of consumables during the operation phase (e.g., reagents, chemical, explosives, etc.)
- Maintenance materials – corresponds to the cost of equipment and infrastructure wear items due to the level of mineral processing.
- Third-party services – corresponds to the cost of operation for the different sub-contracts that must be implemented during the operation phase (e.g., maintenance, mining development, surveillance, etc.).
- G&A process plant – corresponds to the administration expenses associated with people (e.g., accommodation, food, mobilization, etc.)

The operating costs by area are summarized in Table 21-6 and Table 21-7.

Table 21-6: Porvenir Annual Operating Costs
Mineros S.A. – Hemco Property

(US$ million)	Total LOM	Years								
		1	2	3	4	5	6	7	8	9
Mine	240.06	21.35	25.24	29.03	29.42	27.40	29.12	29.48	29.26	19.76
Plant	213.88	14.76	19.03	26.47	26.47	26.47	26.47	26.47	26.47	21.27
Administration	11.29	1.00	1.21	1.34	1.34	1.34	1.34	1.34	1.34	1.06
Tailings	16.47	1.02	1.53	2.05	2.05	2.05	2.05	2.05	2.05	1.64
Total	**481.70**	**38.13**	**47.01**	**58.88**	**59.27**	**57.25**	**58.98**	**59.33**	**59.11**	**43.73**

Table 21-7: Porvenir Annual Unit Operating Costs
Mineros S.A. – Hemco Property

(US$/t)	Total LOM	Years								
		1	2	3	4	5	6	7	8	9
Mine	41.42	59.30	46.74	40.32	40.87	38.05	40.45	40.94	40.64	34.33
Plant	36.90	41.00	35.24	36.76	36.76	36.76	36.76	36.76	36.76	36.95
Administration	1.95	2.78	2.24	1.86	1.86	1.86	1.86	1.86	1.86	1.84
Tailings	2.84	2.84	2.84	2.84	2.84	2.84	2.84	2.84	2.84	2.84
Total	**83.12**	**105.93**	**87.06**	**81.79**	**82.33**	**79.52**	**81.92**	**82.41**	**82.10**	**75.96**

Additional details of the cost elements are included, and a breakdown of these costs is provided in the following sections.

21.2.3.1 Mine

The mine operating costs are based upon the mine development and production schedules and the use of contractors for development, production, and rock haulage. The mine costs and unit costs are shown in Table 21-8 and Table 21-9.

Table 21-8: Porvenir Mine Annual Operating Costs
Mineros S.A. – Hemco Property

(US$000)	Total LOM	Years								
		1	2	3	4	5	6	7	8	9
Labour	7,841	877	894	894	894	894	894	894	894	705
Materials	20,980	1,734	3,144	4,066	2,532	1,653	1,701	1,640	3,772	738
Services	187,119	17,239	18,952	21,075	22,999	21,854	23,532	23,948	21,596	15,923
Energy	24,118	1,498	2,247	2,996	2,996	2,996	2,996	2,996	2,996	2,396
Total	240,057	21,348	25,238	29,031	29,421	27,398	29,124	29,478	29,258	19,762

Table 21-9: Porvenir Mine Annual Unit Costs
Mineros S.A. – Hemco Property

(US$/t)	Total LOM	Years								
		1	2	3	4	5	6	7	8	9
Labour	1.35	2.44	1.66	1.24	1.24	1.24	1.24	1.24	1.24	1.22
Materials	3.62	4.82	5.82	5.65	3.52	2.30	2.36	2.28	5.24	1.28
Services	32.29	47.89	35.10	29.27	31.95	30.35	32.69	33.26	29.99	27.66
Energy	4.16	4.16	4.16	4.16	4.16	4.16	4.16	4.16	4.16	4.16
Total	41.42	59.30	46.74	40.32	40.87	38.05	40.45	40.94	40.64	34.33

21.2.3.2 Processing Plant

The processing operating costs were developed by BISA based on data from a variety of sources, including:

- Interpretation of metallurgical test work;
- Supplier quotes for reagents and consumables;
- Consultation from Mineros;
- Available industry data;
- BISA's cost database; and
- Calculations from first principles.

Costs have been developed by BISA to comply with operations dictated by the key process design criteria. These costs have been reviewed by SLR and are found to be acceptable and a reasonable representation of the Porvenir Project.

The total cost of the processing plant operation is summarized in Table 21-10 (BISA, 2023).

Table 21-10: Total Process Plant Operating Costs
Mineros S.A. – Hemco Property

(US$000)	Total LOM	Years								
		1	2	3	4	5	6	7	8	9
Labour	12,637	1,295	1,295	1,480	1,480	1,480	1,480	1,480	1,480	1,167
Energy	54,600	4,193	4,193	6,774	6,774	6,774	6,774	6,774	6,774	5,570
Consumables	109,125	6,188	9,234	13,778	13,777	13,778	13,777	13,778	13,779	11,036
Maintenance Materials	21,688	1,710	2,565	2,565	2,565	2,565	2,565	2,565	2,565	2,023
Third-party Services	9,300	733	1,100	1,100	1,100	1,100	1,100	1,100	1,100	867
G&A Process Plant	6,528	515	772	772	772	772	772	772	772	609
Total	213,876	**14,759**	**19,026**	**26,470**	**26,469**	**26,470**	**26,469**	**26,470**	**26,471**	**21,272**

The processing plant unit operating costs are summarized in Table 21-11 (BISA, 2023).

Table 21-11: Process Plant Unit Operating Costs
Mineros S.A. – Hemco Property

(US$/t)	Total LOM	Years								
		1	2	3	4	5	6	7	8	9
Labour	2.18	3.60	2.40	2.06	2.06	2.06	2.06	2.06	2.06	2.03
Energy	9.42	11.65	7.77	9.41	9.41	9.41	9.41	9.41	9.41	9.68
Consumables	18.83	17.19	17.10	19.14	19.14	19.14	19.14	19.14	19.14	19.17
Maintenance Materials	3.74	4.75	4.75	3.56	3.56	3.56	3.56	3.56	3.56	3.51
Third-party Services	1.60	2.04	2.04	1.53	1.53	1.53	1.53	1.53	1.53	1.51
G&A Process Plant	1.13	1.43	1.43	1.07	1.07	1.07	1.07	1.07	1.07	1.03
Total	36.90	**41.00**	**35.24**	**36.77**	**36.77**	**36.77**	**36.77**	**36.77**	**36.76**	**36.95**

21.2.3.3 Administration

The Porvenir administration costs and unit costs are shown in Table 21-12 and Table 21-13.

Table 21-12: Porvenir Administration Annual Operating Costs
Mineros S.A. – Hemco Property

(US$000)	Total LOM	Years								
		1	2	3	4	5	6	7	8	9
Labour	4,975	531	571	571	571	571	571	571	571	450
Materials	-	-	-	-	-	-	-	-	-	-
Services	2,206	216	256	256	256	256	256	256	256	202
Energy	4,108	255	383	510	510	510	510	510	510	408
Total	11,290	1,002	1,209	1,337	1,337	1,337	1,337	1,337	1,337	1,060

Table 21-13: Porvenir Administration Unit Operating Costs
Mineros S.A. – Hemco Property

(US$/t)	Total LOM	Years								
		1	2	3	4	5	6	7	8	9
Labour	0.86	1.47	1.06	0.79	0.79	0.79	0.79	0.79	0.79	0.78
Materials	-	-	-	-	-	-	-	-	-	-
Services	0.38	0.60	0.47	0.35	0.35	0.35	0.35	0.35	0.35	0.35
Energy	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Total	1.95	2.78	2.24	1.86	1.86	1.86	1.86	1.86	1.86	1.84

21.2.3.4 Tailings Deposit

The Porvenir tailings deposition costs and unit costs are shown in Table 21-14 and Table 21-15.

Table 21-14: Porvenir Tailings Annual Operating Costs
Mineros S.A. – Hemco Property

(US$000)	Total LOM	Years								
		1	2	3	4	5	6	7	8	9
Materials	1,218	76	113	151	151	151	151	151	151	121
Services	15,256	948	1,421	1,895	1,895	1,895	1,895	1,895	1,895	1,515
Total	16,474	1,023	1,535	2,047	2,047	2,047	2,047	2,047	2,047	1,636

Table 21-15: Porvenir Tailings Unit Operating Costs
Mineros S.A. – Hemco Property

(US$/t)	Total LOM	Years								
		1	2	3	4	5	6	7	8	9
Materials	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
Services	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63
Total	2.84	2.84	2.84	2.84	2.84	2.84	2.84	2.84	2.84	2.84

21.2.3.5 Porvenir Manpower

The manpower for the Porvenir Project through construction and the first five years of operations is summarized in Table 21-16.

Table 21-16: Porvenir Manpower
Mineros S.A. – Hemco Property

Area	Years						
	-2	-1	1	2	3	4	5
Mine Staff	28	29	32	32	32	32	32
Mine Contractors	84	99	147	159	177	177	180
Plant	80	80	80	80	97	97	97
Plant Maintenance	34	34	34	34	38	38	38
Mine Maintenance	19	19	19	20	20	20	20
G&A	30	32	33	39	39	39	39
Total	**275**	**293**	**345**	**364**	**403**	**403**	**406**

22.0 ECONOMIC ANALYSIS

The economic analysis contained in this Technical Report is a combined cashflow for the Hemco Property. The Hemco Property includes the Panama Mine, the Pioneer Mine, and the Porvenir Project. There are gold Mineral Reserves in the Panama and Pioneer mines and gold, silver, and zinc Mineral Reserves in the Porvenir deposit.

For the Panama and Pioneer mines the economic assumptions, and capital and operating costs used for the economic analysis were provided by Mineros. For the Porvenir Project the economic assumptions were provided by Mineros and the capital and operating costs were developed for the Project PFS by BISA and Mineros and reviewed and accepted by SLR. All costs are in Q3 2022 US dollars with no allowance for inflation.

A summary of the key criteria is provided below.

22.1 Economic Criteria

22.1.1 Physicals

- Hemco Property mine life: 13 years (between years 2023 and 2035):
  - Panama and Pioneer mines: 4.8 years (between years 2023 and 2027).
  - Porvenir Project: 9 years (between years 2027 and 2035).
- Hemco Underground operations:
  - Total underground tonnes mined: 7,363 kt at 3.34 g/t Au

Production by Mine	Ore (kt)	Grade (g/t Au)	Grade (g/t Ag)	Grade (% Zn)
Panama Mine (Mechanized)	934	4.00	-	-
Panama Mine (Shrinkage)	97	4.21	-	-
Pioneer Mine (Mechanized)	537	4.84	-	-
Porvenir Project	5,795	3.08	10.29	2.97%
Total LOM Underground Combined Production	**7,363**	**3.34**	**-**	**-**

  - The Porvenir Mineral Reserves represent 79% of the total tonnes of Proven and Probable Mineral Reserves on the Hemco Property.
- Processing LOM tonnes:
  - Hemco Plant (Panama and Pioneer mines)
    - Total Ore Feed to Plant: 1,568 kt at 4.30 g/t Au
    - Contained Gold: 216,672 oz Au
    - Average LOM Plant Recovery 90%

- Recovered Gold: 195,005 oz Au

- Porvenir Plant
  - Total Ore Feed to Plant: 5,794 kt at 3.07 g/t Au, 10.29 g/t Ag, and 2.97% Zn
  - Contained Metal:
    - Au: 574,657 oz
    - Ag: 1,917,801 oz
    - Zn: 172,363 t (380 Mlb Zn)
  - Average LOM Plant Recovery
    - Au recovery in doré: 85.6%
    - Ag recovery in doré: 52.8%
    - Zn grade in concentrate: 50.0%
    - Au recovery in Zn concentrate: 3.3%
    - Zn recovery in Zn concentrate: 91.1%
  - Recovered Metal:
    - Au: 510,423oz
    - Ag: 1,011,235 oz
    - Zn: 157,038 tonnes (346 Mlb Zn)
    - Au Equivalent (AuEq): 816,370oz AuEq

22.1.2 Revenue

- Revenue is estimated based on:
  - Mineral Reserve metal prices: A gold price of US$1,500/oz Au for ounces not under the forward sales contract, a silver price of US$19.00/oz Ag, and a zinc price of US$1.27/lb Zn
  - A forward sales contract of 1,000 oz Au/ month for year 2023, which Mineros will review at the end of 2023 to determine whether to renew the contract for year 2024 and thereafter. This contract mitigates the risk of low spot prices, but limits upside of high spot prices.
- Gold production: doré bars containing gold and silver are sent to two refineries, with a split of 75% (Argor Heraeus, Switzerland) and 25% (Asahi, USA) of production by refinery. Silver was not included in the economic analysis for Panama and Pioneer mines, as it is not included in the Mineral Reserves. Past production from the Panama and Pioneer mines indicates that the production of silver in the doré could represent an approximate 1% to 2% additional contribution to the revenue presented in the cash flow.
- Gold and Silver Transportation and Doré Refining Charges are estimated at a LOM average of US$1.24/oz of doré production (including transportation, shipment, and treatment charges).
- For zinc production, the assumed smelter terms are based on typical zinc smelter contracts. There is a small amount of payable gold within the Porvenir zinc concentrate. The sale of zinc

concentrate and the precise terms are a function of the concentrate quality and the level of impurities in the concentrate.

