Feasibility Study Technical Report (NI 43-101) for the Borborema Gold Project, Currais Novos Municipality, Rio Grande do Norte, Brazil

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1 EXECUTIVE SUMMARY

1.1 PROPERTY DESCRIPTION AND LOCATION

The Borborema Project, located in the southern portion of the state of Rio Grande do Norte in northeastern Brazil, is situated 26 km east from the well-established town of Currais Novos, which has good infrastructure and a population of approx. 45,000 people.

The Project comprises three (3) mining concessions totalling 2,907.2 hectares. Most of the gold (Au) Mineral Resource based on the January 2023 estimate by SRK Consulting (US) Limited ("SRK") is located in mining concession numbers 805049/1977 and 840152/1980, with a small remaining portion located in mining concession 840149/1980.

1.2 GEOLOGY AND EXPLORATION

The Borborema Project area is situated in the top of the Seridó Group stratigraphy (the Seridó Formation) within a sequence of banded arkosic metapelitic schists, subjected to upper-amphibolite facies regional metamorphism. Mineral assemblages are dominated by plagioclase, potassium feldspar (K-feldspar) and quartz, with subordinate biotite, garnet, sillimanite, cordierite, muscovite and andalusite. This assemblage is indicative of high temperature (650-700° C) and relatively low pressure (3-4 kb) conditions.

Quartzo-feldspathic bands resulting from partial melts both crosscut and parallel the schistosity, dominantly in the more pelitic cordierite schists. Widespread retrograde sericite overprints the prograde mineral assemblage. The schists are intruded by Brasiliano-age pegmatite bodies.

During the Neoproterozoic the region underwent a complex tectonic evolution involving thrusting (D2) and transcurrent shearing (D3), as indicated by the presence of both low-and high-angle structures (the S2 and S3 foliations, respectively).

The main Borborema ore body has overall dimensions of approximately 600 m in the down-dip direction, 3,500 m along the strike, and averages of 50 m in thickness in the central and 30 m in thickness in the southern and northern parts. The Borborema deposit is located within a northeast-southwest trending shear zone and displays a penetrative north-northeast-trending fabric, dipping southeast at around 40 degrees.

The Borborema deposit has been drilled out at nominal drill spacing of approximately 50 m x 50 m. A total of 303 diamond drill holes and 921 reverse circulation (RC) holes totalling 109,090 m were drilled between 1979 and 2022 and were used to generate the Borborema 3-D models.

In the Borborema deposit area (Sao Francisco historical pit) four distinctive structural and strongly deformed domains were identified:

- A shallow dipping, leucosome-rich hanging-wall zone with strong deformation features which is metamorphosed under amphibolite facies. The folding is tight. Crenulations and S-C fabrics in shear zones are abundant.
- A mylonitic zone (retrograde zone) cut with faults (D2b) developed along the main Sao Francisco Shear zone (D3). Stratigraphy has been overturned and thrusted and retrograde alteration is strong and dominant. The mineralisation mainly developed in the retrograde zone.

- A moderate to strong shearing zone with wavy shear fabric mainly developed within quartz-muscovite-biotite schist and on the footwall side of the Sao Francisco shear zone. Crenulation cleavages are abundant and dips steeper than in the shear zone. This zone is mainly barren and represents the main metamorphic event in lower amphibolite facies.

- A quartz-feldspathic footwall schist with meta-sedimentary origin and bedding, which can be labelled as a footwall schist where layering and bedding are clearly preserved. The host rocks metamorphosed under lower amphibolite and upper greenschist facies.

The mineralisation is strongly controlled by regional structure with secondary structures providing the preferred host for gold. In addition to the main mineralised zone, several thinner sub-parallel zones of with gold mineralisation were identified.

Two distinct gold mineralisation types are identified in drill cores: 1) disseminated free gold, and 2) gold in association with sulphide mineralisation represented by pyrrhotite, chalcopyrite, pyrite, sphalerite, and galena. Additionally, the sulphide mineralization was observed in the outer contact between chert boudins and schist along with or within schist foliation.

The continuity of mineralisation observed in select diamond drill core shows a highly discontinuous nature. Sulphide-hosted gold (Au) appears primarily along psammitic schist foliations and around the perimeter of quartz veins and boudins. The visual inspection of sulphide mineralisation in core with correlated analytical results appears to indicate a relatively high concentration of gold in pyrrhotite such that a sub-cm scale zone of sulphide mineralization resulted in grades commonly exceeding 1 g/t Au.

The mineralised sequence has been subjected to a complex, multi-stage deformational history, with folded, sheared, dismembered and boudinage quartz and quartz-carbonate veins and veinlets commonly associated with the gold mineralisation.

The genesis of gold mineralization is poorly understood on a property and regional scale Some geologists who studied the geology of the deposit area in the past associated the gold mineralisation with peak metamorphism adjacent to D2 shear zones (Stewart, 2011), while others believe that the deformational event which accompanied gold mineralisation was an extensional event forming a linear dilatational feature (Baars, 2011). It has been suggested that the base metal sulphide mineralisation event may be independent of the gold event; the lack of direct correlation between gold and silver also suggests deposition in separate events or pulses. Other geologists concluded that a second shallow-dipping structure was associated with mineralisation that was separate from and oblique to the main shear zone. The shallowly dipping ore system lies in a strongly attenuated axial plane-parallel zone within the overturned limb of a large, inclined fold (Holcombe, 2012).

The deposit at the Borborema Project is considered to be a classic mesothermal/orogenic gold deposit type in a sheared and deformed Archaean to Proterozoic age greenstone belt sequence comprised of metamorphosed volcanic-sedimentary rocks units intruded by slightly younger post-tectonic igneous bodies.

Orogenic gold deposits are among the most important sources of gold production in the world. The geology of the Borborema Project area and its gold occurrences are strikingly like many other gold-bearing schist belts throughout the world.

Several companies have completed various exploration programs at the Project and surrounding region including Itaperiba Mármores e Granitos LTDA (1979-1983), Mineração Xapetuba (1984), Mineração Santa Elina (1994-1997), Caraíba Metais LTDA (2007), Crusader (2009-2012), Big River (2021-2022), and Aura Minerals (2022).

Systematic exploration mainly was carried out by Crusader and later by Big River which included mapping and structural interpretations, geochemical sampling, and drilling. Aura since the acquisition of the project in 2022, carried out regional geophysical modeling and will start more systematic exploration work in the acquired claims from Big River.

1.3 DRILLING, SAMPLING & ASSAYING

Historical drilling on the Borborema Gold Project has been completed in various campaigns since 1979 by several companies including Xapetuba, JICA, Santa Elina, and Caraiba.

Table 1 summarizes these different drilling campaigns. Figure 42 shows the location of these historical drillings.

Table 1: Historical drilling (DDH & RC) statistics in Borborema Project.

Campaign		Diamond Drilling		Reverse Circulation		Total	
Company	Year	Holes	Metres	Holes	Metres	Holes	Metres
Xapetuba	1984 - 1990	13	264	198	4,545	211	4,809
JICA	1991	2	400			2	400
Santa Elina	1995	15	1,185			15	1,185
Caraiba	2007	75	10,528			75	10,528
Total		**105**	**12,377**	**198**	**4,545**	**303**	**16,922**

The diamond drilling was completed by conventional and wireline techniques using HQ and NQ diameter core except for the JICA drilling which used AX diameter core.

Crusader began drilling on the Project in August 2010 and drilled consistently until the end of 2012. Crusader drilled 1,235 m in 10 diamond drill holes for a metallurgical study. Big River drilled 13 holes to extend the known mineralisation at depth and increase the inferred mineral resources. Table 2 summarizes these drilling programs.

Table 2: Crusader and Big River (DDH &RC) drilling statistics in Borborema Project.

Campaign		Diamond Drilling		Reverse Circulation		Total	
Company	Year	Holes	Metres	Holes	Metres	Holes	Metres
Crusader	2010 - 2014	185	41,001	723	46,026	908	87,027
Big River	2021 - 2022	13	5,141			13	5,141
Total		**198**	**46,142**	**723**	**46,026**	**921**	**92,168**

The drilling was completed in various stages and for various purposes. Table 3 shows the detailed statistics of each drilling campaign. Crusader drilled 1,235 m in 10 diamond drill holes for a metallurgical study which is included in the resource building category since the results was used also for Mineral Resource estimation.

Table 3: Crusader drilling detailed statistics in Borborema Project.

Drilling Program	Diamond Drilling		Reverse Circulation		Auger Drilling		Rotary Air Blast		Total	
	Holes	Metres	Holes	Metres	Holes	Meters	Holes	Meters	Holes	Metres
Resource	172	39,131	380	23,794					552	62,925
Condemnation			267	13,984					267	13,984
Exploration	1	253	76	8,248					77	8,501
Geotechnical	2	382							2	382
Metallurgical	10	1,235							10	1,235
Heap Leach Piles					48	250			48	250
Grade Control							98	238	98	238
Total	**185**	**41,001**	**723**	**46,026**	**48**	**250**	**98**	**238**	**1,054**	**87,515**

The diamond drilling has been completed by the wire line technique using HQ and NQ diameter core. Each core run was approximately 3 metres and the core recovery in un-weathered rock was excellent. On average the fresh rock recovery in each hole was 97.9% with an overall average recovery of 96.9%.

The RC drilling generally used 5.5" drill-bits and some completed with 4.5" bits. The theoretical sample mass for each metre was calculated using the volume of the metre drilled, depending on the bit size, and multiplying it by the density of the material obtained from test work using drill core. The minimum recovery in the drilling contract was 85%, but in general the RC drill-holes achieved well above this, with minimal to no groundwater or voids in the area to cause major drilling problems.

All of Crusader's drill hole collars were surveyed using a differential GPS (DGPS) by the Crusader surveying team. The collar positions for all located historical drill holes (e.g., Caraiba drill holes) were also re-surveyed by Crusader. The drill holes were picked up using a DGPS to an accuracy of greater than 5 cm. Crusader has also compiled a surface topography file with a similar accuracy.

Downhole surveys for Crusader and Big River diamond drill-holes at the Borborema Project were completed using a Devico Peewee wellbore electronic single shot survey system. The instrument works the same as a Reflex Easy- Shot unit and is to industry standards.

There is a little information available for sample preparation and QA/QC measures for drilling and sampling prior to the Crusader acquisition of the Project.

Prior to the Crusader acquisition of the Project, diamond core was selectively sampled at intervals from 0.55 m up to 3 mI based on the interpreted geological contacts. Longer samples were taken where lithologies were not considered to be likely hosts for mineralisation. Due to subjective selection of lithological boundaries and the likely open pit mining methods, Crusader sampled uniform 1 metre intervals for both RC and diamond drill core.

The core was cut in half lengthways with a diamond core saw. Half core was sent for assay and the remaining half core was stored at the Project core shed. The vast majority of RC sample splitting was done at the rig by a splitter attached to the cyclone.

Two Brazilian laboratories were contracted by Crusader for sample analyses: Bureau Veritas Laboratory (BV) and ALS Laboratory. In addition, check sampling was undertaken at Acme Analytical Laboratories Ltd (Acme) in Santiago, Chile and by Bureau Veritas' Ultratrace Laboratory in Perth, Western Australia. Big River used SGS GEOSOL Laboratórios LTDA (Rodovia MG010, Km 24,5, bairro Angicos, CEP: 33206-240. Vespasiano/MG.) for 2021-2022 drilling campaign.

The analyses carried out by the four laboratories are summarised in Table 4 below.

Table 4: Laboratory analysis techniques used by Crusader.

Lab	Lab Code	Sample Digestion	Finish	Company	Main Element	Limit of detection (ppm)	Use
Bureau Veritas	FA001	Fire Assay	AAS	Crusader	Au	0.001	Normal
ALS	Au-AA26	Fire Assay	AAS	Crusader	Au	0.01	Normal
ACME	G6-50	Fire Assay	AAS	Crusader	Au	0.005	QC
Ultratrace	FA002	Fire Assay	ICPM	Crusader	Au	0.001	QC
SGS	FAA505	Fire Assay	AAS	Big River	Au		Normal

The entire sample preparation for Crusader 2010-2011 and 2021-2022 drilling campaigns was carried out in designated laboratories.

Crusader's QA/QC programme comprised submitting sample blanks, standard reference samples, sample duplicates, and inter-laboratory check samples. The rate of sample submissions for blanks and reference materials was 1 in 20 samples, duplicates 1 in 25 samples (only for RC holes) and interlaboratory check assays 1 in 10 samples.

A series of QC analyses on the QA/QC data was done by third party consultants and Crusader geologists. The Bureau Veritas assay results showed poor accuracy for the standards and contamination of the blanks. Investigation of the Bureau Veritas re-assays showed no improvement of the QC data. The re-assaying of the pulps by Ultratrace was better. Key findings from this exercise are summarised below:

I. Field duplicates show good repeatability, with almost 60% of assays within 10% precision limits. All field duplicates are RC chips.

II. Lab repeats are fairly good (64% of data within 10% precision limits), with limited bias.

III. Lab checks are fair, better for RC samples than core, but both data sets show scatter at higher grades where original assays are significantly higher than subsequent checks. This may indicate that re-homogenisation of the sample pulp has not occurred.

IV. Blanks are reporting above detection limits (0.001 g/t Au) for both the Crusader internal blank and the Bureau Veritas QZ blanks. However, the highest value reported is 0.06 g/t, and this is an improvement on the Bureau Veritas laboratory.

V. No Crusader standards have been submitted.

VI. Ultratrace internal standards report within acceptable limits of 2 standard deviations from the expected mean.

VII. Based on the available data, the Ultratrace data appears to be both accurate and reports acceptable levels of precision.

VIII. Comparison of the original Bureau Veritas assays with the Ultratrace assays is poor, with only 28% of data falling with 10% precision limits (after removal of assays <0.1 g/t Au). However, the relative precision is consistent across the grade range at approximately 30% (see the T&H plot) and the relative bias is less than 5%. The bias is in favour of the Bureau Veritas assaying.

This study indicated low confidence in the Bureau Veritas assay data, and therefore 1,166 samples from all batches (1 to 9) were sent to ACME Laboratory in Chile, for umpire checks. Summary findings of the ACME QC data are as follows:

I. Blanks show no indications of contamination.

II. It is difficult to comment on laboratory precision as the internal checks have returned codes of insufficient sample for nearly half (13) of the original 28 samples. Of these, 7 samples have check assays within 10% difference.

III. ACME results compare poorly with both sets of Bureau Veritas assay data (i.e., original and re-assays).

IV. ACME results compare well with ALS assay results.

V. ACME results compare favourably (with a few exceptions at the data extremes), with the Ultratrace re-assays.

VI. There is no difference (where there are sufficient samples) between pulp and coarse reject samples.

VII. There is a slight negative bias for pulp samples (i.e., original results higher than ACME results, particularly at higher grades). 34% of pulp sample pairs are within 10% precision limits.

VIII. There is a slight negative bias (i.e., original results higher than ACME results, particularly at higher grades). 35% of sample pairs are within 10% precision limits.

Despite the relative lack of confidence in the Bureau Veritas results it was concluded that enough volume of samples had been re-analysed at ALS and ACME with reliable results to enable a JORC-compliant Mineral Resource to be estimated. It was recommended that all Bureau Veritas samples used in the estimate be re-assayed at an Umpire laboratory for inclusion in future resource and reserve estimates. This task was completed by the ALS laboratory.

The Big River QA/QC program included submittal of both blind and non-blind control samples into the sample stream being analyzed by the SGS laboratory. Big River maintained internal quality control by inserting a minimum of one blank sample in each batch mainly after each mineralized zone, two standards - one high grade and one low grade in each analytical batch of 40 samples (5%), and a minimum of two core duplicates in each analytical batch of 40 samples (5%). Duplicate sample analysis, averaging five samples per hole, was requested after the original results were received.

The control sample assay results of the internal QA/QC program were monitored, including the CRMs, blanks, and coarse duplicates. Additionally, systematic checks of the digital database were conducted against the original signed Certificates of Analysis from the laboratory.

1.4 DATA VERIFICATION

As part of the mineral resource validation and estimation, SRK Consulting (U.S.), Inc. ("SRK") performed a data verification exercise. This included a site visit by the Qualified Person, review of drilling data, Au assay and SG data, review of select drill core, review of twin drilling data, review of data acquisition procedures, and interviews with site geologist. It is the Qualified Person's opinion that the raw drilling data used for estimating Mineral Resources has been adequately reviewed and classified in-line with CIM guidelines. Items identified as potential project risks, low confidence data, or lack of historical production data is accounted for in the Mineral Resource classification.

Data verification performed by SRK included comparison of the drilling database by sample ID of gold grade found in original laboratory certificate data against corresponding values for gold with matching IDs in the assay database. From the certificate files provided, SRK identified 57,912 sample IDs in the certificates provided containing gold values that SRK could match IDs for in the database, representing 79.71% of the gold values in the assay database. Of those 57,912 matching sample IDs, 211 mismatched values were identified representing an error rate of 0.37% (99.63% match rate). SRK identified a low (0.37%) error rate between original source data found in certificates and the data in the assay database. In summary, it is the Qualified Person's opinion that the assay database has been verified and is appropriate for use in Mineral Resource estimation.

SRK reviewed the use of reverse circulation (RC) sampling alongside diamond drill core (DDH) data in the deposit to determine reliability of the RC data on grade and potential biases that may incur from RC sampling in a highly variable – moderate to high nugget deposit. In summary, it is SRK's opinion that minor biases and dilution is likely occurring in RC holes. Additional reviews of collar, downhole surveys, logging, SG, and supporting data resulted in SRK's opinion that the Borborema drilling database is suitable for use in estimation of mineral resources.

1.5 MINERAL PROCESSING AND METALLURGICAL TESTING

In the initial test work and studies for the Borborema Project resource model, the metallurgical or lithological domains were not evaluated. Samples for metallurgical tests were developed by selecting a grade, i.e., oxide, transition, or fresh, and then targeting head grades within each zone for that grade. Composite samples were then developed by combining cores from identified holes that would achieve the desired head grade. Although this approach identifies material with respect to head content, it does not necessarily develop samples that reflect variations in mineralogical species and spatial distribution. The studies of metallurgical tests to evaluate the behaviour of the ore and the definition of the process route started in 2010 with samples CRMET-001 to CRMET-036, conducted by the company TestWork Desenvolvimento de Processos. These studies supported the development of the pre-feasibility study (PFS) in 2012, prepared by CRA/TetraTech, for a 4.0 Mtpy project. These studies were used until 2016 and included hydrometallurgical tests, and tests to define the parameters of comminution, sedimentation, and filtration.

Subsequently, new samples were collected based on the lithological characteristics of the ore, with the aim of revalidating the initial information. This new metallurgical test work, identified by A17445, was performed to validate the mineral processing flowsheet and to expand understanding of the metallurgical variability of the Borborema Project ore body. The program was completed by ALS Ammtec in Perth, Western Australia between July and September 2019. The test work program comprised:

- Test work to establish optimal leaching conditions (particle size and cyanide concentration) master composite sample.
- Determination of reagent consumption under optimal conditions.
- Leaching in master composite samples for sequential carbon-in-leach (CIL), loading carbon, and cyanide detoxification parameter setting.
- Cycloning and screen test to determine the behavior of the mica.
- Leaching performance on 10 samples of variability in a grind size with P80 <106 µm.

In addition to these tests, ALS Ammtec also prepared samples to be sent to Outotec for thickening and filtration testing. OMC performed a study for the comminution circuit to confirm the comminution behaviour with the option selected to achieve 2.0 Mtpy at a P_{80} 106 µm grind size.

Test work was completed on master composite and variability samples prepared by ALS from eight boreholes that crossed the ore below the existing pit, and the samples were considered representative of the ore and average grade of these composites that were aligned with the long-term average grade of the mine operation.

An optimization test program was performed on Sample Master Composite and included the following:

- Preparation of samples for master composition and analysis of composites.
- Determining the appropriate test method.

- Grind optimization – cyanide leaching tests were performed on three grind sizes (P80 <90 µm, 106 µm, and 125 µm) to establish an optimal grind size.

- Leach optimization for size P80 <106 µm, initial cyanide concentration of 350 ppm, and leaching time of 36 hours.

Previous work identified a high degree of variability with head-grade content determination. Investigative work carried out at ALS/Ammtec in Perth-WA identified that this was due to a very high concentration of gold in coarse particles. The use of the "metallic screen fire assay" technique provided reasonable consistency in the determination of head contents. The results of tests to evaluate the adsorption kinetics of gold on carbon indicate an adsorption rate compatible with industrial practices. No unusual loading characteristics were observed. The results of the gold loading tests on the carbon in the steady state are also within the norms practiced in projects of similar size in the gold industry.

The cyanide detoxification test was performed using the SO_2/air oxidation process to determine the consumption of reagents and conditions to achieve the destruction of sodium cyanide in tailings. Test results for cyanide neutralization indicate that:

- The Air/SO2/Cu2+ method successfully reduces cyanide weak acid dissociable (CNWAD) to levels below 1 ppm.

- The lime dosage at 1.7 kg/kg SO2 proved to be efficient to adjust the pH of the sodium metabisulfite/copper sulphate/cyanide SMBS/CuSO4/CN- reaction;

- The addition of copper proved to be effective in eliminating dissolved iron.

Ten leaching tests were carried out to evaluate gold recoveries between zones and head-grades in variability samples. Results showed a gold extraction in the range of 90.2% to 97.9% with residues in the range of 0.01 to 0.28 g/t Au. Reagent consumption was low in all evaluated tests. The average consumption of cyanide was 0.24 kg/t and 0.46 kg/t for lime, which is in line with the consumption observed in tests with master composite samples. The test for evaluation of the analysis test method was proposed to define a method to evaluate the gold content during the execution of specific tests on the bench. This work was carried out by ALS, in one master composite sample and eight samples for variability with different gold concentrations; for each sample the repeatability was defined. The results of the test work suggested that aqua regia extraction as a test method showed good results when gold contents are below 2.5 g/t Au.

The tailings disposal method proposes to include a thickener after the cyanide neutralization to recycle the water and produce a pulp with density favorable for filtration. The tailings sample tested reached densities around 54 to 55% solids (w/w). The Horizontal Vacuum Belt Filter technology was tested, and the flocculant application increased the filtration rate and, consequently, decreased the final cake moisture. It's possible to achieve higher filtration rates with cake moisture in the desired range.

1.6 MINERAL RESOURCES

SRK Consulting (U.S.), Inc. ("SRK") performed the Mineral Resource Estimate in support of the Borborema Feasibility Study (FS) report with an effective date of 31 January 2023. Mineral Resource work was performed or supervised by Erik Ronald, P.Geo (PGO#3050), and Principal Consultant with SRK acting as the Qualified Person for Mineral Resources. All supporting drilling and geological data were provided by Aura and reviewed by the Qualified Person. SRK constructed the block model, performed grade shell modeling of mineralization, interpolation of gold concentrations, scripting of bulk density, assigning Mineral Resource classification based on CIM guidelines, and calculating the Mineral Resource statement.

The drill hole database supporting the Mineral Resources contains 1,370 drillholes for 109,578 m across the entire property with 74,038 sample intervals utilized to inform the mineral resource estimate for Borborema. A breakdown of drilling method, number of holes and total meterage is presented in Table 5.

Table 5: Drilling database on the Borborema Property.

Drill Method	No.	Meters
AUG	48	250
RAB	98	238
DD	303	58,519
RC	921	50,571
Total	**1,370**	**109,578**

Note: AUG = auger, RAB = rotary air blast, DD = diamond drilling, RC = reverse circulation.

There are 29,617 specific gravity (SG) measurements from drilling data in the database used in Mineral Resources. These measurements are collected from core by Crusader (Cascar) personnel using the immersion method via the specific gravity apparatus onsite. The SG data demonstrates low variance across all samples. Within the sulphide zone, the Qualified Person notes the generally unaltered nature and the lithologic similarity of the main two rock types hosting mineralization. Bulk density was applied to the resource block model by oxidation zone including allotment for the mineralised sulphide. The applied bulk density values utilized in the Mineral Resource block model by domain are shown in Table 6.

Table 6: Assigned bulk density for the Borborema resource block model.

Zone	Bulk Density (g/cm^3)
Oxide	2.65
Sulfide	2.76
Mineralized Sulfide	2.77

SRK reviewed raw, 1 m, 2 m, and 3 m composite lengths to determine material effect or bias on these various composite lengths. A 2 m composite was used for estimation of the 2022 Mineral Resource model. It is the Qualified Person's opinion that use of a 2 m composite is considered appropriate based on the raw sampling intervals with the majority collected at 1 m length.

A comparative upper capping analysis was performed to review potential gold outliers and assess the potential estimation impact of gold capping. SRK selected multiple upper-end capping limits and various domains to assess local and global sensitivity and impacts of capping. Ultimately, a 20 g/t Au upper cap value from 2 m composited data was set as the upper capping limit within the broadly defined mineralised domain, defined by a numeric indicator model at a 0.1 g/t Au threshold. The impact of this upper cap resulted in capping of 54 composites, 3.3% total metal loss which obtained a 26% improvement in coefficient of variation (CV).

The Borborema Mineral Resource block model does not utilize a lithological model to confine the grade estimation but instead utilizes multiple gold grade shells to define estimation domains. This approach was used due to the inability to model lithostratigraphic correlations across the deposit. As the gold mineralisation is predominantly controlled by a primary structural zone trending north-south and dipping ~35 degrees to the east; it was this orientation that was used to define the grade shell directionality and trend.

The Mineral Resource block model utilized a minimum 0.2 g/t Au grade shell to constrain the estimation and thus, define the overall mineralisation envelop with potential for economic material. Within the 0.2 g/t Au grade shell, SRK has utilized two additional nested gold grade shells of 0.5 and 1.0 g/t Au that were also created in Leapfrog® Geo using the indicator numeric modeling tools (Figure 1). Parameters of the indicator grade shells include a 0.4 ISO value (probability), anisotropic trend aligned with the primary mineralisation zone at 35° dip and 90° dip direction. The indicator interpolant utilized a spheroidal model with a base range of 300 m.

SRK utilized an oxidation boundary surface constructed in 2012 by Crusader (Cascar) to discriminate oxide from sulphide mineralisation as the logging data was considered too variable and of lower confidence to construct this surface. The oxidation model is used to code bulk density in the Mineral Resource block model. SRK notes the surface is utilized to provide an approximate indicator of the transition but recognizes the confidence in the boundary is considered poor. Therefore, the simplicity of the oxidation boundary is in question and the Qualified Person has accounted for this uncertainly through Mineral Resource classification.

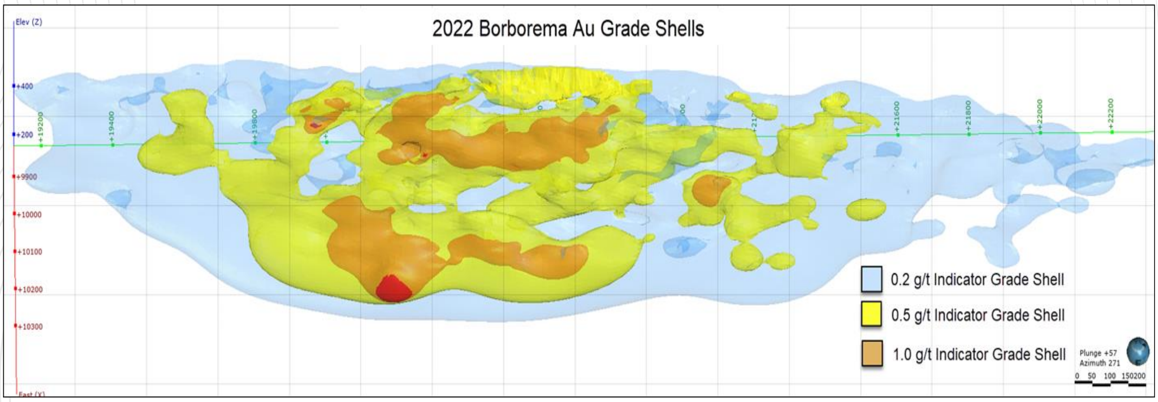


Figure 1: Longitudinal view of Au grade shells, looking west (SRK, 2022).

The spatial continuity of gold grades across the Borborema deposit was assessed though experimental and modeled semi-variograms calculated using Leapfrog® Geo and Isatis software. SRK calculated multiple experimental semi-variograms investigating the sensitivity of continuity parameters to multiple thresholds on indicator grade shells and differences between drilling methods (DDH and RC).

Summary findings from the variography and grade shell sensitivity analyses includes:

- The nugget effect is relatively consistent across multiple sensitivity trials at 40% to 50% of the sill regardless of grade shell, capping, or exclusion of RC data. Given the known deposit style of orogenic gold, observed mineralisation in core, the two styles of gold mineralisation (free and sulphide hosted), and spatial distribution of grades, a high nugget effect is expected.

- Ranges are short, typically less than the 50 m. This is also the mean drill spacing across the deposit which indicates a relatively low range of continuity between samples. SRK notes that this is a common feature in some low continuity deposits where the range will appear correlated with drill spacing and may result in early-project over confidence at wider spacing.

- Anisotropy varies by grade shell with the lower grade shell thresholds (0.1 and 0.2 g/t Au) showing continuity trends along the main north-south structure while higher grade shell's (0.5 and 1.0 g/t Au) show the major direction of continuity to be oblique of the north-south structure. This may support a theory of higher-grade, secondary shoots oriented oblique to the main structure.

- Use of the 0.1 g/t Au grade shell is considered satisfactory in delineating minimal mineralisation from areas of no or trace gold occurrences.

- A 0.2 g/t Au grade shell improves mean internal grade values by 20%, thus removing a material portion of low-grade material on the edges of the mineralised area.

- Overall, the mineralisation appears to be consistent along two main, sub-parallel zones with strike consistent with historical interpretation for the discrete two zones of higher grade.

SRK created a digital 3-D Mineral Resource block model using Leapfrog® Geo software. The model extents and block size were influenced by the property extents, geometry of mineralisation, previous block model (2012), expected selective mining unit (SMU), and mean data spacing across the deposit which is nominally 50 m. The updated Mineral Resource block model construction parameters are shown in Table 7.

Table 7: Borborema block model parameters (SRK, 2022).

Parameters (m)	X	Y	Z
Origin	9745	19080	530
Offset	775	3350	400
Block Size	25	25	5
Sub-block size	5	5	2.5
Rotation	None		

The updated Mineral Resource block model gold grade was estimated using Ordinary Kriging (OK) and inverse distance weighted squared (IDW2) methodologies constrained within nested grade shells at 0.2 g/t, 0.5 g/t, and 1.0 g/t Au indicatory grade shells (Figure 1).

The aim of the nested grade shell approach is to constrain higher grade gold mineralisation into specific zones of occurrences while limiting the potential over-influence of outlier high grade composites to impact the mean block grades. Due to the lack of modeled structural and geological information, it is SRK's opinion that the nested shell approach provides a satisfactory representation of gold distribution across the Borborema deposit.

SRK utilized a nested, soft-boundary grade shell technique with shells at 0.2, 0.5, and 1.0 g/t Au to limit the influence of outlier data to the broader mineralised volume which displays general lower grade attributes. A multi-pass method was used for estimation based on domains defined by these grade shells. The pass method was implemented to ensure all blocks within the model contain grade and provide a quantitative means of assessing the relative confidence to aid in classification due to the less restrictive nature of each progressive pass search neighbourhood. Summary search neighborhoods by domain and pass are presented in Table 8**:** Summary neighbourhood search parameters by estimation pass (SRK, 2022).

. No variable orientation was utilized due to the consistent planar nature of the mineralisation.

Mineral Resources are classified in accordance with NI 43-101 and CIM definitions into Measured, Indicated, and Inferred classifications based on identified uncertainly and risks. Blocks are assigned a classification based on criteria listed below. The Borborema gold deposit does not contain Measured Mineral Resources at this time due to uncertainties related to:

- Lack of a lithostructural model in an orogenic gold deposit.

- Inherent variability of economic gold grades and relatively high nugget effect.
- Lack of supporting detail on the oxidation model supporting recovery assumptions for near-surface mineralisation.
- Lack of detailed topographic survey across the property.
- Lack of deposit-wide geochemical data to assess the potential for deleterious elements.
- Inconsistent geological logging across the property.
- Estimation not accounting for the two identified styles of gold mineralisation observed at the deposit.

The Borborema gold deposit contains Indicated Mineral Resources based on the following criteria:

- Validation of analytical gold data used in the estimate.
- Review of summary QA/QC supporting information.
- Use of diamond drill core for sample assay.
- Mean drill spacing less than or equal to approximately 75 m.
- Interpolated block gold grades supported by drilling data on all sides spatially.
- Volume within Qualified Person created Indicated classification volume.

The Borborema gold deposit contains Inferred Mineral Resources based on the following criteria:

- Validation of analytical gold data used in the estimate.
- Review of summary QA/QC supporting information.
- Use of diamond drill core or RC drilling for sample assay.
- Mean drill spacing less than or equal to approximately 100 m.
- Minor volume of mineralized material extrapolated at depth.
- Volume within Qualified Person created Inferred classification volume.

In order to establish reasonable prospects for eventual economic extraction (RPEEE) as per NI 43-101 definitions of Mineral Resources, SRK applied an economic cut-off grade (CoG) to blocks constrained within an economic pit shell on the Borborema Property. This shell utilizes a 1.0 revenue factor, 37-degree slope on the west and 60-degree slope on the east. A longitudinal section of the Mineral Resource pit shell is shown in Figure 2.