- Logistics, treatment, and refining charges for the zinc concentrate from Porvenir mine are assumed at:
  - Transportation to Port: US$76.20/wmt
  - Ocean freight to China: US$26.00/wmt
  - Treatment charges of US$265/dmt Zn concentrate
- NSR royalty of 1% payable to Auric.
- LOM net revenue is US$1,292 million (after Royalty and Treatment Charges)

22.1.3 Capital Costs

- Panama and Pioneer mines
  - Hemco Plant Expansion (from 1,750 tpd to 2,200 tpd) capital of US$18.4 million
  - LOM sustaining capital costs of US$52.6 million.
  - Concurrent reclamation and closure costs of US$32.7 million included in the analysis over the LOM. Concurrent reclamation activities occur between 2023 and 2035, and closure and post closure activities occur between 2036 and 2041.
- Porvenir Project:
  - The total initial capital cost for the Porvenir Project is estimated to be US$177.9 million including a US$19.5 million contingency and covers the initial capital expenditure and an expansion phase in years 1 and 2 of operation of the Porvenir mine.
  - The Porvenir Project LOM sustaining capital cost is estimated to be US$53.6 million including contingency of US$2.6 million (or 5%) and represents the sustaining capital required in years 2 to 9 of Porvenir Project operation.
  - Porvenir Conceptual Closure Plan is estimated at US$17.1 million

22.1.4 Operating Costs

- Panama and Pioneer LOM average unit operating costs:
  - Panama SLS mining: US$32.31/ore tonne mined
  - Panama Shrinkage mining: US$77.73/ore tonne mined
  - Pioneer SLS mining: US$32.31/ore tonne mined
  - Processing: US$39.41/ore tonne milled
  - Support and G&A US$28.15/ore tonne milled (US$9.85 million per year)
- Porvenir LOM average unit operating costs:
  - Underground mining: US$41.42/tonnes mined
  - Processing: US$36.90/ore tonne milled

- Tailings: US$2.84/ore tonne milled
- Support and G&A: US$1.95/ore tonnes milled

- Total Hemco Property unit operating costs are US$87.28/ore tonne milled
- Hemco Property LOM total operating costs are US$643 million.
- Total Hemco Property operating cash cost are US$819/oz AuEq.
- Hemco Property All-In Sustaining Cost (AISC) are US$921/oz AuEq.

22.1.5 Taxation and Royalties

- Corporate income tax rate in Nicaragua is 30%. The tax calculation used in the cashflow model is based on a tax model for the Hemco Property developed by BISA for the Porvenir PFS study, reviewed and approved by Mineros for use in the cash flow analysis. This model includes depreciation and tax losses. SLR has relied on the tax model provided by Mineros.
- Production from Old Mining Law concessions are subject to an ad valorem tax, equal to 3% of the on-site value of the minerals extracted, less freight costs from the production site to its destination. Production from Mining Law concessions are subject to a 3% legal royalty (extraction right) on the gross sales price of minerals. Such taxes and royalties are deductible from income tax.
- There is a contractual 1% NSR on production from the Bonanza concession, including the Panama and Pioneer mines, payable to Auric (see Taxes and Royalties in Section 4.4.2 of this Technical Report).

22.2 Cash Flow

An unlevered after-tax cash flow model has been developed by SLR for the Hemco Property, consolidating physicals, costs, and revenues for the Panama Mine, Pioneer Mine, and Porvenir Project.

The inputs for the cash flow model, for Panama and Pioneer, such as capital and operating costs, were provided to SLR by Mineros' corporate and mine site technical teams, and for the Porvenir Project were provided by BISA and Mineros. All costs are in Q3 2022 US$ dollars with no allowance for inflation.

SLR prepared the consolidated production schedule for the Hemco Property, consolidating the Panama mine, Pioneer mine, and the Porvenir Project production schedules.

SLR notes that the tax model used in the after-tax cash flow model was developed by BISA, approved by Mineros, and has been relied on by SLR.

In addition to the Hemco Property consolidated model, SLR has developed an unlevered after-tax cash flow model for Porvenir Project in a stand-alone basis, given is the first-time disclosure of Porvenir Mineral Reserves as of December 31, 2022. SLR's cash flow model for the Porvenir Project is based on BISA's PFS study financial model. All costs are in Q3 2022 US$ millions with no allowance for inflation.

Neither cash flow models consider the following components:

- Financing costs
- Insurance
- Overhead cost for a corporate office
- Revenue from processing and sale of artisanal mining feeds

22.3 Cash Flow Analysis

22.3.1 Hemco Property (Consolidated)

SLR prepared a LOM unlevered after-tax cash flow model to confirm the economics of the Hemco Property over the LOM (between 2023 and 2035). Economics have been evaluated using the discounted cash flow method by considering annual processed tonnages and gold, silver and zinc grades of ore. The associated process recovery, metal prices, operating costs, refining and transportation charges, royalties, and capital expenditures were also considered.

The economic analysis demonstrates that the Hemco Property Mineral Reserves are economically viable at a flat gold price of US$1,500/oz Au, a silver price of US$19.00/oz Ag and a zinc price of US$1.27/lb Zn over the LOM. The pre-tax NPV at a 10% discount rate is US$77 million, and the pre-tax IRR is 25.4%. The after-tax NPV at a 10% discount rate is US$45 million, and the after-tax IRR is 18.5%.

A detailed after-tax cash flow summary for the Hemco Property (consolidated) is presented in Table 22-1.

The undiscounted pre-tax cash flow is US$254 million, and the undiscounted after-tax cash flow is US$193 million.

The World Gold Council Adjusted Operating Cost (AOC) is US$819/oz Au Equivalent. The mine life sustaining capital cost is US$101/oz Au Equivalent, for an AISC of US$921/oz Au Equivalent. Mine average annual gold production during the LOM is approximately 54,300 oz per year between 2023 and 2035, silver production is 112,400 oz per year between 2027 and 2035 and zinc production is 38.5 Mlb per year between 2027 and 2035.

Table 22-1: After-Tax Cash Flow Summary (Consolidated)
Mineros S.A. - Hemco Propoerty

	Analysis Type	YE2022 MRMR Audit and NI 43-101 TR		2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Project Timeline in Years				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Commercial Production Timeline in Years				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Time Until Closure In Years		US$ & Metric Units	LoM Avg / Total	13	12	11	10	9	8	7	6	5	4	3	2	1	-1	-2	-3	-4	-5	-6	-7
Market Prices																							
Gold		US$/oz	**$1,500**	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	-	-	-	-	-	-	-
Gold Forward Contract - Stonex (INTL FCStone)		US$/oz	**$1,700**	1,700	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Silver		US$/oz	**$19.00**	-	-	-	-	19.00	19.00	19.00	19.00	19.00	19.00	19.00	19.00	19.00	-	-	-	-	-	-	-
Zinc		US$/tonne	**$2,800**	-	-	-	-	2,800	2,800	2,800	2,800	2,800	2,800	2,800	2,800	2,800	-	-	-	-	-	-	-
Physicals																							
Underground Ore Mined		**kt**	**7,363**	**283**	**380**	**377**	**361**	**527**	**540**	**720**	**720**	**720**	**720**	**720**	**720**	**576**	-	-	-	-	-	-	-
Au Grade Mined		**g/t**	**3.34**	**4.31**	**4.43**	**4.24**	**4.29**	**3.99**	**3.13**	**3.48**	**3.39**	**2.77**	**2.56**	**2.86**	**3.00**	**3.07**	-	-	-	-	-	-	-
Ag Grade Mined		**g/t**	**8.36**	-	-	-	-	**11.62**	**10.99**	**11.35**	**11.71**	**10.29**	**8.51**	**9.12**	**8.91**	**11.16**	-	-	-	-	-	-	-
Zn Grade Mined		**%**	**2.40%**	-	-	-	-	**2.60%**	**3.44%**	**3.23%**	**2.98%**	**3.19%**	**0.03**	**0.02**	**0.03**	**0.03**	-	-	-	-	-	-	-
Waste		**kt**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Material Mined		**kt**	**7,363**	**283**	**380**	**377**	**361**	**527**	**540**	**720**	**720**	**720**	**720**	**720**	**720**	**576**	-	-	-	-	-	-	-
Total Ore Processed		kt	7,363	283	380	377	361	527	540	720	720	720	720	720	720	576	-	-	-	-	-	-	-
Gold Grade, Processed		g/t	3,342.83	4.31	4.43	4.24	4.29	3.99	3.13	3.48	3.39	2.77	2.56	2.86	3.00	3.07	-	-	-	-	-	-	-
Silver Grade, Processed		g/t	8,101.41	-	-	-	-	11.62	10.99	11.35	11.71	10.29	8.51	9.12	8.91	11.16	-	-	-	-	-	-	-
Zn Grade Mined		%	2.40%	-	-	-	-	2.60%	3.44%	3.23%	2.98%	3.19%	2.88%	2.48%	2.92%	2.98%	-	-	-	-	-	-	-
Contained Gold, Processed		koz	791,328	39,224	54,151	51,435	49,750	67,481	54,360	80,618	78,471	64,190	59,267	66,274	69,345	56,763	-	-	-	-	-	-	-
Contained Silver, Processed		koz	1,917,801	-	-	-	-	134,437	190,718	262,741	271,036	238,103	196,965	211,019	206,188	206,594	-	-	-	-	-	-	-
Contained Zinc, Processed		tonnes	172,363	-	-	-	-	9,363	18,555	23,282	21,476	22,947	20,714	17,845	21,016	17,166	-	-	-	-	-	-	-
Average Recovery, Gold		%	89.1%	90%	90%	90%	90%	87%	93%	91%	85%	87%	91%	90%	92%	85%	-	-	-	-	-	-	-
Average Recovery, Silver		%	52.7%	0%	0%	0%	0%	55%	54%	53%	51%	50%	53%	55%	55%	51%	-	-	-	-	-	-	-
Average Recovery, Zinc		%	91.1%	0%	0%	0%	0%	90%	91%	92%	92%	92%	92%	90%	91%	92%	-	-	-	-	-	-	-
Recovered Gold		koz	705,427	35,302	48,736	46,292	44,775	58,983	50,594	73,615	66,358	55,596	53,879.28	59,736.15	63,517.69	48,042.82	-	-	-	-	-	-	-
Recovered Silver		koz	1,011,235	-	-	-	-	74,275	103,669	139,947	137,580	117,945	104,264	115,204	113,127	105,226	-	-	-	-	-	-	-
Recovered Zinc		tonnes	157,038	-	-	-	-	8,406	16,801	21,316	19,653	21,083	18,969	15,974	19,057	15,781	-	-	-	-	-	-	-
Payable Gold	0.0%	koz	201,148	35,277	48,701.8	46,259.2	44,744.0	20,560.9	507	913	938	543	523	820	753	608	-	-	-	-	-	-	-
Payable Silver		koz	490,983	-	-	-	-	37,550	48,754	70,886	63,706	53,425	51,874	57,494	61,171	46,124	-	-	-	-	-	-	-
Payable Zinc		tonnes	1,132,640	-	-	-	-	80,572	116,702	156,398	152,663	134,422	119,107	127,430	127,955	117,390	-	-	-	-	-	-	-
Payable Gold Equivalent		**Eq koz**	**950,309**	**35,277**	**48,702**	**46,259**	**44,744**	**72,183**	**76,825**	**106,877**	**97,092**	**88,406**	**83,358**	**84,731**	**93,133**	**72,723**	-	-	-	-	-	-	-
Cash Flow																							
Gold Revenue - Reserve price		$000s	1,040,596	55,316	73,053	69,389	67,116	87,166	73,891	107,699	96,966	80,952	78,595	87,471	92,885	70,099	-	-	-	-	-	-	-
Silver Revenue - Reserves Price		$000s	19,021	-	-	-	-	1,397	1,950	2,632	2,588	2,219	1,961	2,167	2,128	1,979	-	-	-	-	-	-	-
Zinc Revenue - Reserves Price		$000s	368,246	-	-	-	-	19,711	39,397	49,984	46,085	49,438	44,481	37,458	44,686	37,007	-	-	-	-	-	-	-
Total Gross Revenue		**$000s**	**1,427,864**	**55,316**	**73,053**	**69,389**	**67,116**	**108,274**	**115,238**	**160,315**	**145,639**	**132,609**	**125,037**	**127,096**	**139,700**	**109,085**	-	-	-	-	-	-	-
Underground Mining Cost		$000s	(295,115)	(9,157)	(12,278)	(12,372)	(14,406)	(28,192)	(25,238)	(29,031)	(29,421)	(27,398)	(29,124)	(29,478)	(29,258)	(19,762)	-	-	-	-	-	-	-
Process Cost		$000s	(275,649)	(11,167)	(14,972)	(14,860)	(14,207)	(21,326)	(19,026)	(26,470)	(26,469)	(26,470)	(26,469)	(26,470)	(26,471)	(21,272)	-	-	-	-	-	-	-
Tailings Costs		$000s	(16,474)	-	-	-	-	(1,023)	(1,535)	(2,047)	(2,047)	(2,047)	(2,047)	(2,047)	(2,047)	(1,636)	-	-	-	-	-	-	-
Suport + G&A Cost		$000s	(55,423)	(9,851)	(9,851)	(9,851)	(9,851)	(5,730)	(1,209)	(1,337)	(1,337)	(1,337)	(1,337)	(1,337)	(1,337)	(1,060)	-	-	-	-	-	-	-
Offsite Treatment Cost		$000s	(121,512)	(55)	(76)	(72)	(70)	(6,568)	(12,954)	(16,463)	(15,189)	(16,225)	(14,601)	(12,360)	(14,696)	(12,181)	-	-	-	-	-	-	-
Royalty NSR - Auric Resources Corp.	1.0%	$000s	(14,279)	(553)	(731)	(694)	(671)	(1,083)	(1,152)	(1,603)	(1,456)	(1,326)	(1,250)	(1,271)	(1,397)	(1,091)	-	-	-	-	-	-	-
Total Cash Costs After By-Product Credits		**$000s**	**(778,452)**	**(30,783)**	**(37,907)**	**(37,849)**	**(39,206)**	**(63,923)**	**(61,115)**	**(76,951)**	**(75,919)**	**(74,802)**	**(74,828)**	**(72,962)**	**(75,205)**	**(57,002)**	-	-	-	-	-	-	-
Operating Margin	**45%**	**$000s**	**649,412**	**24,532**	**35,146**	**31,540**	**27,910**	**44,351**	**54,123**	**83,364**	**69,719**	**57,807**	**50,209**	**54,133**	**64,495**	**52,082**	-	-	-	-	-	-	-
EBITDA		**$000s**	**649,412**	**24,532**	**35,146**	**31,540**	**27,910**	**44,351**	**54,123**	**83,364**	**69,719**	**57,807**	**50,209**	**54,133**	**64,495**	**52,082**	-	-	-	-	-	-	-
Depreciation/Amortization Allowance		$000s	(304,604)	(6,465)	(10,389)	(16,207)	(20,031)	(39,230)	(20,522)	(21,589)	(22,594)	(24,559)	(26,654)	(29,559)	(32,952)	(33,852)	-	-	-	-	-	-	-
Earnings Before Taxes		**$000s**	**344,807**	**18,067**	**24,757**	**15,332**	**7,880**	**5,121**	**33,601**	**61,775**	**47,125**	**33,248**	**23,555**	**24,574**	**31,543**	**18,230**	-	-	-	-	-	-	-
Gov. Ad-Valorem Tax - NSR	3.0%	$000s	(42,836)	(1,659)	(2,192)	(2,082)	(2,013)	(3,248)	(3,457)	(4,809)	(4,369)	(3,978)	(3,751)	(3,813)	(4,191)	(3,273)	-	-	-	-	-	-	-
Corp. Income Tax @ Effective Rate of:	9.4%	$000s	(61,338)	(3,263)	(4,578)	(2,082)	(2,013)	(3,248)	(5,586)	(12,280)	(8,458)	(4,803)	(3,751)	(3,813)	(4,191)	(3,273)	-	-	-	-	-	-	-
Net Income		**$000s**	**240,633**	**13,145**	**17,987**	**11,169**	**3,853**	**(1,376)**	**24,558**	**44,685**	**34,298**	**24,467**	**16,053**	**16,949**	**23,161**	**11,685**	-	-	-	-	-	-	-
Non-Cash Add Back - Depreciation/Amortization		$000s	304,604	6,465	10,389	16,207	20,031	39,230	20,522	21,589	22,594	24,559	26,654	29,559	32,952	33,852	-	-	-	-	-	-	-
Working Capital		$000s	-	(2,025)	-	-	-	(534)	-	-	-	-	-	-	-	2,559	-	-	-	-	-	-	-
Operating Cash Flow		**$000s**	**545,238**	**17,585**	**28,376**	**27,376**	**23,883**	**37,321**	**45,080**	**66,275**	**56,893**	**49,026**	**42,707**	**46,508**	**56,113**	**48,096**	-	-	-	-	-	-	-
Hemco Plant Expansion Capital		$000s	(18,370)	(4,818)	(7,172)	(5,500)	(880)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hemco Sustaining Capital		$000s	(52,547)	(16,479)	(17,346)	(11,956)	(6,767)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Porvenir Initial Capital		$000s	(160,708)	-	-	(81,499)	(79,210)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Porvenir Expansion Capital		$000s	(17,223)	-	-	-	-	(12,088)	(5,134)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Porvenir Sustaining Capital		$000s	(53,550)	-	-	-	-	-	(5,446)	(7,470)	(6,031)	(9,823)	(8,379)	(8,715)	(6,785)	(900)	-	-	-	-	-	-	-
Hemco Closure/Reclamation Capital		$000s	(32,657)	(2,697)	(2,324)	(2,310)	(1,535)	(1,533)	(1,292)	(908)	(1,241)	(1,101)	(1,048)	(1,048)	(492)	(787)	(5,277)	(6,605)	(614)	(614)	(614)	(614)	-
Porvenir Closure/Reclamation Capital		$000s	(17,125)	-	-	-	-	-	-	-	-	-	-	-	-	-	(17,125)	-	-	-	-	-	-
Total Capital		**$000s**	**(352,180)**	**(23,994)**	**(26,842)**	**(101,264)**	**(88,391)**	**(13,622)**	**(11,872)**	**(8,378)**	**(7,272)**	**(10,925)**	**(9,428)**	**(9,764)**	**(7,278)**	**(1,687)**	**(22,402)**	**(6,605)**	**(614)**	**(614)**	**(614)**	**(614)**	-
Cash Flow Adj./Reimbursements		**$000s**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

	Analysis Type	YE2022 MRMR Audit and NI 43-101 TR		2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Project Timeline in Years				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Commercial Production Timeline in Years				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Time Until Closure In Years		US$ & Metric Units	LoM Avg / Total	13	12	11	10	9	8	7	6	5	4	3	2	1	-1	-2	-3	-4	-5	-6	-7
LoM Metrics																							
Economic Metrics																							
a) Pre-Tax																							
Free Cash Flow		$000s	**254,395**	(3,147)	6,113	(71,806)	(62,494)	26,947	38,793	70,176	58,078	42,904	37,030	40,557	53,026	49,682	(22,402)	(6,605)	(614)	(614)	(614)	(614)	-
Cumulative Free Cash Flow		$000s		(3,147)	2,966	(68,840)	(131,335)	(104,388)	(65,594)	4,582	62,660	105,564	142,594	183,151	236,178	285,859	263,458	256,853	256,238	255,624	255,010	254,395	254,395
IRR		**%**	**25.4%**																				
NPV @ 5%	5.0%	$000s	142,786																				
NPV @ 10%	**10.0%**	**$000s**	**77,320**																				
NPV @ 15%	15.0%	$000s	38,336																				
b) After-Tax																							
Free Cash Flow		$000s	**193,058**	(6,410)	1,535	(73,888)	(64,508)	23,699	33,207	57,896	49,621	38,101	33,279	36,744	48,835	46,409	(22,402)	(6,605)	(614)	(614)	(614)	(614)	-
Cumulative Free Cash Flow		$000s		(6,410)	(4,875)	(78,763)	(143,271)	(119,572)	(86,364)	(28,468)	21,153	59,254	92,533	129,277	178,112	224,521	202,120	195,515	194,901	194,286	193,672	193,058	193,058
IRR		**%**	**18.5%**																				
NPV @ 5%	5.0%	$000s	99,210																				
NPV @ 10%	**10.0%**	**$000s**	**45,112**																				
NPV @ 15%	15.0%	$000s	13,679																				

22.3.2 Porvenir Project

To support the disclosure of Mineral Reserves, the economics for the Porvenir Project on a stand-alone basis have been evaluated over its nine-years of LOM, using the discounted cash flow method by considering annual processed tonnages and gold, silver and zinc grades of ore. The associated process recovery, metal prices, operating costs, refining and transportation charges, royalties, and capital expenditures were also considered. All production, revenue, and cost information are based in BISA's PFS study for the Porvenir Project.

The economic analysis demonstrates that the Mineral Reserves are economically viable at a flat gold price of US$1,500/oz Au, a silver price of US$19.00/oz Ag and a zinc price of US$1.27/lb Zn over the LOM.

The Porvenir Project PFS base case economics include an after-tax NPV at a 10% discount rate of approximately US$42 million, an after-tax internal rate of return (IRR) of approximately 16% and a payback period of approximately four years from start of production.

A detailed after-tax cash flow summary for the Porvenir Project (stand-alone) is presented in Table 22-2.

The undiscounted pre-tax cash flow is US$236 million, and the undiscounted after-tax cash flow is US$188 million.

The World Gold Council Adjusted Operating Cost (AOC) is US$813/oz Au Equivalent. The mine life sustaining capital cost is US$116/oz Au Equivalent, for an AISC of US$929/oz Au Equivalent. The Porvenir Project will add average annual production over its nine-year mine life of 56,700 oz Au per year, along with 112,300 oz Ag per year and 38.5 Mlb Zn per year to the Hemco Property.