Table 8: Summary neighbourhood search parameters by estimation pass (SRK, 2022).

General			Ellipsoid Ranges (m)			Ellipsoid Directions			Number of Samples		Outlier Restrictions			Drillhole Limit	Discretization
Interpolant Name	Method	Domain	Max.	Interm.	Min.	Dip	Dip Azimuth	Pitch	Min.	Max.	Method	Distance (m)	Threshold	Max Samples per Hole	X
OK_Au_cap20_0.2GS_P1	OK	0.2 g/t Au grade shell	100	30	12	35	95	170	4	6	Clamp	50	10	3	5
OK_Au_cap20_0.2GS_P2	OK	0.2 g/t Au grade shell	100	40	10	35	95	170	3	6	Clamp	50	10	2	5
OK_Au_cap20_0.5GS_P1	OK	0.5 g/t Au grade shell	60	30	5	35	95	13	4	6	Clamp	50	10	3	5
OK_Au_cap20_0.5GS_P2	OK	0.5 g/t Au grade shell	80	60	10	35	95	13	3	6	Clamp	50	10	2	5
IDW2_Au_cap20_0.20GS_P3	IDW2	0.5 g/t Au grade shell	200	150	75	35	95	170	2	6	None				5
OK_Au_cap20_1.0GS_P1	OK	1.0 g/t Au grade shell	60	30	6	35	95	145	4	6	Clamp	25	10	3	5

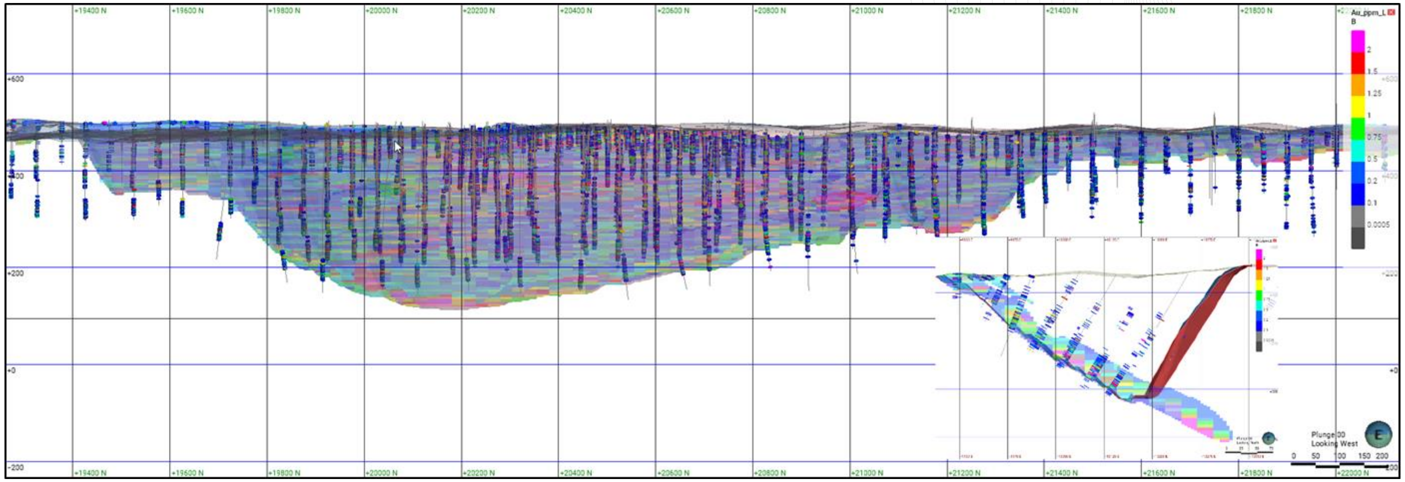


Figure 2: Longitudinal section, looking west, of the economic pit shell. Insert image shows cross section, looking north (SRK, 2022).

The Mineral Resource statement is presented in Table 9 with an effective date of January 31, 2023.

Table 9: Borborema mineral resource estimate as of January 31, 2023.*

CLASS	Au COG	OXIDATION	MASS (Mt)	AVERAGE (Au g/t)	TOTAL METAL (Au Kt oz)
INDICATED	0.33 g/t	OXIDE	2.4	0.79	62
		SULFIDE	61.3	1.02	2,015
		TOTAL	63.7	1.01	2,077
INFERRED	0.33 g/t	OXIDE	0.1	0.83	3
		SULFIDE	10.8	1.13	390
		TOTAL	10.9	1.13	393

***Notes:**

1. Mineral Resources are reported inclusive of Mineral Reserves. Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability.
2. Mineral Resources have been categorized subject to the opinion of a Qualified Person based on the quality of informing data for the estimate, consistency of geological/grade distribution, data quality, and have been validated using visual and statistical analyses.
3. Mineral Resources tonnages and contained metal have been rounded to reflect the accuracy of the estimate, and numbers may not add due to rounding.
4. The economic CoG for Mineral Resources is based on the long-term outlook sale price of US$1,800/troy ounce of gold, 92.1% recovery, average mining costs of US$2.00/t, processing costs of US$14.82/t, G&A of US$1.38, and sustaining capital costs of US$0.62/t.
5. An overall 61° (east side) and 37° (west side) pit slope angle, 0% mining dilution, and 100% mining recovery have been used.
6. Mineral Resources were reported above the economic 0.33 g/t Au CoG and are constrained by an optimized pit shell.
7. The Qualified Person for Mineral Resources is Erik Ronald, P. Geo (PGO #3050), Principal Consultant with SRK Consulting (U.S.), Inc. based in Denver, USA.

The sensitivity of Mineral Resources to changes in the economic CoG is presented below through the grade-tonnage curve in Figure *3*. As the economic CoG is at 0.33 g/t Au, any material changes to project economic assumptions may materially affect the Mineral Resource tonnage and average grades.

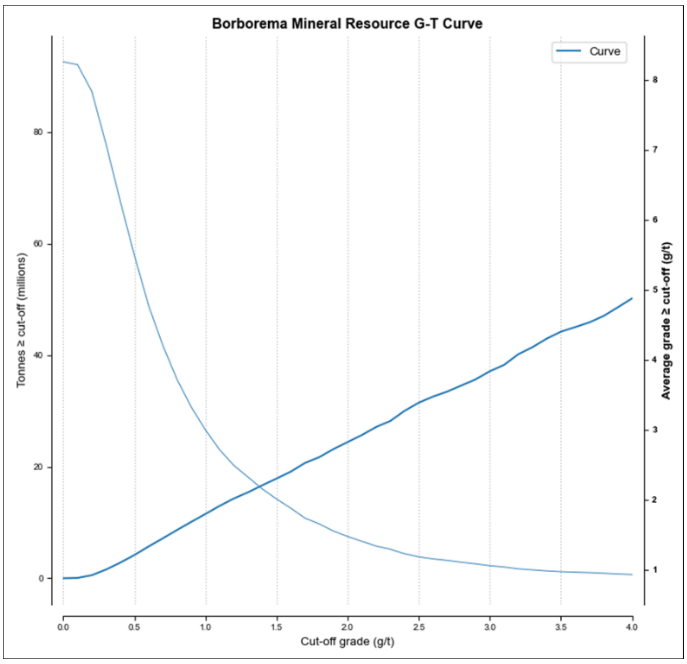


Figure 3: Grade tonnage curve.

1.7 MINERAL RESERVE

Borborema Project Mineral Reserve Estimates, as of 31 July 2023, stated in this report are based on the Mineral Resources reported above by SRK. The key modifying parameters upon which the 31 July 2023 open pit Mineral Reserve Estimates were made are summarized in Table *10*.

Table 10: Mineral Reserve Key Modifying Factors. Used on Pit Optimization Run.

Modifying Factor	Value
Gold price	US$ 1,500/oz
Gold Refining Charge	US$ 28/oz
Royalties (CFEM[1])	1.5% of Gross Revenue
Exchange rate	R$ 5.2:US$ 1
Costs	
Mining fixed	US$ 0.20/t
Mining weathered	US$ 2.20/t
Mining fresh rock ore	US$ 3.00/t
Mining fresh rock waste	US$ 2.60/t
Processing	US$ 14.82/t processed
G&A	US$ 2,753,173/year
Sustaining	US$ 0.62/t processed
Plant recovery	92.1%
Mining recovery	95%
Total Dilution (planned and unplanned)	5%
Overall Pit Slopes	36.5 – 61.5°

[1] Note: CFEM is the Brazilian government royalty

The Mineral Reserves inside the engineered pit designs were reported using cut-off grades (COG) estimated by rock type, based on a gold price of US$ 1,472/oz, including an allowance for refining costs of US$ 28/oz, and a R$:US$ exchange rate of 5.2:1.

A high voltage transmission line (HVTL) constrains the pit to the north and a highway paved road (BR-226) constrains the pit to the south.

The Mineral Reserves are presented in Table *11*.

Table 11: Mineral Reserves Borborema Project, Effective Date July 31, 2023.

Classification	Tonnage (kt)	Au Grade (g/t)	Au Content (koz)
Proven	-	-	-
Probable	22,455	1.12	812
Total	**22,455**	**1.12**	**812**

Notes:

1. CIM (2014) definitions were followed for Mineral Reserves.
2. Mineral Reserves have an effective date of 31 July 2023. The Qualified Person for the estimate is Bruno Yoshida Tomaselli, B.Sc., FAusIMM, an employee of Deswik.
3. Mineral Reserves are confined within an optimized pit shell that uses the following parameters: gold price including refining costs US$1,472/oz; mining costs US$2.40/t weathered material, US$2.80/t waste fresh rock, US$3.20/t ore fresh rock; processing costs US$14.82/t processed; general and administrative costs US$2.8 M/a; sustaining costs US$0.62/t processed; process recovery of 92.1%; mining dilution of 5%; ore recovery of 95%; and pit inter-ramp angles that range from 36–64°.
4. Tonnages and grades have been rounded in accordance with reporting guidelines. Totals may not sum due to rounding.

The Mineral Reserves have been estimated in accordance with Canadian National Instrument (NI) 43-101 Standards of Disclosure for Mineral Projects as of August 2011 and Definition Standards for Mineral Resources and Mineral Reserves adopted by the CIM Council on May 2014.

1.8 MINING METHOD

The mine layout and operation are based on the following criteria:

- Two independent open-pit areas named Main Pit and South Pit.
- Two independent waste rock storage facilities (WRSF).
- Independent access from both pits to the mine run-of-mine (ROM)/crushing pad.
- Low-grade stockpiling strategy near the ROM/crushing pad.
- 20-m height benches.

The life of mine (LOM) will be eleven years and four months. The basis for the scheduling includes:

- Plant capacity: 2.0 Mtpy.
- 10 months of pre-stripping operation.
- The maximum proportion of oxidized material in the plant is 10%.
- Total material movement: approximately 14 Mtpy.
- Sink rate: 100 m (5 benches at 20 m high).
- Low-grade stockpile to increase head grade for initial years.

1.9 RECOVERY METHODS

The proposed beneficiation plant design is based on metallurgical testing and designed for optimal gold recovery with low capital and operating costs. In its initial conception, a conventional circuit for feeding 4.0 Mtpy was foreseen, consisting of three-stage crushing, ball mill, CIL, and thickening and filtering for dry stacking of the tailings, including desorption by the Anglo American Research Laboratory (AARL) method and electrolysis. The current design is based on a nominal feed of 2 Mtpy of ore, assuming a crushing plant availability of 75% and 90% for milling/CIL and supported downstream operations by an emergency stockpile of crushed ore and reserve equipment in critical areas. The Project includes single-stage primary crushing with a single stage semi-autogenous grinding (SSSAG) mill circuit at the 2.0 Mtpy stage to obtain a P_{80} 106 µm product for cyanide leaching in the presence of activated carbon in obtaining gold recovery of 92.1%.

The beneficiation plant design incorporates the following unit process operations:

- Single-stage primary crushing to produce a crushed product size with 80% pass (P80) in 92 mm.
- Belt conveyor to transfer the crushing product to feed a surge bin with a storage capacity of 500 t of ore. The recovery of ore from this bin will be through vibrating feeders and the excess crushed ore will be stored in an emergency pile with the material being recovered by a front loader.
- Grinding SSSAG in a closed circuit with hydrocyclones to produce a grinding size P80 <106 µm.
- Gravimetry and intensive leaching circuit for the recovery of coarse gold, with a feed of 30% of the circulating grinding load.
- A hybrid circuit, incorporating a leaching tank and six tanks for leaching in the presence of activated carbon for gold adsorption.
- Zadra Pressure elution circuit divided into a column for acid washing and a column for elution, with a capacity of six tonnes of activated carbon, electrolyte tank, electrowinning extraction, and precious metals smelting to recover gold and silver from carbon charged to produce bullion.
- Thickening unit to recover water containing cyanide and reduce consumption of cyanide itself and reagents for neutralization.
- Tailing treatment incorporating tanks for cyanide destruction using sodium metabisulfite/air/copper sulphate.
- Final thickening unit for adapting the tailings slurry to the optimal density for filtering and recovering cyanide-free water for the process.
- Tailings filtering station to obtain a cake with a moisture content of around 20% that will be transported to an intermediate pile, and subsequently recovered by mechanical shovel and transported by trucks to the disposal shared with the mine waste.

The crushing plant will be able to operate with a projected production of up to 304 tph, with an availability of 75%. Excess ore from the mill feed bin will be stored and retrieved from the emergency stockpile (approximately 12,000 t capacity) via a front loader (FEL) and belt conveyor to transfer the material to the SSSAG mill feed. The mill design was selected to produce a P_{80} <106 µm product with a nominal feed rate of 254 tph. The SAG mill will be equipped with a variable speed drive and will operate in a single stage (SSSAG) in a closed circuit with a set of five hydrocyclones in operation. After metallurgical tests confirmation of the presence of coarse gold in the feed, a gravimetry and intensive leaching circuit will absorb 30% of the circulating load for the concentration of gold by gravity.

Based on metallurgical test work, a configuration of one leach tank and six tanks containing leached activated carbon (CIL) was adopted to achieve 92.1% gold recovery with consistently low tailings grades. The tanks will be identical in size with cyanide added to the CIL tanks as needed. The residence time will be 30 hours with solids density of 35% w/w. Atmospheric air will be sparged to maintain an adequate level of dissolved oxygen for leaching into the CIL tanks.

A Zadra-type elution circuit under Pressure (ZP), with two columns, one for the acid washing of carbon and the other for the elution of this pregnant carbon, was dimensioned with the capacity to treat six tonnes of loaded carbon based on the metallic content of the feeding and recovery from gold extraction. An AARL-type circuit would be the initial option for offering greater operational flexibility. However, due to the uncertainty of the quality of water, with low concentrations of salts as a result of the use of wastewater from the city of Currais Novos, the option for ZP was chosen. Two electrowinning cells will operate one dedicated to the gravimetry circuit and the other to the CIL circuit.

The Air/SO_2 system was selected as the cyanide destruction method after the tailings slurry undergoes thickening to recover cyanide-containing water and decrease reagent consumption. Subsequently, this neutralized pulp will be thickened again to recover cyanide-free water and thicken the pulp to suitability for filtration. With a higher percentage of solids in the tailings slurry, the efficiency of the filtering system will be facilitated to obtain dry tailings or tailings with low humidity of 20%. After filtering, the material will be deposited by a conveyor to form a heap in the shape of a bean, and from there it will be recovered by a front loader and transported by bucket truck to the disposal shared with the mine waste dump.

1.10 PROJECT INFRASTRUCTURE

The general site plan (Figure 4) shows the planned locations of the main Project facilities, including the gatehouse and administrative areas, primary substation, processing plant, wastewater treatment plant ("WTP"), filtration, mine support area, access roads, pit and piles.

Access to the facility is from the south side of the property from road BR-266. The main access will be through the security gate near the process plant. The site will be fenced off to prevent access by unauthorized persons. The process plant is located west of the pit. The site plan design took into account the site geography and terrain, and optimization of soil movement from cutting and for embankments.

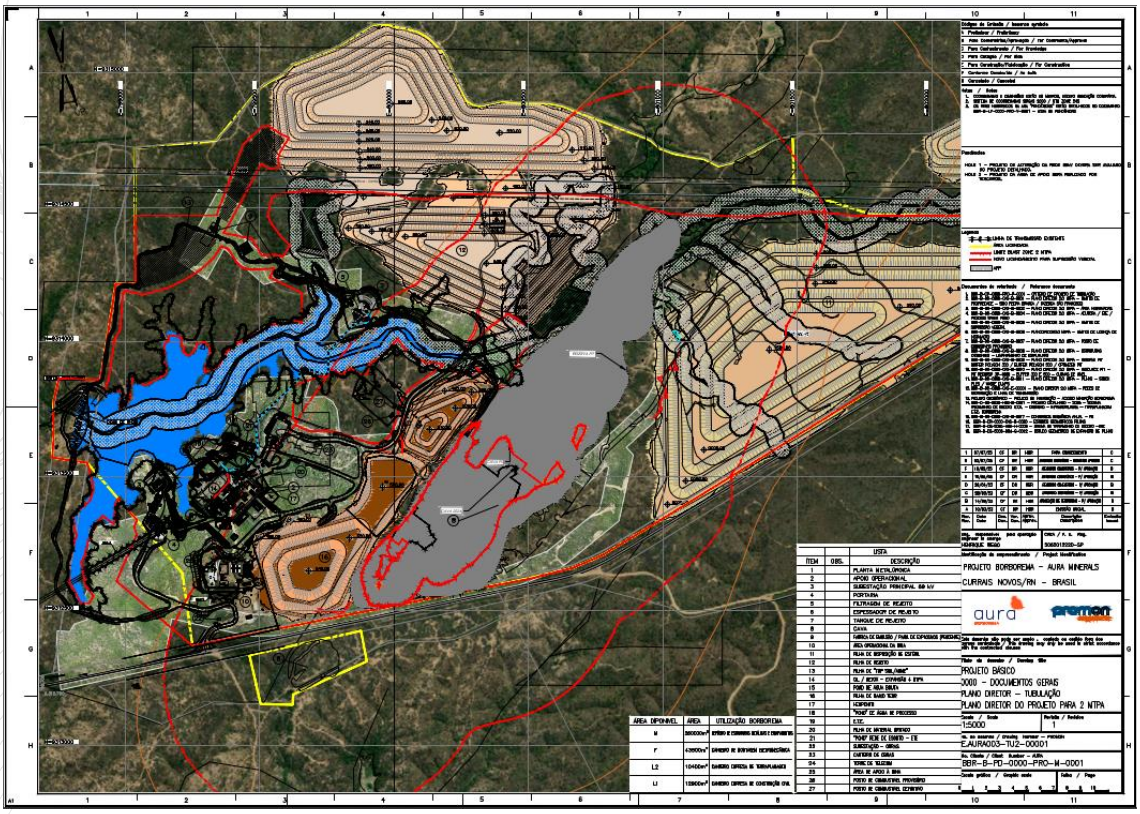


Figure 4: General site plan

1.11 ENVIRONMENTAL STUDIES, PERMITTING, SOCIAL AND COMMUNITY IMPACTS

The Borborema Project is in a semi-arid region with an average annual rainfall of 695 mm and an annual evaporation rate of around 2,600 mm, resulting in a large yearly water deficit. The Project site is located about 172 km from Natal, 30 km from Currais Novos, and about 1-4 km from the local communities São Luiz, São Rafael, São Sebastião and Maxixe.

The Project area is not located in Conservation Units (Parks, Forest Reserves) or Indigenous Lands. There is a Traditional Quilombola community, called Negros do Riacho, located about 20 km from the site, outside the directly affected area and of direct influence of the Project.

Aura owns the São Francisco Farm and the Pedra Branca site and has enough areas to house all the structures of the 2 Mtpy project. The Jesus Maria farm was also acquired to be a Forestry Reserve area and conduct reforestation.

The water demand for the annual productions is 75.6 m^3/h of raw water for the operational process. This demand will be met by wastewater (sewage) from the municipality of Currais Novos, which will be treated at the Sewage Treatment Station in the Project area and by rainwater accumulated in the fines dike and in the Onça and São Francisco dams, located inside São Francisco Farm, owned by Aura.

Results of acid mine drainage (ARD) and metal leaching tests carried out to date do not suggest the generation of acid or alkaline drainage associated with waste rock and tailings materials from the Borborema Project, and metal leaching is not shown to be a significant concern.

The Environmental Impact Study (EIA) and Environmental Impact Report (RIMA) were prepared in 2011 in which the main impacts of the Borborema Project were identified and evaluated and mitigating measures, plans, and environmental programs were proposed. The Project's areas of influence were defined, and field studies were carried out on the terrestrial and aquatic fauna, flora, water resources, historical and archaeological heritage, socioeconomic diagnosis of the region, and traditional populations, among others.

The presentation of the Project and the environmental impact study was held at a Public Hearing in the city of Currais Novos on December 05th 2013, which was very well received by the local population. After the public hearing and analysis of the study by the responsible authority (IDEMA -Institute for Sustainable and Environmental Development of Rio Grande do Norte), the Preliminary License -LP No. 2011-047788/TEC/LP-0136 was issued in April 2017. On April 15, 2019, Installation License No. 2018-129191/TEC/0083 was issued, which has already expired. Currently, the Borborema Project has Installation License LI nº 2022-188699/TEC/LI-0181 for the implementation of the Project in an area of 490 ha is valid until 2028.

The application for an Operation License with IDEMA will be made around October 2024 and, following IDEMA's instructions, all changes and expansions carried out in the executive project and implemented during construction will be provided to IDEMA shortly after the License is issued of Operation (LO). An Operation Alteration License (LAO) is required for the changes to be added to the Operation License. It is estimated that the Operating License will be issued in about 90 to 100 days after the application is submitted.

1.12 CAPITAL AND OPERATING COSTS

The capex study presented has a variation of +10% and -10%. The capex estimate presented in Table 13 includes the cost for project execution, acquisition, construction, and commissioning of all facilities. The estimate was based on basic engineering of the disciplines of mechanics, electrical, civil, instrumentation and pipes. In addition to the quantitative and definitions coming from the consolidated basic project, other definitions of scope were considered together with Aura, such as the values of pile construction, mine and other costs, including indirect.

Table 12: Overall CAPEX Estimation.

Item	Total	%
Services (US$ x 1,000)	$49,878.18	25,41%
Supply (US$ x 1,000)	$67,691.61	34,49%
Mine, Pile and LT (US$ x 1,000)	$39,962.51	20,36%
Indirect Costs (US$ x 1,000)	$29,082.00	14,82%
Contingency (US$ x 1,000)	$9,648.43	4,92%
TOTAL CapEx (US$ x 1.000)	$196,262.73	100%

Operating costs are shown in Table 14, in which the unit costs per tonnes/year are presented for labor, G&A, laboratory, access maintenance, equipment rental, water and sewage treatment plant, pile and mine.

Table 13: OPEX for the Borborema Project.

	OPEX (AISC) - Borborema per t Feed		OPEX (AISC) - Borborema Per Oz Produced	
	Per Tonne/Year		Per Oz/Year	
	Total (US$)	**%**	**Total (US$)**	**%**
Unitary Costs	**$ 27.13**	**100%**	**$ 867.36**	**100%**
Labor (Fixed Costs)	$ 2.83	10%	$ 90.99	10%
G&A (Fixed Cost)	$ 1.33	5%	$ 42.69	5%
Laboratory (Fixed Cost)	$ 0.58	2%	$ 18.70	2%
Access Maintenance (Fixed Cost)	$ -	0%	$ -	0%
Equipment rental (Fixed Cost)	$ 0.11	0%	$ -	0%
Energy (Variable Costs)	$ 1.67	6%	$ 53.58	6%
Reagents and Consumables (Variable Costs)	$ 3.81	14%	$ 122.41	14%
Maintenance	$ 0.96	4%	$ 30.91	4%
Water and sewage treatment plant	$ 0.36	1%	$ 11.46	1%
Pile	$ 2.39	9%	$ 76.87	9%
Mine	$ 12.31	45%	$ 394.99	46%
Selling	$ 0.01	0%	$ 0.29	0%
Royalties	$ 0.78	3%	$ 25.13	3%

1.13 ECONOMIC ANALYSES

The financial model adopts the concept of project free cash flow, in which all the project's cash generation capacity is evaluated by countering this flow with a weighted discount rate ("WACC") which reflects the average cost of sources of funds (cost of equity and third parties). The amounts in the cash flow were expressed in thousands of United States Dollars (USD x 1,000) and on a real basis (without inflation).

Based on the assumptions adopted, the net present value (“NPV”) of Aura Minerals Gold Project is between a range of USD 90.2 million and USD 182.7 million.

The project's internal rate of return ("IRR") stands at 21.4%, while the annual average EBITDA (from 2025 to 2036) amounts to USD 47.6 Million. The operational payback period is calculated at 3.3 years.

The results are summarized in Table 14.

Table 14: Project Cash Flow.

		Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
Operational Cash Flow	USD x 1000	-	-	-	23.422	62.237	92.266	54.762	52.736	34.997	28.502	62.420	49.549	27.747	21.175	9.726	1.510
(+) EBITDA	USD x 1000	-	-	-	28.296	78.599	110.129	47.193	59.960	31.250	29.268	79.709	48.823	24.239	24.566	8.817	-
(-) Income tax FCFE	USD x 1000	-	-	-	-	(7.929)	(12.596)	(2.961)	(5.060)	(1.059)	(1.082)	(8.986)	(4.407)	(627)	(3.338)	(1.754)	(0)
(+/-) Working capital variation	USD x 1000	-	-	-	(4.874)	(8.433)	(5.267)	10.531	(2.164)	4.806	317	(8.303)	5.133	4.135	(53)	2.662	1.510
Investiment Cash Flow	USD x 1000	-	(57.686)	(113.757)	(18.624)	(1.677)	(1.677)	(2.216)	(1.741)	(1.583)	(2.018)	(2.018)	(2.018)	(2.018)	(866)	(8.363)	-
Capex - Expansion	USD x 1000	-	(57.686)	(113.757)	(18.624)	-	-	-	-	-	-	-	-	-	-	-	-
Capex - Sustaining	USD x 1000	-	-	-	-	(1.677)	(1.677)	(2.216)	(1.741)	(1.583)	(2.018)	(2.018)	(2.018)	(2.018)	(866)	(8.363)	-
Free Cash Flow to Firm (FCFF)	USD x 1000	-	(57.686)	(113.757)	4.798	60.560	90.589	52.546	50.994	33.413	26.485	60.402	47.531	25.729	20.308	1.362	1.510

Source: EY

1.14 CONCLUSION

After the evaluation, the NPV, at a WACC rate between 5.0% and 11.0% per year, resulted in a range with a minimum value of USD 90.2 Million and a maximum value of USD 182.7 Million, with a Project IRR of 21.4% and a 3.3-years Operational Payback Time. For this scenario, the gold price adopted has an average value of USD 1,712/Oz considering all the operational years and the exchange rate used was BRL 4.93 for USD 1.00 in 2023, BRL 5.00 for USD 1.00 in 2024 and BRL 5.09 for USD 1.00 in 2025 onwards.

1.15 RECOMMENDATIONS

This Report and the results herein have been verified and approved by the QPs Mr. Farshid Ghazanfari, M.Sc. (P.Geo.), Dr. Homero Delboni, Jr. Ph.D., (MAusIMM – CP Mettallurgy), Bruno Yoshida Tomaselli, B.Sc. (FAusIMM) and Erik Ronald, (P.Geo.).

Specific recommendations can be found in chapter 26.

2 INTRODUCTION AND TERMS OF REFERENCE

The Borborema Gold Project is located in the southern portion of the state of Rio Grande do Norte, Brazil. The Project comprises three active mining concessions for the last forty years, totaling 2,907 hectares, and was acquired by Aura from its previous owner, Big River Gold, in 2022.

Borborema Project has a long and continued historic exploration program carried out by different companies since 1980. Preliminary resource models were constructed based on the results of the exploration work. Mineração Xapetuba LTDA mined the São Francisco open-pit between 1984 and 1991, and reported that approximately 100,000 ounces of gold were recovered.

Aura reviewed all information received from Big River Gold (Crusader Resources). Aura performed additional metallurgical work and a preliminary mining study. The results of these studies are incorporated into this technical report. Information used in this NI 43-101 technical report is listed in the References section.

Aura, in collaboration with PROMON, SRK, DESWIK, and a few independent consultants prepared this NI 43-101-compliant Feasibility Study Report. This report is a new report for the Borborema Project and incorporates new technical information and new financial conditions. This report was prepared to meet the requirements of Canadian National Instrument 43-101 (NI 43-101) and conforms to Form 43-101 F1 for Qualifying Reports. This new Technical Report meets the requirements of NI 43-101.

2.1 PROJECT BACKGROUND

The Borborema Project is located in the municipality of Currais Novos, in Rio Grande do Norte State, Brazil. The gold deposit is the main focus of this Feasibility Study and will be the primary source of potential ore.

The following activities and project developments were completed by Aura between 2022 and 2023:

- Database validation and QA/QC review.
- Mineral Resource and Reserves estimation updates.

- Mining studies and pit optimization.
- Improvements in the processing studies with elaboration of the definitive and adequate flowsheet: comminution, leaching in the presence of active carbon, carbon elution, electrolysis, and smelting.
- The beneficiation plant will have an operational capacity of 2.0 Mtpy. The process plant includes crushing, grinding, classification, gravity concentration, leaching and adsorption (CIL), acid washing and desorption, followed by electrolysis and smelting.
- Preliminary estimates of capital and operating expenditures for the project, a discounted cash flow for the life of the project, a project implementation plan, and a site rehabilitation plan for the decommissioning of the project.
- Acquiring permits for a wildlife survey and the EIA/RIMA (Environmental Impact Study and Environmental Impact Report) general field survey.

2.2 QUALIFIED PERSONS

The following individuals, by virtue of their education, experience, and professional association, are considered Qualified Persons as defined in NI 43-101 and are members in good standing of appropriate professional institutions.

The Qualified Persons are responsible for the specific sections as follows:

1.Farshid Ghazanfari, M.Sc. (P.Geo.), Member of the Association of Professional Geologists of Ontario, Canada (PGO), Aura Mineral Geology and Resource Director (Geology), is the Qualified Person responsible for Sections 3, 4, 5, 6, 7, 8, 9, 10, 11 and 23, as well as providing summaries for Sections 1, 2, 25, 26, 27 and 28.

2.Dr. Homero Delboni, Jr. Ph.D., (MAusIMM – CP Mettallurgy), Independent Senior Consultant (Metallurgy), is the Qualified Person responsible for Sections 13, 17, 18, 19, 20, 21 and 22, and a co-author for Sections 3 and 24, as well as providing summaries for Sections 1, 2, 25, 26, 27 and 28.

3.Bruno Yoshida Tomaselli, B.Sc., Fellow of the Australasian Institute of Mining and Metallurgy (FAusIMM), Mining Engineer employed as a Consulting Manager with Deswik Brazil., is the Qualified Person responsible for Sections 15, 16 and 24, as well as providing summaries for Sections 1, 2, 25, 26, 27 and 28.

4.Erik Ronald, (P.Geo.), (PGO #3050), Principal Consultant with SRK Consulting (U.S.), Inc. based in Denver, USA., is the Qualified Person responsible for Sections 12 and 14 as well as a co-author for Sections 1, 25, 26, 27 and 28.

2.3 QUALIFIED PERSONS SITE VISITS

Mr. Farshid Ghazanfari, Qualified Person (Aura, Geology and Mineral Resources) has been involved with the Borborema Gold Project since 2018, as well as during the due diligence prior to Aura's acquisition. Mr. Ghazanfari visited the Borborema Gold Project on a few occasions during the past three years. His most recent site visit was from November 8 to 12, 2022.

Mr. Erik Ronald, Qualified Person (Principal Consultant with SRK Consulting (U.S.), Inc. based in Denver-USA.) visited Borborema property between November 19 to 21, 2021.

Mr. Bruno Yoshida Tomaselli, QP (Mineral Reserves), visited the Borborema property for 2 days between February 13 to 14, 2023. During this period the following were evaluated: road conditions, possible accesses to the site, potential location for the processing plant and for infrastructure, existing infrastructure conditions, pit and stockpile locations.

2.4 TERMS AND DEFINITIONS

All measurement units used in this report are metric and the currency is expressed in US dollars (US$) or Brazil Real (R$). Units of measurement are listed in Table 15.