Table 22-2: After-Tax Cash Flow Summary (Porvenir Project)
Mineros S.A. - Hemco Property

	Analysis Type	PFS		Year -2	Year -1	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11
Project Timeline in Years				1	2	3	4	5	6	7	8	9	10	11	12	13
Commercial Production Timeline in Years				-2	-1	1	2	3	4	5	6	7	8	9	10	11
Time Until Closure In Years		US$ & Metric Units	LoM Avg / Total	11	10	9	8	7	6	5	4	3	2	1	-1	-2
Market Prices																
Gold		US$/oz	**$1,500**	-	-	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	-	-
Silver		US$/oz	**$19.00**	-	-	19.00	19.00	19.00	19.00	19.00	19.00	19.00	19.00	19.00	-	-
Zinc		US$/tonne	**$2,800**	-	-	2,800	2,800	2,800	2,800	2,800	2,800	2,800	2,800	2,800	-	-
Physicals																
Underground Ore Mined		**kt**	**5,795**	**-**	**-**	**360**	**540**	**720**	**720**	**720**	**720**	**720**	**720**	**576**	**-**	**-**
Au Grade Mined		**g/t**	**3.08**	**-**	**-**	**3.92**	**3.13**	**3.48**	**3.39**	**2.77**	**2.56**	**2.86**	**3.00**	**3.07**	**-**	**-**
Ag Grade Mined		**g/t**	**10.29**	**-**	**-**	**11.62**	**10.99**	**11.35**	**11.71**	**10.29**	**8.51**	**9.12**	**8.91**	**11.16**	**-**	**-**
Zn Grade Mined		**%**	**2.97%**	**-**	**-**	**2.60%**	**3.44%**	**3.23%**	**2.98%**	**3.19%**	**2.88%**	**2.48%**	**2.92%**	**2.98%**	**-**	**-**
Waste		**kt**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Total Material Mined		**kt**	**5,795**	**-**	**-**	**360**	**540**	**720**	**720**	**720**	**720**	**720**	**720**	**576**	**-**	**-**
Total Ore Processed		kt	5,795	-	-	360	540	720	720	720	720	720	720	576	-	-
Gold Grade, Processed		g/t	3,084.17	-	-	3.92	3.13	3.48	3.39	2.77	2.56	2.86	3.00	3.07	-	-
Silver Grade, Processed		g/t	10,292.79	-	-	11.62	10.99	11.35	11.71	10.29	8.51	9.12	8.91	11.16	-	-
Zn Grade Mined		%	2.97%	-	-	2.60%	3.44%	3.23%	2.98%	3.19%	2.88%	2.48%	2.92%	2.98%	-	-
Contained Gold, Processed		koz	574,657	-	-	45,370	54,360	80,618	78,471	64,190	59,267	66,274	69,345	56,763	-	-
Contained Silver, Processed		koz	1,917,801	-	-	134,437	190,718	262,741	271,036	238,103	196,965	211,019	206,188	206,594	-	-
Contained Zinc, Processed		tonnes	172,363	-	-	9,363	18,555	23,282	21,476	22,947	20,714	17,845	21,016	17,166	-	-
Average Recovery, Gold		%	88.8%	-	-	86%	93%	91%	85%	87%	91%	90%	92%	85%	-	-
Average Recovery, Silver		%	52.7%	-	-	55%	54%	53%	51%	50%	53%	55%	55%	51%	-	-
Average Recovery, Zinc		%	91.1%	-	-	90%	91%	92%	92%	92%	92%	90%	91%	92%	-	-
Recovered Gold		koz	510,423	-	-	39,084	50,594	73,615	66,358	55,596	53,879	59,736	63,518	48,043	-	-
Recovered Silver		koz	1,011,235	-	-	74,275	103,669	139,947	137,580	117,945	104,264	115,204	113,127	105,226	-	-
Recovered Zinc		tonnes	157,038	-	-	8,406	16,801	21,316	19,653	21,083	18,969	15,974	19,057	15,781	-	-
Payable Gold	0.0%	koz	497,263	-	-	38,225	49,260.6	71,799.1	64,644.1	53,967.8	52,397	58,314	61,924	46,732	-	-
Payable Silver		koz	1,001,123	-	-	73,532	102,632	138,547	136,204	116,765	103,221	114,052	111,996	104,173	-	-
Payable Zinc		tonnes	131,517	-	-	7,040	14,070	17,851	16,459	17,657	15,886	13,378	15,959	13,217	-	-
Payable Gold Equivalent		**Eq koz**	**755,441**	**-**	**-**	**52,297**	**76,825**	**106,877**	**97,092**	**88,406**	**83,358**	**84,731**	**93,133**	**72,723**	**-**	**-**
Cash Flow																
Gold Revenue - Reserve price		$000s	745,894	-	-	57,337	73,891	107,699	96,966	80,952	78,595	87,471	92,885	70,099	-	-
Silver Revenue - Reserves Price		$000s	19,021	-	-	1,397	1,950	2,632	2,588	2,219	1,961	2,167	2,128	1,979	-	-
Zinc Revenue - Reserves Price		$000s	368,246	-	-	19,711	39,397	49,984	46,085	49,438	44,481	37,458	44,686	37,007	-	-
Total Gross Revenue		**$000s**	**1,133,162**	**-**	**-**	**78,445**	**115,238**	**160,315**	**145,639**	**132,609**	**125,037**	**127,096**	**139,700**	**109,085**	**-**	**-**
Underground Mining Cost		$000s	(240,057)	-	-	(21,348)	(25,238)	(29,031)	(29,421)	(27,398)	(29,124)	(29,478)	(29,258)	(19,762)	-	-
Process Cost		$000s	(213,876)	-	-	(14,759)	(19,026)	(26,470)	(26,469)	(26,470)	(26,469)	(26,470)	(26,471)	(21,272)	-	-
Tailings Costs		$000s	(16,474)	-	-	(1,023)	(1,535)	(2,047)	(2,047)	(2,047)	(2,047)	(2,047)	(2,047)	(1,636)	-	-
Suport + G&A Cost		$000s	(11,290)	-	-	(1,002)	(1,209)	(1,337)	(1,337)	(1,337)	(1,337)	(1,337)	(1,337)	(1,060)	-	-
Offsite Treatment Cost		$000s	(121,191)	-	-	(6,536)	(12,953)	(16,461)	(15,187)	(16,223)	(14,600)	(12,359)	(14,694)	(12,180)	-	-
Royalty NSR - Auric Resources Corp.	1.0%	$000s	(11,332)	-	-	(784)	(1,152)	(1,603)	(1,456)	(1,326)	(1,250)	(1,271)	(1,397)	(1,091)	-	-
Total Cash Costs After By-Product Credits		**$000s**	**(614,221)**	**-**	**-**	**(45,452)**	**(61,113)**	**(76,948)**	**(75,917)**	**(74,800)**	**(74,826)**	**(72,961)**	**(75,203)**	**(57,001)**	**-**	**-**
Operating Margin	**46%**	**$000s**	**518,941**	**-**	**-**	**32,993**	**54,125**	**83,367**	**69,722**	**57,809**	**50,211**	**54,135**	**64,497**	**52,084**	**-**	**-**
EBITDA		**$000s**	**518,941**	**-**	**-**	**32,993**	**54,125**	**83,367**	**69,722**	**57,809**	**50,211**	**54,135**	**64,497**	**52,084**	**-**	**-**
Depreciation/Amortization Allowance		$000s	(231,481)	-	-	(19,200)	(20,522)	(21,589)	(22,594)	(24,559)	(26,654)	(29,559)	(32,952)	(33,852)	-	-
Earnings Before Taxes		**$000s**	**287,460**	**-**	**-**	**13,794**	**33,602**	**61,777**	**47,127**	**33,249**	**23,557**	**24,576**	**31,545**	**18,232**	**-**	**-**
Gov. Ad-Valorem Tax - NSR	3.0%	$000s	(33,995)	-	-	(2,353)	(3,457)	(4,809)	(4,369)	(3,978)	(3,751)	(3,813)	(4,191)	(3,273)	-	-
Corp. Income Tax @ Effective Rate of:	9.3%	$000s	(48,510)	-	-	(2,353)	(5,586)	(12,281)	(8,458)	(4,803)	(3,751)	(3,813)	(4,191)	(3,273)	-	-
Net Income		**$000s**	**204,955**	**-**	**-**	**9,087**	**24,559**	**44,687**	**34,300**	**24,468**	**16,054**	**16,950**	**23,163**	**11,687**	**-**	**-**
Non-Cash Add Back - Depreciation/Amortization		$000s	231,481	-	-	19,200	20,522	21,589	22,594	24,559	26,654	29,559	32,952	33,852	-	-
Working Capital		$000s	-	-	-	(2,559)	-	-	-	-	-	-	-	2,559	-	-

Analysis Type	PFS			Year -2	Year -1	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11
Project Timeline in Years				1	2	3	4	5	6	7	8	9	10	11	12	13
Commercial Production Timeline in Years				-2	-1	1	2	3	4	5	6	7	8	9	10	11
Time Until Closure In Years		US$ & Metric Units	LoM Avg / Total	11	10	9	8	7	6	5	4	3	2	1	-1	-2
Operating Cash Flow		**$000s**	**436,436**	**-**	**-**	**25,727**	**45,081**	**66,276**	**56,894**	**49,027**	**42,708**	**46,509**	**56,115**	**48,098**	**-**	**-**
Initial Capital		$000s	(160,708)	(81,499)	(79,210)	-	-	-	-	-	-	-	-	-	-	-
Expansion Capital		$000s	(17,223)	-	-	(12,088)	(5,134)	-	-	-	-	-	-	-	-	-
Sustaining Capital		$000s	(53,550)	-	-	-	(5,446)	(7,470)	(6,031)	(9,823)	(8,379)	(8,715)	(6,785)	(900)	-	-
Closure/Reclamation Capital		$000s	(17,125)	-	-	-	-	-	-	-	-	-	-	-	(17,125)	-
Total Capital		**$000s**	**(248,606)**	**(81,499)**	**(79,210)**	**(12,088)**	**(10,580)**	**(7,470)**	**(6,031)**	**(9,823)**	**(8,379)**	**(8,715)**	**(6,785)**	**(900)**	**(17,125)**	**-**
Cash Flow Adj./Reimbursements		**$000s**	**-**	-	-	-	-	-	-	-	-	-	-	-	-	-
LoM Metrics																
Economic Metrics																
a) Pre-Tax																
Free Cash Flow		$000s	**236,340**	(81,499)	(79,210)	15,992	40,087	71,087	59,322	44,007	38,080	41,607	53,520	50,471	(17,125)	-
Cumulative Free Cash Flow		$000s		(81,499)	(160,708)	(144,716)	(104,629)	(33,542)	25,779	69,787	107,867	149,474	202,994	253,465	236,340	236,340
IRR		**%**	**19.3%**													
NPV @ 5%	5.0%	$000s	**133,996**													
NPV @ 10%	**10.0%**	**$000s**	**68,328**	-	-	-	-	-	-	-	-	-	-	-	-	-
NPV @ 15%	15.0%	$000s	**25,359**													
Pre-Tax Payback		**years**	**3.6**													
b) After-Tax																
Free Cash Flow		$000s	**187,831**	(81,499)	(79,210)	13,639	34,501	58,806	50,863	39,204	34,329	37,794	49,329	47,198	(17,125)	-
Cumulative Free Cash Flow		$000s		(81,499)	(160,708)	(147,069)	(112,569)	(53,763)	(2,899)	36,304	70,634	108,428	157,757	204,955	187,831	187,831
IRR		**%**	**15.9%**													
NPV @ 5%	5.0%	$000s	**98,537**													
NPV @ 10%	**10.0%**	**$000s**	**41,750**													
NPV @ 15%	15.0%	$000s	**5,000**													
After-Tax Payback		**years**	**4.1**													

22.4 Sensitivity Analysis

Project risks can be identified in both economic and non-economic terms. Key economic risks were examined by running cash flow sensitivities on after-tax NPV at a 10% discount rate. The following items were examined:

- Metal prices
- Head grade
- Metallurgical recovery
- Operating costs
- Capital costs (Development, Sustaining, and Closure)

After-tax sensitivity over the base case has been calculated for -20% to +20% for head grade, -5% to +5% for metallurgical recovery, -20% to +20% for metal prices, and -15% to +35% for operating costs and capital costs variations to determine the most sensitive parameter of the Hemco Property.

22.4.1 Hemco Property (Consolidated)

The sensitivities for the Hemco Property (consolidated) are shown in Table 22-3 and Figure 22-1.