Table 15: Terms and Definitions

CHAPTER NUMBER	SECTIONS	QUALIFIED PERSONS (QP)
1	EXECUTIVE SUMMARY	Farshid Ghazanfari, M.Sc., (P.Geo) Dr. Homero Delboni, Jr. Ph.D. (MAusIMM – CP Mettallurgy) Bruno Yoshida Tomaselli, B.Sc. (FAusIMM) Erik Ronald, P.Geo, (PGO #3050)
2	INTRODUCTION	Farshid Ghazanfari, M.Sc., (P.Geo) Dr. Homero Delboni, Jr. Ph.D. (MAusIMM – CP Mettallurgy) Bruno Yoshida Tomaselli, B.Sc. (FAusIMM) Erik Ronald, P.Geo, (PGO #3050)
3	RELIANCE ON OTHER EXPERTS	Farshid Ghazanfari, M.Sc., (P.Geo)
4	PROPERTY DESCRIPTION AND LOCATION	Farshid Ghazanfari, M.Sc., (P.Geo)
5	ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE, AND PHYSIOGRAPHY	Farshid Ghazanfari, M.Sc., (P.Geo)
6	HISTORY	Farshid Ghazanfari, M.Sc., (P.Geo)
7	GEOLOGICAL SETTING AND MINERALIZATION	Farshid Ghazanfari, M.Sc., (P.Geo)
8	DEPOSIT TYPES	Farshid Ghazanfari, M.Sc., (P.Geo)
9	EXPLORATION	Farshid Ghazanfari, M.Sc., (P.Geo)
10	DRILLING	Farshid Ghazanfari, M.Sc., (P.Geo)
11	SAMPLE PREPARATION, ANALYSES, AND SECURITY	Farshid Ghazanfari, M.Sc., (P.Geo)
12	DATA VERIFICATION	Erik Ronald, P.Geo, (PGO #3050)
13	MINERAL PROCESSING AND METALLURGICAL TESTING	Dr. Homero Delboni, Jr. Ph.D. (MAusIMM – CP Mettallurgy)
14	MINERAL RESOURCE ESTIMATES	Erik Ronald, P.Geo, (PGO #3050)
15	MINERAL RESERVE ESTIMATES	Bruno Yoshida Tomaselli, B.Sc. (FAusIMM)
16	MINING METHODS	Bruno Yoshida Tomaselli, B.Sc. (FAusIMM)
17	RECOVERY METHODS	Dr. Homero Delboni, Jr. Ph.D. (MAusIMM – CP Mettallurgy)
18	PROJECT INFRASTRUCTURE	Dr. Homero Delboni, Jr. Ph.D. (MAusIMM – CP Mettallurgy)
19	MARKET STUDIES AND CONTRACTS	Dr. Homero Delboni, Jr. Ph.D. (MAusIMM – CP Mettallurgy)
20	ENVIRONMENTAL STUDIES, PERMITTING, AND SOCIAL OR COMMUNITY IMPACT	Dr. Homero Delboni, Jr. Ph.D. (MAusIMM – CP Mettallurgy)
21	CAPITAL AND OPERATING COSTS	Dr. Homero Delboni, Jr. Ph.D. (MAusIMM – CP Mettallurgy)
22	ECONOMIC ANALYSIS	Dr. Homero Delboni, Jr. Ph.D. (MAusIMM – CP Mettallurgy)
23	ADJACENT PROPERTIES	Farshid Ghazanfari, M.Sc., (P.Geo)
24	OTHER RELEVANT DATA AND INFORMATION	Bruno Yoshida Tomaselli, B.Sc. (FAusIMM)

CHAPTER NUMBER	SECTIONS	QUALIFIED PERSONS (QP)
25	INTERPRETATION AND CONCLUSIONS	Farshid Ghazanfari, M.Sc., (P.Geo) Dr. Homero Delboni, Jr. Ph.D. (MAusIMM – CP Mettallurgy) Bruno Yoshida Tomaselli, B.Sc. (FAusIMM) Erik Ronald, P.Geo, (PGO #3050)
26	RECOMMENDATIONS	Farshid Ghazanfari, M.Sc., (P.Geo) Dr. Homero Delboni, Jr. Ph.D. (MAusIMM – CP Mettallurgy) Bruno Yoshida Tomaselli, B.Sc. (FAusIMM) Erik Ronald, P.Geo, (PGO #3050)
27	REFERENCES	Farshid Ghazanfari, M.Sc., (P.Geo) Dr. Homero Delboni, Jr. Ph.D. (MAusIMM – CP Mettallurgy) Bruno Yoshida Tomaselli, B.Sc. (FAusIMM) Erik Ronald, P.Geo, (PGO #3050)
28	CERTIFICATES OF QUALIFIED PERSONS	Farshid Ghazanfari, M.Sc., (P.Geo) Dr. Homero Delboni, Jr. Ph.D. (MAusIMM – CP Mettallurgy) Bruno Yoshida Tomaselli, B.Sc. (FAusIMM) Erik Ronald, P.Geo, (PGO #3050)

Location coordinates are expressed in the Universal Transverse Mercator (UTM) grid coordinates using the SIRGAS 2000 Datum, Zone 24M, unless otherwise noted.

The following terms and definitions are used in this report.

- Aura refers to Aura Minerals 360 Mining.
- Deswik refers to Deswik Brasil (Belo Horizonte, Brazil).
- SRK refers to SRK Consulting do Brasil (Belo Horizonte, Brazil).
- ANM refers to the (Agência Nacional de Mineração do Brasil).
- Ausenco refers to Ausenco do Brasil Engenharia LTDA (São Paulo, Brazil).
- TWSP refers to TestWork Desenvolvimento de Processos LTDA (São Paulo, Brazil).
- ALS refers to ALS Metallurgy (São Paulo, Brazil).
- HDA refers to HDA Serviços S/S LTDA. (São Paulo, Brazil)
- Promon refers to Promon Engenharia LTDA (São Paulo, Brazil)

2.5 UNITS, SYMBOLS AND ABBREVIATIONS

Aura has based all measurements in the metric system, exceptions to this primarily list both English and Metric standards. Currencies are generally based on the July 32, 2023, US Dollar, with the conversion exchange rate of 5.0 Brazilian Reals per 1 US

Dollar for the long-term exchange rate unless otherwise stated. Dollars are United States Dollars, and weights are in metric tonnes of 1,000 kilograms (2,204.62 pounds).

Location coordinates are expressed in the Universal Transverse Mercator (UTM) grid coordinates using the SIRGAS 2000 Datum, Zone 24M, unless otherwise noted.

The abbreviations used in this report are described in Table 16.

Table 16: Units, symbols and abreviations

UNITS, SYMBOLS AND ABBREVIATIONS	
%	Percent(age)
"	Inch
$ / USD / US$	United States Dollars
AA/AAS	Atomic Adsorption Spectroscopy
AARL	Anglo American Research Laboratories
Ai	Abrasion index
AISC	All-In-Sustaining Costs
AIG	Australian Institute of Geoscientists
AusIMM	Australasian Institute of Mining and Metallurgy
AFRIMM	Additional of Freight
Ag	Silver
ANM	National Mining Agency (*Agência Nacional de Mineração*)
As	Arsenic
AT	Assay Ton
Au	Gold
R$	Brazilian Reais
BWI	Bond Work Index
$Ca(OH)_2$	Calcium hydroxide
CAERN	Water and Sewage Company of Rio Grande do Norte State
CAPEX	Capital Expenditure
CFEM	Financial Compensation for the Exploration of Mineral Resources (*Compensação Financeira pela Exploração de Recursos Minerais*)
CIL	Carbon-in-Leach
CIM	CIM guidline
CIP	Carbon-in-Pulp

UNITS, SYMBOLS AND ABBREVIATIONS	
CN	Cyanide
CNWAD	Weak acid dissociable cyanide
CP	Chartered Professional
CPG	Certified professional geologist
CRM	Certified reference material
CSLL	Social Contribution (*Contribuição Social Sobre o Lucro Líquido*)
Cu	Copper
DCF	Discounted Cash Flow
DDH	Diamond Drill Hole
DETOX	Detoxification
Dique de finos	It is a conceptual purpose is the containment of the fines dragged by the drainages in the rainy season (small dam).
DFS	Definitive Feasibility Study
DWI	Drop-Weight Index
EBIT	Earnings Before Interest and Taxes
EBITDA	Earnings Before Interest, Taxes, Depreciation, and Amortization
EEE	Sewage Pumping Station
EIA	Environmental Impact Study
ETA	water treatment plant
ETE	Sewage Treatment Station
FAIG	Fellow of the Australian Institute of Geoscientists
FCFF	Free Cash Flow to Firm
F80	Feed- 80% passing particle size
Fe	Iron
FEL	Front End Loaded Project Evaluation Study
FS	Feasibility Study
ft	feet
ft^3	cubic feet
g	gram
Ga	Gigaannum, a unit of time equal to one billion years
g/cc	gram per cubic centimeter

UNITS, SYMBOLS AND ABBREVIATIONS	
g/cm^3	gram per cubic centimeter
g/L	gram per liter
g/t	gram per metric ton
G&A	General and Administrative
GO	Goias state of Brazil
GPS	Global Positioning System
GRG	Gravity Recoverable Gold
Hg	Mercury
HTS Code	Harmonized Tariff Schedule Code
Hz	Hertz
IBC	Intermediate Bulk Container
ICP	Inductively Coupled Plasma
ID^2	Inverse Distance Squared
ILR	Intensive Leach Reactor
in	Inch
IRPJ	Income Tax (Imposto de Renda de Pessoa Jurídica)
IRR	Internal Rate of Return
IPI	Taxes over industrialized products (*Imposto sobre Produtos Industrializados*)
ISO	International Standards Organization
ISU	International System of Units
ITR	Independent Technical Report
JORC	Australasian Code for Reporting of Exploration Results, Mineral Resources, and Ore Reserves
k	thousands
K-feldspar	Potassium-dominant feldspars
kg	kilogram
kg/t	kilogram per metric ton
km	kilometer
kPag	kilopascals, gauge
kV	kilovolts

UNITS, SYMBOLS AND ABBREVIATIONS	
kW	kilowatts
kWh/t	kilowatt-hour per metric ton
LI	License of Installation
LMC	Linear co-regionalization model
LO	License of Operation
LOM	Life of Mine
LP	Preliminary License
M	Millions
m	meter
m/h	meter per hour
m^2/tpd	square meter per tons per day
m^3	cubic meter
Ma	Megaannum, a unit of time equal to one million years
MCW	Meters of Column of Water
mg/L	milligram per liter
mm	millimeters
Mt or mt	Million metric tons
Mt/a	Million metric tons per annum (year)
mtpy	Million metric tons per year
mV	millivolt
MW	Megawatts
NI 43-101	Canadian National Instrument 43-101
NPI	Net Profitability Index
NPV	Net Present Value
OEAS-ICP	Chemical analysis method by plasma
OK	Ordinary Kriging
ONAN/ONAF	Oil Natural Air Natural/Oil Natural Air Forced
OPEX	Operational Expenditure
Oz or toz	Troy ounces
P_{80}	Product- 80% passing particle size (0.106 mm = 150# Tyler)
PB	Paraiba state of Brazil

UNITS, SYMBOLS AND ABBREVIATIONS	
PIS and COFINS	Recoverable taxes (*Programa de Integração Social – Contribuição para o Financiamento da Seguridade Social*)
ppb	parts per billion
ppm	parts per million
PSA	Pressure Swing Adsorption
QA/QC	Quality assurance/Quality control
QP	Qualified person
R$ / BRL$	Brazilian Real
RC	Reverse circulation drilling
RIMA	Environmental Impact Report
ROM	Run-of-Mine
SAG mill	semi-autogenous grinding mill
S	Sulphur or sulphide
SG	Specific Gravity
SI	International System of Units
SMBS, $Na_2S_2O_5$	Sodium Meta-bisulphite
SMC test	SAG mill comminution test
SO_2	Sulphur dioxide
st	Short ton (tn) = 907.185 kg
SUDAM	Amazon Development Superintendent Agency (*Superintendência de Desenvolvimento da Amazônia*)
T or t	Metric Tonne (1,000 kg or 2,204.6 lbs)
t/a or tpa	metric tons per annum
t/d or tpd	metric tons per day
t/h or tph	metric tons per hour
t/m³	tons per cubic meter
TDA	Total De-clustered Average
TDS	Total Dissolved Solids
TMF	Tailings Management Facility
toz	Troy Ounce
Tpa or tpy	Metric tons per annum/year

UNITS, SYMBOLS AND ABBREVIATIONS	
tph/m^2	Metric ton per hour per square meter
TSF	Tailings Storage Facility
TSS	Total Suspended Solids
UTM	Universal Transverse Mercator coordinate system
VAT	Value-added tax
WACC	Weighted Average Cost of Capital
w/v	Weight by volume ratio
w/w	Weight by weight ratio
XRF	X-Ray Fluorescence
y	Year
Zn	Zinc
yd^3	cubic yards
µm	micron or micrometer

3 RELIANCE ON OTHER EXPERTS

This report was prepared by Aura and is based in part on information presented in the 2019 report titled "Definitive Feasibility Study Technical Report for Borborema Project by Big River Gold", and on geological, geochemical, engineering, metallurgical, legal, environmental, and other technical reports and documents, including internal company documents, that were completed by other authors, as well as opinions from other persons. Most of these persons are not Qualified Persons under the definitions of NI 43-101.

Aura conducted surface land status evaluations and applied for environmental permits for the Project. Much of this work, were conducted by persons who are not Qualified Persons. Mr. Farshid Ghazanfari P.Geo. and Mr. Homero Delboni have relied on this data, as necessary, to complete this report.

4 PROPERTY DESCRIPTION AND LOCATION

4.1 PROPERTY LOCATION

The Borborema Project, located in the southern portion of the state of Rio Grande do Norte in northeastern Brazil, is situated 26 km east from the well-established town of Currais Novos and 35 km west from the town of Santa Cruz. The town of Currais Novos has good infrastructure and a population of approx. 45,000 people. The Project site is strategically located to benefit from direct access to the BR-226 federal highway linking it to the state capital Natal (172 km east, population approximately 880,000).

The highway is a single-lane paved road in excellent condition and usable all year round fed by a network of well-maintained dirt roads providing access to all major areas within the Project.

Figure 5 shows the location of the Borborema Project area and access routes.

Figure 5: Borborema Project Map Location, Rio Grande do Norte State, Brazil.

4.2 MINERAL RIGHTS, MINING CONCESSION AND PERMITTING

The Project comprises three (3) mining concessions totalling 2,907.2 hectares. Most of the gold (Au) Mineral Resource based on the January 2023 estimate by SRK Consulting (US) Limited ("SRK") is located in mining concession numbers 805049/1977 and 840152/1980, with a small remaining portion located in mining concession 840149/1980 (Figure 6). The last two mining concessions are currently in suspense and mining is inactive. The suspension requested awaits response from the National Mining Agency ("ANM"). It is intended that these two concessions be reactivated once mining activities commence.

Mining concession No. 805.049/1977 has a valid and active operating license ("LO") issued by IDEMA, the state environmental authority, related to prior mining and beneficiation activities on the property.

In addition, Borborema Inc., currently holds two exploration licenses in the Seridó Belt (located in the states of Rio Grande do Norte and Paraiba) and Mara Rosa (located in the state of Goias). Borborema's holding are summarized in Table *11*.

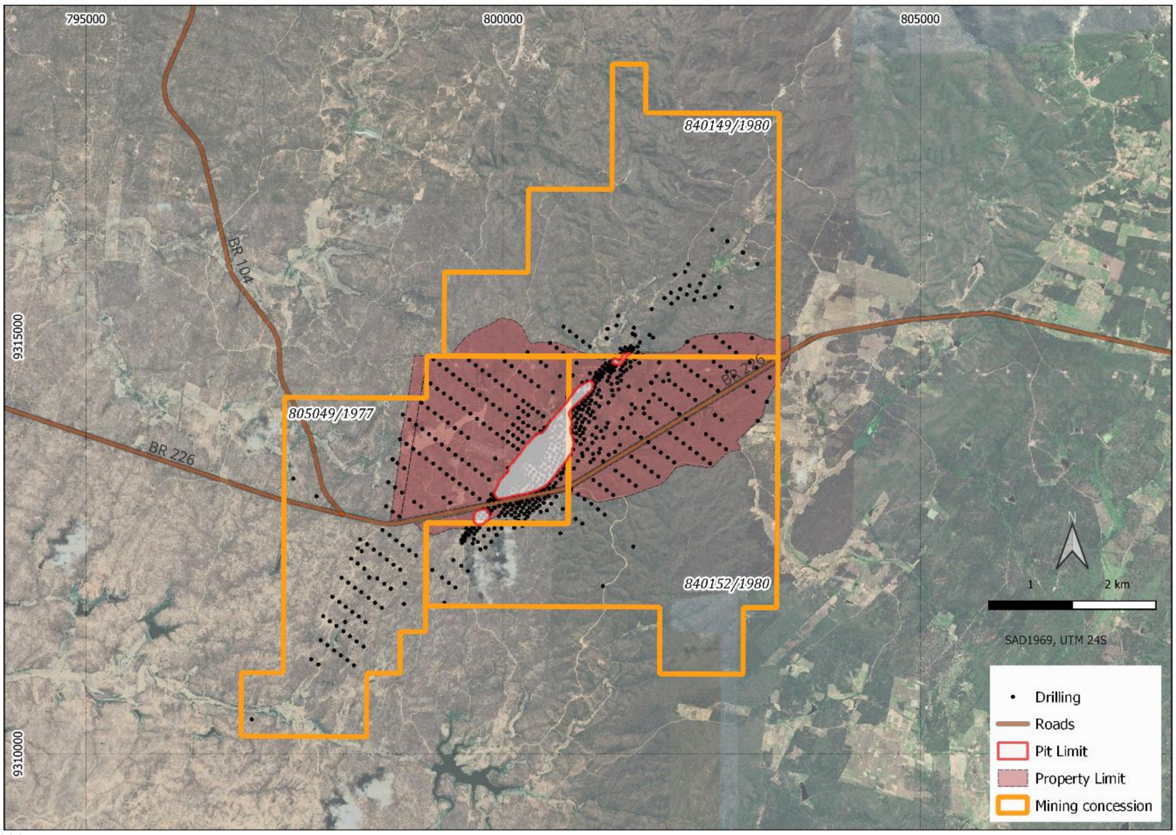


Figure 6: Borborema Project comprising three mining concessions, Aura property and LIcensed area.

Table 17: Borborema Inc. land holding status.

Project	State	No of Tenements	Situation	Mineral	Area (km^2)
Borborema	RN	3	Mining Concession Granted	Gold	29.07
Seridó Belt	RN-PB	31	Exploration Authorized	Gold; Lithium	296.2
Mara Rosa	GO	3	Exploration Authorized	Gold	27.14
Total		37			**352.41**

Following submission of a study by Ausenco do Brazil Engenharia LTDA (“Ausenco”) of the Project’s processing plant design in 2018, the following two licences were granted:

1. The Environmental License (Licença Prévia LP) in April 2017 and updated 30 July 2018; and

2. The Installation License (LI) or Installation Permit was approved one year later in April 2019 by the Rio Grande do Norte State Government Environmental Department (IDEMA). The Installation License (LI) acquired in April 2019 covers most of the three ANM mining concessions at 805.049/1977, 840.149/1980, and 840.152/1980.

In March 2023, upon request of Aura the Installation License was updated by IDEMA for a total area of 490 hectares located in UTM coordinates (SIRGAS 2000 Datum): 9,314,875.56 m N; 800,289.00 m E and linked to No. 805.049/1977, 840.149/1980 and 840.152/1980 Mining Concessions.

The vegetal suppression license, which allows the suppression of vegetation on the Project area, was issued in February 2023 by IDEMA, and covers all the project installation areas including mine, waste dump, operational area, utilities, and dry storage facility.

4.3 SURFACE RIGHTS: ACCESS TO LAND

Borborema Inc, now owns the São Francisco farm which has an area of 752.06 hectares and covers the entire Project area. With the program of acquisition of properties adjacent to the São Francisco farm, three (3) new properties were acquired totaling 151.70 hectares, comprising the Pedra Branca site - westward continuation of the São Francisco Farm, the Santo André site and the Mulungu site.

Figure 7 shows the São Francisco Farm area, the new Aura properties and other properties surrounding the venture.

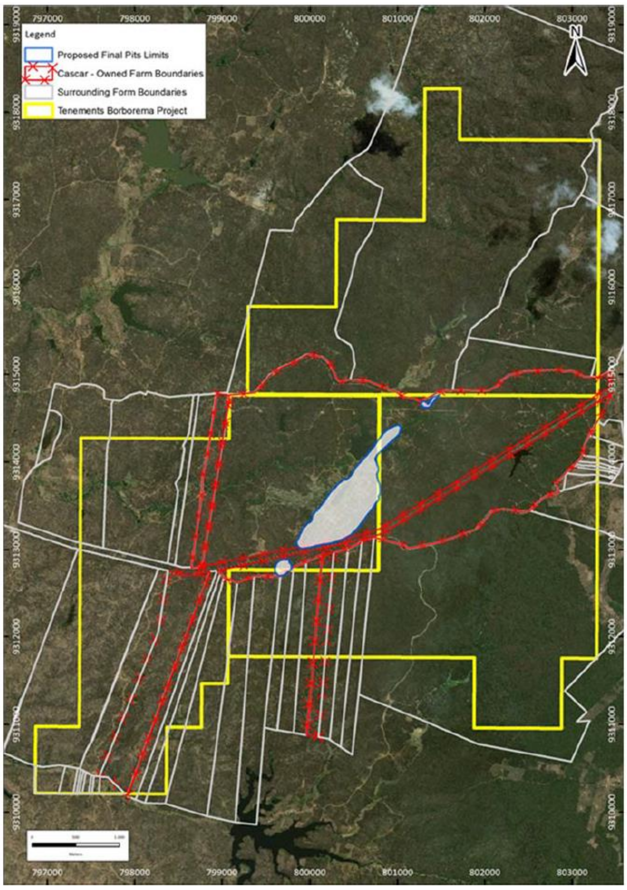


Figure 7: Small farms around the São Francisco farm.

4.4 ROYALTIES AND EXPLOITATION TAXES

CFEM is a “royalty” payment, like a tax, created by the Federal Constitution as compensation for states and municipalities for the economic use of mineral resources in their territory. It applies to any individual or entity qualified to extract mineral substances for economic purposes.

CFEM is calculated on the revenue of the value of sales when the mineral product is sold. Net sales are the sales value of the mineral product, less taxes (ICMS, PIS, COFINS, IOF and ISS), and insurance expenses incurred at the time of sale.

The rates applied on net sales or on the sum of direct and indirect expenses vary according to the mineral substance. For gold mining the applicable CFEM rate is 1.5% (one integer and five tenths per cent).

CFEM will be distributed according to the following percentages and criteria:

- Seven per cent (7%) for the mining sector regulator;
- One whole and eight tenths' percent (1.8%) for the Centre for Mineral Technology (CETEM), linked to the Ministry of Science, Technology, Innovations, and Communications, created by Law No. 7,677 October 21, 1988, for research, studies, and projects for the treatment, processing and industrialization of mineral goods;
- Two tenths per cent (0.2%) for the Brazilian Institute of Environment and Renewable Natural Resources (IBAMA), for environmental protection activities in regions impacted by mining;
- Fifteen per cent (15%) for the federal district and states where production occurs;
- Sixty percent (60%) for the federal district and municipalities where production occurs;
- Fifteen percent (15%) for the federal district and municipalities when mining activity and production does not occur in their territories unless in the following situations:
  - Crossed by infrastructure used for rail or pipeline transport of mineral substances;
  - Affected by port operations and loading and unloading of mineral substances;
  - Where waste piles, tailings dams and mineral processing facilities are located, and other facilities provided for in the Economic Recovery Plan (PAE).

5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE, AND PHYSIOGRAPHY

5.1 ACCESS

Access to the Project from both Currais Novos and Natal is via the BR-226 federal highway which crosses the Property. The highway is asphalt, marked, single-lane road that is maintained in excellent condition and is useable throughout the year. A network of cleared dirt roads provides access to all the main areas within the Project.

5.2 CLIMATE

The Project has a semi-arid climate, with little or no water surplus is characterized by hot summers extending from October to March and warm and generally dry winters. The average annual rainfall is 695 mm, with a rainy season predominantly from January to April, but generally irregular. The average annual temperature is 27.5°C, with a minimum average of 18°C and maximum average of 33°C. The variation between the warmest months (October to March) and the coldest month (July) is approximately 8°C. The prevailing wind direction is from the south-east at an average speed of 1.4 m/s.

5.3 PHYSIOGRAPHY

The Project is located on the Western Borborema Plateau. Relief is predominantly undulating with ridges and hills aligned toward the north-east. The altitude in the immediate mine area varies from approximately 470 m to 490 m above sea level. The environment has predominantly low erosion, with steep-sided smaller drainage systems and flat-bottomed large drainage systems. The thin soil (generally less than 40 cm) is poorly drained with a sandy upper horizon and a clay-rich lower horizon with corresponding low permeability. The soil is classified as a natric planosol (Bezerra Junior and da Silva, 2007).

5.3.1 GEOMORPHOLOGY

The state of Rio Grande do Norte has a wide variety of landforms carved in the Cretaceous sedimentary rocks of the Potiguar Basin and the older crystalline basement rocks. Based on the classification of Brazil's Morphoclimatic Domains (Ab Saber, 1969), the Potiguar landform is inserted in two domains and a transition range. Mares de Morros Domain, which corresponds to the Coastal Northeastern Trays. Domains of the Intermontane and Interplanaltic Depressions of the Caatingas in the state territory were formed by four sets of morphological features; the flattening surfaces of the Country Depression plateaus are supported by sedimentary rocks, isolated saws, and Borborema Plateau (Figure 5-1). Interspersing these domains is an important morphoclimatic transition range, from the humid coast to the semi-arid hinterland, called Agreste Potiguar (Dantas & Ferreira, 2010).

Based on analysis of remote sensing data, field profiles, and previous regional-geomorphological studies (IBGE, 1995; ROSS, 1985, 1997), the state of Rio Grande do Norte was divided into seven geomorphological domains (Figure 8).

The state of Rio Grande do Norte has a total of 17 relief patterns, which are inserted in the various morphoclimatic domains referred to and represented in the State of Rio Grande do Norte Relief Pattern Map and served as a base for the state geodiversity map (Figure 9). Individual relief information was obtained based on an analysis of SRTM images (Shuttle Radar Topography Mission), with a resolution of 90 m, and GeoCover images, where the relief units are interpreted according to texture analysis and image roughness.

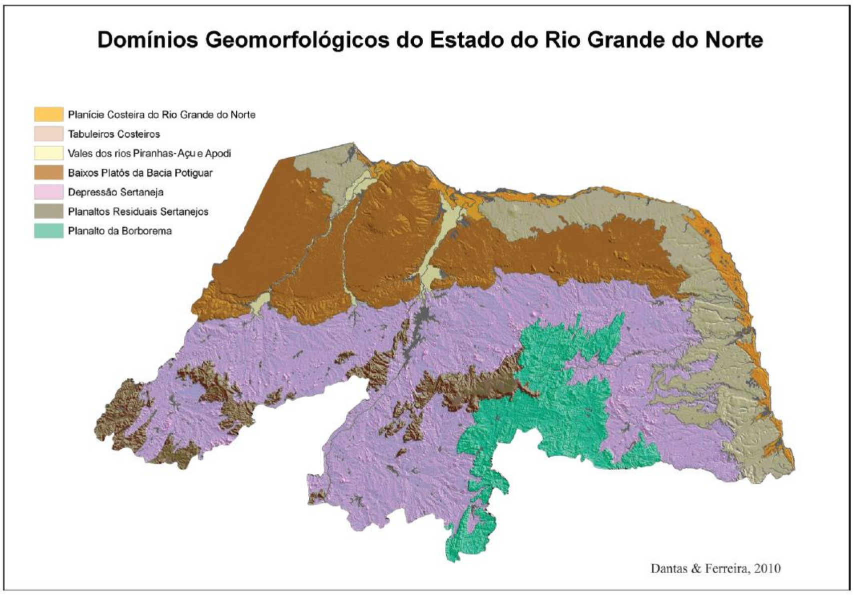


Figure 8: Geomorphological domains of Rio Grande do Norte state.

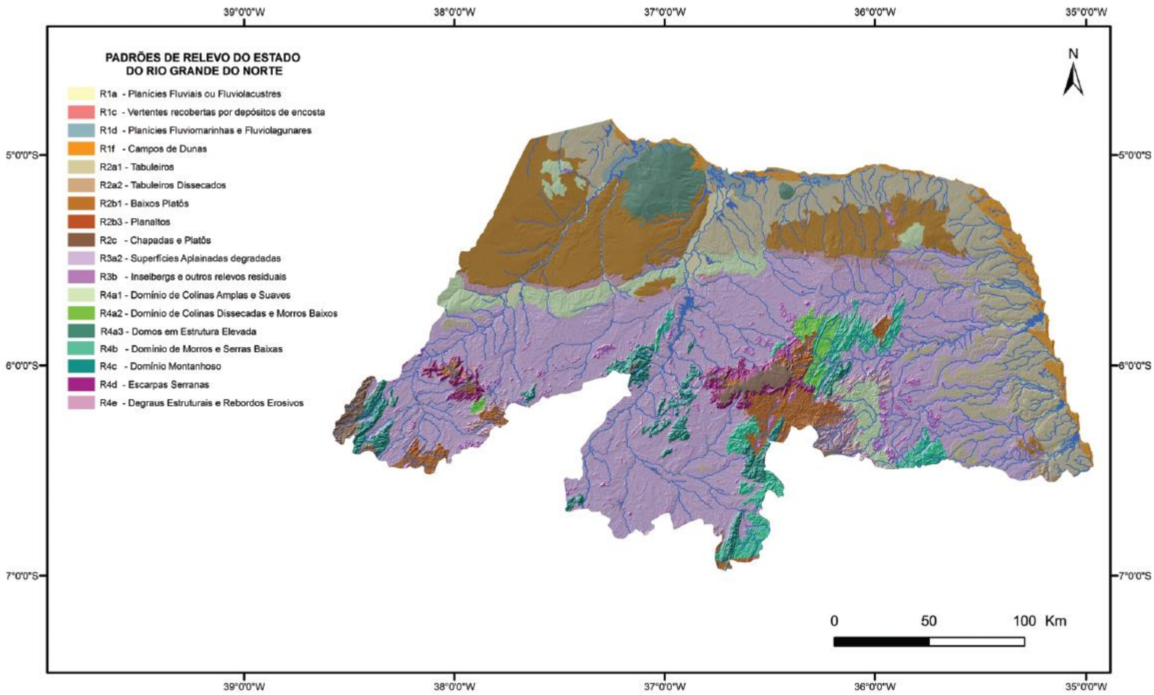


Figure 9: Relief patterns of Rio Grande do Norte state.

Degraded, flattened surfaces (R3a2) have formed a set of flat and gently undulating landforms resulting from generalized weathering processes on various types of lithologies. These vast flattened surfaces are dotted with inselbergs (R3b), which appear in the landscape as isolated hills, rising in many cases hundreds of metres above the regional surface floor.

At the northwest boundary of the state are a set of isolated mountain massifs (R4c) with elevations above 300 metres from the adjacent flattened surface. In the eastern region of the state, that borders with the state of Paraíba, there is a set of hills and low mountains (R4b) with gaps below 300 metres which together with the plateau morphology (R2b3) (Figure 10), located more to the north, form part of the northern rim of the Borborema Plateau representing remnant landforms (Figure 10 and Figure 11) of that plateau.

In contact with the plateau landform is the imposing escarpment of the Serra de Santana, which represents a transition landform between different surfaces raised to different elevation levels, with an unevenness of approximately 400 metres, and deposition of colluvial ramps and deposits with talus at the base of the escarpment (R4d). Serra de Santana consists of a plateau (R2c) (Figure 12) representing a fragment of a past summit surface capped by Neogene sandstones of the Serra do Martins Formation, with elevations reaching 750 metres in altitude.

At the northeast Rio Grande do Norte state are a set of dissected hills (R4a2) (Figure 13) with convex-concave slopes and sharp tops varying in height from 30 to 80 metres located on the threshold of the plateau domain. On the regional floor there are some boulder fields, indicating a predominance of physical weathering.

Figure 10: Domain of ridges and low hills, Gargalheiras dam (Acari/RN).

Figure 11: Residual landform of Acari pluton detached from flattened surface (Border of BR-227: Currais Novos/RN).

Figure 12: North edge of Borborema Plateau (representing remaining residual landforms (municipality of Currais Novos/RN).

Figure 13: Erosive escarpment of Serra de Santana; flat top of the Plateau (Currais Novos Municipality/ RN is observed).

Figure 14: Domain of dissected hills with boulders field indicating predominance of physical weathering (Municipality of Cerro Corá / RN).

5.3.1.1 Borborema Plateau

The Planalto da Borborema (Borborema Plateau) (IBGE, 1995), is in the eastern portion of northeast of Brazil, occupying an extensive area that covers part of the states of Alagoas, Pernambuco, Paraíba, and Rio Grande. It is a relief of degradation in a Precambrian crystalline massif, general direction north-northeast–south-southwest, with vast plateau surfaces (R2b3) raised in elevations that vary between 450 and 1,000 m of altitude, clearly visible in relation to the surrounding areas (MORAES NETO and ALKMIN, 2001).

Situated in the state of Rio Grande do Norte, the Borborema Plateau along its northern edge, where relief ranges from 300 to 700 m, consists of an area quite dissected by erosive processes. This plateau morphology comprises a diverse set of relief patterns composed of hills and mountains of lower elevations (R4b), small crests and sparse plateau surfaces (R2b3) with plateaus (R2c) covered by Cenozoic covers, delimited by erosive short ridges (R4e) and mountain slopes (R4d), with some mountainous segments (R4c), representing residual reliefs remaining from the eroded highland. At the extreme north of the plateau area, interspersing the mountain domain, lies a set of hills dissected (R4a2) by the lowest relief of the area (Figure 15).