Table 22-3: Hemco Property After-Tax Sensitivity Analysis
Mineros S.A. – Hemco Property

Variance	Head Grade (g/t Au)	NPV at 10% (US$000)
80%	2.69	-64,151
90%	3.01	-9,095
100%	**3.34**	**45,112**
110%	3.68	95,923
120%	4.01	144,311
	Recovery (% Au)	**NPV at 10% (US$000)**
95%	84.4%	18,214
98%	86.6%	31,757
100%	**88.8%**	**45,112**
103%	91.0%	58,149
105%	93.3%	70,988
	Metal Prices (US$/oz Au)	**NPV at 10% (US$000)**
80%	$1,200	-74,027
90%	$1,350	-12,696
100%	**$1,500**	**45,112**
110%	$1,650	98,552
120%	$1,800	149,565

	Operating Costs (US$/t)	NPV at 10% (US$000)
85%	$74.19	84,468
93%	$80.74	65,322
100%	**$87.28**	**45,112**
118%	$102.56	-5,154
135%	$117.83	-60,637
	Capital Costs (US$000)	**NPV at 10% (US$000)**
85%	$299,353	79,188
93%	$325,767	62,150
100%	**$352,180**	**45,112**
118%	$413,812	5,356
135%	$475,444	-34,400

Note: For head grade, metallurgical recovery and metal price sensitivities the table shows only gold units as a reference given is the major commodity for the Hemco Property, but the NPV sensitivity analysis considers variation for all metals produced (gold, silver and zinc).

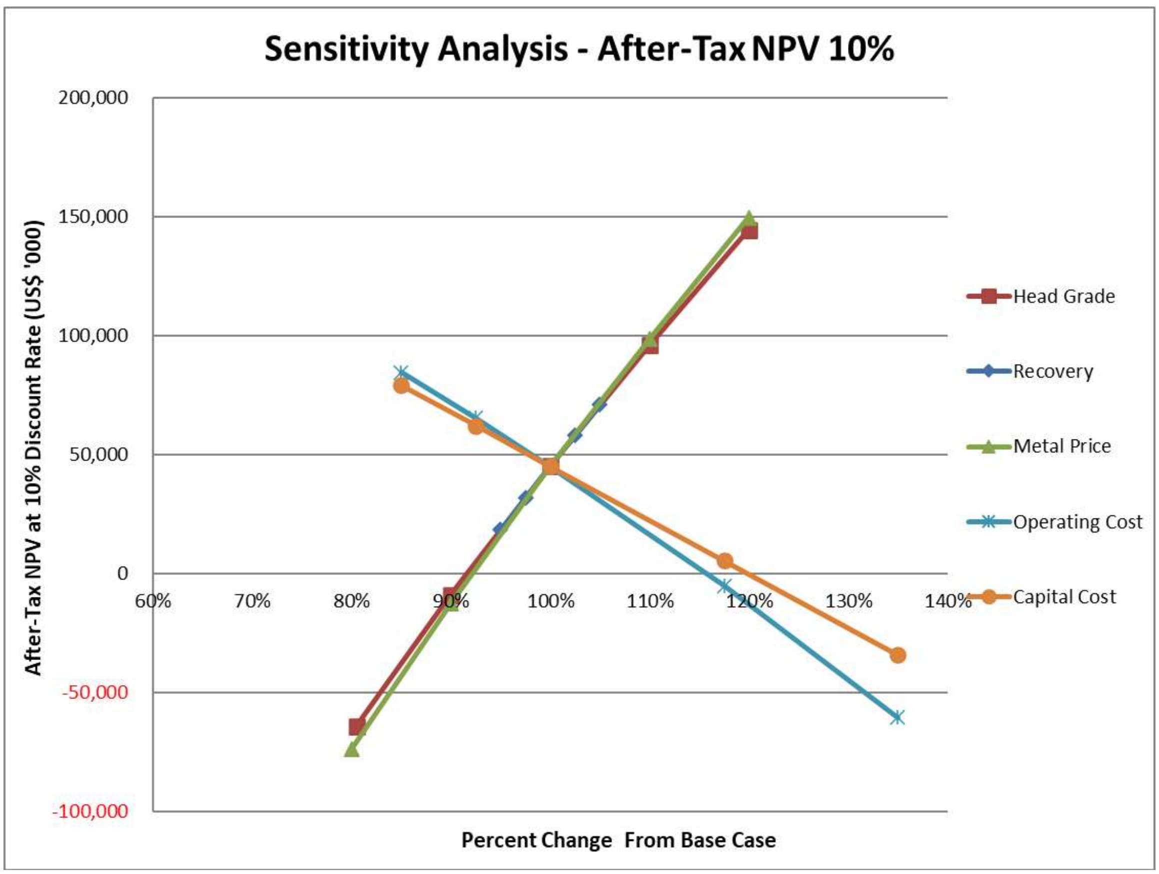


Figure 22-1: NPV$_{10\%}$ Sensitivity Graph

The after-tax NPV is most sensitive to gold price, then head grade and metallurgical recovery, followed by operating costs, and capital costs.

22.4.2 Porvenir Project

The sensitivities for the Porvenir Project are shown in Table 22-4 and Figure 22-2.

Table 22-4: Hemco Property After-Tax Sensitivity Analysis
Mineros S.A. – Hemco Property

Variance	Head Grade (g/t Au)	NPV at 10% (US$000)	NPV at 5% (US$000)
80%	2.00	-45,297	-20,850
90%	2.50	-1,541	39,025
100%	**3.08**	**41,750**	**98,537**
110%	3.73	81,959	153,547
120%	4.44	119,101	204,189
	Recovery (% Au)	**NPV at 10% (US$000)**	**NPV at 5% (US$000)**
95%	84.5%	20,354	69,119
98%	86.7%	31,166	83,985
100%	**88.9%**	**41,750**	**98,537**
103%	91.1%	52,138	112,775
105%	93.4%	62,458	126,905
	Metal Prices (US$/oz Au)	**NPV at 10% (US$000)**	**NPV at 5% (US$000)**
80%	$1,200	-59,595	-40,486
90%	$1,350	-7,263	31,147
100%	**$1,500**	**41,750**	**98,537**
110%	$1,650	86,359	159,571
120%	$1,800	127,902	216,236
	Operating Costs (US$/t)	**NPV at 10% (US$000)**	**NPV at 5% (US$000)**
85%	$70.65	71,135	138,835
93%	$76.88	57,167	119,711
100%	**$83.12**	**41,750**	**98,537**
118%	$97.66	3,388	45,648
135%	$112.21	-38,057	-11,171

	Capital Costs (US$000)	NPV at 10% (US$000)	NPV at 5% (US$000)
85%	$211,315	69,645	130,363
93%	$229,960	55,697	114,450
100%	**$248,606**	**41,750**	**98,537**
118%	$292,112	9,207	61,406
135%	$335,618	-23,337	24,275

Note: For head grade, metallurgical recovery and metal price sensitivities the table shows only gold units as a reference given is the major commodity for the Porvenir Project, but the NPV sensitivity analysis considers variation for all metals produced (gold, silver and zinc).

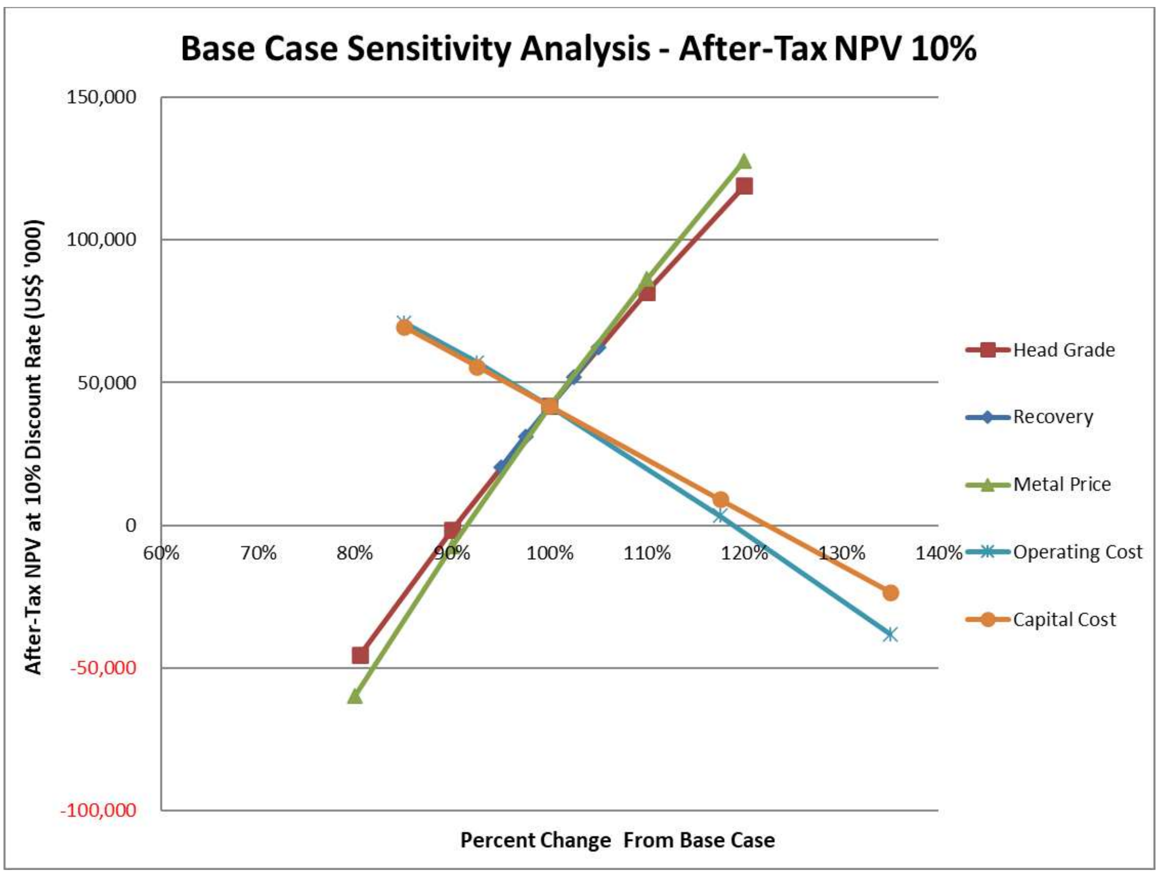


Figure 22-2: NPV$_{10\%}$ Sensitivity Graph

The after-tax NPV is most sensitive to gold price, then head grade and metallurgical recovery, followed by operating costs, and capital costs.

23.0 ADJACENT PROPERTIES

There is historical production from the Siuna and Rosita mines in the Bonanza district. The La Luz (Cerro Potosi) Mine at Siuna produced 2.27 Moz Au and 672,210 oz Ag from 17,092 kt from 1912 to 1968 from skarn deposits. The Santa Rita Mine at Rosita produced 305 Mlb Cu , 177,737 oz Au, and 2,630,000 oz Ag from 5,374,688 t in the mid-1960s to early 1980s from skarn deposits (Arengi, 2002).

The Eastern Borosi Project, approximately 37 km southwest of Bonanza, owned by Calibre Mining Corp., has an Indicated Mineral Resource of 950 kt grading 8.47 g/t Au and 87.3 g/t Ag containing 258 koz Au and 2.7 Moz Ag and an Inferred Resource of 2.8 Mt grading 3.08 g/t Au and 83.9 g/t Ag and containing 278 koz Au and 7.5 Moz Ag (SLR, 2022). Mineral Resources were estimated at various cut-off grades depending on the area, using long term prices of US$1,500/oz Au and US$23/oz Ag, and will potentially be mined by open pit and underground methods.

The reader is referred to Figure 14-1 in Section 14 of this Technical Report which shows the Calibre concessions relative to the Mineros' land tenure.

SLR has not independently verified this information and this information is not necessarily indicative of the mineralization at the Hemco Property.

24.0 OTHER RELEVANT DATA AND INFORMATION

No additional information or explanation is necessary to make this Technical Report understandable and not misleading.

25.0 INTERPRETATION AND CONCLUSIONS

SLR's conclusions by area are summarized as follows.