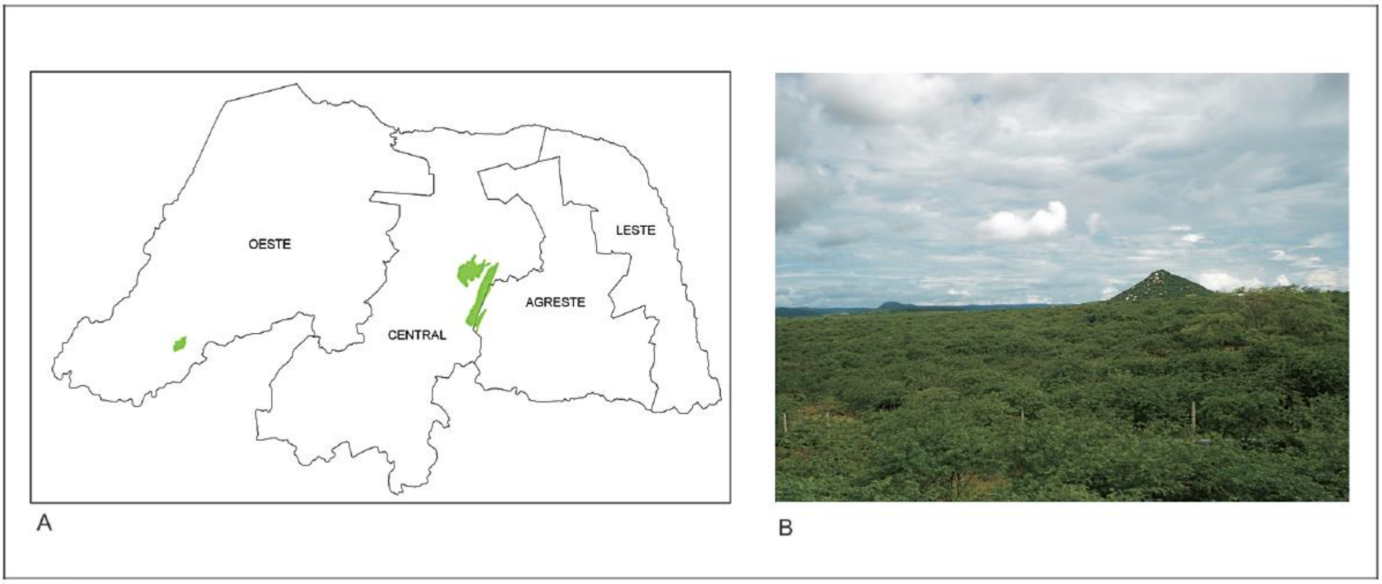


Figure 15: Location of the Colinas Dissecadas and Morros Baixos Unit (R4a2) in the state of Rio Grande do Norte; (b) dissected hills in the municipality of Lages.

In the highlands, pedogenesis (formation of thick and well-drained soils, in general, with low to moderate susceptibility to erosion) processes predominates. Sporadic erosion occurrences are restricted to accelerated laminar or linear erosion processes (ravines and gullies).

The eastern slope of Borborema Plateau is drained by the Potengi, Salgado and Japi rivers towards the Zona da Mata, northeastern Brazil. This is a slightly wetter area located on the windward slope of the Borborema Plateau, in an of agreste (a geographical subregion of transition between the forest zone and the hinterland of the northeast characterized by the semi-arid climate and the vegetation of the Caatinga) with intensive subsistence agriculture.

Due to this orographic barrier, the easterly trade winds climb the eastern slope of Borborema Plateau, causing more rainfall, especially in winter. The western slope – or interior slope – is drained by the Piranhas-Açu River to the Sertaneja Depression in localities like Caico. This region is regionally known such as Seridó, an area of progressive desertification process due to the complete loss of the meager ground cover and irreversible exposure of the outcropping rock.

The semi-arid region located on the eastern slope of the Borborema Plateau, where the trade winds flow over the area without humidity, results in caatinga (semi-arid tropical vegetation, meaning white vegetation) (DANTAS et al., 2008). In the Borborema Plateau, Luvisols soils predominate, Chromic, Eutrophic Litholic Neosols and Argisols Eutrophic red yellows.

In this region of the Borborema Plateau are the cities of Currais Novos, Campo Redondo, Cerro Corá and Jaçanã. The regional economy is predominantly agriculture, arable farming and animal husbandry, and the mining of the scheelite in the municipality of Currais Novos, an important economic activity that in the area since 1940. The production of scheelite concentrate comes from mines and garimpos (artisanal mining) that occur mainly in metamorphic rocks within the Seridó Group.

5.3.2 HYDROGRAPHY

The Borborema Project area is part of the Piranhas-Açu River basin, which covers a territory of 42,900 km² distributed between the states of Paraíba and Rio Grande do Norte, with an approximate population of 1,552,000.

The basin has a semi-arid climate with average rainfall ranging from 400 to 800 mm annually, concentrated between February and May. Rain occurs in a few months of the year combined with the region's geomorphology, characterized by shallow soils formed on a crystalline substrate with low storage capacity, is responsible for the intermittent character of the region's rivers. In addition, the rainfall pattern tends to present strong interannual variability, causing alternation between years of regular rainfall and years of severe water scarcity, leading to the occurrence of water droughts. However, evapotranspiration rates are quite high and can reach over 2,000 mm / year, which causes a significant water deficit and is a key factor to be considered in the operation of reservoirs in the region.

The Piranhas-Açu River rises from the Serra de Piancó in the state of Paraíba and flows near the city of Macau in Rio Grande do Norte. Like most of the north-eastern semi-arid rivers, except for the São Francisco and Parnaíba rivers, the Piranhas-Açu River is an intermittent river under natural conditions. The continuity of its flow is ensured by two regularisation reservoirs built by DNOCS: Firstly, Coremas - Mãe d'Água in Paraíba, with a capacity of 1,360 billion m^3 and a regularised flow of 9.5 m^3 /s and dam; and secondly, Armando Ribeiro Gonçalves (ARG), in Rio Grande do Norte, with 2.400 billion m^3 and regularised flow of 17.8m^3/s (Q 90%).

Throughout the water system formed by the river channel and its reservoirs called the Sistema Curema-Açu, various uses have been developed such as diffuse irrigation, irrigation in public perimeters, human water supply, animal desensitization, leisure, energy production, and aquaculture.

The Cristalina geological formation comprises the bedrock for most of the basin, formed by impermeable rocks with low water storage capacity and often of low water quality. The sedimentary formations, with higher porosity and, therefore, greater water storage capacity, are present only in two locations of the basin: a smaller area in the Peixe river sub-basin near Souza-PB; and a second location where the bedrock is the Jandaíra Formation, covering the Lower Açu region.

Another important source of groundwater is alluvial aquifers, which in most cases provide good quality water for human, animal, and irrigation supplies.

The Piranhas-Açu Basin covers, in full or in part, 147 municipalities, 102 in Paraíba and 45 in Rio Grande do Norte. These municipalities have a population of approximately 1,280,000, 67% in Paraíba. The average rate of urbanisation in the Basin is around 66% with most municipalities (75%) having less than 10,000 inhabitants. The largest city in the Basin is Patos (population 88,000). Other important cities are Sousa, Cajazeiras, and Pombal in Paraíba, and Caicó, Assu, and Currais Novos in Rio Grande do Norte.

In the Piranhas-Açu River Basin, including the reservoirs Curemas-Mãe d'água and Armando Ribeiro Gonçalves, are 46 reservoirs (dams) considered strategic because of a combined storage capacity of over 10 million m^3. This water capacity is required to enable the reservoir to cope with periods of drought, permitting adequate water supply between rainy periods.

The Seridó Oriental region is bordered by the Piranhas - Açu River Basin, which occupies a surface area of 17,498.5 km^2, corresponding to about 32.8% of the land mass the state of Rio Grande do Norte, and covers 33 municipalities comprising the entire central mesoregion and part of the Agreste region. The Basin's head waters are at Serra do Bongá, Paraíba, enter the Rio Grande do Norte through the municipality of Jardim de Piranhas, and flow into the Atlantic Ocean near the city of Macau (GRUBEN and LOPES, 2001). In the Seridó Oriental, part of the Piranhas-Açu Basin, is the Seridó River sub-basin which covers the entire area studied. The Seridó River sub-basin's main tributaries include: Acauã River, Carnauba, São José, Barra Nova, Cobras River and Sabugi.

According to Guerra and Cunha (2003), a drainage system is characterized by the formation of slopes, tops, valley bottoms, canals, and bodies of groundwater, amongst others. These characteristics interconnect to form a surface that drains water, sediment, and materials into the river channel. Thus, the Piranhas-Açu basin can be characterized in two different ways – drainage in the Planalto and Depression areas. In the Borborema Plateau, the Basin has a radial drainage that flows from a topographically high point, meaning that most of the rivers of the Seridó Oriental have their headwaters at the edge of the plateau. In the depression area, rivers have a dendritic drainage pattern, noticeable in maps, with a tree-root appearance.

These rivers are very rectilinear, denoting a structure markedly controlled by the contours of the Plateau (Figure 16).

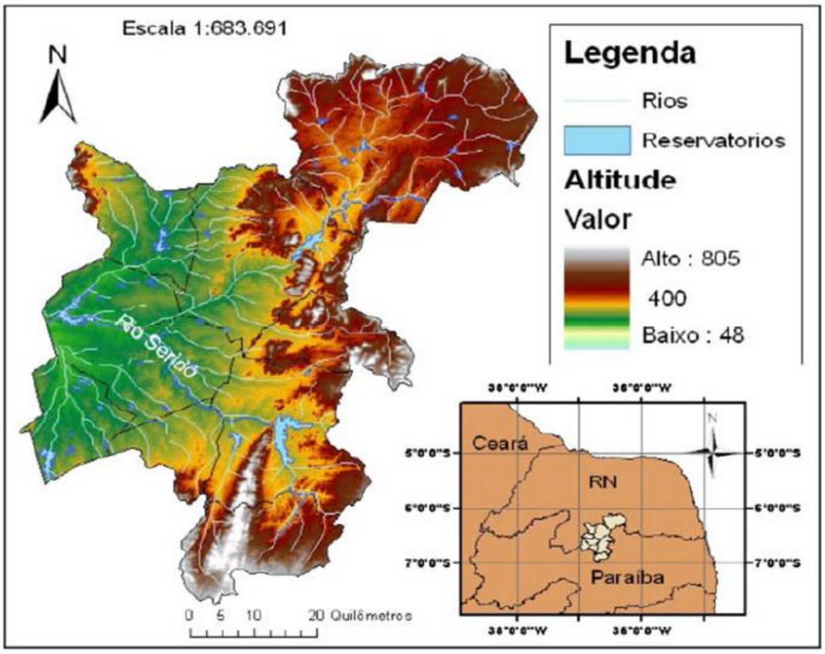


Figure 16: Seridó Oriental hydrography (Fonte: BEZERRA JR. 2008).

Due to the crystalline formation of the Seridó soil, the Basin has low subsurface water potential and has a fragile system, emphasizing the importance of avoiding the removal of vegetation cover on river slopes, as the soil can erode and silt the Basin water. Other natural factors contributing to the low water potential, besides the soil, is the semi-arid climate with its high hour/day insolation rate. Thus, the water deficit is estimated at 2,022 l/s for 2010, but 90% of this deficit comes from the Seridó River sub-basin (Gruben and Lopes, op. cit).

These elements explain how the basin is mostly formed by temporary rivers. The natural characteristics of the Seridó Basin means that the natural water supply is unable to meet the needs of the entire population. For this reason, the seridoense hydrography is marked by reservoirs, such as those in Cruzeta (located in the municipality of Cruzeta) that store 35,000,000 m³ of water. The São José Creek Dam, Cruzeta, supplies rural and urban communities in the region for irrigated agriculture and small crops located downstream, close to the river.

These reservoirs include:

- Zangarelhas in Jardim do Seridó, capable of storing 7,916.00 m³ of water and damming the Rio da Cobra, thus supplying local communities, ebb crops, fish farms and diffuse irrigation.
- Parelhas Cauldron in Parelhas, which stores 10,195,600 m³ of water.
- Riacho dos Quintos's dam, supplying Santana do Seridó and serving for ebb cultivation and fish farming.
- Boqueirao de Parelhas, also in Parelhas, with a capacity of 85,012,750 m³ of water, helps to perpetuate the course of the Seridó River, supplying Parelhas and other communities and is useful for fish farming, agriculture, and leisure.
- Water bodies in the study area include several small dams identified in the Project area of influence, most of these are located near rural communities, and two are in the direct Project area of influence near the old pit area. These are the Onça Dam and São Francisco Dam. The main uses of water are artisanal fishing and animal desedentation.

5.3.3 VEGETATION

In the Project region, the Hyperxerophilous Caatinga predominates - drier vegetation, with abundance of cactaceans, and smaller and scattered plants; and the Seridó Subdesertic Caatinga - the driest vegetation in the state, with bushes and low trees, thinning and more severe xerophytism.

The main ecosystem of the city is the Caatinga do Seridó, which is in transition between the countryside and Caatinga Arbórea, with medium and low trees, and an abundance of cacti and bare patches. The Subcaducifolia Forest is still present in the region, in the Serra de Santana region.

In these types of vegetation (Caatinga), the most common species are: pereiro, faveleiro, facheiro, macambira, mandacaru, xique-xique and black jurema.

The National Plan to Combat Desertification (PNCD) in Brazil defines desertification as land degradation in arid, semi-arid and sub-humid zones, resulting from diverse factors like climate variations and human activities. Currais Novos' susceptibility to desertification has been categorised by the PNCD of Brazil as serious.

5.4 LOCAL RESOURCES AND INFRASTRUCTURE

The Project is located approximately 26 km east of the regional centre of Currais Novos, a town with a population of approximately 45,000. The regional town of Campo Redondo lies a similar distance east of the Project along highway BR-226 and is much smaller than Currais Novos. Several small communities and villages are found closer to the Project site but often comprise only a few houses and families. The more significant of these communities include Maxixe, São Luiz, São Sebastião, Santa Rita, Santo André and Pedra Branca.

None of these communities, however, lie close enough to the Project to be impacted to any significant extent and instead should benefit from the future employment possibilities and improvements in infrastructure.

The Quilombola community of Negros do Riacho lies approximately 10 km east of the Project. Quilombolas are small communities originally settled by escaped slaves during the 19th Century. Today these communities are recognised as traditional communities and as such protected by Brazilian law.

Twin high-tension power lines (230 kV) cross the Project area in its northern section. Low-tension power lines also reach the Project area and provide power to all existing buildings and offices. Several buildings on the property date back to the previous project owners. Many are now run-down and beyond use. However, three main buildings close to the entrance to the Project remain in excellent condition. These buildings are currently being used by the Company for offices, mess facilities, sampling areas and storage. All buildings are complete with earthed power supplies, running water and bathroom facilities. Another large building has since been constructed by the Company for storing the drill core and samples from the extensive drilling programs (104,500 m) that have been completed.

6 HISTORY

The history of the Borborema Project prior to 1979 is unclear. The earliest reference to mining appears in the government records from the 1940s when prospectors ("garimpeiros") discovered gold (Au) in the area; an estimated 150,000 ounces of gold are reported to have been recovered over the subsequent 50 years.

In 1979, the company Itaperiba Mármores e Granitos LTDA ("Itaperiba") acquired the principal tenement of the Project (number 805049/1977), and completed mapping, sampling, trenching and drilling programs.

In 1984, Mineração Xapetuba LTDA acquired the Project from Itaperiba and through further sampling, trenching, mapping and drilling finalized the exploration of the principal tenement and two other neighbouring tenements comprising the Project (840149/1980 and 840152/1980). After approval by the National Mining Agency (ANM) of the positive exploration reports, Xapetuba commenced open-pit mining to extract the precious metal via heap leaching, the first time this process had been attempted in Brazil. It is reported that approximately 100,000 ounces of gold were recovered up to 1991, when Xapetuba requested a suspension of the mining licence from the ANM quoting poor recoveries and low gold prices as the reasons.

In 1991, the company METASA (Metais Seridó LTDA.) acquired the three tenements comprising the Project from Xapetuba. From 1991 until 1994, METASA re-processed the existing heap-leach piles using a simple gravity circuit. It is not stated in the DNPM (now ANM) records how much gold was recovered during this period.

In 1994, the company Mineração Santa Elina Indústria e Comercio S.A. acquired the mineral rights from METASA and reviewed all existing data. However, after undertaking a diamond-drilling programme it returned the mineral rights to METASA in 1997.

In 1998, MGP (Mineração e Agropecuária LTDA.) acquired the project, installed a simple gravity circuit, and began treating the existing heap-leach piles, processing at a rate of approximately 15 t/hr. Whilst under MGP ownership; Caraíba Metais LTDA ("Caraíba") negotiated an option to buy the project in 2007. Caraíba completed a significant diamond drilling programme and resource estimate update but decided not to exercise their purchase option.

In 2009, Crusader Resources Limited ("Crusader") negotiated a similar purchase option with MGP. After careful evaluation of the Project data and some significant fieldwork, in August 2010 Crusader exercised their option and acquired the Project together with the São Francisco farm upon which most of the Project is located.

In October 2011, Conestoga, Rovers and Associates ("CRA") in Belo Horizonte was retained by Crusader to prepare a bankable feasibility study ("BFS") for the Borborema Project. During this time CRA's mining division was acquired by Tetra Tech Inc. who assumed the role of principal consultant for the study. Tetra Tech produced a Feasibility Study in 2013, the Tetra Tech Brazil's Feasibility Study of 2013 that was based on a process plant throughput of 4.2 Mtpy. However, the Feasibility Study ("FS") showed unsatisfactory financial returns and Crusader subsequently continued to optimise the Borborema development at a 2 Mtpy, completing several technical studies based on this scenario.

Further studies were commissioned in 2018 (TTP and Ausenco), based on a revised process plant throughput of 2 Mtpy. These studies were extrapolated from the completed BFS and presented a low level of engineering definition and cost accuracy (30% - 40%) with the expressed intent of attaining an order of magnitude capital estimate, revised economics, and environmental approval.

In mid-2019, Crusader Resources was delisted from the ASX and following corporate restructure, downsizing, and divestment of non-core assets, and relisted as Big River Gold Limited (ASX: BRV) ("Big River"). With a renewed focus on its core asset, the Borborema Gold Project, the company commissioned Perth, Australia, based Wave International to produce an "enhanced" Definition Phase Study.

In November 2019, Big River published a definitive feasibility study ("DFS") for the Borborema Project showing that the Project may be economically developed to mine 20Mt of gold ore reserves recovering an average of 72,564 oz of gold per year for 10 years. The average grade is estimated to be 1.2 g/t Au.

The operation was estimated to produce 2 Mtpy of ore with a cash cost of US$23.36 per tonne, the Internal Rate of Return on the of 41.8% and US$642 per ounce production cost. The Project NPV was at 8% discount rate equal to US$203M. The total capital cost estimated to be US$99.3M.

In July 2020, CPC Project Design (CPC) was commissioned by Big River to develop the design and estimate the cost differences brought about by recent post DFS design changes. The updated capital costs were estimated to be approximately US$101M.

In late 2021 and early 2022, Big River drilled 13 additional holes in the Project to prove down dip extension of the mineralized ore body. Big River announced the results of drilling in July 2022 and indicated that all holes intercepted elevated grades in projected zones of mineralization at 100 m down dip to the known mineralisation and along 1.2 km of strike.

In April 2022, Aura announced the acquisition of Big River Gold. The Transaction was closed in September 2022. Aura now owns 80% of the new Company and Dundee Resources Limited own the remaining 20%.

6.1 HISTORICAL MINERAL RESOURCE ESTIMATES

Note that all of these Mineral Resource Estimates are historical in nature as defined by NI 43-101. These historical Mineral Resource Estimates have not been reviewed by a Qualified Person under the guidelines of NI 43-101 and should not be considered as current Mineral Resources as of date of this report.

The first documented and published historical Mineral Resources Estimate for the Borborema Project (São Francisco Pit area) was calculated in 2007 by Mineração Caraíba S.A ("MCSA") which was filed in ANM (National Mining Agency). A database was used representing 36 drill holes (a total of 4,782.23 m of drilling) and the chemical analysis sampling results. Of the 36 holes, 15 holes were drilled by Santa Elina for a total of 1,185.26 m in 1994, and 21 holes were drilled by MCSA for a total of 3,596.97 m in 2007.

The classified historical Mineral Resource Estimate was done internally based on modeled mineralized domains within a software platform, using the ordinary Kriging estimation method to enable Mineração Caraíba S.A (MCSA) to make further decisions regarding the project. Table 18 shows the classified Mineral Resources for the Sa Francisco Pit area, Borborema Project.

*Table 18: Mineração Caraíba S.A mineral resources estimate statement (2007) *.*

Class	Au average (g/t)	Tonnes	% Class	Contained Au (Kg)
Measured	1.30	408,942	3.65	532.80
Indicated	1.05	6,954,347	61.63	7,328.50
Inferred	1.11	3,920,635	34.75	4,335.40
Total	**1.08**	**11,283,924**	**100.00**	**12,196.80**

**Adopted from DNPM (ANM): 805.049/1977*

The second historical, classified Mineral Resource Estimate (JORC) was completed by Coffey Mining (August 2010) and revised by Ian Dreyer (December 2010). The Mineral Resource Estimate was determined using the Ordinary Kriging method, and 12.5 N x 5 m E x 5 m RL Parent Cells and reported a total of 839 koz Au at a cut-off of 0.5 g/t Au, and 730 koz Au using 1.0 g/t Au cut-off (Table 19).

Table 19: Borborema Project mineral resources estimate statement (Coffey, 2010).

Borborema Project Mineral Resource									
	Indicated			Inferred			Total		
Cut-off Grade Applied (g/t Au)	Tonnes (Mt)	Avg. Grade (g/t Au)	Contained Gold (koz)	Tonnes (Mt)	Avg. Grade (g/t Au)	Contained Gold (koz)	Tonnes (Mt)	Avg. Grade (g/t Au)	Contained Gold (koz)
0.5	12.2	1.67	653	3.2	1.79	186	15.4	1.70	839
1.0	7.7	2.27	656	2.2	2.32	165	9.9	2.28	730

The third historical Mineral Resource Estimate (JORC) reported in December 2011 by Lauritz Barnes and Brett Gossage, was calculated using the Ordinary Kriging method and12.5 m N x 5 m E x 5 m RL Parent Cells. This Mineral Resource totalled 2,311 koz Au at a 0.5 g/t Au cut-off, and 1,388 koz Au using a 1.0 g/t Au cut-off (Table 20).

Table 20: Borborema Project mineral resources estimate statement (Crusader, 2011).

Borborema Project Mineral Resource									
	Indicated			Inferred			Total		
Cut-off Grade Applied (g/t Au)	Tonnes (Mt)	Avg. Grade (g/t Au)	Contained Gold (koz)	Tonnes (Mt)	Avg. Grade (g/t Au)	Contained Gold (koz)	Tonnes (Mt)	Avg. Grade (g/t Au)	Contained Gold (koz)
0.5	31.57	1.18	1,201	36.10	0.96	1,110	67.68	1.06	2,311
1.0	15.77	1.65	838	12.67	1.35	549	28.44	1.52	1,388

The fourth historical Mineral Resource Estimate (JORC) was prepared for Crusader Resources Limited (Crusader) in July 2012 by Lauritz Barnes (Trepanier Pty Ltd.), Brett Gossage (EGRM Consulting Pty Ltd.) and Isobel Algar (Mitchell River Group Pty Ltd.). A database containing 622 drill holes totalling 63,441.9 m was used for the purposes of resource infill and extension, sterilisation, geotechnical investigation and exploration. The additional resource infill/extension data resulted in a refined grade estimation approach and material changes in the reported Mineral Resource.

This 2012 Mineral Resource model was based on open pit exposure, information from 73 diamond holes drilled by previous holder Caraíba, 13 diamond holes drilled by previous holder Santa Elina, plus information from 338 reverse circulation (“RC”) and

156 diamond drill holes drilled by Crusader. Assays from other historical holes were used to assist in interpretation, but not for estimation purposes.

Diamond core logging has not revealed any definitive correlation between geology and high gold grades. Consequently, a Multiple Indicator Kriged ("MIK") model was generated based on mineralisation constraints interpreted at a notional 0.1 g/t Au lower cut-off grade.

The MIK estimate was subdivided into three regions, the main Central Zone, and the lesser Northern Zone and Southern Zone of the deposit. The grade estimation was completed based on a block size of 12.5 m E x 25 m N x 5 m RL. A change of support was completed to replicate a 5 m E x 6.25 m N x 2.5 m RL selective mining unit ("SMU").

Mineral Resource classification was primarily based on drill density. Measured Mineral Resource areas have generally been drill tested at a spacing of 25 m or better, Indicated Mineral Resource areas are generally defined by a drill spacing of 50 m x 50 m or better, and the Inferred Minera Resource areas represent a 75 m extension down dip from the Indicated blocks or 100 m spaced drill sections.

The Mineral Resources Estimate for the Borborema deposit has been categorised in accordance with the criteria laid out in the JORC Code. A combination of Indicated and Inferred Mineral Resources have been defined using definitive criteria determined during the validation of the grade estimates, with detailed consideration of the categorisation guidelines.

The Mineral Resource Estimate is reported using a 0.5 g/t Au lower cut-off grade based on the preliminary economic and mining planning investigations as shown in Table 21.

Table 21: Borborema Project updated mineral resources statement (Crusader, 2012).

Reserve Classification	LCOG (Au g/t)	Tonnes (Mt)	Grade (Au g/t)	Au Ounces (koz)
Measured	0.5	8.148	1.22	320
Indicated	0.5	42.795	1.12	1,547
Measured + Indicated	0.5	50.943	1.14	1,867
Inferred	0.5	17.6	1	566

Crusader and Tetra Tech Inc. used the above MIK Mineral Resource Estimate, now an historical Mineral Resource Estimate, in the first draft of the Bankable Feasibility study report (2013) and Big River used the same model for the Definitive Feasibility Study (DFS) in 2019 and any updates made afterwards. The details of the Mineral Resource estimation by the MIK method were discussed in the 2013 Feasibility Study Report.

7 GEOLOGICAL SETTING AND MINERALIZATION

7.1 REGIONAL GEOLOGY

The Project, located in the Borborema Province, sits within the domain of the Seridó Fold Belt in north-eastern Brazil (Figure 17).

The regional basement is comprised of Archaean and Paleoproterozoic gneisses and migmatites unconformably overlain by a sequence of supra-crustal rocks of Neoproterozoic age belonging to the Seridó Group. The basal unit of this group is the Jucurutu Formation, comprised of gneisses, amphibolites, marbles, and calc-silicate rocks. The middle unit is the Equador Formation of quartzites and meta-conglomerates, whilst the upper unit, the Seridó Formation, consists of mica- schists and phyllites. During the Brasiliano Orogeny, the basement and sequence of super crustal rocks were intruded by granitic, granodioritic, and locally gabbroic and tonalitic stocks, sills and dykes.

During the Neoproterozoic the region underwent a complex tectonic evolution involving thrusting (D2) and transcurrent shearing (D3), as indicated by the presence of both low-and high-angle structures (the S2 and S3 foliations, respectively). During this deformation period the metamorphic conditions varied from greenschist facies in the western portion of the belt to upper amphibolite facies in the east, with some local contact metamorphism (localised granulite facies) and anatexis (partial melting) (Crusader Resources PFS 2011). A series of quartz vein-hosted or vein-related gold (Au) deposits occur within the Seridó Belt, concentrated along the eastern margin of the Seridó Group, in addition to several tungsten skarn-style deposits that are often associated with varying degrees of bismuth, copper, and gold mineralisation. The Borborema Project deposit is the largest known gold occurrence in the region.

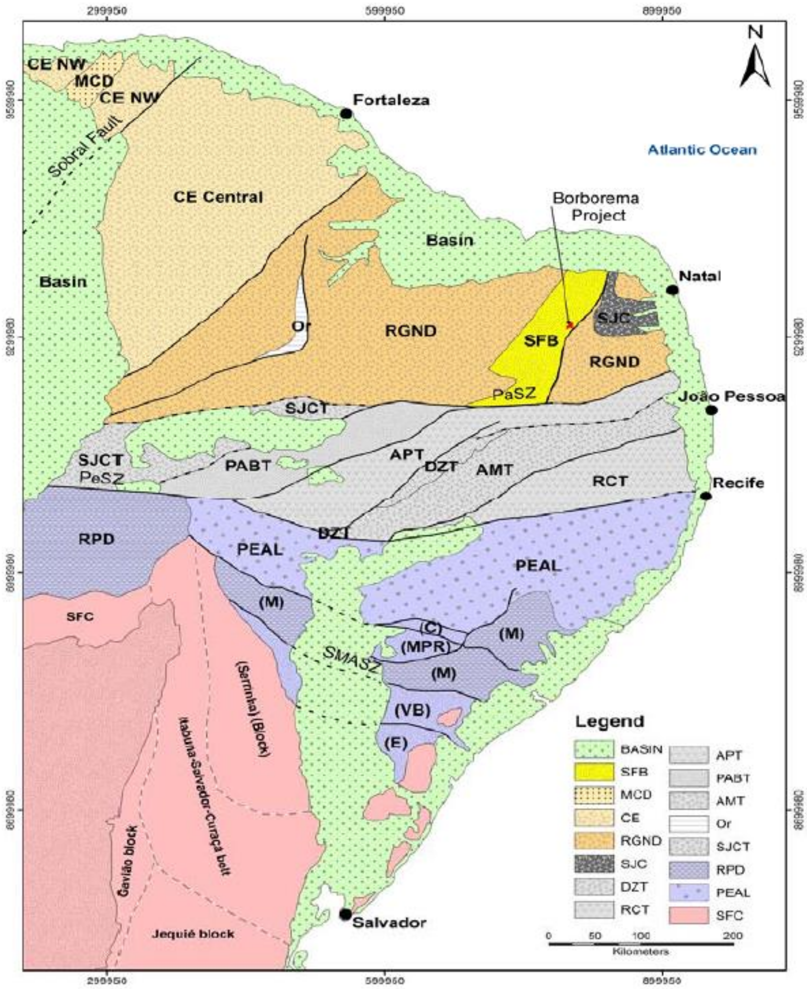


Figure 17: Regional geological setting (after Brito Neves et al., 2000).

Notes for Figure 17: Major domains and terranes: CE ¼ Ceará Domain (Or: 1.8 Ga Orós fold belt); DZT: Domínio da Zona transversal; MCD: Médio Coreaú Domain; PEAL: Pernambuco-Alagoas Domain; RGND : Rio Grande do Norte domain (SFB: Seridó fold belt); SJC: São José do Campestre Archean nucleus); RPD: Riacho do Pontal domain; SD: Sergipano domain (C: Caninde complex; E: Estancia subdomain; M: Macurure subdomain; MPR: Maranco- Poco Redondo sub domain; VB: Vaza Barris sub domain); SFC: São Francisco Craton; SLC: São Luiz Craton. Zona Transversal subdivisions are: AMT: Alto Moxoto terrane; APT: Alto Pajeú terrane; CV: Cariris Velhos orogenic belt; PABT: Piancó - Alto Brígida terrane; RCT: Rio Capibaribe terrane; SJCT: SJC: São José do Caiano terrane; ZTTTN: Zona Tectônica Teixeira - Terra Nova. Faults and shear zones: PAsz: Patos shear zone; PEsz: Pernambuco shear zone; SMAsz: São Miguel do Aleixo shear zone. Cities and towns: Fo: Fortaleza; JP: João Pessoa; Na: Natal; Re: Recife; Sa: Salvador

7.2 PROPERTY GEOLOGY

The Borborema Project area is situated in the top of the Seridó Group stratigraphy (the Seridó Formation) within a sequence of banded arkosic metapelitic schists, subjected to upper-amphibolite facies regional metamorphism (Baars, et. al., 2011). Mineral assemblages are dominated by plagioclase, K-feldspar and quartz, with subordinate biotite, garnet, sillimanite, cordierite, muscovite and andalusite.

This assemblage is indicative of high temperature (650-700°C) and relatively low pressure (3-4 kb) conditions. The sequence comprises alternating pelitic (cordierite-sillimanite) and more psammitic (garnet-sillimanite) units (Stewart, 2011). Quartzo-feldspathic bands resulting from partial melts both crosscut and parallel the schistosity, dominantly in the more pelitic cordierite schists. Widespread retrograde sericite overprints the prograde mineral assemblage. The schists are intruded by Brasiliano-age pegmatite bodies.

7.2.1 DEPOSIT LITHOLOGY AND STRATIGRAPHY

The sequence of rocks at the map scale has been subdivided into several packages broadly correlating to protolith characteristics and metamorphic mineral assemblages (Stewart, 2011). Each of the following rock packages exhibits variable interlayering, generally observed on the metre-scale. The lithological units occurring in the greatest abundance in any given area of the property have been used to map out the sequences. Figure 7-2 shows the geology map of the Project as produced by PGN Geoscience (Stewart, June: 2011).

7.2.1.1 Biotite Schist

In the quartz-feldspathic-biotite +/- sillimanite-garnet schist, biotite schist is the most abundant mapped lithological unit within the Project area and contains a varying proportion of biotite. Accessory minerals include sillimanite and garnet. This unit is generally fine to medium-grained and contains a well-preserved, early gneissic fabric (S1), sub parallel to the lithological layering. Lithological layering within this unit comprises differentiated millimetre to centimetre-scale, biotite-rich and granular quartz-feldspar-rich bands that often resembles rhythmic layering within a laminated sedimentary rock. Based on its outcrop character and lithology, this unit could be described as psammopelitic, which suggests it may have a sandy siltstone protolith (Figure 18 and Figure 19).

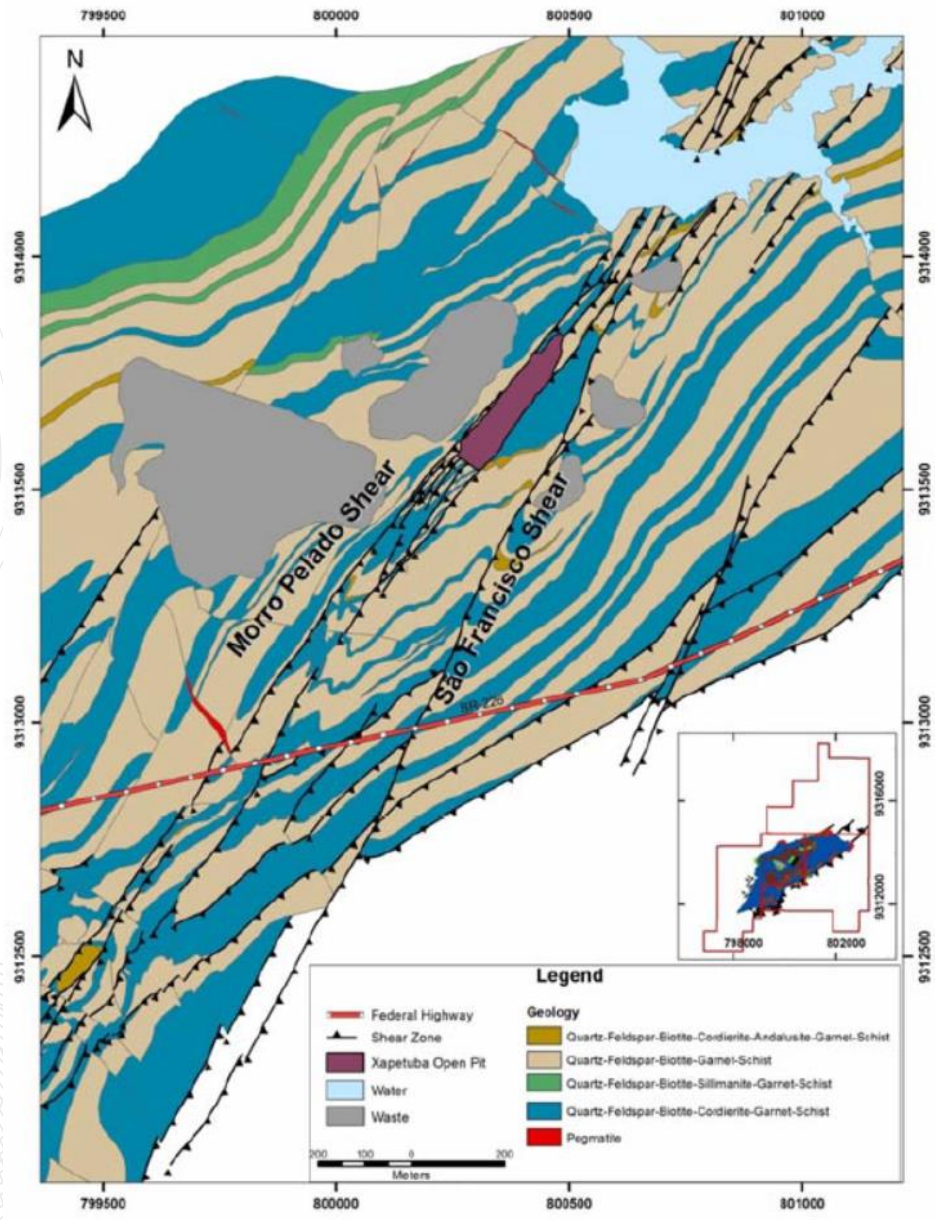


Figure 18: Borborema deposit geology map (after Stewart, 2011).

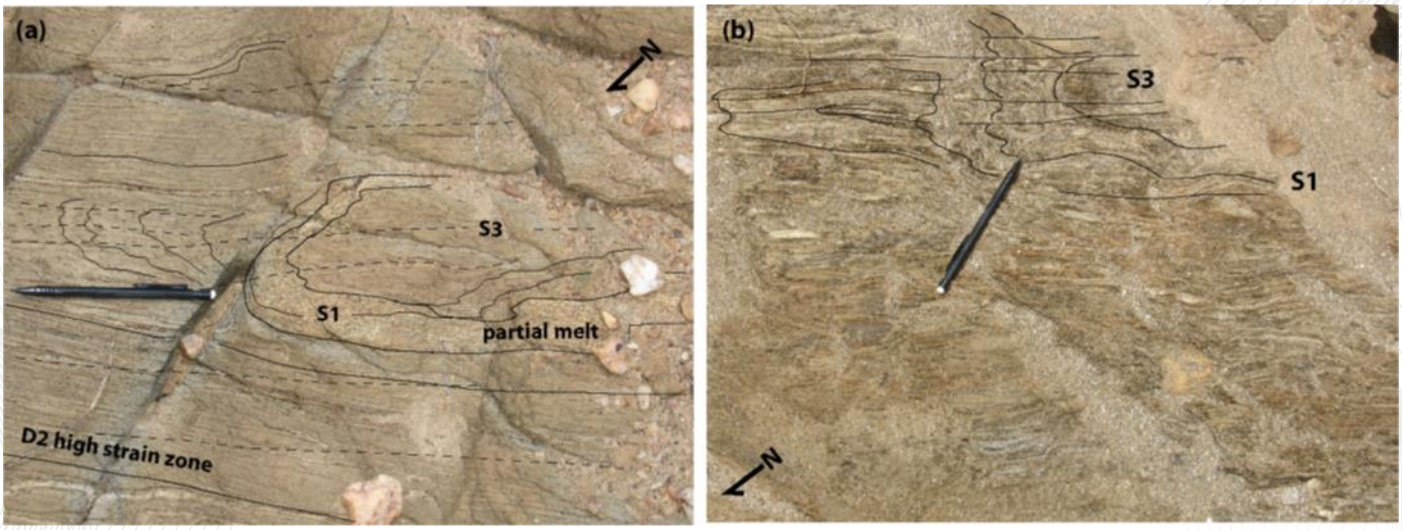


Figure 19: (a) Well-developed gneissic fabric in Quartzofeldspathic-rich biotite schist. Note the PGB partial melt that is oblique to S1. (b) Folded biotite schist with a strong muscovite overprint (Stewart, 2011).

7.2.1.2 Cordierite Schist

In the quartz-feldspathic-biotite +/- cordierite-sillimanite-garnet schist, cordierite schist is the second most abundant lithology mapped in the Project area (Figure 18).

This map unit generally comprises metre-scale packages of interbedded cordierite-rich quartz-feldspathic-biotite schist and more psammitic quartzo-feldspathic-biotite schist. Cordierite-rich horizons are generally very coarse grained and defined by 20-100 mm diameter cordierite porphyroblasts, constituting up to ~50% of the rock mass within some horizons. Cordierite is variably altered to fine-grained muscovite and commonly weathered to an iron-rich clay mineral. The proportion of sillimanite within this unit increases towards D2 high-strain zones.

Two types of cordierite have been observed:

1. Large oblate to prolate porphyroblasts that overgrow S1, either late in D1, after development of the gneissic foliation, or during M2 (Figure 20);

2. Asymmetric porphyroblasts that clearly overgrow and rotate the S1 fabric (Figure 21). These cordierites are associated with concentrated feldspar and biotite. They also show characteristics of partial melt development (cordierite growth within M2 mineral assemblage with partial melt), correlated structurally to sites of extensional shearing and foliation boudinage. These cordierite porphyroblasts commonly develop north-northwest–south-southeast trending long axes and sigma-type geometries within D2 shear zones.

Figure 20: (a) Porphyroblast-rich horizon (S0) within cordierite schist package. Cordierite is strongly altered at this locality. (b) Massive cordierite-schist (Stewart 2011).

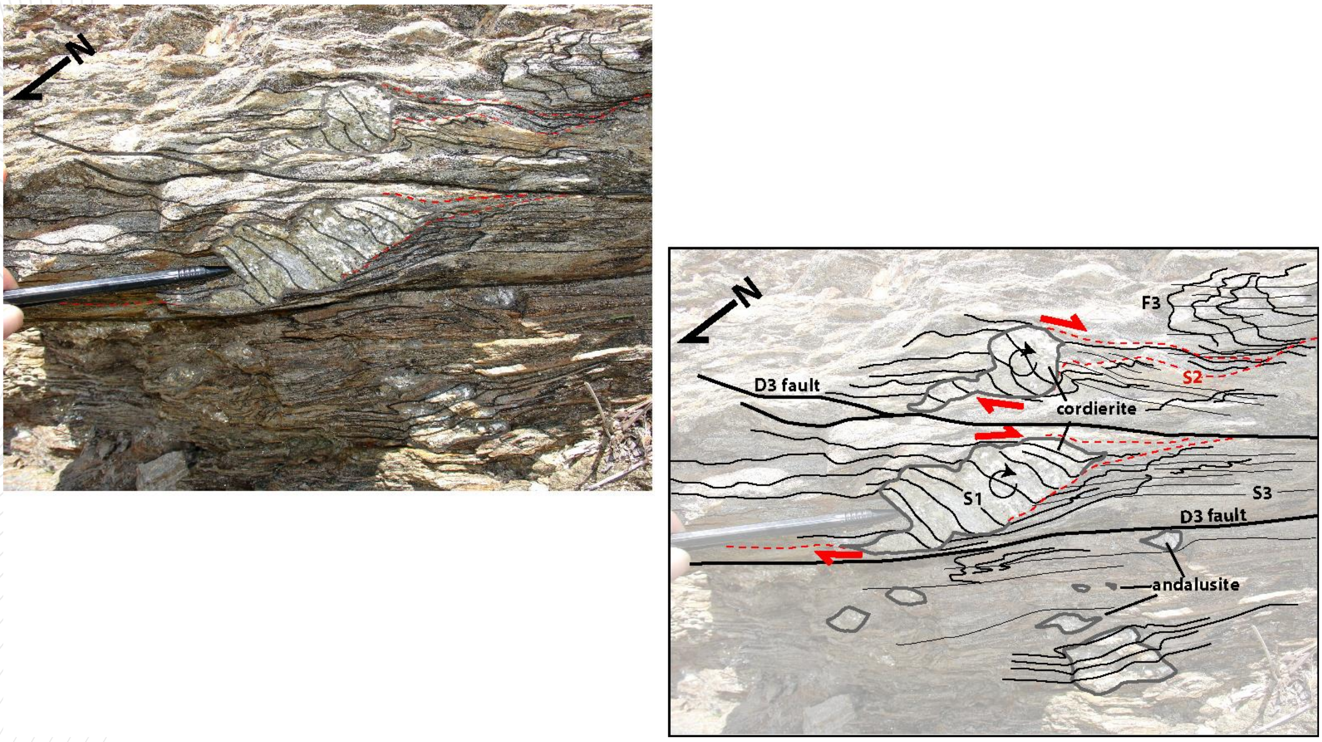


Figure 21: Photograph and sketch of altered cordierite porphyroblast with internal S1 fabric. S1 shows clockwise rotation and cordierite strain shadow is indicative of dextral shear and suggests syn-shear mineral growth during the development of D2 shears. S3 crenulations overprint the asymmetric S1 fabric (Stewart, 2011).

7.2.1.3 STAUROLITE Schist

In the quartz-feldspathic-biotite +/- staurolite-garnet schist, this metamorphic mineral has possibly been misidentified in the field and likely constitutes D2 cordierite-potassium feldspar-biotite partial melt, which occurs within D2 high strain zones (Figure 22). Interpreted staurolite schist horizons are in the northwest of the mapped area (Figure 18), within the Project property, and identified at the southwest end of the main open-cut pit within the Borborema Shear Zone. The occurrence of this unit, which can be correlated with high-grade D2 shearing, corresponds to a tectonostratigraphic horizon that can be used as a marker and may control the distribution of mineralisation.

Figure 22: Cordierite-rich partial-melt infilling asymmetric boudinage dilatational site within mylonitic biotite schist (typical of zone mapped as Staurolite Schist). Boudinage geometry is antithetic (sinistral) with respect to D2 dextral shearing. Note the strong muscovite alteration (Stewart, 2011).

7.2.1.4 Andalusite Schist

In the quartz-feldspathic-biotite +/- cordierite-andalusite-garnet schist the andalusite schists comprise a very small proportion of the mapped rocks in the Project area. These andalusite schists usually occur as thin centimetre- to metre-scale psammopelitic horizons within biotite schists and are mostly found within areas associated with high grade D2 shear zones (Figure 23. The andalusite porphyroblasts are generally 2-8 mm in diameter and are mostly replaced by mats of milky white, fine-grained sillimanite (fibrolite).

7.2.1.5 Quartz - Staurolite Schist

Thin (<500 mm width) horizons of what appear to be felsic igneous rocks have been observed in two places within the Project area. Closer inspection reveals the presence of rare garnets and abundant millimetre-scale, randomly oriented, dark greenish-grey staurolite porphyroblasts that overgrow a quartzo-feldspathic S1 gneissic fabric, most likely associated with M2 peak metamorphism.

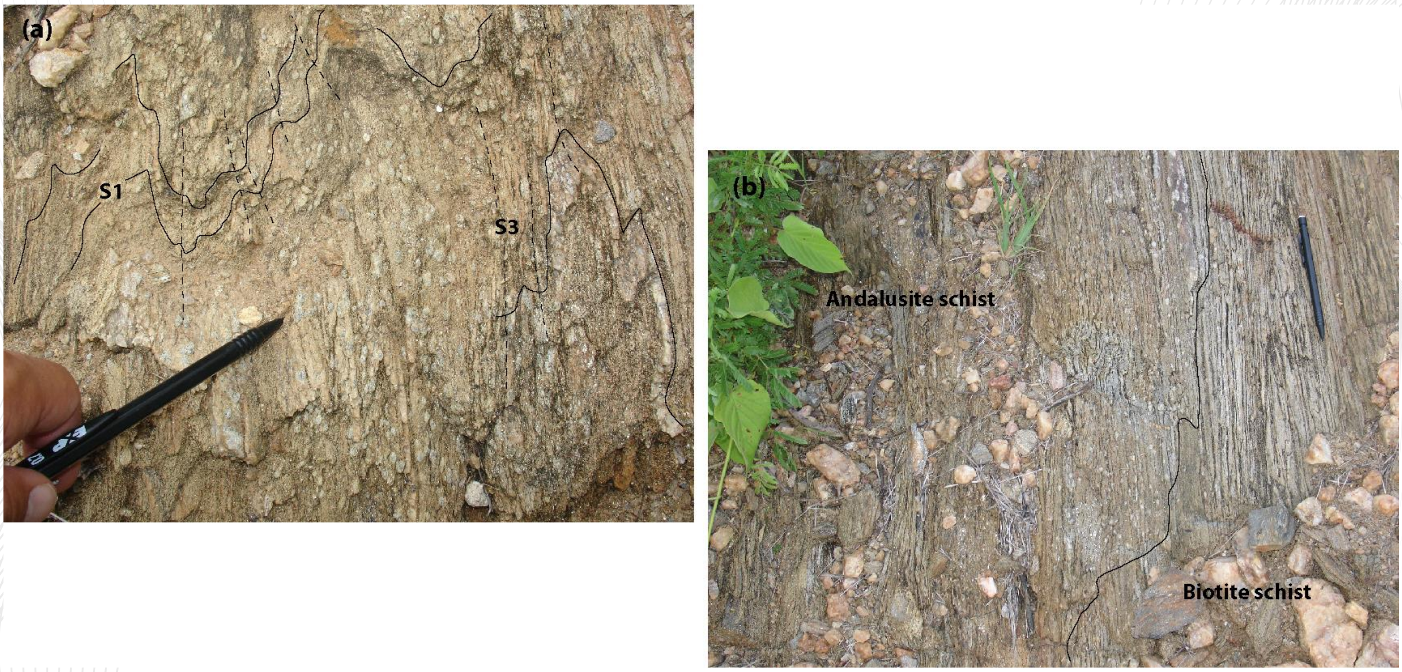


Figure 23: (a) Coarse andalusite porphyroblasts in folded andalusite schist horizon. (b) Well-differentiated quartzofeldspathic-biotite S1 fabric within andalusite schist and biotite schist (Stewart 2011).

7.2.1.6 Granitic Orthogneiss (PGB Lozenges)

Small lenses, lozenges and boudins of plagioclase-quartz-biotite+/-garnet (possibly after amphibole) are common throughout the mapped area and have mineralogy consistent with a dioritic protolith. The millimetre-to centimetre-scale clots of biotite may be pseudo-morphing hornblende. PGB lozenges are most hosted within more psammitic rocks with a higher quartzo-feldspathic component than adjacent schists. PGB lozenges are associated with increased proportions of garnet with higher concentrations at their margins. Garnets occurrence shows some correlation with the location of folded and boudinaged D1 quartzo-feldspathic leucosomes, suggesting its relationship between their respective productions.

7.2.1.7 Mylonite

Mylonite has been interpreted by other workers (e.g., Araujo et al., 2002) as a widespread lithological association within the mapped area. Mylonite is interpreted in the mapped area where there is an association between intense foliation developments, shear-sense indicators such as rotated porphyroblasts, and development of quartz ribbon textures indicative of intense recrystallization. The abundance of true mylonite is less than previously suggested as much of the apparently "mylonitic" rock is lacking kinematic or shear sense indicators that would suggest shear zone development. Rather it is interpreted here that much of the previously interpreted mylonite is indicative of a more psammopelitic biotite schist, which is well-banded at the millimetre-to centimetre-scale, indicative of the S1 gneissic fabric (Figure 24).

Mylonites occur frequently and are generally associated with northeast–southwest oriented S2 foliations offset by D3 faults and reoriented into a more north-northeast–south-southwest trend within the Sao Francisco Shear Zone. However, mylonites do occur and are associated with high grade D2 shearing, the kinematics of which is described below. Also, some D3 faults exhibit narrow, centimetre-scale zones of mylonite development. This deformation is related to attenuation of the F3 long limb during folding.

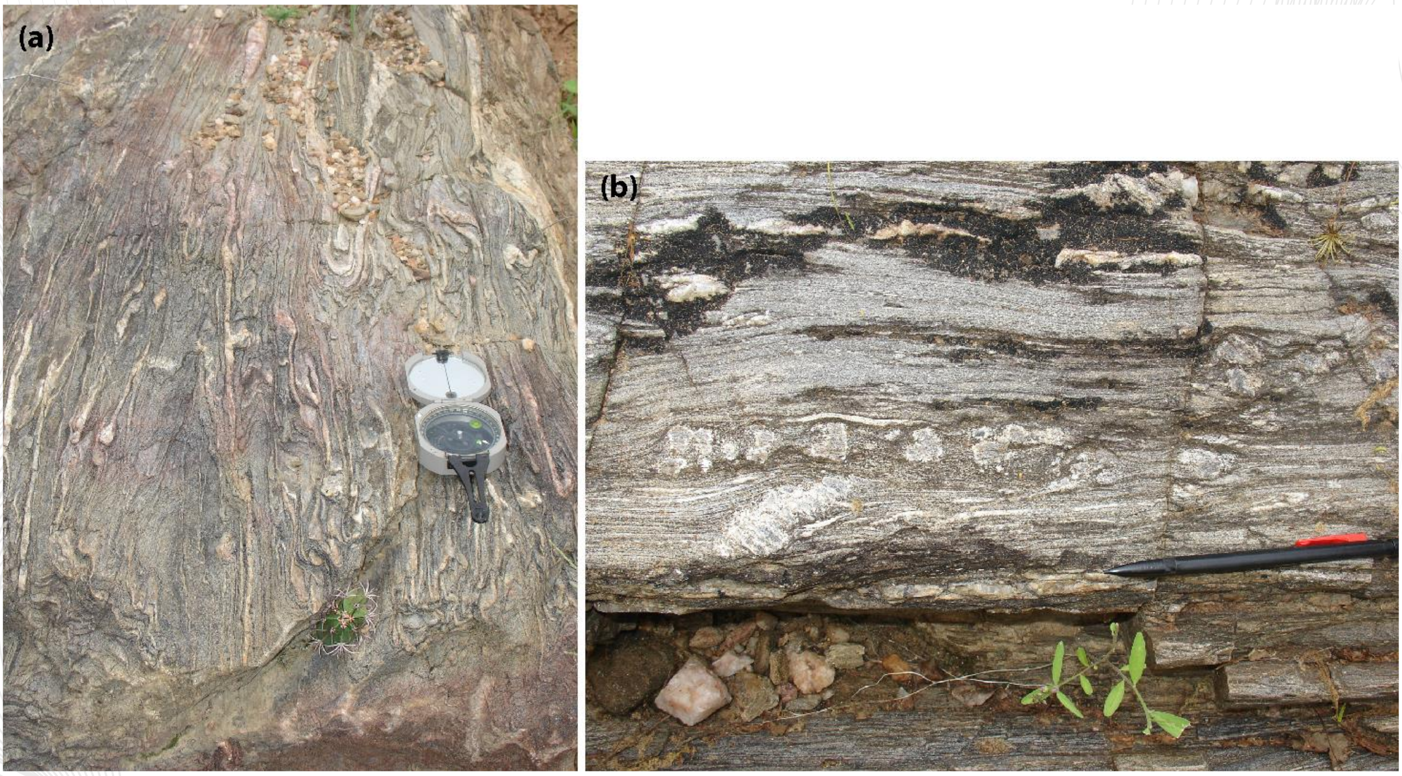


Figure 24: (a) Quartz ribbons in mylonitic biotite schist folded by F3 with axial planar S3 biotite. (b) D2 mylonite in cordierite schist with dextral syn-shear cordierite porphyroclast and layer of boudinaged cordierite (Stewart, 2011).

7.2.1.8 Pegmatite

Pegmatite dykes are common across the Project area and appear to be focused into two northwest trending belts that cross the mapped area (Figure 26). Pegmatites are generally 1-5 m wide with strike lengths of several hundred metres or more. Pegmatites primarily comprise quartz-potassium feldspar-plagioclase-muscovite, however, some also contain a tourmaline component that appears to have grown parallel to S3 (Figure 25). Tourmaline growth is axial planar to gentle-to-open F3 folds and commonly parallel to a centimetre-spaced muscovite-filled fracture cleavage. Axial planar muscovite alteration is particularly strong where pegmatite dykes crosscut biotite schist; the dykes are commonly accompanied by focused muscovite alteration within the schists along the dyke contacts. These pieces of evidence put pegmatite emplacement within a late-D3 position and indicate that M3 retrogression passed from the biotite field to the muscovite field at some stage during this deformation.

The mapped area comprises outcrop-scale, thinly alternating pelitic and psammitic layering that cluster into broadly psammitic packages (biotite schists) and pelitic packages (cordierite schists). This suggests that the protolith comprised of thinly alternating silt-rich and sand-rich layers is indicative of a relatively low-energy depositional environment or a distal sediment source. There may have been subtle stratigraphic relationships. If this was present in the sequence, high-grade metamorphism has obscured this within the Project area.

However, there may be a fundamental protolith contrast that has led to the partitioning of partial melt and vein-rich zones, features that are concentrated within and adjacent to D2 shear zones. This tectonostratigraphy may be crucial in future exploration and provides marker zones that can be used to assess the effect of D3 deformation and movement on the Sao Francisco Shear Zone and adjacent structures.

Figure 25: (a) Pegmatite dykes cross-cutting biotite- and cordierite-schist. Note the S3 axial planar cleavage. (b) Tourmaline parallel to S3. (c) Gneissic fabric within quartz-staurolite schist. Staurolite porphyroblasts are dark-coloured sub-mm flecks. (Stewart, 2011).

7.2.2 STRUCTURAL GEOLOGY AND DEFORMATION HISTORY

The Project consists of a garnet-biotite-schist package coarsely sub-dividable into alternating sequences of psammopelitic garnet-sillimanite schist and more pelitic cordierite-sillimanite schist. Localised horizons of andalusite-and staurolite-bearing schists occur proximal to high-grade shear zones approximately parallel to the stratigraphic layering and contain abundant partial melt products and early vein networks (Stewart, 2011).

The event and deformation framework are complex and is interpreted as follows:

- D0 - Deposition of fine-grained, siltstone-dominated, sedimentary package with minor medium-grained (sandy siltstone) intercalations (turbiditic);

- D1a - Thickening of the stratigraphic pile coincident with possible magmatism and high temperature, low-pressure metamorphism leading to the emplacement of a pervasive layer-parallel gneissic fabric;

- D1b - Development of quartzofeldspathic dominated partial melt products oblique to the gneissic foliation and concentrated/confined to tectonostratigraphic horizons within the sedimentary package. These are generally found in more pelitic rocks such as the cordierite schists. Late M1 cordierite porphyroblasts overgrow the S1 foliation.

- D2a - The partitioning of high strain along rheological contrasts between partial melt-rich and partial melt poor/psammitic tectonostratigraphy, leading to mylonite development within the brittle-ductile transition zone. Progressive flattening and partitioned southerly-directed extensional shearing led to isoclinal folding of D1a partial melt products and boudinage of F2 fold limbs synchronous with top-to-south (clockwise in present orientation) rotation of cordierite porphyroclasts.

- D2b - Increased fluid pressures during peak amphibolite facies metamorphism (M2) late in D2 promoted localized brittle deformation and rapid pressure drops. Low pressure sites occurred within north-northeast trending, east-southeast dipping brittle zones that cross-cut S1 and S2 as fault-vein networks. Within these zones auriferous quartz was deposited in two primary orientations: 1) parallel to the east-southeast trending fault zones; and 2) in a Riedel, west-northwest dipping position. The laterally propagating Riedel quartz veins situated themselves preferentially in more psammitic lithologies, particularly within the footwall of D2 mylonite zones.

- D3 - Regional folding tilts the sequence and S1-2 fabrics shallowly to the southeast. This causes the cordierite porphyroclasts that were rotated during D2 to take on a dextral sense of movement, which is only an apparent sense within the Sao Francisco Shear Zone and is not representative of the D3 kinematics. East-southeast dipping, D2 quartz-veined faults are unrotated as they are in the extensional field with respect to the D3 stress orientation. The veined faults locally accommodate shallow reverse faulting or steep thrusting (~30-65° east-southeast) accompanied by project-wide northwest verging F3 asymmetric folds and development of a steeply east-southeast dipping axial planar biotite crenulation cleavage. Adjacent to some D3 faults, the stratigraphy becomes overturned and the F3 folds become southeast verging. The short-limb of these asymmetric fold structures represents the sites least- affected by D3 strain (generally within the footwall to D3 shear zones) and preserve crenulated, but un-sheared Riedel D2 Au-bearing quartz veins. Pegmatite dykes are emplaced within northwest–southeast oriented corridors synchronous with shortening and exhibit a variably developed S3 foliation. Biotite retrograde metamorphic reactions accompany D3.

- D4 - The fracture orientation initiated during pegmatite emplacement develops into a prominent fault trend accompanied by ~east–west to ~southwest–northeast conjugate faults. A pervasive west-northwest– east-southeast oriented extensional dissolution and/or fracture cleavage develops. The orientation of S4 forms “domains” bound by major north-northeast-trending D3 faults indicating that these structures were still active. Muscovite alteration accommodates this deformation and is focused along fault zones.

The deformation history at Borborema as interpreted by Stewart is summarised in Figure 26.

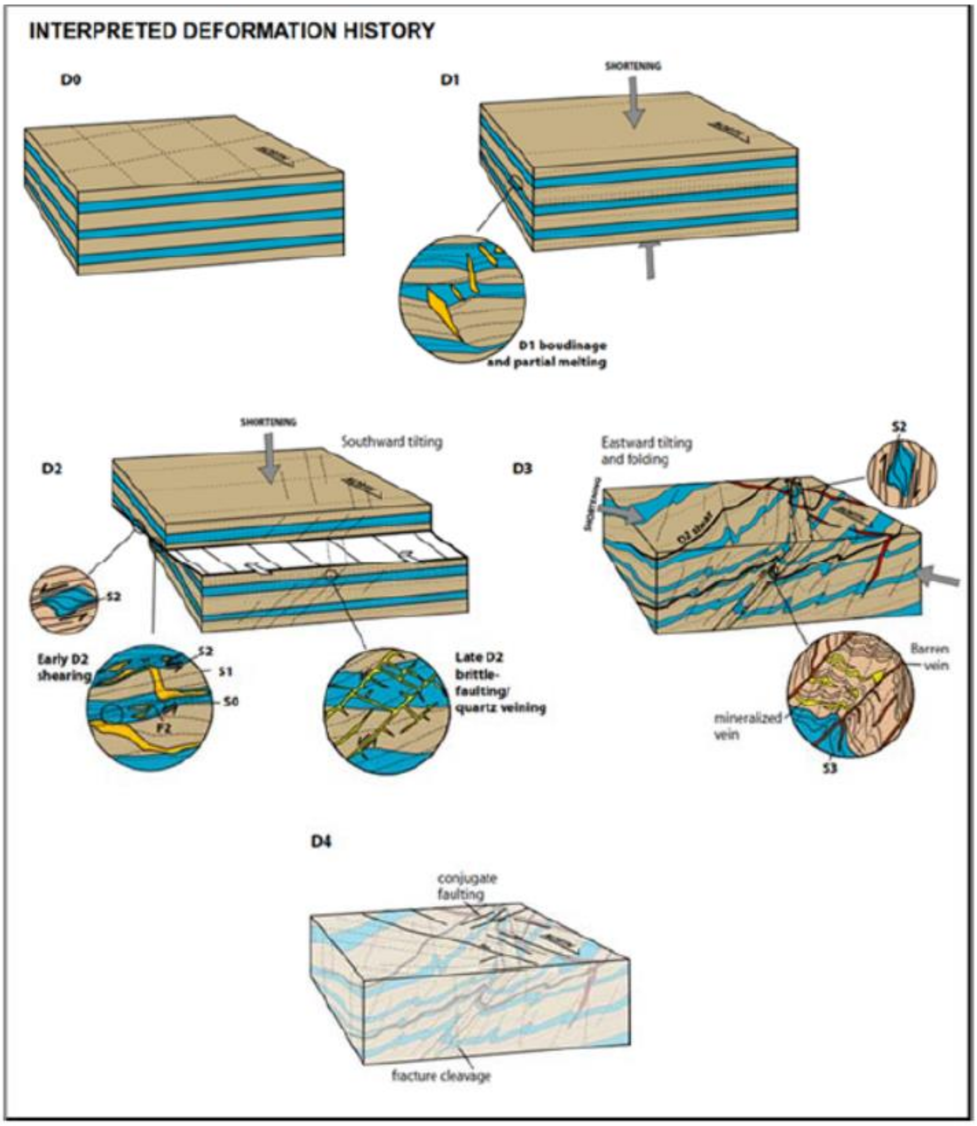


Figure 26: Interpreted deformation history at Borborema (Stewart: 2011).