25.1 Geology and Mineral Resources

- Mineral Resources at the Hemco Property conform to CIM (2014) definitions.
- Mineral Resources have been estimated for the Panama deposit (gold only), Pioneer deposit (gold and silver), Porvenir deposit (gold, silver, and zinc), Luna Roja (gold only), and Leticia and San Antonio deposits (gold, silver, and zinc).
- As at December 31, 2022, Measured and Indicated Mineral Resources totalling 4,567.2 kt averaging 3.13 g/t Au and containing 458.9 koz Au, exclusive of Mineral Reserves, have been estimated for the Hemco Property. In addition, the Hemco Property contains 425.1 koz Ag for Pioneer and Porvenir and 57.7 Mlb Zn for Porvenir:
  - **Panama deposit** – 1,876.9 kt at a grade of 3.85 g/t Au, containing 232.2 koz Au at a 2.0 g/t Au cut-off grade.
  - **Pioneer deposit** – 492.7 kt at a grade of 3.60 g/t Au and 9.8 g/t Ag, containing 57.0 koz Au and 155.0 koz Ag at a 2.0 g/t Au cut-off grade.
  - **Porvenir deposit** – 1,033.4 kt at a grade of 2.35 g/t Au, 8.13 g/t Ag, and 2.53% Zn, containing 78.2 koz Au, 270.1 koz Ag, and 57.7 Mlb Zn at a US$82.30/t cut-off value.
  - **Luna Roja deposit – Open Pit** - 1,139.6 kt at a grade of 2.39 g/t Au, containing 87.6 koz Au at a 0.87 g/t Au cut-off grade.
  - **Luna Roja deposit – Underground** - 24.6 kt at a grade of 5.10 g/t Au, containing 4.0 koz Au at a 2.0 g/t Au cut-off grade.
- As at December 31, 2022, Inferred Mineral Resources totalling 7,057.9 kt averaging 3.59 g/t Au, and containing 813.9 Moz Au, 1,360.6 Moz Ag, and 165.6 Mlb Zn were estimated to be as follows:
  - **Panama deposit** – 2,222.2 kt at a grade of 4.60 g/t Au, containing 328.7 koz Au at a 2.0 g/t Au cut-off.
  - **Pioneer deposit** – 916.3 kt at a grade of 3.99 g/t Au and 8.1 g/t Ag, containing 117.5 koz Au and 239.7 koz Ag at a 2.0 g/t Au cut-off grade.
  - **Porvenir deposit** – 1,693.9 kt at a grade of 2.42 g/t Au, 12.05 g/t Ag, and 3.64% Zn, containing 132.1 koz Au, 656.3 koz Ag, and 135.9 Mlb Zn at a US$82.30/t cut-off value.
  - **Luna Roja deposit – Open Pit** - 313.8 kt at a grade of 2.30 g/t Au, containing 23.2 koz Au at a 0.87 g/t Au cut-off grade.
  - **Luna Roja deposit – Underground** – 185.8 kt at a grade of 2.37 g/t Au, containing 14.1 koz Au at a 2.0 g/t Au cut-off grade.
  - **Leticia** – 586.3 kt at a grade of 4.19 g/t Au, 7.10 g/t Ag, and 1.15% Zn, containing 78.9 koz Au, 133.8 koz Ag, and 14.8 Mlb Zn at a US$73.3/t cut-off value.
  - **San Antonio** – 1,139.6 kt at a grade of 3.26 g/t Au, 9.0 g/t Ag, and 0.59% Zn, containing 119.3 koz Au, 330.8 koz Ag, and 14.9 Mlb Zn at a US$73.3/t cut-off value.

- The sample preparation, analysis, and security procedures at the Hemco Property are adequate, and the QA/QC results are sufficient to support Mineral Resource estimation.
- The data exclusion measures taken by Mineros have ensured that the data used is of sufficient quality to support Mineral Resource and Mineral Reserve estimation.
- The Mineral Resources are reasonable and suitable to support the estimation of Mineral Reserves.

25.2 Mining and Mineral Reserves

- Mineral Reserves at the Hemco Property conform to CIM (2014) definitions and include the Panama and Pioneer underground mines and the initial Mineral Reserve estimate for the Porvenir Project.
- Mineral Reserves are based on mine designs, sufficient to support the LOM plan and estimation of reserves. The mine design and development and production scheduling have been undertaken to a sufficient level of detail to support the Mineral Reserve estimate.
- Reasonable allowances fo7r dilution and losses have been applied.
- As at December 31, 2022, Proven and Probable Mineral Reserves for the Hemco Property (Panama, Pioneer, and Porvenir) are estimated to total 7,362 kt at a grade of 3.33 g/t Au, containing 789 koz Au. In addition, the Porvenir Project also contains 5.794 kt of silver and zinc Mineral Reserves at a grade of 10.32 g/t Ag and 2.96% Zn for 1,922 koz of silver and 3790 Mlb of zinc. SLR prepared a cash flow analysis to demonstrate positive economics to support the disclosure of Mineral Reserves.

25.2.1 Panama and Pioneer Mines

- As of December 31, 2022, the Panama and Pioneer Proven and Probable Mineral Reserves are estimated at 1,568 kt at a grade of 4.30 g/t Au, containing 217 koz of gold.
- The Panama Mine has two distinct production areas, informally divided by the 850 Level, with production above the 850 Level derived from non-mechanized shrinkage stoping and production below the 850 Level derived mainly from mechanized long hole stoping with a few areas planned to be mined using shrinkage stoping. While Mineros will continue to mine shrinkage stopes above the 850 Level and identify new mining areas, they were not included in the current Mineral Reserve estimates as their tonnage is not significant.
- Production at the Pioneer Mine started in 2021 and development and stoping activities at the Lone Star vein is currently well advanced. Development to a few sublevels the Pioneer Northeast vein has been completed and production is expected to start in 2024.
- Panama and Pioneer are both mined using sub-level open stoping, with a few areas at Panama mined using shrinkage stoping.
- The Panama and Pioneer mines are projected to supply approximately 50% to 60% of the Hemco Plant mill feed and the remaining feed will be from artisanal mining and remaining shrinkage stopes.
- The Mineral Reserves estimated at Panama and Pioneer support a LOM of 4.75 years.
- Production at Panama will be undertaken by Mineros personnel and haulage by a contractor, while all mine development and production at Pioneer is assumed to be completed by contractors. Mineros will investigate the possibility of undertaking part or all the mining and development activities in the future.

25.2.2 Porvenir Project

- The Porvenir Mineral Reserves are based upon a Prefeasibility Study (PFS) completed by BISA and Mineros in 2022 and reviewed by SLR. The Mineral Reserves total 5,794 kt grading 3.07 g/t Au, 10.32 g/t Ag and 2.96% Zn containing 572 koz of gold, 1,922 koz of silver, and 379 Mlb of zinc.
    - Proven Mineral Reserves at Porvenir consist of 270 kt grading 2.70 g/t Au, 13.61 g/t Ag, and 3.14% Zn containing 23 koz of gold, 118 koz of silver, and 19 Mlb of zinc.
    - Probable Mineral Reserves at Porvenir consist of 5,524 kt grading 3.09 g/t Au, 10.16 g/t Ag, and 2.96% Zn containing 549 koz of gold,1,804 koz of silver, and 360 Mlb of zinc.
- Porvenir Mineral Reserves are based upon the Real McKoy vein and two zones of multiple close spaced veins, Porvenir Norte and Porvenir Sur.
- There are other veins in the Mineral Resource which did not meet the criteria for Mineral Reserves.
- Mining widths at Porvenir vary from 1.55 m in Real McKoy to 30 m in Porvenir Norte.
- Mining at Porvenir is planned to be underground mechanized mining using bench and fill and transverse sub-level stoping.
- Ground conditions are good, however, dilution estimates may not include sufficient allowance for mining practices or unexpected variations in the orebody widths or attitudes.
- Mining is planned to commence in the higher grade Real McKoy zone and then move into Porvenir Norte, followed by Porvenir Sur.
- The Porvenir deposit is planned to be mined over a nine year period after two years of preproduction development.
- All mine development and production will be carried out by contractors.
- The mining rate will be 1,000 tpd initially, increasing to 2,000 tpd in year 3 of operations.
- The level of engineering in the PFS is sufficient to support the estimation of Mineral Reserves.

25.3 Mineral Processing

25.3.1 Panama and Pioneer Mines

- The Processing Plants are operating well, considering the age of equipment.
- Throughput has increased over time, and ongoing optimization projects are continuing.
- There are three sources of feed for the Hemco Plant, the main processing plant servicing the Hemco Property: artisanal mining and the Panama and Pioneer underground mines, while feed for the Vesmisa and La Curva plants is exclusively from artisanal mining. Overall gold recovery for the Hemco Plant in 2022 was 91.1% gold, while overall recovery from all three Processing Plants was 89.3% gold. It is expected that similar recoveries will be achieved in the future.
- More than 50% of the ore being milled at the Hemco Plant and 100% of the ore being milled at the Vesmisa and La Curva plants is purchased from artisanal mining cooperatives under contracts. Total production (from Mineral Reserves and from artisanal sources) has been over 120,000 oz Au per year since 2019.

- LOM gold production is planned to increase to approximately 60,000 oz Au per year from Mineral Reserves, with mill feed percentage from artisanal sources expected to decrease from 50% to 40% as reserve feed takes a larger proportion of available capacity.
- The power facilities are being run well and producing electricity in an economic and consistent fashion.
- The marketing and gold sales contracts are within mineral industry norms.

25.3.2 Porvenir Project

- Porvenir Project test work completed to date appears to be comprehensive. The results indicate that good gold and silver recovery is achievable at acceptable recovery rates by direct cyanidation.
- While the production of commercial grade copper and zinc concentrates requires further test work, it appears that a commercial zinc concentrate may be more achievable than a copper concentrate, due to low copper grades and high zinc content in the copper concentrate produced in test work undertaken to date.
- Metallurgical testing supports the proposed process flowsheet and expected capacity.

25.4 Infrastructure

25.4.1 Panama and Pioneer Mines

- Panama has been in operation for many decades and the surface infrastructure is well established. The site consists of a camp, administrative and technical buildings, a clinic, mechanical maintenance and wash bays, warehouses, and various miscellaneous buildings.
- Pioneer, as a satellite mine with ore processed at the Hemco Plant, has a relatively small surface footprint. The established surface facilities are, however, sufficient to support the operation and include a mechanical maintenance building with an adjacent open air wash bay sump facility, a project office building, a site storage building, an electrical transformer station, miscellaneous tanks and piping, a mine portal gatehouse, a laydown pad, and water drainage ditches.

25.4.2 Porvenir Project

- Porvenir will be operated as a separate mine with its own infrastructure including:
  - Approximately 6.4 km of access roads required to and around the site
  - Diesel generators for backup power
  - A connection to the local 24.9 kV distribution system
  - Camp accommodation for 216 persons (employees, staff, and contractors)
  - Processing facilities
  - Tailings storage facility for the Porvenir tailings
- Considering the haulage of concentrates and supplies, the planned 7 m wide roads with a maximum 12% gradient are steep and narrow and will need to be reconsidered in future studies.
- In the future, Porvenir may be connected to a planned 138 kV power line connected to the national grid at Rosita.

25.5 Environmental, Permitting, Social/Community/Artisanal Relations

25.5.1 Panama and Pioneer Mines

- Hemco is committed to pro-active environmental management and local and regional corporate social responsibility, as well as the building of long-term sustainable relationships with artisanal and small-scale miners in the region.
- Hemco has a sound understanding of the regulatory regime and requirements within which it works and has all appropriate and applicable permits for its operations.
- Hemco is committed to ongoing improvements of its operations to minimize its impacts on the environment and maximize its contributions to the sustainability of the region. Examples of this are as illustrated below:
  - 2017 construction of state-of-the-art tailings facility and cyanide destruction plant for excess tailings water.
  - In 2018, a two Phase plan was developed to treat domestic and sewage waters at the Hemco Plant complex from approximately 600 personnel on site. Phase 1 of the plan was carried out in 2018 and Phase 2, in 2019. The system consists of a grease trap, an activated sludge system, a disinfection system, and drying beds. Data indicated that occasional discharges in 2018 and 2019 were not always in compliance with permit requirements, however, Hemco addressed the major cause of these issues in 2020 and the system is currently meeting regulatory requirements.
  - During 2018, a second tailings line from the Hemco Plant to the San José tailings dam was constructed. This was a positive step as it allows for routine and emergency maintenance and repairs without disruption of plant operations.
  - A series of other projects were identified, initiated, and carried out between 2018 and 2021 at the Hemco Property to improve environment and health and safety of the operation including: design and initiation of construction for a new excess tailings water detoxification system; construction of a new state-of-the-art chemical laboratory; construction of artisanal ore collection, sampling and storage facilities; upgrading of the existing diesel power plant facility; construction and operation of a new solid waste management facility; and a new fuel storage and filling station, among others.
  - Progressive reclamation has been underway and continues to be practiced with respect to former open pit mines and tailings management facilities at the Hemco Property. In addition, rehabilitation of historical artisanal and small-scale mine openings in the area continues to be carried out.
  - A broad range of corporate sustainability and socio-economic activities are underway in the immediate vicinity of operations and on a regional basis in association with local and regional agencies, mayors, and governments. A significant recent addition was construction of the Ring Road which dramatically reduces Hemco and artisanal miner traffic through the town of Bonanza.
  - Extensive efforts have been expended to support formalization and collaboration with artisanal and small-scale miners to improve environmental, health and safety, and socio-economic benefits associated with their activities and the region in general. These efforts have been very successful in contributing to both the revenue of the Hemco operations as

well as to the environmental and socio-economic well-being and improved prosperity in the region.

- Aspects of the Panama and Pioneer Mine operation that provide opportunities for improvement include:
    - Low pH and elevated metals in Hemco mine infiltration water from old workings used for water supply may be indications of ARD. Significant efforts have been carried out to recirculate and reuse this water and minimize treated discharge to the local environment. Data indicates that discharge is not always in compliance with permit requirements.
    - Cyanide handling at the Hemco and Vesmisa plants, particularly various activities related to cyanide addition to the mill process circuit, is manual and as such presents elevated worker health and safety risks. Hemco is assessing its practices against the requirements of the International Cyanide Code, but no changes in practice have been undertaken to date.
    - Cyanide destruction at the Hemco Plant is not done prior to discharge to tailings and as such tailings lines carry cyanide solution which exacerbates the potential risk associated with pipeline failure. Cyanide destruction of excess tailings waters ensures compliant discharge from the tailings systems.
    - There is minimal to no secondary containment of the tailings pipeline from the Hemco Plant to the San José tailings dam.
    - There are areas where the pipeline is exposed to physical risk due to limited use of physical barriers.
    - Third party tailings dam hazard assessments study for the Concha Urrutia, Aguas Claras, and Vesmisa I tailings dams were initiated 2021. Independent assessment of these structures is critical to ensuring that these structures are functioning as designed and ensuring that risks are managed. Draft reports including emergency response plans were received in 2022 and are under review by Hemco.
    - The draft KP Closure Report notes that surface water quality around the Hemco facility has been impacted by mine operations. KP recommends that ARD/ML assessments be carried out to provide additional information to support closure designs.

25.5.2 Porvenir Project

- Review of the technical and environmental information available to date for the proposed Porvenir underground mine and mill project did not find any environmental or social fatal flaws.
- Commitments for development of Porvenir are in keeping with existing Hemco corporate policies and practices respecting environmental, social, and small-scale/artisanal mining.
- Appropriate baselines studies in support of the environmental assessment have been completed and PFS level designs and engineering are underway.
- Engineering concepts and designs, as developed are generally reasonable and appropriate to minimize impacts on the environment for the nature and setting of the proposed operation.
- Environmental assessments will be submitted in 2023 for project approval. From the information reviewed, it is reasonable to expect that the Porvenir Project will be approved.

- Construction, operation and closure of the project will result in benefits to local and regional communities and improvements to the local environment which has been impacted by many years of artisanal and small-scale mining activities.
- Aspects of the Porvenir Project that provide opportunities for improvement include:
  - Carrying out ARD/ML assessments to ensure no acid generating materials are used for construction and to assist in closure planning.
  - Independent third party geotechnical review of tailings dams, with a focus on post-closure long-term stability.
  - Studies to assess the viability of flooding the mine workings to inhibit ARD/ML and thereby avoid need for post-closure water treatment.
  - Extending the post-closure monitoring period beyond the current period of four years.

25.6 Costs and Economic Analysis

- Panama and Pioneer are active operations; therefore, sustaining capital and operating cost estimates were prepared based on 2021 and 2022 actual costs.
- Mineros staff also continues to assess operating efficiencies and approaches in efforts to improve operating costs in the different cost centres.
- Mineros has recently adopted the ERP cost system to improve cost tracking and allocation.
- The Panama and Pioneer operating costs over the LOM total US$161 million ($102.68/t milled).
- SLR considers the capital and operating cost estimates to be reasonable, provided the production targets are realized.
- Porvenir capital and operating cost estimates are based on the 2022 PFS prepared by BISA and Mineros and reviewed by SLR. Capital and operating cost estimates are considered to meet the requirements of an AACE Class 4 estimate.
- The total initial capital cost is estimated to amount to US$177.9 million including a US$19.5 million contingency and represents the initial capital for the development of the Project and an expansion phase in years 1 and 2 of operation.
- Sustaining capital for Porvenir totals US$53.55 million over the Project life mainly for mine development and tailings dam construction.
- The Porvenir Project LOM operating costs are estimated to be US$482 million ($83.12/t milled).
- The economic analyses of the Hemco Property operations (Panama Mine, the Pioneer Mine, and the Porvenir Project) demonstrates that the Hemco Property Mineral Reserves are economically viable at the Mineral Reserve prices of US$1,500/oz Au, US$19.00/oz Ag, and US$1.27/lb Zn over the LOM. The pre-tax NPV at a 10% discount rate is US$68million and the after-tax NPV at a 10% discount is US$42 million.
- To support the first-time disclosure of Porvenir Mineral Reserves, SLR prepared a discounted cash flow for the Porvenir Project on a stand-alone basis, based on the engineering in the Project PFS.
- The economic analysis of the Porvenir Project demonstrates that the Mineral Reserves are economically viable at flat prices of US$1,500/oz Au, US$19.00/oz Ag, and US$1.27/lb Zn over the LOM. The Porvenir Project PFS base case economics result an after-tax NPV at a 10% discount

rate of approximately US$42 million, an after-tax IRR of approximately 16%, and a payback period of approximately four years from start of production.

26.0 RECOMMENDATIONS

SLR offers the following recommendations.

26.1 Geology and Mineral Resources

Overall, SLR considers the Mineral Resource estimation procedures to be acceptable, however, SLR recommends that for future estimates Mineros implement the following:

1. Incorporate minimum thickness as a modelling and reporting criterion at Leticia and San Antonio.
2. Perform additional validation on the property wide database to realize the full value of the data excluded from the Mineral Resource estimate.
3. Investigate the poor performance of fine and coarse duplicates of channel samples prepared by the Hemco and Vesmisa laboratories, and implement check assays for drill hole samples to Pioneer, Panama and Porvenir.
4. While the use of grade domains to control the influence of high grade samples is considered to be acceptable, additional steps could be taken to smooth the edges of the domains and remove isolated small volumes of high grade domain within the low grade domain, and vice versa.
5. Evaluate the application of a soft boundary between the nested domains.
6. While the Panama block model resource classification is acceptable, the QP recommends that in future updates the classification criteria of the Mineral Resources be consistent over the Project.

26.2 Mining and Mineral Reserves

26.2.1 Panama and Pioneer

1. As Mineros is preparing to consolidate all mine designs and LOM production schedules under a single platform (Deswik), develop a standard operating procedure package for the Mineral Reserve estimation process.
2. Apply dilution within the designed stope shapes so that dilution grades can be estimated from the resource model.
3. Evaluate and schedule mine development and the recovery of any pillars using scheduling software.
4. Review reconciliation data along with stope survey data to gain a better understanding of dilution and mining recovery factors.
5. Further monitor near term long hole stoping production to refine the mining plans and determine more accurate operating parameters and costs.
6. Consolidate the resource models for the Pioneer, Pioneer Northeast Extension, and Pioneer 3 orebodies to avoid overlapping and simplify stope optimization processes.
7. Plan upgrading the Pioneer 4 deposit to Mineral Reserves in the short term. The deposit can be accessed from Lone Star development.

26.2.2 Porvenir Project

1. Review the planned equipment dimensions for all equipment to ensure adequate clearance for safe operation in the headings.

2. Prepare more detailed plans for stope development considering the narrow width of the Real McKoy and other veins.
3. Develop grade control and Mineral Reserve reconciliation procedures.
4. Review the dilution assumptions in the next stage of study, including consideration of orebody irregularities and mining practices.
5. Review mine dewatering requirements considering the suspended solids in the mine water and the time required for water clarification.

26.3 Mineral Processing

26.3.1 Panama and Pioneer Mines

1. Complete further test work to determine if the ore from the Panama and Pioneer veins will have an adverse effect on the grind characteristics of the Hemco Plant, as the Bond Work Indices for the samples appear to be much higher than those for ore being presently treated.

26.3.2 Porvenir Project

1. Complete further test work for the Porvenir Project to optimize the flotation flowsheet and reagent combinations.

26.4 Infrastructure

26.4.1 Panama and Pioneer

1. As the Pioneer mine production increase ramps up, reassess the equipment workshop and maintenance facilities on site.

26.4.2 Porvenir Project

1. Reassess the road designs for the site considering haul truck widths, maximum gradients, and road side safety berms.
2. Review and reassess the parameters for the tailings dam designs.
3. Review the tailings dam design criteria which reflect those of an extreme dam classification to determine the appropriate dam classification

26.5 Environmental, Permitting, Social/Community/Artisanal Relations

26.5.1 Panama and Pioneer Mines

1. Assess ARD potential and extent of potential impacts on mine water releases to the environment. If mine rock is disposed of on surface, ARD assessments would indicate if mitigation and management measures are needed.
2. Audit performance of all water management systems to determine if the systems are performing as planned and discharges meet requirements. For any non-performing systems, identify and address root causes and undertake corrective measures.

3. Consider secondary containment of the tailings pipelines from the Hemco Plant to the San José tailings dam.
4. Assess physical risks to the tailings pipeline along its route from the plant to the San José tailings dam.
5. Assess opportunities to improve cyanide management practices. SLR understands that a project has been initiated to investigate the applicability of the Cyanide Code to Hemco's operation.
6. Closure cost estimates do not include allowance for potential treatment of underground mine water. SLR recommends Hemco assess potential needs for ongoing post-closure underground mine water treatment.
7. A total of US$33.1 million dollars has been estimated for final closure of the Hemco operations (including Vesmisa). This does not include allowances for potential post closure ARD water treatment. SLR recommends that a specific allowance be carried for ARD mitigation or post closure water treatment until such time that ARD assessments have been carried out and the Conceptual Closure Plan is up date to specifically address ARD management.
8. Post closure monitoring costs are based on four years. It is recommended that Hemco consider a longer post closure monitoring period.

26.5.2 Porvenir Project

1. Update/finalize preliminary designs for the tailings discharge and process water reclaim systems, fresh water supply, and process water treatment.
2. Carry out sampling and analysis for ARD/ML potential of underground development rock and ore, mill tailings, surface rocks from quarry areas, and general surface excavations associated with development of the mill/mine and tailings storage area.
3. Update the BISA PFS closure concepts and closure estimate to reduce uncertainty in the estimate. In this respect, SLR also recommends that Mineros consider:
   - carrying out studies to assess the feasibility of sealing the mine to achieve flooding of the working to mitigate ARD/ML generation to avoid long term water treatment,
   - carrying out an independent expert review of tailings dam slope designs for long term dam slope stability and erosion protection,
   - extending the long term maintenance and monitoring period beyond the six years.

26.6 Costs and Economic Analysis

1. Consider renegotiating the gold sales contracts at the end of 2023 to take current market conditions into consideration. While the forward sales contract mitigates the risk of low spot prices, ensuring revenue at prices above the Mineral Reserve price of US$1,500/oz Au, this limits upside potential in the current market of high spot prices.
2. Adjust the costs allocation setup to include operational support costs to the respective mine and plant cost centres instead of grouping support costs and G&A costs.
3. Determine the planned sales process for the zinc concentrates whether direct to smelter or through a trader.
4. Negotiate contracts for concentrate sales, transportation, storage at the port and ocean shipping as required.