7.2.3 STRCTUCTUAL AND DEFORMATION COMPONENTS OF SAO FRANSISCO PIT

Figures 28 and 29 show the southwest face of the Sao Francisco Pit and the four distinctive structural and strongly deformed domains. These domains are as follows:

- A shallow dipping, leucosome-rich hanging-wall zone with strong deformation features which is metamorphosed under amphibolite facies. The folding is tight and crenulations and S-C fabrics in shear zones are abundant. (Zone a Figure 27, Figure 28)

- A mylonitic zone (retrograde zone) cut with faults (D2b) developed along the main Sao Francisco Shear Zone (D3)., This mylonite zone is stratigraphy overturned and thrusted, retrograde alteration is strong and dominant. The eastern margin of the retrograde shear zone is the strongly silicified and chloritic (shown in greenish color). Stewart (2011) reported folded layering within this zone that has the same overturned limb vergence as in the hanging wall. Both Stewart (2011) and Holcombe (2012) interpret the host for this high strain zone as being within the deformed hanging all. the retrograde shear seems to be a structure truncating the main ore shoots (Holcombe, 2012). (Zone b Figure 27, Figure 28)

- A moderate to strong shearing zone with wavy shear fabric mainly developed within quartz-muscovite-biotite schist and developed on the footwall side of Sao Francisco Shear Zone. Crenulation cleavages are abundant, and dips are steeper than the shear zone. This zone is mainly barren and represents the main metamorphic event in lower amphibolite facies. (Zone c Figure 27, Figure 28)

- A quartz-feldspathic footwall schist with meta-sedimentary origin and bedding. It can be labelled as footwall schist where layering and bedding clearly preserved. The ribbon-like (pressure solution) structures with accumulation of biotite and quartz-feldspar shows turbiditic origin of the host rocks. This zone is still strongly attenuated by D1-2 event. The host rocks were metamorphosed under lower amphibolite and upper greenschist facies. (Zone d Figure 27, Figure 28)

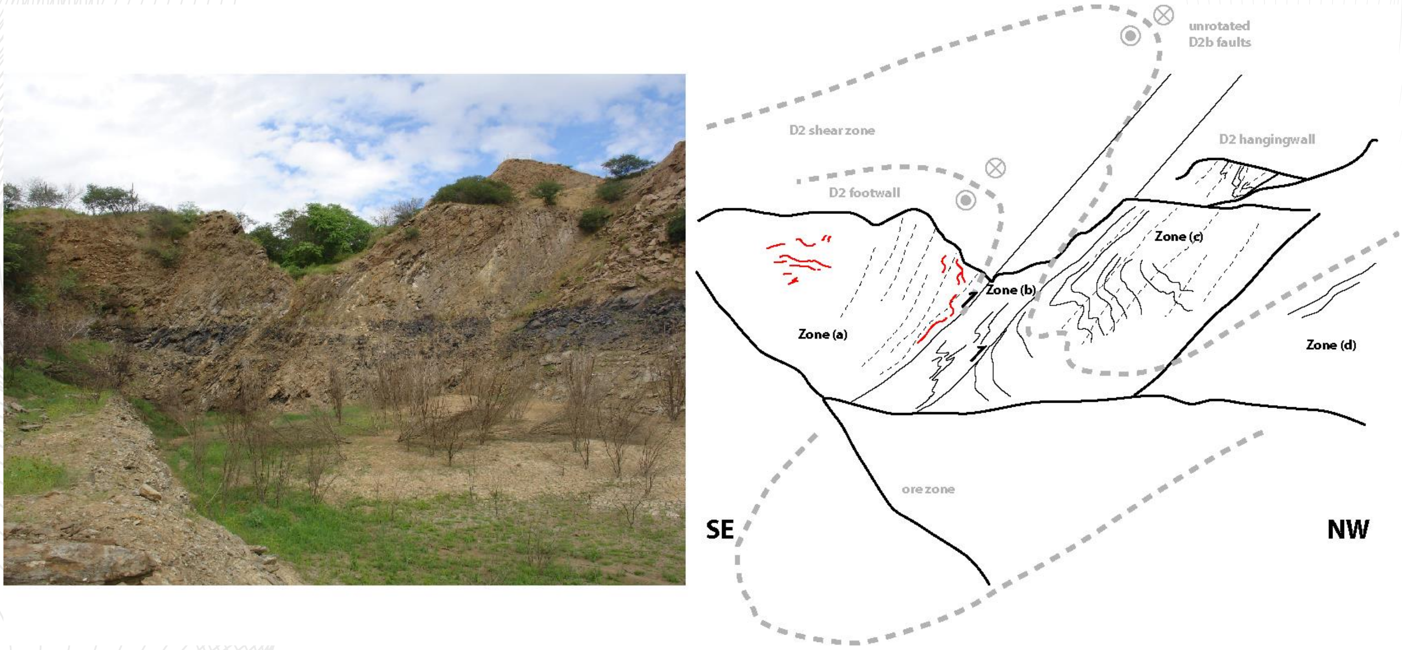


Figure 27: Photograph of the SW end of the Sao Francisco Pit. Major structures are evident and structural domains are separated into the following zones: (a) Shallowly SE-dipping D1 leucosome-rich hanging wall with strongly developed S1 fabric and increasing D3 fabric intensity towards the NW. F3 vergence to NW and steeply to SE approaching the shear zone; (b) D2 mylonite zone cut by SE-dipping primary D2b faults that are reworked by D3 Sao Francisco Shear Zone. Stratigraphy is locally overturned stratigraphy within the short limb of a major F3 fold. F3 vergence to SE; (c) ~NW-dipping hinge zone in the footwall of D2-3 shear zone containing abundant late-D2 Au-bearing quartz veins. Few D1 leucosomes are present. The S1-2 fabric is strongly developed. F3 W-folds and local vergence changes from SE- to NW-verging; (d) bedding and foliation dip SE. F3 vergence to NW (Stewart, 2011).

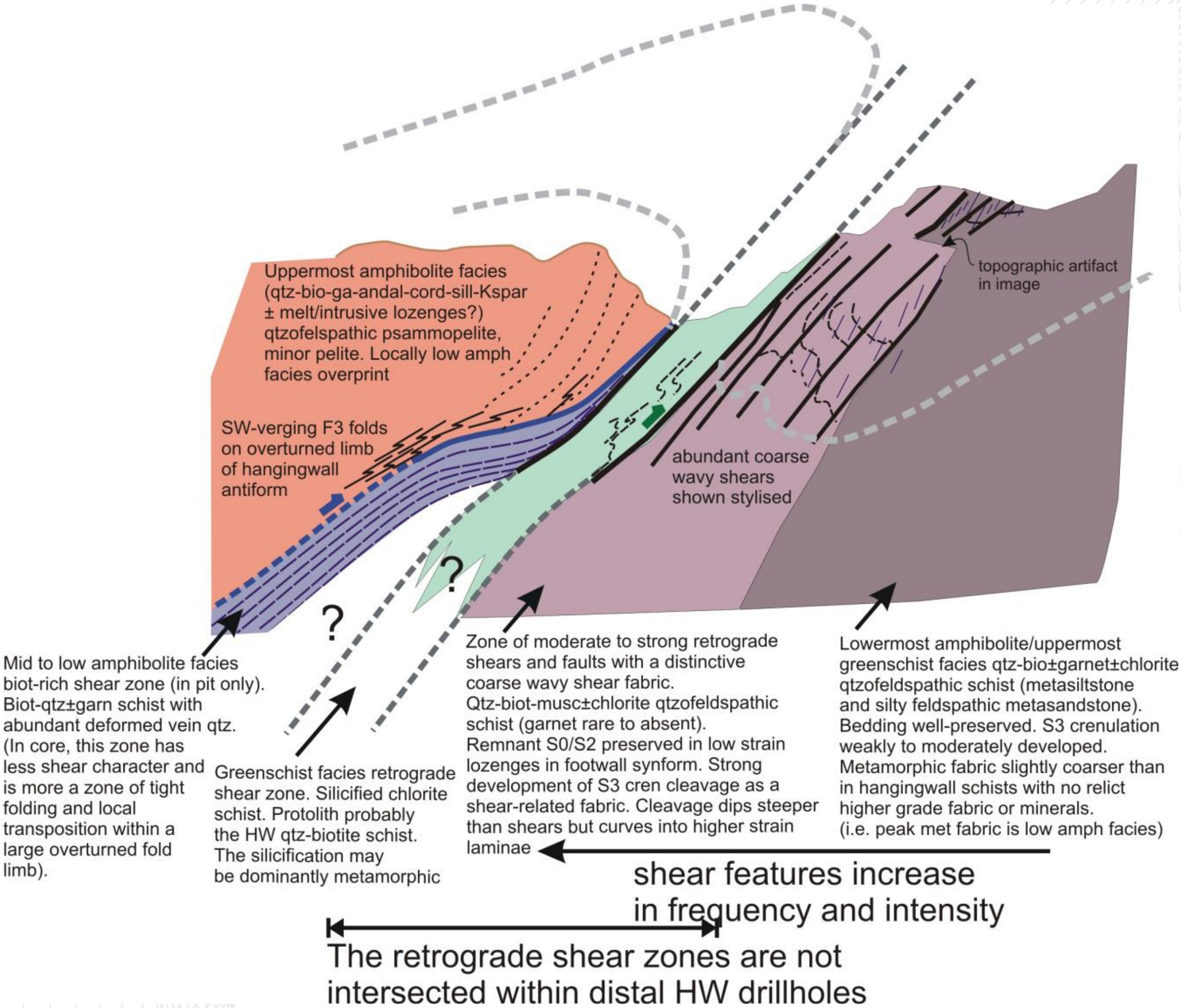


Figure 28: Modified structural domains inside Sao Francisco Pit-Borborema Project (Holcombe, 2012).

Although the retrograde shear has associated lowermost amphibolite facies fabrics in its footwall, it also has a significant component of greenschist facies fabrics. That is, the entire retrograde shear system may have started evolving at lowermost amphibolite facies but has been exhumed during its development into greenschist facies.

The retrograde shear in the Sao Francisco Pit and local shears associated with the ore zone are dip-slip thrusts with no strike-slip components. The similar kinematics of both the shallow and the steeper zones suggest that they may be simply different parts of the same evolving D3 contraction. The faults are then kinematically coherent, the structure is commonly observed, and requires no rotation of crustal blocks (Holcombe,2012).

7.2.4 MINERALIZATION AND ALTERATION

The Borborema deposit is located within a northeast–southwest trending structure which forms part of the northern segment of the Santa Mônica dextral shear zone (Araujo et. al, 2002). The shear zone displays a penetrative north-northeast-trending fabric, dipping southeast at around 40 degrees. In the Project area the principal mineralised shear zone, termed the Morro Pelado Shear, is around 30 metres thick.

The mineralization is strongly controlled by regional structure with secondary structuring providing the preferred host for gold (Figure 29). In addition to the main mineralized zone, several thinner sub-parallel zones of increased gold mineralization (> 0.1 g/t Au) can be seen in drill core.

Genesis of the gold mineralizing event or events is poorly understood. Two distinct gold mineralization types are identified both by SRK and Aura Geologists in drill cores: 1) disseminated free gold, and 2) gold in association with sulphide mineralization represented by pyrrhotite, chalcopyrite, pyrite, sphalerite, and galena. Additionally, the sulphide mineralization was observed in the outer contact between chert boudins and schist along with or within schist foliation.

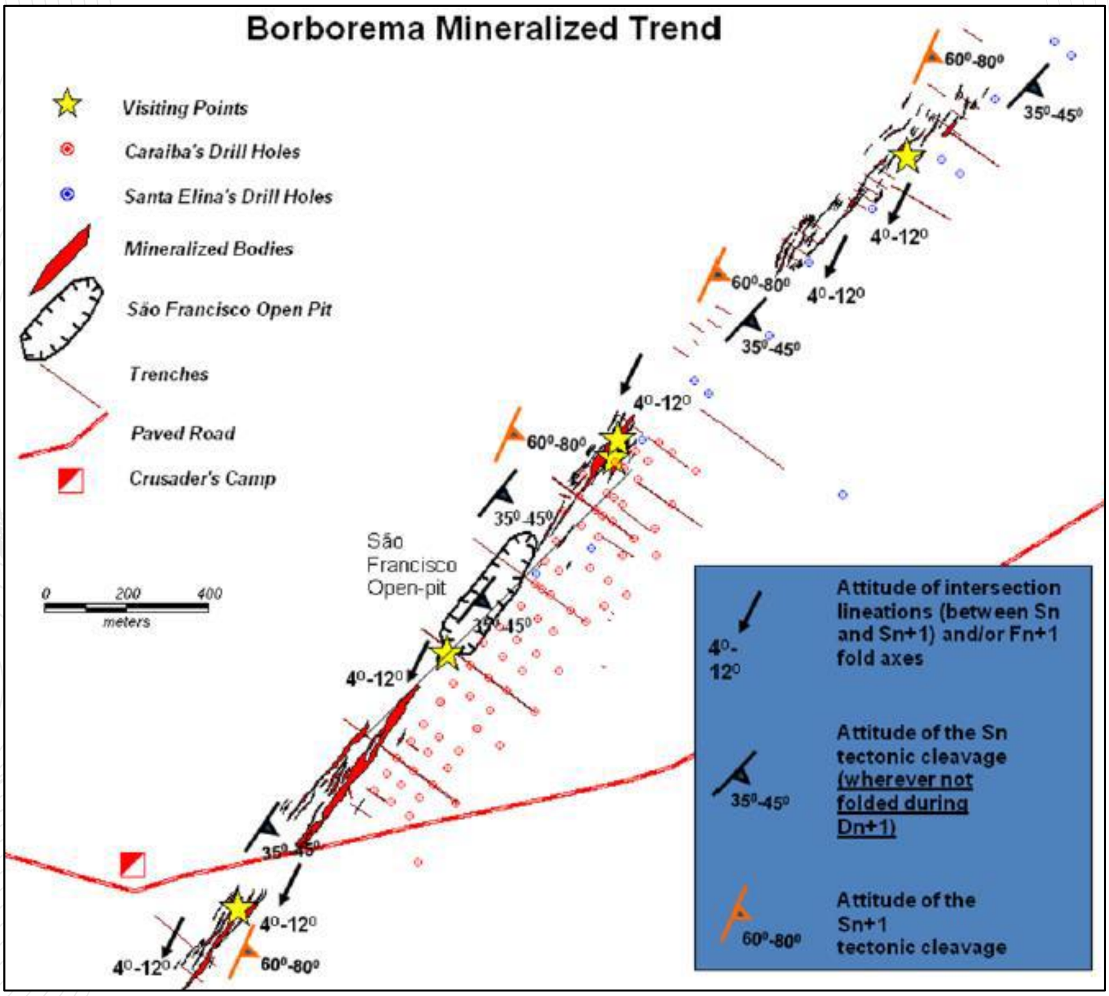


Figure 29: Map of Sao Francisco-Borborema mineralized trend (SRK, 2022).

The continuity of mineralization observed in select diamond drill core shows a highly discontinuous nature to both types of observed gold mineralization. Sulphide-hosted gold appears primarily along psammitic schist foliations and around the perimeter of quartz veins and boudins. The visual inspection of sulphide mineralization in core with correlated analytical results appears to indicate a relatively high concentration of Au in pyrrhotite such that a sub-cm scale zone of sulphide mineralization resulted in grades commonly exceeding 1 g/t Au (SRK, 2022). Sulphide mineralization throughout the main mineralized zone is sporadic in nature. For example, a 10 cm zone of sulphides hosted the entirety of the metal for the 1 m sampling interval while the remaining core appeared barren was noted (SRK, 2022).

The mineralised sequence has been subjected to a complex, multi-stage deformational history, with folded, sheared, dismembered and boudinage quartz and quartz-carbonate veins and veinlets commonly associated with the gold mineralisation. Recrystallised sulphides, both finely disseminated and locally forming centimetre-scale patches, dominated by pyrrhotite with lesser pyrite, chalcopyrite, sphalerite, and galena are common within the mineralised zones. Microscopic examination, however, does not appear to indicate a direct relationship between gold mineralisation and sulphide abundance. Magnetite closely associated with gold, post-dates the sulphides (Baars, 2011).

Stewart (2011) suggests that the gold mineralisation was emplaced at close to peak metamorphism adjacent to D2 shear zones, preferentially in the more psammitic units as shown in Figure 30.

Baars (2011) believes that the deformational event which accompanied gold mineralisation was an extensional event forming a linear dilatational feature. Limited analytical data for silver indicate overall a silver/gold ratio of approximately 2:1, although on an individual sample basis there appears to be little or no correlation between gold and silver values. Phillips (personal comm.) suggests that the base metal sulphide mineralisation event may be independent of the gold event; the lack of direct correlation between gold and silver also suggests deposition in separate events or pulses.

Holcombe (2012) concluded that the main host of mineralization developed along steeply dipping, retrograde reverse-sense shear that occurs within the Sao Francisco Pit. He concluded also that a second shallow-dipping structure was associated with mineralization that was separate and oblique to the main shear zone. The shallowly dipping mineralized system lies in a strongly attenuated, axial plane-parallel zone within the overturned limb of a large, inclined fold. The mineralization is locally sheared but the displacement between its hanging wall rocks, and its footwall rocks is not significant from a crustal point of view.

Mineralisation within the wide retrograde shear within the pit is dominantly within deformed veins. The mineralisation extracted from the eastern part of the main pit may have been from dissection of the pre-existing shallowly dipping mineralized zone that now forms the main mineralized orebody. Mineralisation within the remainder of the shear, within the pit, is likely from a separate source at depth.

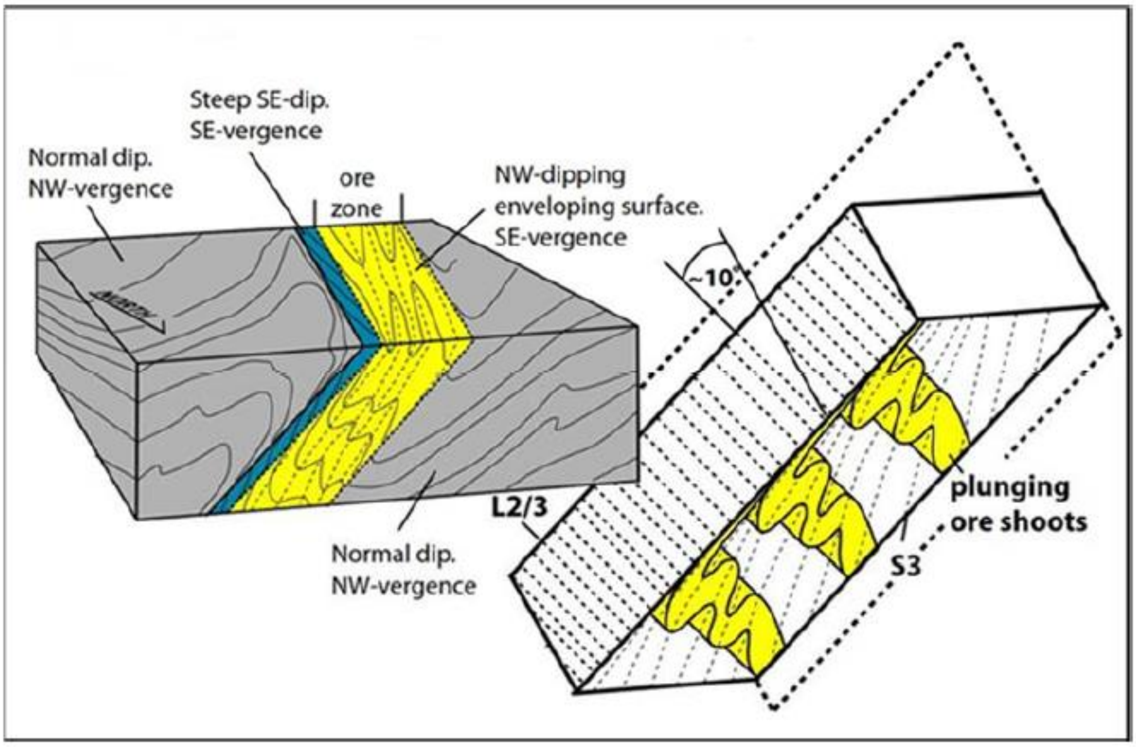


Figure 30: Structural context for gold mineralisation (after Stewart, 2011).

Evidence of alteration of the host rock in association with gold mineralization is not well understood. The retrograde metamorphism in the Sao Francisco Pit has not examined for altered minerals and low-temperature mineral assemblage. There is no or little geochemical analysis was done to identify the mineralogical and chemical signatures of gold bearings host rocks. Further analysis on alteration chemistry and mineralogy needs to be done to better clarify the genesis of gold in the Borborema deposit.

8 DEPOSIT TYPES

The Borborema deposit, Borborema Project, is considered to be a classic orogenic-gold deposit type in a sheared and deformed Archaean to Proterozoic age greenstone belt sequence, that is comprised of metamorphosed volcanic-sedimentary rocks units intruded by slightly younger post-tectonic igneous bodies.

According to Goldfarb et al. (2005), the term orogenic gold deposit is used for a class of deposits formed during compressional to transgressional deformation processes at convergent plate margins in accretionary or collisional orogens. The single most consistent characteristic of this type of deposit is their association with deformed metamorphic terrains of all ages. Observations from preserved Archaean greenstone belts and most recently active Phanerozoic metamorphic belts throughout the world indicate a strong association of gold and greenschist-facies rocks, however, some significant deposits occur in higher metamorphic-grade terrains. Pre-metamorphic protoliths for the auriferous Archaean greenstone belts are predominantly volcano-plutonic terrains of oceanic back-arc basalt and felsic to mafic arc rocks; terrains dominated by clastic marine sedimentary rocks that metamorphosed to metagreywacke, slate, phyllite, and mica schist.

Studies carried out in the Borborema Project area (Phillips, 2011) concluded that the gold deposit is classified as a mesothermal orogenic-gold type in view of its key characteristics.

Orogenic gold deposits are among the most important sources of gold production in the world. The geology of the Borborema Project area and its gold occurrences are strikingly like many other gold-bearing schist belts throughout the world. Orogenic gold deposits collectively account for more than 20 percent of the world's total gold production.

This class of mineralisation, orogenic gold, is normally controlled by first-order faults that act as conduits for the auriferous fluids; second-and third-order faults are sites of mineral deposition (Robert et al., 2005). Additional favourable areas with low or minimum mean stress zones include regional fault intersections, areas of regional uplift or anticlines, and zones of competency contrast, such as along granitoid margins (Robert, 1989; Vearncombe et al., 1989; Groves et al., 2000). In compressional regimes, reverse faults in these zones have the highest degree of disorientation and the highest levels of fluid overpressure, making them most susceptible to a high fluid flux and deposition of gold (Sibson et al., 1988).

The mineralisation generally classified as "mesothermal," means it is thought to have formed under relatively high temperature at considerable depth in the earth's crust by hydrothermal and/or metamorphic processes. The deposits of this type may have great vertical extents (down-plunge), commonly two kilometres or more. In many deposits, the gold occurs in fissure veins, veinlets, stockworks and altered wall rock.

Gold mineralisation at the Borborema Project, Borborema Province, occurs in a succession of (meta) pelitic and psammopelitic schists intruded by minor occurrences of pegmatite and granitic orthogneiss (Stewart: 2011). Rocks are metamorphosed in upper greenschist facies to amphibolite conditions (Araújo et al., 2002; Stewart, 2011).

The pit in the São Francisco Mine exposes a greenschist facies retrograde shear zone and above this shear zone, gold mineralisation occurs within an overturned limb of an F3 fold (Holcombe, 2012). The kinematics on this shear zone is consistent with thrusting (Stewart, 2011; Holcombe, 2012), but how exactly this structure continues at depth is an unresolved question. One possibility, suggested by Holcombe (2012), is that gold mineralisation is localized along a shallowly dipping system parallel to the axial plane of these folds.

9 EXPLORATION

9.1 HISTORICAL EXPLORATION

Several companies have completed various exploration programs on the Project and surrounding region. Between 1979 and 1983, Itaperiba Mármores e Granitos LTDA completed 13 trenches on the Borborema Project area, totalling 3,250 metres. The trenches were sampled and assayed by Geosol Laboratories for gold, silver and lead using OES-AA methods. A very primitive resource model was constructed based on the results. In 1984, Mineração Xapetuba continued the work of Itaperiba, completing 56 trenches across the project area, totalling 5,120 metres of trenching. Geochemical soil-samples and surface rock chip samples were also taken. Along with drilling results, the trench sampling results were used to update the resource. Xapetuba used this resource to mine in an open-cut operation that was Brazil's first gold extraction project using heap-leaching methods.

In 1991, Metasa-Metais Seridó acquired the project from Xapetuba to re-process the existing heap-leach piles and did not complete any further exploration work. In 1991, the Brazilian and Japanese governments formed an accord to explore for gold in the northeast of Brazil, known as JICA. JICA completed a five-phase regional exploration programme across the Seridó Belt, which incorporates the area of the Project. The programme included regional mapping, geochemical soil-sampling, stream-sediment sampling and pan concentrates, and eventually some minor drilling.

From 1994 to 1997, Mineração Santa Elina Indústria e Comercio S/A completed detailed mapping of the Project area, re-opened and re-sampled the existing trenches, surveyed the topographical surface, re-logged and re-sampled the existing drill-holes, and completed their own drilling program. In 2007, Caraíba Metais LTDA held an exploration option over the Project with the then-owners MGP - Mineração e Agropecuaria LTDA.

Whilst a new drilling programme was the focus, Caraiba also re-mapped and re-sampled some of the existing data. In a more-regional sense, the CPRM - Brazil’s Geological Survey - completed several regional exploration programs across the Seridó Belt and Project area, including geological mapping (1:500,000), airborne geophysical radiometric and magnetic surveys, geochemical soil-sampling, and stream-sediment sampling and pan concentrates. None of the historic exploration data has been used by Crusader in the Project Mineral Resources estimation.

9.2 EXPLORATION BY CRUSADER

In addition to drilling, brownfields exploration work by Crusader has concentrated on mapping and soil sampling within the deposit corridor covering approximately 4 kilometres of strike length. Mapping has been predominantly conducted by Australian-based consultants with extensive South American experience, assisted by site geologists and field technicians. Soil sampling has been performed using the Company’s site-based teams. The Company also commissioned a study of the public domain geophysical data which was integrated with both local and more regional (greenfields) mapping.

9.2.1 MAPPING AND STRUCTURAL ANALYSIS

In 2011, PGN Geoscience was engaged by Big River Gold to provide a lithological and structural interpretation of the Project, and an ore genesis model for the gold occurrence. Mapping was conducted over 14 days in March and June 2011 and covered an area of around 5 km2, focussing on an approximate 4 km strike length of the Sao Francisco and Morro Pelado Shear Zones associated with known gold mineralisation at Borborema. The mapping included integration of detailed field observations at GPS localities and inferred/interpolated structure in areas of no outcrop, with minor aerial photograph interpretation.

In Stewart’s (2011) summary there appear to be numerous factors that influenced the tectonic evolution of the rocks within the Project area, each of which contributed to the existence and preservation of significant gold mineralisation:

- D0 decimetre-scale interlayering of pelitic and psammitic stratigraphy provides a heterogeneous primary rheology;
- Heterogeneous rheology focuses D1 partial melting and leucosome production;
- D2 shear zones develop at the interface between D1 leucosome-rich and D1 leucosome-poor stratigraphy;
- Mylonite- and gneiss-dominated D2 shear zones provide unique rheology suited for fracturing and propagation of secondary D2b quartz veins from major east-southeast-dipping brittle conduits;
- Fold vergence and scale plays a critical role implicated in the preservation and geometry of mineralized ore zones.

Holcombe (2012) also stated the shallowly dipping ore system, defined by drilling, is dominantly a strongly folded, and locally sheared, zone located in the overturned limb of a large fold but parallel to the axial plane of the fold. It is not within a single unit but crossed by the folded stratigraphy. Passive biotite accumulation related to the degree of deformation (pressure solution) has produced an artificially simple view of the structure in the current cross-sections. Lithological packages of alternating biotite schist and garnet schist form a stack of units parallel to the main ore zone, which is hosted in biotite schist. Rather than being stratigraphic units, the biotite-rich zones are zones of strong folding and deformation parallel to the axial plane of the main fold. The ore body is one such deformation zone, possibly with more intense folding than the others.

Currently only the lower biotite schist host zone is routinely sampled for assaying. Given the similarity of the upper biotite schist to the mineralised zone, Holcombe suggested that the higher-level zones should also be sampled for assaying. The assaying procedure was modified on this recommendation, but only sporadic mineralisation was found. The shear zone within the pit has some very distinctive characteristics (coarse, curved flaser fabrics, and a chloritic component) that were not recognised in the few drill-holes examined by Holcombe (2012). Given that this shear zone does host mineralisation in the old pit, one priority should be to define its location at depth.

The most important conclusion of Holcombe's (2012) work is the observation that the shallowly dipping ore zone at depth is separate from, and cut by, the slightly more steeply dipping, retrograde reverse-sense shear that occurs within the pit and which was the main host for the extracted mineralisation.

9.2.2 GEOCHEMOCAL SAMPLING

Geochemical soil sampling has been conducted by Big River Gold on the Borborema tenements since 2009. Initially, samples were taken approximately every 100 metres along lines spaced 1-2 km apart. The sample lines ran perpendicular to the regional shear zones and shear fabric, approximately northwest–southeast, forming a local grid that later became the Borborema Local Grid ("BLG"). The samples were taken from shallow pits 30-50 cm deep, intended to sample from the in-situ soil horizon B. The early samples were analysed on-site with a portable Niton XRF analyser, assayed semi-quantitatively for 32 elements.

Whilst gold was not included in the results, several key elements including Cu, As, Pb and Zn were perceived to have anomalous results consistent with the surface expression of the known gold mineralisation at Borborema. Hence, these anomalous soils results were used to map targets for follow-up work, in which case the sample spacing was reduced to better define the anomalies.

In April 2011, it was decided that all soil samples be assayed for gold and hence all existing samples, as well as all future samples, were sent to the ALS Brasil LTDA laboratory in Minas Gerais state for sample preparation and gold analyses by fire assay (with AA finish). To-date the entire three tenements of the Project have been covered by geochemical soil-sampling on a spacing of 50 metres by 50 metres or closer, except in the areas of previous workings in which the surface material was deemed to no longer be in situ.

The results have defined several broad anomalies along strike and parallel to the main Borborema deposit, the larger of which have been named Cobia, Remora and Northern Extension (Figure 31).

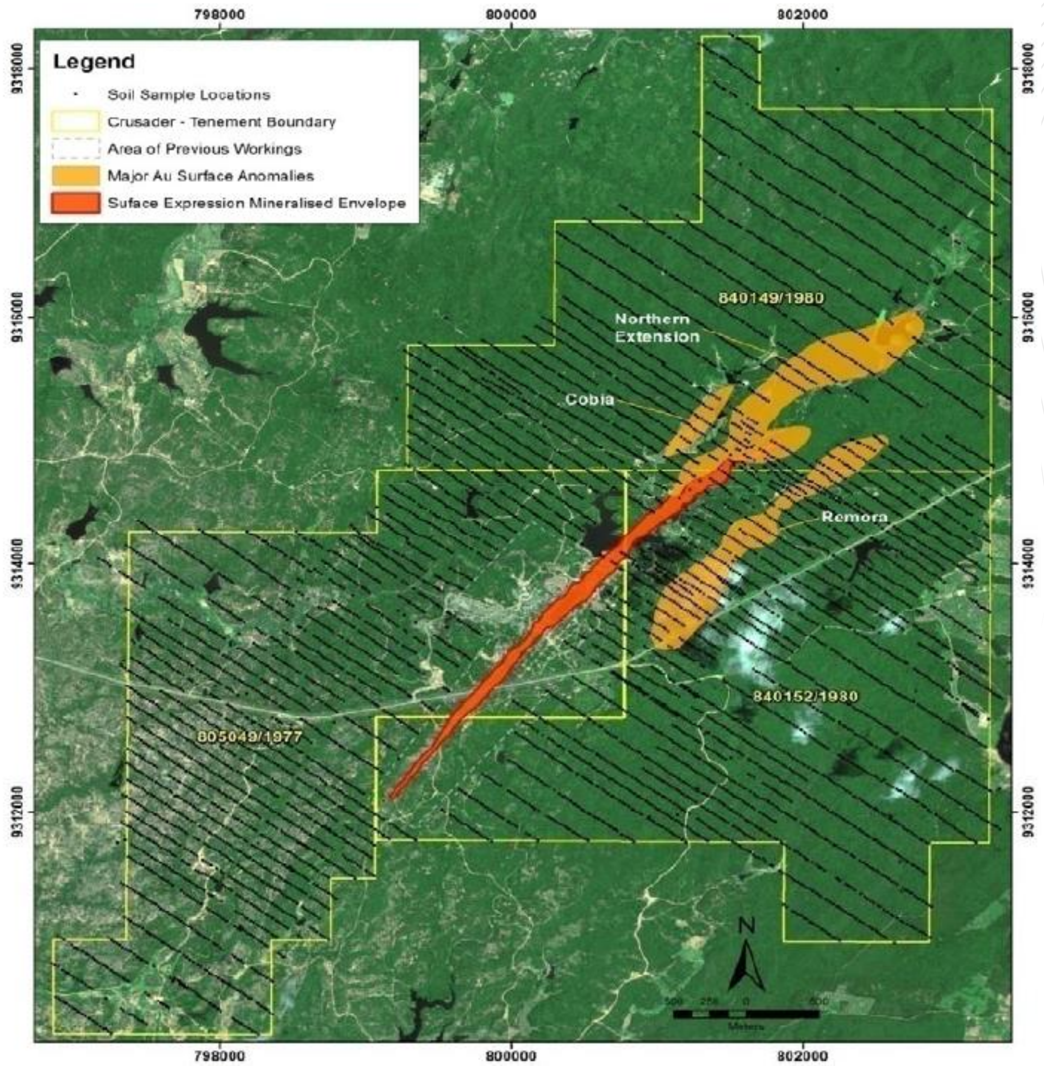


Figure 31: Soil-sampling and resulting gold anomalies at Borborema Project.

9.2.3 GEOPHYSICAL INTERPRETEATION

PGN Geoscience (2011) reviewed the public domain regional geophysical data. This data consisted of aeromagnetic and radiometric data collected on a 1,000 metre-spaced flight lines. The data was reprocessed and both structurally and lithologically modelled with the additional input of regional mapping traverses by Stewart to constrain the geophysical interpretation (Figure 33).

The magnetic response of the region appears to represent a combination of magnetic marker units within metamorphosed sedimentary successions and orthogneiss, as well as alteration along shear zones. Differentiation of stratigraphy and structure relied upon constraints from regional traverse mapping and offset of magnetic anomalies.

The interpretation indicates that the region can be divided into three general belts of rocks. The western part of the belt coincides with the Rio Grande do Norte domain of Van Schmus et al. (2011) and is dominated by a higher map abundance of orthogneiss and granitoid complexes within interleaved meta-sedimentary and calc-silicate rocks. This domain is less effected by fault repetitions related to D2 thrust development, but regional folds are more prevalent, possibly suggesting a difference in the mode in which crustal shortening occurred (Figure 32).