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28.0 DATE AND SIGNATURE PAGE

This report titled "Technical Report on the Hemco Property, Región Autónoma de la Costa Caribe Norte, Nicaragua" with an effective date of December 31, 2022, was prepared and signed by the following authors:

(Signed & Sealed) ***Sean Horan***

Dated at Toronto, ON
March 24, 2023

Sean Horan, P.Geo.
Principal Geologist

(Signed & Sealed) ***Varun Bhundhoo***

Dated at Toronto, ON
March 24, 2023

Varun Bhundhoo, ing.
Senior Mining Engineer

(Signed & Sealed) ***R. Dennis Bergen***

Dated at Toronto, ON
March 24, 2023

R. Dennis Bergen, P.Eng..
Associate Principal Mining Engineer

(Signed & Sealed) ***Brenna J.Y. Scholey***

Dated at Toronto, ON
March 24, 2023

Brenna J.Y. Scholey, P.Eng.
Principal Metallurgist

(Signed & Sealed) ***Gerd Wiatzka***

Dated at Toronto, ON
March 24, 2023

Gerd Wiatzka, P.Eng.
National Expert Civil/Environmental Engineer
Vice President and Director Mining
of Arcadis Canada Inc.

29.0 CERTIFICATE OF QUALIFIED PERSON

29.1 Sean Horan

I, Sean Horan, P.Geo., as an author of this report entitled “Technical Report on the Hemco Property, Región Autónoma de la Costa Caribe Norte, Nicaragua” prepared for Mineros S.A. with an effective date of December 31, 2022, do hereby certify that:

1. I am Technical Manager – Geology and Mineral Resources, and Principal Geologist and Geostatistician with SLR Consulting (Canada) Ltd, of Suite 501, 55 University Ave., Toronto, ON M5J 2H7.
2. I am a graduate of Rhodes University, South Africa, in 2003 with a B.Sc. (Hons.) degree in Environmental Studies, and in 2004 with a B.Sc. (Hons.) degree in Geology. I also have a post-graduate certificate in Geostatistics from the University of Alberta, Canada.
3. I am registered as a Professional Geologist in the Province of Ontario (Reg. #2090). I have worked as a geologist for a total of 15 years since my graduation. My relevant experience for the purpose of the Technical Report is:
    - Geological consulting to the mining and exploration industry in Canada and worldwide, including resource estimation and reporting, due diligence, geostatistical studies, QA/QC, and database management.
    - Geologist responsible for all geological aspects of underground mine development, underground exploration, resource definition drilling planning, and resource estimation at a gold mine in Ontario, Canada.
    - Grade control and prospecting geologist for an alluvial diamond mining company in Angola.
    - Experienced user of AutoCAD, Datamine Studio 3. SQL Database Administration, Visual Basic, Javascript (Datamine Studio 3), Century Systems (Fusion SQL drill hole database tools), Snowden Supervisor, X10, python, and GSLIB.
4. I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
5. I visited the Hemco Property from August 1 to 6, 2018.
6. I am responsible for Sections 1.1.1.1, 1.1.2.1, 1.3.1 to 1.3.6; 2 to 12, 14; 23; 25.1; 26.1; and related disclosure in Section 27 of the Technical Report.
7. I am independent of the Issuer applying the test set out in Section 1.5 of NI 43-101.
8. I have prepared previous internal technical reviews and a NI 43-101 Technical Report dated October 29, 2021 on the property that is the subject of the Technical Report.
9. I have read NI 43-101, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.

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

Dated this 24th day of March, 2023

(Signed & Sealed) ***Sean Horan***

Sean Horan, P.Geo.

29.2 Varun Bhundhoo

I, Varun Bhundhoo, ing., as an author of this report entitled "Technical Report on the Hemco Property, Región Autónoma de la Costa Caribe Norte, Nicaragua" prepared for Mineros S.A. with an effective date of December 31, 2022, do hereby certify that:

1. I am a Senior Mining Engineer with SLR Consulting (Canada) Ltd, of Suite 501, 55 University Ave., Toronto, ON M5J 2H7.
2. I am a graduate of the University of Toronto, Lassonde Mineral Engineering Program in 2010 with a B.A.Sc. degree in Mineral Engineering.
3. I am registered as an engineer with Ordre des Ingénieurs du Québec (Reg.# 5048788). I have worked as a mining engineer for a total of 10 years since my graduation. My relevant experience for the purpose of the Technical Report is:
    - Pit and underground stope optimizations.
    - Open pit and underground mine designs.
    - Production and development schedules.
    - Financial modelling.
    - Experienced user of Deswik, Whittle, Mine 2-4D and Studio 5D Planner mine design and scheduling software~~.~~
4. I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
5. I visited the Panama and Pioneer mines on August 4 and 5, 2021.
6. I am responsible for Sections 1.1.1.2.1, 1.1.1.4.1, 1.1.2.2.1, 1.1.2.4.1, 1.3.7 (Panama and Pioneer), 1.3.8.1; 15 and 16 (Panama and Pioneer); 18.1; 25.2.1; 25.4.1, 26.2.1, and 26.4.1, and related disclosure in Section 27.0 of the Technical Report.
7. I am independent of the Issuer applying the test set out in Section 1.5 of NI 43-101.
8. I was involved in the preparation of previous internal technical reviews for the Panama and Pioneer mines and a NI 43-101 Technical Report dated October 29, 2021.
9. I have read NI 43-101, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.
10. At the effective date of the Technical Report, to the best of my knowledge, information, and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated this 24th day of March, 2023.

(Signed & Sealed) *Varun Bhundhoo*

Varun Bhundhoo, ing.

29.3 R. Dennis Bergen

I, R. Dennis Bergen, P.Eng., as an author of this report entitled "Technical Report on the Hemco Property, Región Autónoma de la Costa Caribe Norte, Nicaragua" prepared for Mineros S.A. with an effective date of December 31, 2022, do hereby certify that:

1. I am Associate Principal Mining Engineer with SLR Consulting (Canada) Ltd, of Suite 501, 55 University Ave., Toronto, ON M5J 2H7.
2. I am a graduate of the University of British Columbia, Vancouver, B.C., Canada, in 1979 with a Bachelor of Applied Science degree in Mineral Engineering. I am a graduate of the British Columbia Institute of Technology in Burnaby, B.C., Canada, in 1972 with a Diploma in Mining Technology.
3. I am registered as a Professional Engineer in the Province of British Columbia (Reg. #16064, Permit to Practice Permit Number 1002816). I have worked as an engineer for a over 40 years since my graduation. My relevant experience for the purpose of the Technical Report is:
    - Practice as a mining engineer, production superintendent, mine manager, Vice President Operations and a consultant in the design, operation, and review of mining operations.
    - Review and report, as an employee and as a consultant, on numerous mining operations and projects around the world for due diligence and operational review related to project acquisition and Technical Report preparation.
    - Engineering and operating superintendent at the Con gold mine, a deep underground gold mine, Yellowknife, NWT, Canada
    - General Manager of the Ketza River Mine, Yukon, Canada
    - Vice President Operations in charge of the restart of the Golden Bear Mine, BC, Canada
    - General Manager in Charge of the Reopening of the Cantung Mine, NWT, Canada
    - Mine Manager at three different mines with open pit and underground operations.
    - Consulting engineer (Associate Principal Mining Engineer with RPA, now part of SLR) for over fifteen years working on project reviews, engineering studies, Mineral Reserve audits, Technical Report preparation, and other studies for a wide range of worldwide projects.
4. I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
5. I did not visit the Hemco Property.
6. I am responsible for 1.1.1.2.2, 1.1.1.4.2, 1.1.1.6, 1.1.2.2.2, 1.1.2.4.2, 1.1.2.6, 1.2, 1.3.7 (Porvenir), 1.3.8.2, 1.3.11, 1.3.13; 15 and 16 (Porvenir); 18.2; 19; 21; 22; 24; 25.2.2; 25.4.2, 26.2.2, and 26.4.2, and related disclosure in Section 27 of the Technical Report.
7. I am independent of the Issuer applying the test set out in Section 1.5 of NI 43-101.
8. I have had no prior involvement with the property that is the subject of the Technical Report.
9. I have read NI 43-101, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.

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

Dated this 24th day of March, 2023

(Signed & Sealed) ***R. Dennis Bergen***

R. Dennis Bergen, P.Eng.

29.4 Brenna J.Y. Scholey

I, Brenna J.Y. Scholey, P.Eng., as an author of this report entitled "Technical Report on the Hemco Property, Región Autónoma de la Costa Caribe Norte, Nicaragua" prepared for Mineros S.A. with an effective date of December 31, 2022, do hereby certify that:

1. I am Principal Metallurgist with SLR Consulting (Canada) Ltd., of Suite 501, 55 University Ave., Toronto, ON M5J 2H7.
2. I am a graduate of The University of British Columbia in 1988 with a B.A.Sc. degree in Metals and Materials Engineering.
3. I am registered as a Professional Engineer in the Province of Ontario (Reg. #90503137) and British Columbia (Reg. #122080). I have worked as a metallurgist for a total of 34 years since my graduation. My relevant experience for the purpose of the Technical Report is:
   - Reviews and reports as a metallurgical consultant on numerous mining operations and projects for due diligence and regulatory requirements.
   - Senior Metallurgist/Project Manager on numerous base metals and precious metals studies for an international mining company.
   - Management and operational experience at several Canadian and U.S. milling, smelting and refining operations treating various metals, including copper, nickel, and precious metals.
4. I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
5. I did not visit the Property.
6. I am responsible for Sections 1.1.1.3, 1.1.2.3, 1.3.9; 13; 17; 25.3; and 26.3 of the Technical Report.
7. I am independent of the Issuer applying the test set out in Section 1.5 of NI 43-101.
8. I have had no prior involvement with the property that is the subject of the Technical Report.
9. I have read NI 43-101, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.
10. At the effective date of the Technical Report, to the best of my knowledge, information, and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated this 24th day of March, 2023.

(Signed & Sealed) ***Brenna J.Y. Scholey***

Brenna J.Y. Scholey, P.Eng.

29.5 Gerd Wiatzka

I, Gerd Wiatzka, P.Eng., as an author of this report entitled "Technical Report on the Hemco Property, Región Autónoma de la Costa Caribe Norte, Nicaragua" prepared for Mineros S.A. with an effective date of December 31, 2022, do hereby certify that:

1. I am National Expert Civil/Environmental Engineer, Vice President and Director Mining of Arcadis Canada Inc. of Unit 12, 121 Granton Drive Richmond Hill, ON, L4B 3N4.
2. I am a graduate of the University of Waterloo, Waterloo, Ontario, in 1974 with a Bachelor of Applied Science (B.A.Sc. Honours) degree in Civil Engineering.
3. I am registered as a Professional Engineer in the Province of Ontario (Reg.# 49882012), Manitoba (Reg.# 47832), and the Northwest Territories and Nunavut (Reg #L1701). I have worked as a civil/environmental engineer for more than 40 years since my graduation. My relevant experience for the purpose of the Technical Report includes:
   - More than 40 years experience in the resource sector
   - More than 35 years experience as an environmental professional
   - Approximately seven years experience in management information and technology services
   - Worldwide mining sector project experience including environmental assessments, closure planning, due diligence/liability assessments, and NI 43-101 reviews
   - Expert services to state/federal governments and national/ international financial institutions (e.g. European Bank for Reconstruction and Development, International Finance Organization).
4. I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
5. I visited the Hemco property on May 16 to 18, 2017 and August 4 and 5, 2021.
6. I am responsible for Sections 1.1.1.5, 1.1.2.5, 1.3.12; 20, 25.5; 26.5, and related disclosure in Section 27.0 of the Technical Report.
7. I am independent of the Issuer applying the test set out in Section 1.5 of NI 43-101.
8. I have previously prepared internal technical reviews on the property that is the subject of the Technical Report.
9. I have read NI 43-101, and the part of the Technical Report for which I am responsible has been prepared in compliance with NI 43-101 and Form 43-101F1.
10. As of the effective date of the Technical Report, to the best of my knowledge, information, and belief, Sections 1.1.1.5, 1.1.2.5, 1.3.12, 20.0, 25.5 and 26.5 in the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated this 24th day of March, 2023.

(Signed & Sealed) ***Gerd Wiatzka***

Gerd Wiatzka, B.A.Sc., P.Eng