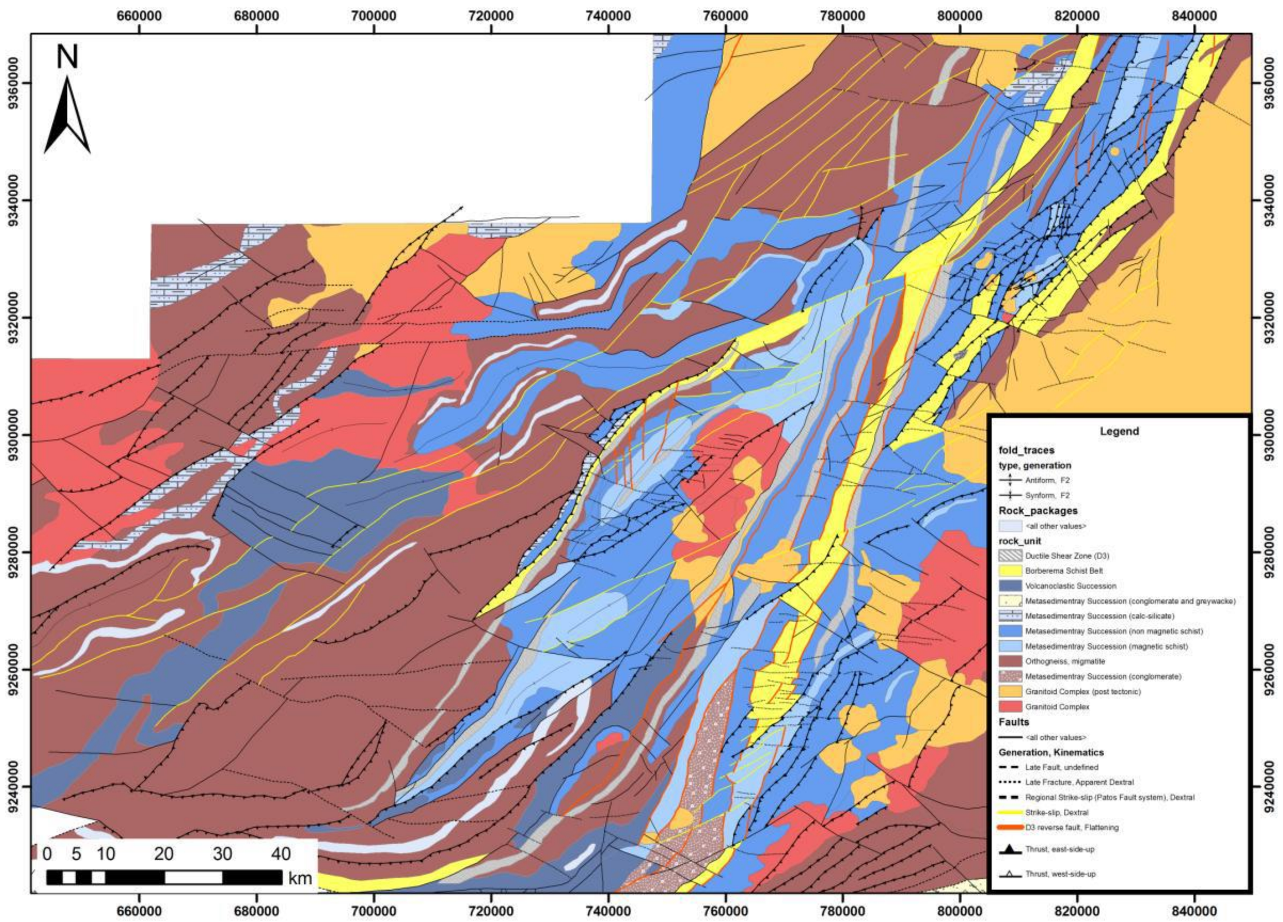


Figure 32: Geophysical reinterpretation geophysical interpretation of the Rio Grande do Norte Domain and Seridó Fold Belt, showing distribution of major rock packages and the major structural elements (Stewart, 2011).

A central belt coincides with the Seridó Fold Belt (Van Schmus et al., 2011) and is characterised by interleaving belts of schist, volcanoclastic rocks, and minor conglomeratic belts, orthogneiss and calc-silicate packages. These packages are repeated by regional D2 folds and thrust repetitions to give complex rock distributions (Figure 33). The far eastern part of the belt is a repetition of the Rio Grande do Norte domain of Van Schmus et al., (2011), and is characterised by higher map abundance of granitoid complexes and orthogneiss and along their margins (Figure 32).

The geophysical interpretation suggests that the rocks hosting the Borborema gold deposit are hosted in a generally non-magnetic package of rocks (Borborema Schist) that trend in a north-northeast orientation. This package of rocks is part of a larger belt of rocks located on the eastern limb of a regional, shallowly east-dipping, inclined, regional antiformal fold, interpreted to have formed during regional D2 (Stewart, 2011).

Magnetic data has insufficient resolution to map out individual units and is only effect at mapping broad packages of rocks and as a result no early deformation associated with D1 has been mapped.

The eastern part of the interpreted map is dominated by northeast to north-northeast trending faults that are interpreted as regional thrusts and reverse faults that duplicate rock packages and juxtapose orthogneiss packages with the psammitic and pelitic rocks of the Seridó Schist and Borborema Schist. These faults are correlated with the D2b low angle shear zones and mylonites documented in and surrounding the Borborema Mine and surrounding area (Stewart, 2011). The distributions of these structures suggest that they formed in response to regional northwest-directed tectonic transport (Figure 33).

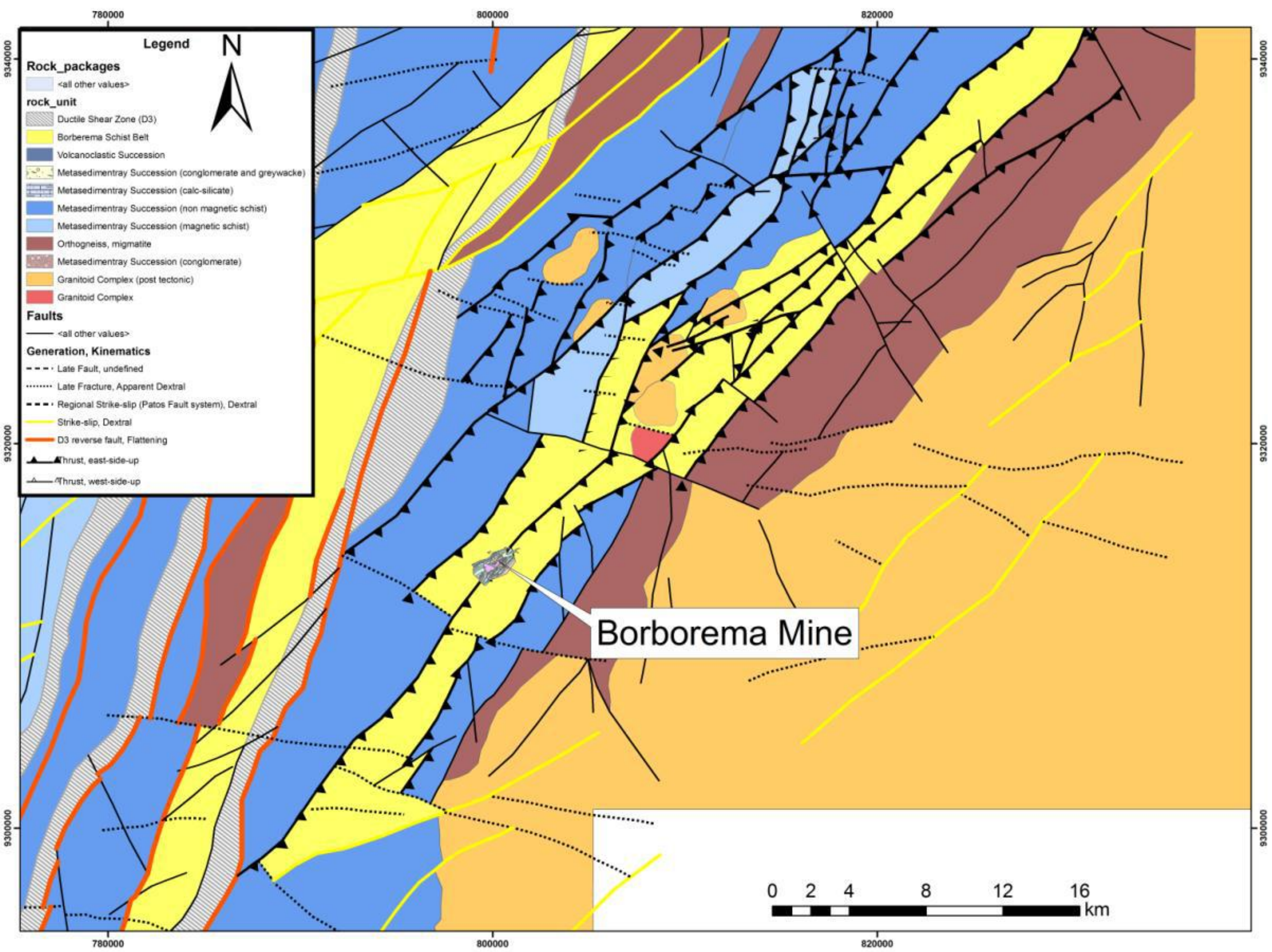


Figure 33: Geophysical interpretation of the eastern Seridó Fold Belt in the region immediately surrounding the Borborema mine (Stewart, 2011).

Several regional folds are also interpreted from the geophysical data. Fold axial traces trend in a general northeast direction parallel with the regional D2b thrust, although they have been locally modified during later deformation episodes, most likely refolding during D3. The regional map pattern suggests that the central part of the interpreted area is characterised by a regional antiformal fold that is doubly plunging (Figure 33). The fold is dismembered by later D3 and D4 shear zones and faults, suggesting they formed during D2. The Borborema Schist Belt is located on the eastern limb of this D2 antiform.

The third phase of deformation is characterised by a series of wide shear zones identified during regional traverses and from offsets in geophysical data. These shear zones are steeply dipping and trend in a north to north-northeast orientation. Stewart (2011) interpreted these structures as a zone of flattening strain. Regional data suggest that there may be a component of dextral apparent offset, although both sinistral and dextral kinematics are locally identified in the geophysical data. Small faults that are parallel with these shear zones are also interpreted to belong to this generation. D3 shear zones dismember the Borborema Belt. D3 shear zones are more prevalent in the central part of the belt (Figure 36 and Figure 37) and have duplicated and dismembered major orthogneiss and Seridó Schist packages. D3 shear zones are not identified in the mine area.

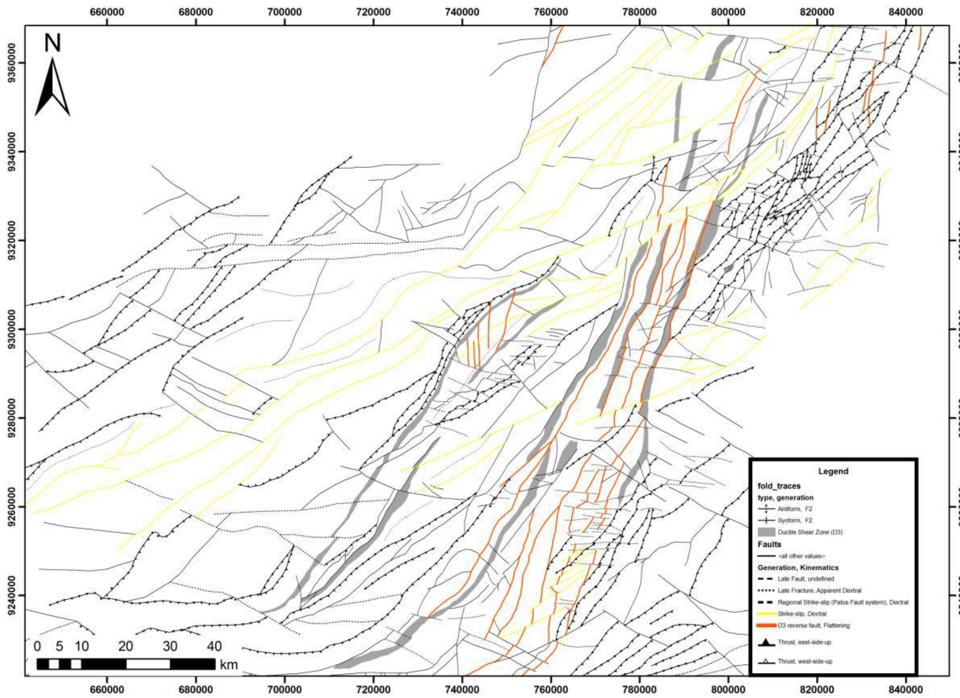


Figure 34: Distribution of major faults delineated by their generations. The thick grey package represents a zone of distributed D3 shear zones interpreted with the aid of regional traverses (Stewart, 2011).

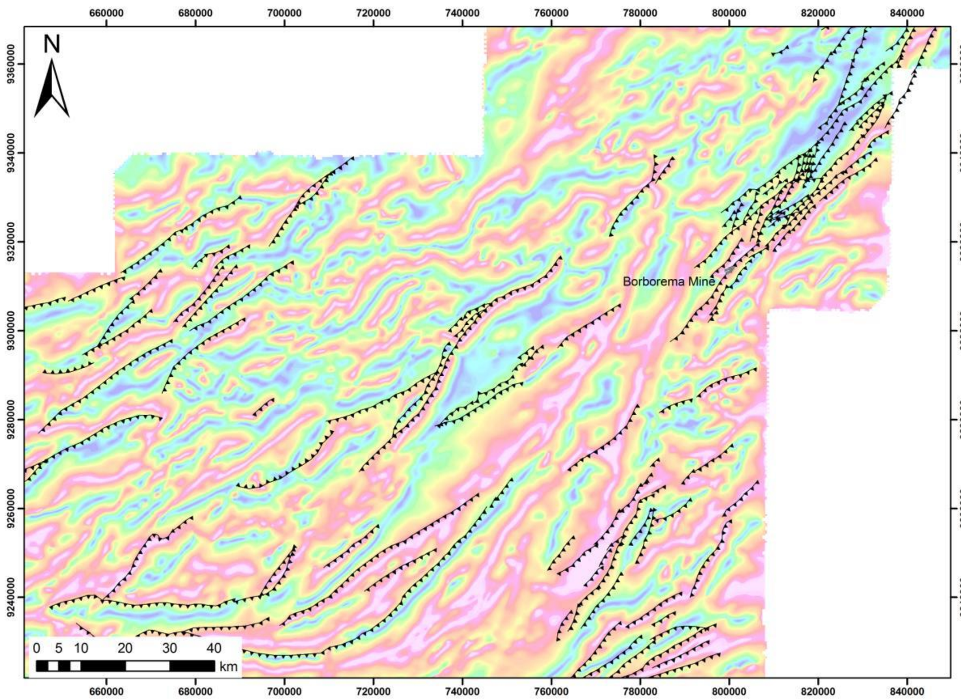


Figure 35: Geophysical interpretation of the Rio Grande do Norte Domain and Seridó Fold Belt showing distribution of major D2 thrust faults, A high density of D2 thrusts occur north of the Borborema Fault and to the immediate north of the Patos Fault Zone. (Stewart, 2011).

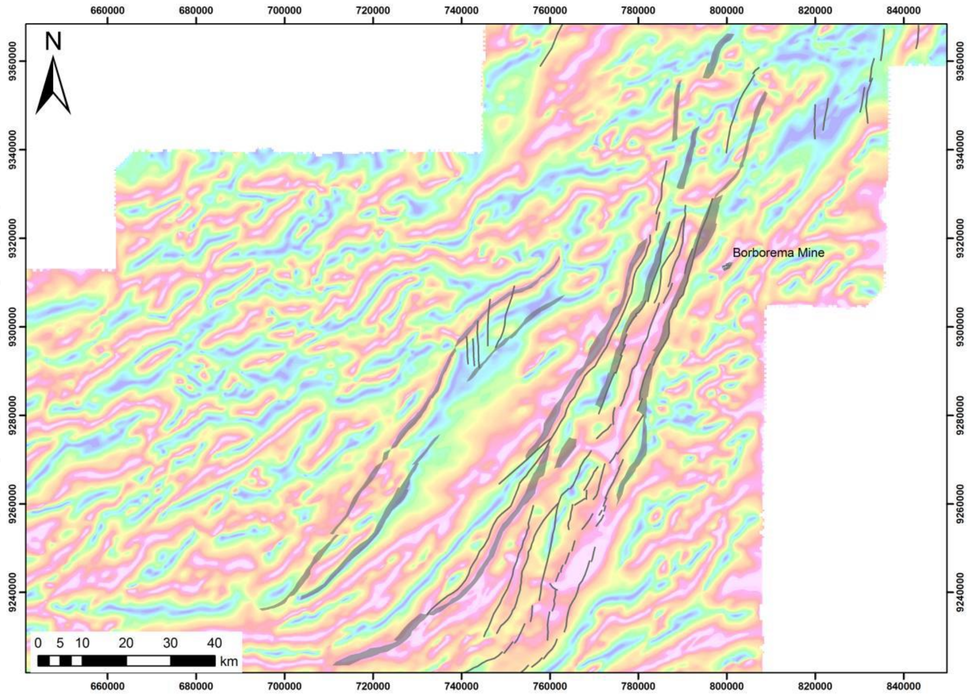


Figure 36: Geophysical interpretation of the Rio Grande do Norte Domain and Seridó Fold Belt showing distribution of major D3 faults (Stewart, 2011).

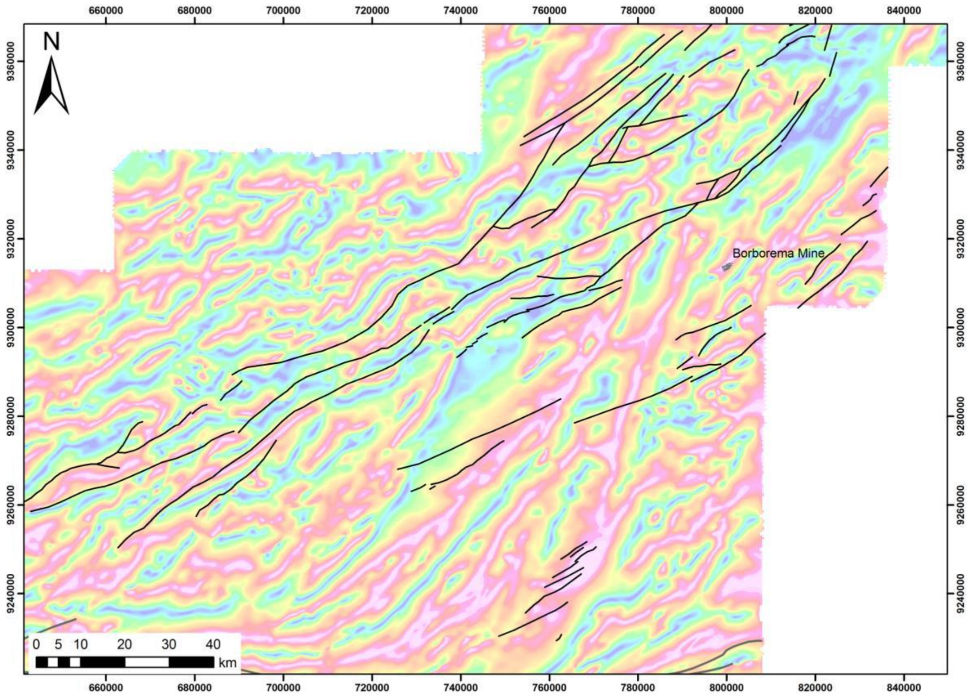


Figure 37: Geophysical interpretation of the Rio Grande do Norte Domain and Seridó Fold Belt showing distribution of major dextral D3b faults. These faults truncate D3 faults but are overprinted by D4 faults (Stewart, 2011).

Stewart (2011) reported several structural implications for mineralisation as summarised below:

- The presence of D2 shear zones within the Borborema Project area appears to be a fundamental controlling factor on the localization of gold. The mapping demonstrates that there is potential for identifying these structures at the local scale, as these structures have been mapped at the regional scale (Araujo et al., 2004). Thus, if these shear zones can be correlated to a regional structural pattern; this will be a powerful tool for targeting further exploration, provided that high-resolution data can establish some contrast between the early shear zones and the surrounding schists.

- Structures that appear at a local scale that are relevant to identifying D2 deformation in outcrop and drill holes include shallowly-dipping mylonite; shear-sense indicators within the shallowly-dipping fabric; apparent dextral shear sense related to the growth of high-grade metamorphic minerals such as cordierite; the localization of D1 leucosomes, which appeared to show a degree of conformity at the large scale with the position of D2 shearing.

Based on this observation three priority areas were identified by Stewart (2011) for further geophysical exploration (Figure 38):

Priority area 1: This area has all structural elements as it covers the mine and therefore it will be possible to constrain the magnetic response of the mine. This area also has a high density of D2 thrust faults and is located near the boundary between the Seridó Fold Belt and the Rio Grande do Norte Domain. Priority area 1 also has a significant component of interpreted Borberema Schist.

Priority area 2: Is located to the south of Priority area 1 and has many of the structural elements as Priority area 1. This area is also located near the boundary between the eastern Seridó Fold Belt and orthogneissic rocks and granitoid complexes of the Rio Grande do Norte Domain. The major issue is that this domain does not overlap with the deposit area and thus aeromagnetic characterisation of the mine will not be achieved. This domain also contains some interpreted Borborema Schist.

Priority area 3: This domain is located to the west of Priority area 1 and has several of the structural characteristics. It is located in the western Seridó Fold Belt and the orthogneissic rocks and granitoid complexes of the Rio Grande do Norte Domain. This area does not cover the deposit area and therefore aeromagnetic characterisation of the mine will not be achieved. This area also has Borborema Schist.

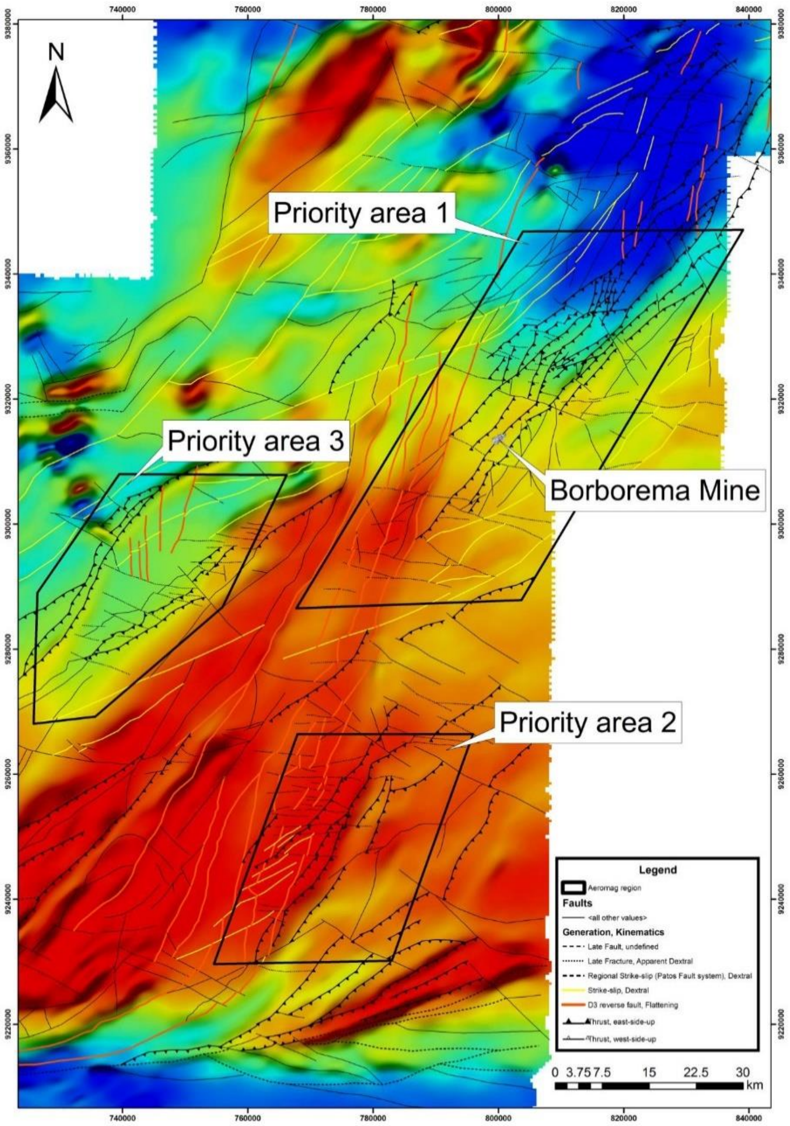


Figure 38: Proposed areas for collection of new high-resolution magnetic data. (Stewart, 2011).

9.3 EXPLORATION BY AURA MINERALS

9.3.1 GEOPHYSICAL MODELING

At the request of Aura, a 3-D magnetic modeling over the Borborema Project was performed by Revo Geoscience (a consulting geophysical company from Belo Horizonte, Brazil) in November 2022. The modeling was done based on public aeromagnetic and radiometric surveys flown between 2007 and 2009 by Brazilian Geological Survey (CPRM).

The modeling areas selected by Aura are located within these surveys approximately 170 km away from Natal, Rio Grande do Norte State, Brazil. The areas are regional with a block scale of 100 x 100 km and a deposit scale with a block scale of 18 x 20 km (Figure 39).

The main goal of the modeling is quantifying the depths and geometries of the magnetics sources and support the interpretation of the regional structural framework.

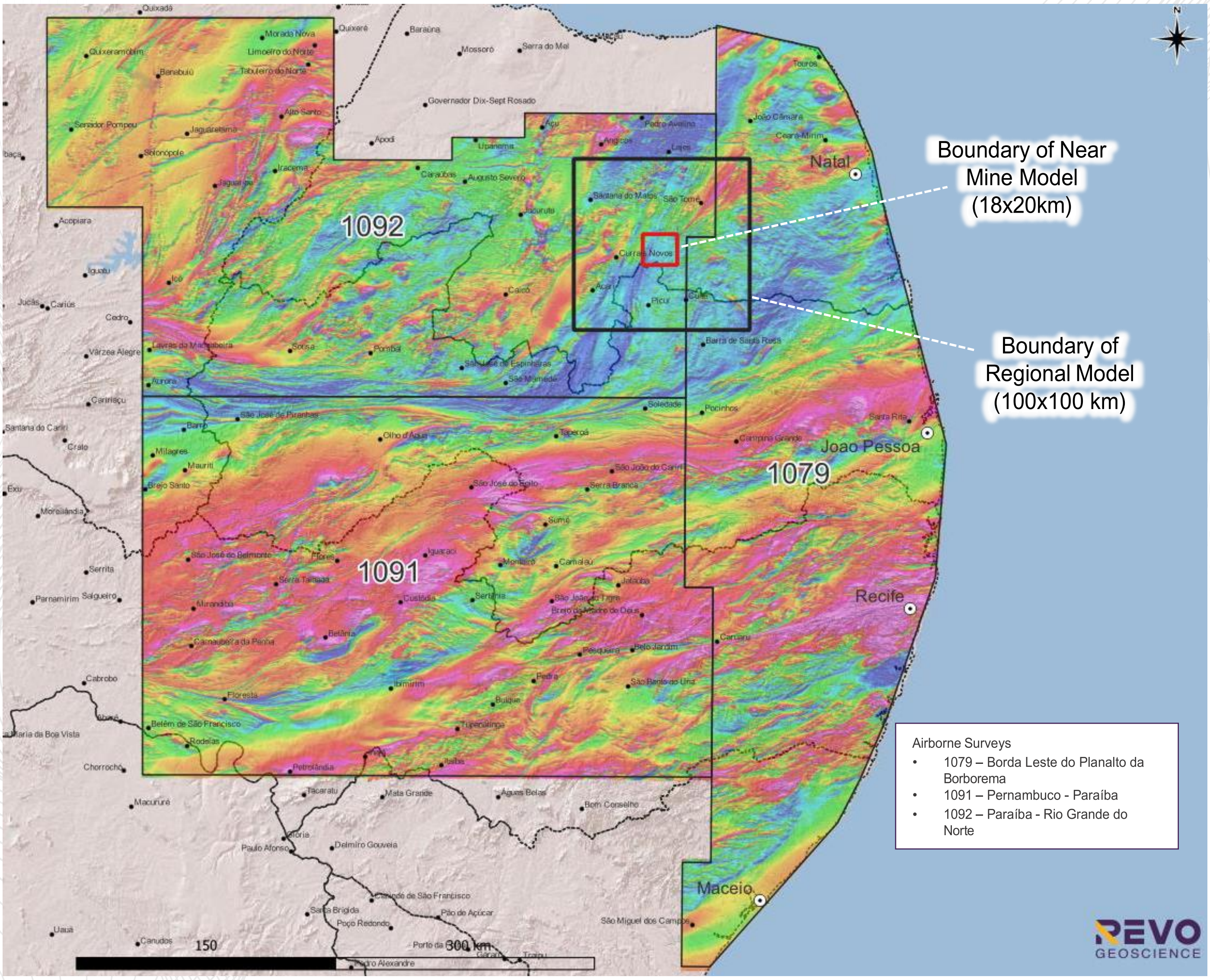


Figure 39: Total field aeromagnetic data showing the boundaries of the areas selected for 3-D inversion.

The inversion models are produced using MVI susceptibility solids or voxels in MVI-Si units for both regional and deposit scale blocks. MVI susceptibility at elevation slices at 0m, 40m, 200m, 400m, 600m, 1,000m, 2,000m, 3,000m, 4,000m, 5,000m, 7,500m and 10,000m in Geosoft and GeoTiff formats.

Iso-surfaces of the MVI susceptibility extracted from the 3-D voxel at 0.001SI, 0.003SI, 0.005SI, 0.007SI and 0.009SI. These are in 3-D DXF and Geosoft formats.

The results of this modeling are shown in Figure 40 and Figure 41 for regional and deposit scales, respectively.

The results of this modeling are preliminary. Aura intends to carry out drone-base and ground geophysical surveys over the target areas near the mine and on a regional scale. This will provide more comprehensive coverage to make more informed conclusions from previous geophysical surveys and generate some targets for drilling.

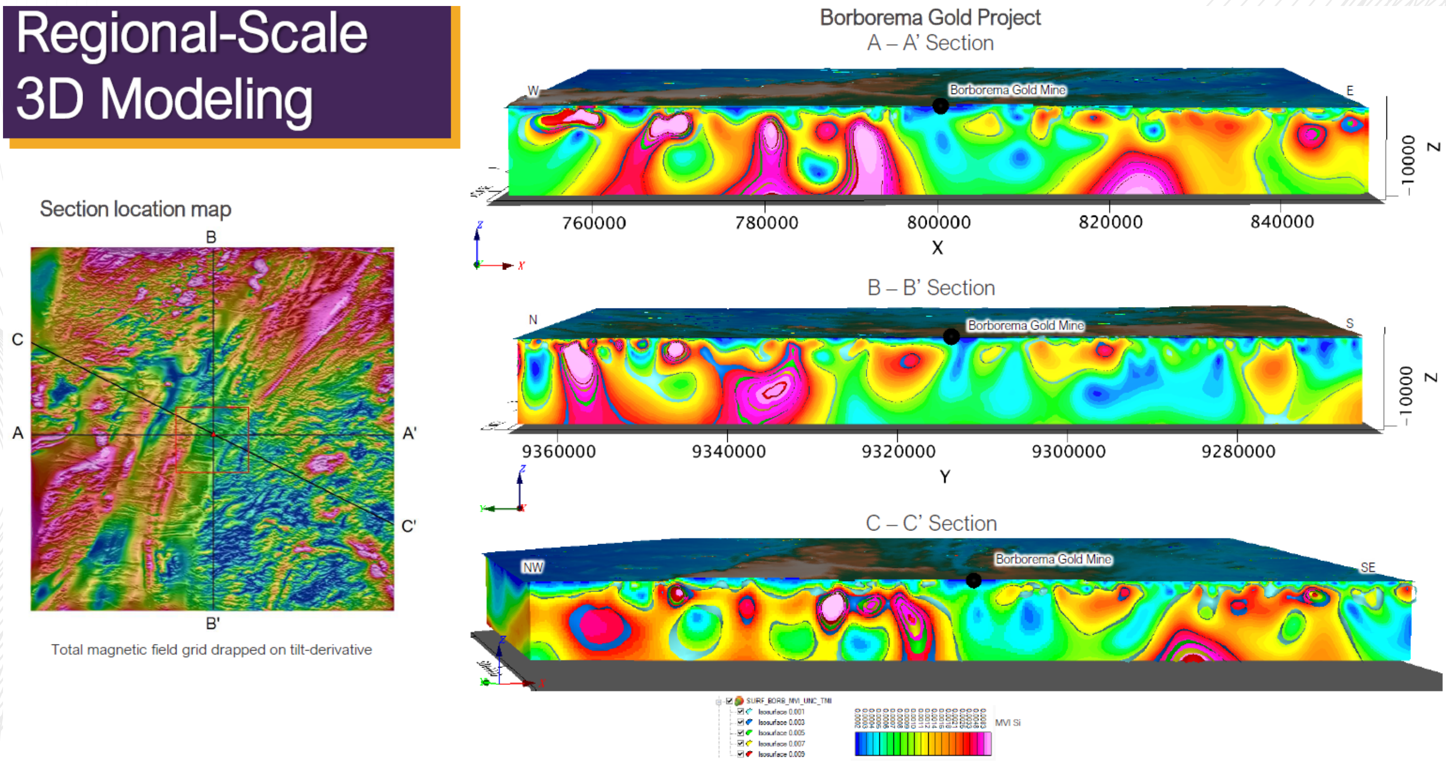


Figure 40: Magnetic inversion models in regional scale.

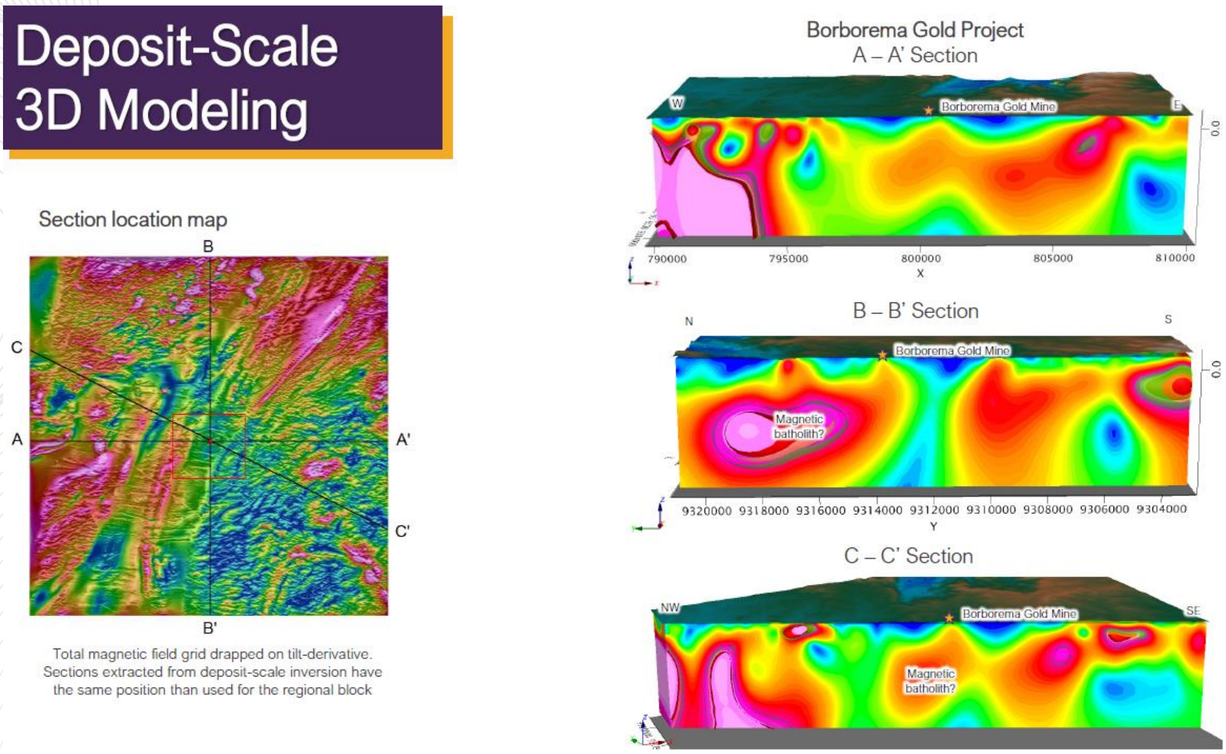


Figure 41: Magnetic inversion models in deposit scale.

10 DRILLING

Multiple phases of drilling have been completed by different companies broadly grouped as historical (Figure 42) (drilled prior to Crusader) and the more recently drilling programs managed by Crusader and Big River Gold.

10.1 HISTORICAL DRILLING

Historical drilling on the Borborema Gold Project has been completed in various campaigns since 1979 by several companies including Xapetuba, JICA, Santa Elina and Caraiba. Table 22 shows the statistics of these different drilling campaigns and Figure 42 shows the locations of these historical drill holes.

Table 22: Historical drilling statistics in Borborema Project.

		DIAMOND DRILLING		REVERSE CIRCULATION		TOTAL	
Company	Year	Holes	Metres	Holes	Metres	Holes	Metres
Xapetuba	1984 - 1990	13	264	198	4,545	211	4,809
JICA	1991	2	400			2	400
Santa Elina	1995	15	1,185			15	1,185
Caraiba	2007	75	10,528			75	10,528
Total		**105**	**12,377**	**198**	**4,545**	**303**	**16,922**

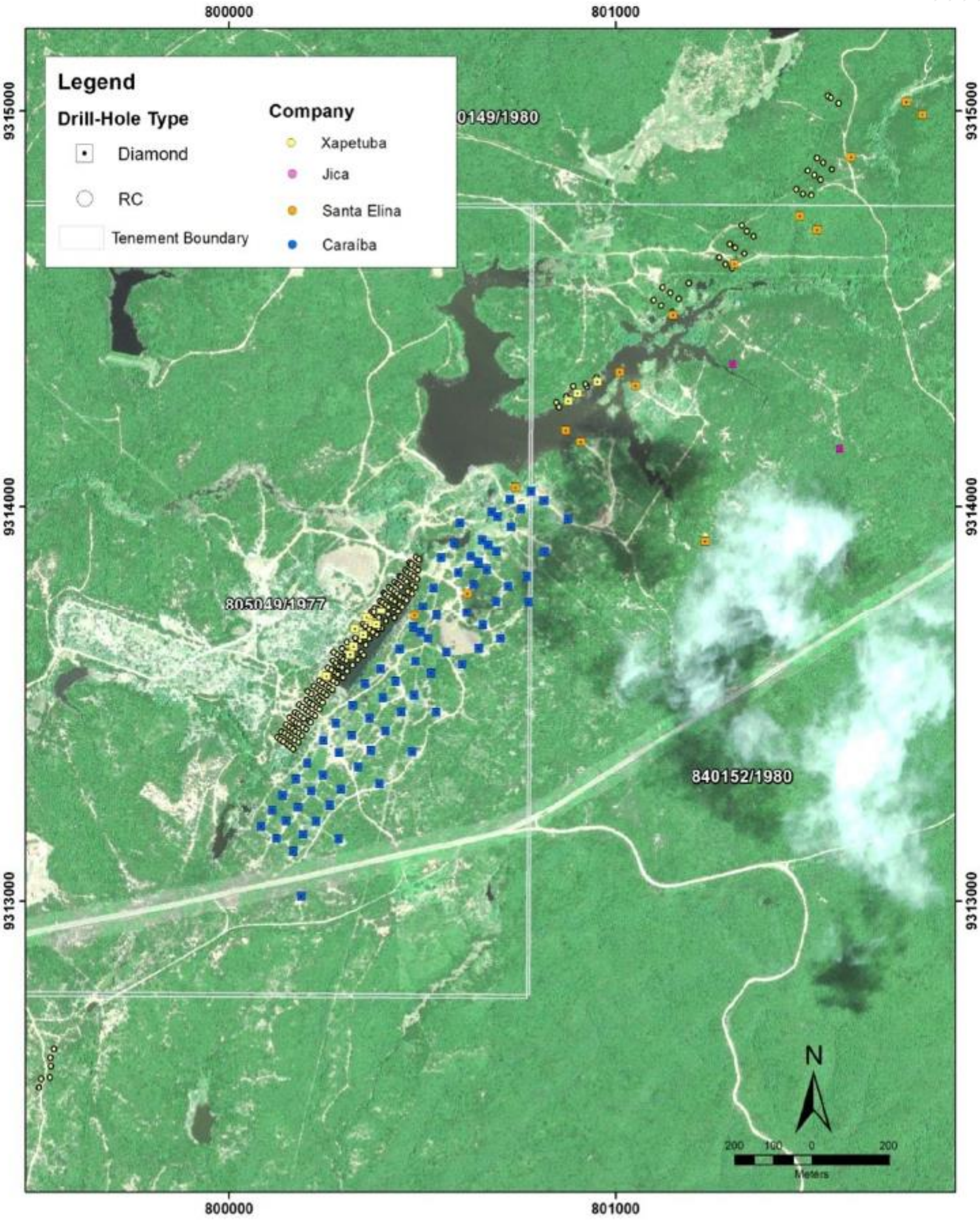


Figure 42: Historic drill hole locations at Borborema Project.

The diamond drilling was completed by conventional and wireline techniques using HQ and NQ diameter core except for the JICA drilling which used AX diameter core. From these drilling campaigns, drill holes collars related to Itaperiba and JICA were not identified in the field by Crusader geologists. Therefore, these drill holes were not used in past and current Mineral Resource estimations. Xapetuba drill holes are mainly drilled in areas of historical production and the pit, therefore, most of the collars have been mined out. These drill holes, although located inside the historical pit and partially mined out, were drilled in close spacing and were used by SRK for the current, 2023 Mineral Resource Estimate.

Between August and November 1995, Santa Elina completed 15 diamond drill holes of HQ diameter totalling 1,185.26 metres. The core was logged, with half-core sampled for gold analyses by commercial labs using gravimetric (468 samples) and fire assay (626 samples) methods. Previous Mineral Resource Estimates by Crusader (Big River) did not utilise these 15 drill-holes as their locations had not been verified in the field. However, 13 of the 15 collars were located by Crusader (Big River) and their positions surveyed with a DGPS unit to an accuracy of greater than 5cm. No down-hole surveys were used for the Santa Elina drill-holes but given that the drill-holes were all relatively shallow (majority < 100 metres deep) this is not a major issue. Since the quality of the Santa Elina data was consistent with industry-accepted standards, Crusader decided to use the data from these drill-holes in the July 2012 Mineral Resources Estimate for the Borborema Project. SRK also utilized these holes in the current, 2023 Mineral Resource estimation presented in this report.

In 2007, whilst exercising an exploration option over the Project, Caraiba completed a diamond drilling programme comprising 75 drill-holes totalling 10,528.47 metres, using HQ and NQ diameter drill core. The collars of these drill-holes were readily located in the field. The drill core is in core trays on the Project site. Down-hole surveys for the Caraiba diamond drill-holes at the Project were completed using a Reflex Easy-shot wellbore electronic single shot survey system and are to industry standards. The drill-holes were re-logged by the Crusader's geologists and sampled as half-core. The samples were assayed by SGS Geosol Laboratórios LTDA using conventional fire assay methods. The data quality is consistent with industry accepted standards, and hence the Crusader has used the data from these 75 drill-holes in all of their historical Mineral Resource Estimates for the Project. SRK also utilized these holes in the current, 2023 Mineral Resource Estimation presented in this report.

10.2 CRUSDAER DRILLING

Crusader began drilling at the Project in August 2010, and drilled consistently until the end of 2012, having anywhere up to two RC drill-rigs and four diamond drill-rigs on-site at one time. In 2014, Crusader drilled 1,235m in 10 diamond drill holes for purpose of a metallurgical study.

Table 23 shows the statistics from Crusader and Big River drilling programmes for the Project. The drilling was completed in various stages which can be grouped into categories discussed below and summarized in Figure 43 and Table 24.

Table 23: Crusader and Big River Drilling Statistics, Borborema Project.

		Diamond Drilling		Reverse Circulation		Total	
Company	Year	Holes	Metres	Holes	Metres	Holes	Metres
Crusader	2010 - 2014	185	41,001	723	46,026	908	87,027
Big River	2021 - 2022	13	5,141			13	5,141
Total		**198**	**46,142**	**723**	**46,026**	**921**	**92,168**

Table 24: Crusader Drilling Detailed Statistics, Borborema Project

Drilling Program	Diamond Drilling		Reverse		Auger Drilling		Rotary Air Blast		Total	
	Holes	Metres	Holes	Metres	Holes	Meters	Holes	Meters	Holes	Meters
Resource	172	39,131	380	23,794					552	62,925
Condemnation			267	13,984					267	13,984
Exploration	1	253	76	8,248					77	8,501
Geotechnical	2	382							2	382
Metallurgical	10	1,235							10	1,235

Drilling Program	Diamond Drilling		Reverse		Auger Drilling		Rotary Air Blast		Total	
	Holes	Metres	Holes	Metres	Holes	Meters	Holes	Meters	Holes	Meters
Heap Leach Piles					48	250			48	250
Grade Control							98	238	98	238
Total	**185**	**41,001**	**723**	**46,026**	**48**	**250**	**98**	**238**	**1,054**	**87,515**

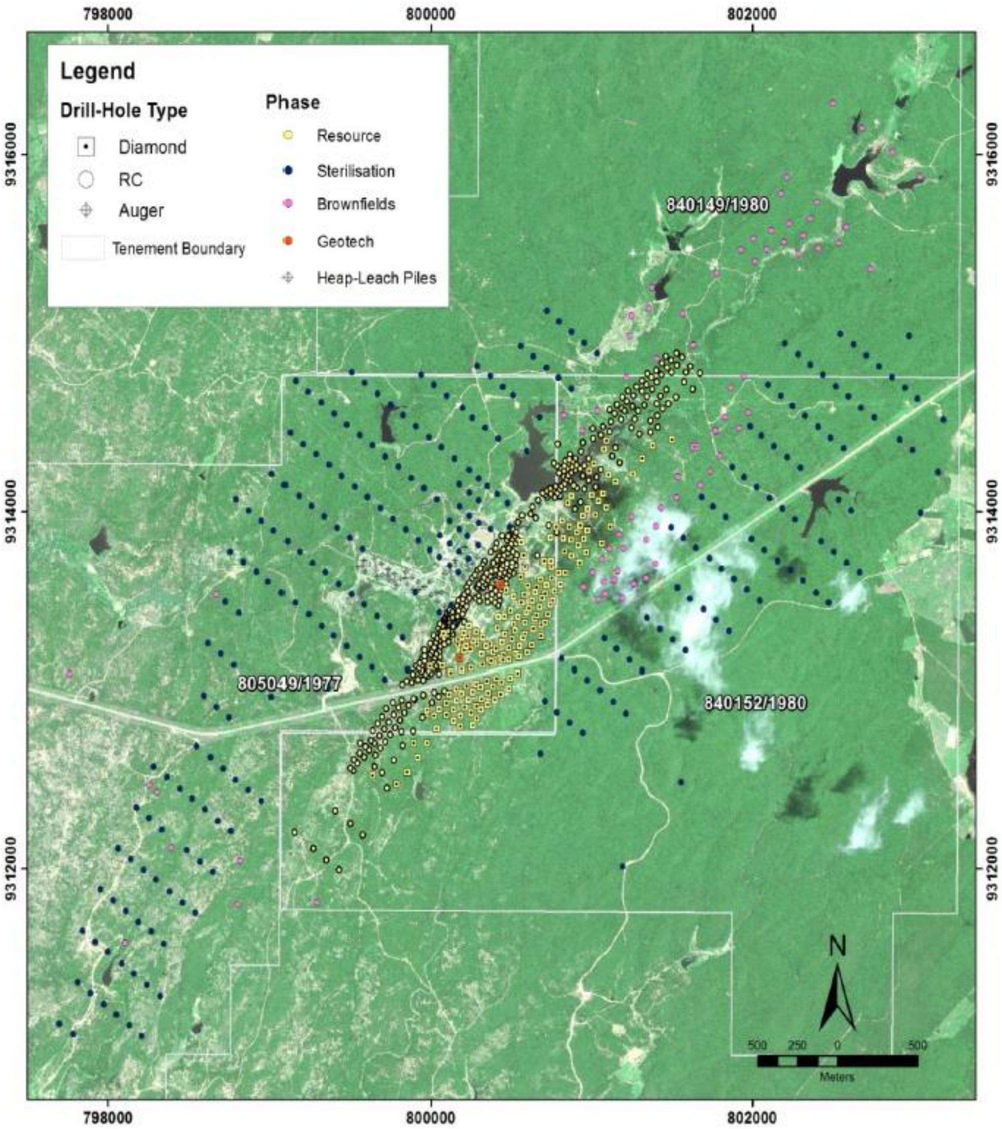


Figure 43: The Crusader's drilling at Borborema Project

- Resource building drilling

Crusader has drilled a combination of RC and diamond drill-holes (DDH) which were the principal drill-holes used in the historical Mineral Resource estimation in 2013 and were used in the current Mineral Resource Estimate. The drill-holes were cased and the drill-hole sites suitably rehabilitated. Casing consists of PVC tubes inserted down to the end of the HQ collar, generally, only a few metres in depth.

- Condemnation drilling

During 2011 and 2012, Crusader undertook a dedicated condemnation drilling programme to confirm a lack of mineralization, to sterilize the areas immediately around the Borborema deposit where permanent infrastructure, waste dumps and tailings storage facilities are planned. The programme comprised vertical RC drill-holes, generally 50 metres deep, with a drill-hole spacing of 100 metres east-west by 250 metres north-south (BLG local grid). The sterilization drill-holes were automatically sampled on metre intervals at the drill-rig. For analyses, 4 metre composites were made up from the individual metre samples. The condemnation drilling consisting of 267 drill-holes totalling 13,984 metres and has indicated that no significant mineralisation exists in the proposed footprint of the Project.

- Exploration drilling

In addition to the resource drilling and condemnation drilling, the main targets generated by the geochemical soil sampling were tested with relatively shallow RC drill-holes. The intention of this programme was two-fold: to delineate further gold mineralisation and add to the current resources; or to effectively sterilize these areas so that they could be used for future mining infrastructure. In general terms, significant intervals of gold mineralisation were encountered in several drill-holes in the Remora, Cobia, and Northern Extension targets. These intervals were modelled into geological shapes but were deemed to be uneconomic at this time, for example, too thin and/or too low-grade Further testing of these zones at depth may be warranted in the future.

- Auger drilling

Hand-held auger drills were used to complete a drilling programme of the existing heap-leach piles that were left from the Xapetuba operations. A total of 48 drill-holes totalling 249.6 metres were drilled across the three main piles at roughly 25 ‑ 30 metre spacings. The drill-holes were drilled from the surface of the pile until the true topographical surface was encountered with drill-hole depths varying from 0.3 to 16.4 metres. Each drill-hole was sampled in its entirety as one sample and assayed for gold by the ALS laboratory, fire assay with AA finish. The average grade of these holes is about 0.28 g/t Au. There was no Mineral Resource Estimate calculated for the Heap Leach Pile.

10.2.1 TYPE OF DRILLING

The diamond drilling has been completed by the wire line technique using HQ and NQ diameter core. The drilling contractor used since 2007, by Crusader and Caraiba, was Servitec Sondagem Geológica with industry standard MACH 1200 drill rigs produced by Maquesonda of Rio de Janeiro, Brazil. All diamond drill-holes were cored from surface, collaring with HQ diameter, and changing to NQ when fresh, competent rock was encountered which generally occurred within the first 15 ‑ 20 metres of the hole. Each core run was approximately 3 metres and the core recovery in un-weathered rock was excellent. On average the fresh rock recovery in each hole was 97.9% with an overall average recovery of 96.9%.

For the shallower drilling required for resource, condemnation and brownfields exploration drilling, the reverse circulation (RC) drill method was utilised by Servitec Sondagem Geológica using an Atlas Copco Explorac 50 RC drill rig. In general, the RC drill-holes have a final depth of less than 150 metres, the practical limit of the drill rig and its compressor. The RC drilling generally used 5.5” drill-bits and some were completed with 4.5” bits. The theoretical sample mass for each metre was calculated by calculating the volume of the metre drilled, depending on the bit size, and multiplying it by the density of the material that resulted from test work using drill core. The minimum recovery in the drilling contract was 85%, but in general the RC drill-holes achieved well above this, with minimal to no groundwater or voids in the area to cause major drilling problems.

At the start of the RC drilling programme, two diamond drill-holes were selected and twinned with RC drill-holes to verify the validity of RC drilling and results. The assays from the twin-holes were compared and assessed statistically. It was concluded that there were no material differences between the results of the two drilling techniques.

10.2.2 DRILLING GRID, COLLAR AND DOWN HOLE SURVEYS

The Project lies within the UTM Zone 24 South using the SAD 69 Datum which refers to the 1967 International Ellipsoid (SGR-67). The Project is centred approximately at 6.205° South and 36.285° west. During the exploration and resource building phases, Crusader established a local grid with grid north rotated 37° east of True North to match the strike trend of the mineralized zone and surrounding tectono-stratigraphic trend.

After completion of the June 2011 Mineral Resource Estimate, a surveying error was identified by qualified and experienced surveyors newly employed by Crusader. The error was related to differences between the regional government survey points and the local survey stations previously established at the Project. The relative positions and distances between the drill-hole collars at Borborema were not the issue, but as a precaution Crusader corrected the survey of the local survey stations against the government IBGE grid and resurveyed all drill-hole collar positions.

This change does not materially affect the June 2011 published, historical Mineral Resource by Crusader; however, the conversion between UTM24S SAD69 and the local grid was modified. To avoid any potential for confusion, the new local grid is referred to as the BLG (Borborema Local Grid).

All its drill-hole collars (Figure 44) were surveyed using a differential GPS (DGPS) by Crusader's surveying team (Figure 45). The collar positions for all located historical drill holes, e.g., Caraiba drill-holes, were also re-surveyed by the Company. The drill holes were located using a DGPS to an accuracy of greater than 5 cm. Crusader has also compiled a surface topography file with similar accuracy.

Most of the drilling and site work has been completed using the local grid (BLG). Therefore, to improve both the geological interpretation process and block model generation, it was decided to utilise the local grid for the Borborema Mineral Resource model. The conversion to local grid is a simple two-point grid transformation from Universal Transverse Mercator Zone 24 South (UTM 24S) and SAD69 datum to BLG Local Grid using the two coordinates listed in Table 25. The elevation used is the same for both grid systems.

Down-hole surveys for the Company diamond drill holes on the Project were completed using a Devico Peewee wellbore electronic single shot survey system. The instrument works the same as a Reflex Easy-Shot unit and is to industry standards.

Table 25: Grid Transformation coordinates (UTMS24 SAD69 to Local Grid).

Point	UTMS24 SAD69 (IBGE)		BORBOREMA LOCAL GRID (BLG)	
	Easting	Northing	Easting	Northing
1	800,316.15	9,314,144.89	9,568.75	20,977.21
2	799,524.11	9,313,147.62	9,536.39	19,704.90

Figure 44: Examples of drill hole collar markers at Borborema – Caraiba and Crusader drilling.

Figure 45: Crusader's survey base station for differential GPS (2012).

10.3 BIG RIVER DRILLING

Big River drilled 5,141m in 13 holes in late 2021 and early 2022 to investigate the down dip extension of the ore body. The drilling target was the central zone of the mineralized ore body (Figure 46). All holes were drilled 60° westward (Grid Datum: UTM24S_SAD69_IBGE).

All holes intercepted elevated gold grades in zones of mineralization 100 12m down dip to the known mineralized ore body and along 1.2 km of strike. Drilling of the central zone has confirmed thick zones of significantly high grades over 300m of strike extending below the depth of previous drilling. Figure 47 shows the location of these holes in longitudinal section (Big River Press Release, July 26, 2022), and Figure 48 shows a representative vertical cross-section from this drilling.

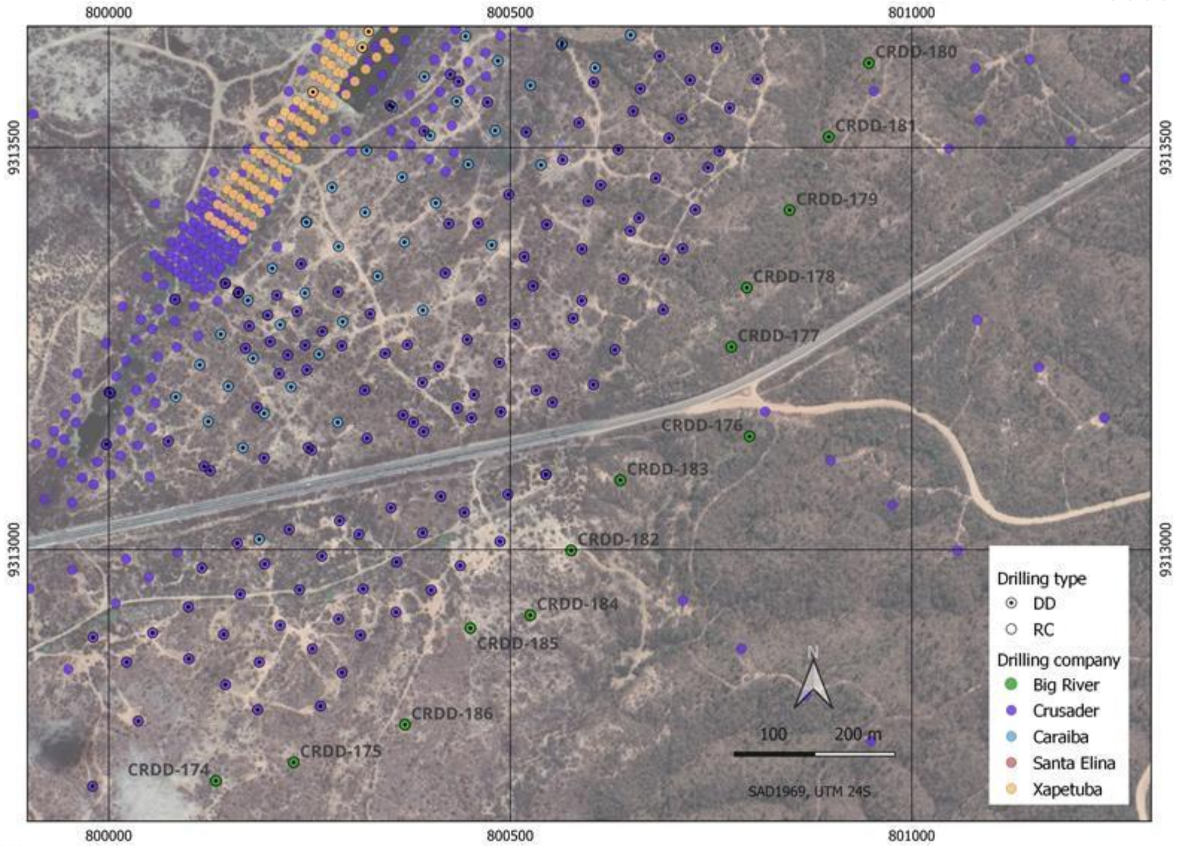


Figure 46: Plan view showing the location of diamond drill hole collars for all drilling campaigns at Borborema Project, Big River`s 2021-2022 drill plan are shown in green.

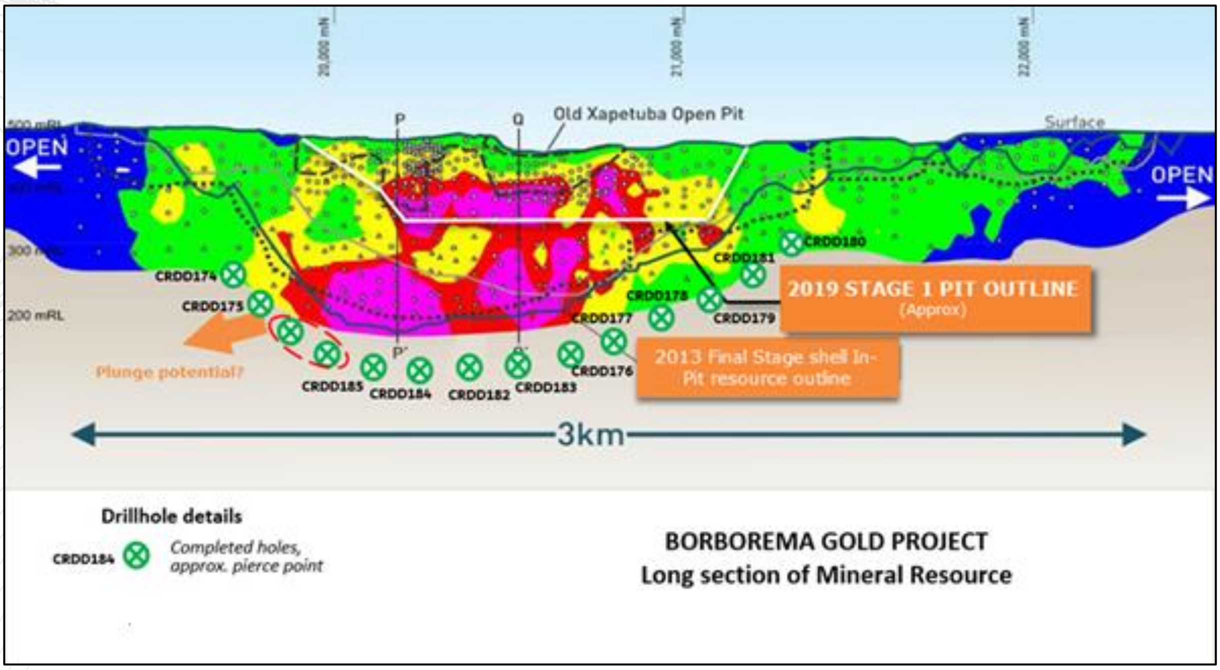


Figure 47: Long section of Borborema Mineral Resource showing Big River`s drill targets (green circles) and previous pit outlines (background lines) (adopted from Big River`s Press Release- July 26, 2022).

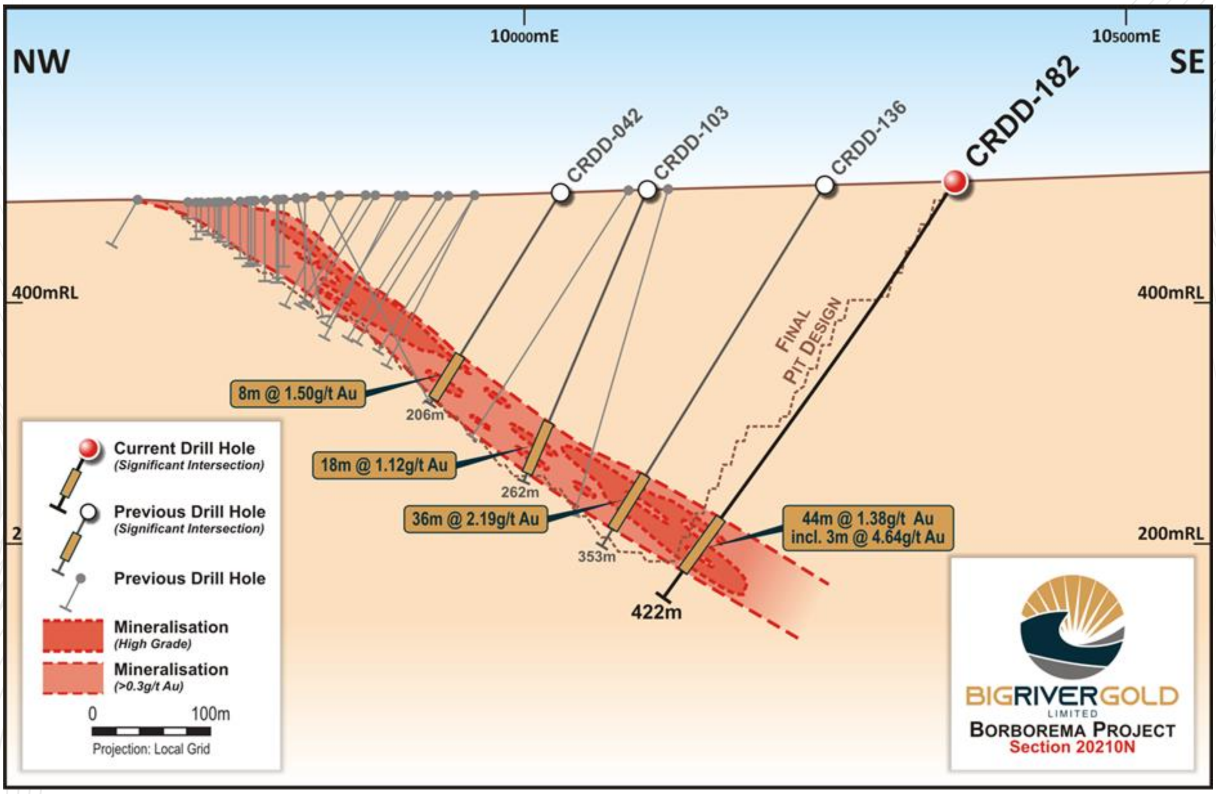


Figure 48: Typical vertical Cross-section (20210N) showing diamond drill hole CRDD-182 (adopted from Big River`s Press Release- July 26, 2022).

All samples from the 2021-2022 drill campaign were analyzed in SGS GEOSOL Laboratórios LTDA (Rodovia MG010, Km 24,5, bairro Angicos, CEP: 33206-240. Vespasiano/MG, Brazil) and the significant assay intercept results are listed in Table 26.

Table 26: Big River significant intercepts from 2021-2022 drill campaign.

Hole ID	Total depth	From (m)	To (m)	Apparent width (m)	Au g/t
CRDD-174	334.35	248.00	268.00	20.00	1.21
CRDD-175	353.05	287.00	321.00	34.00	0.95
CRDD-176	448.85	401.00	432.00	31.00	1.38
CRDD-177	435.30	362.00	380.00	18.00	1.10
CRDD-178	394.50	320.00	357.00	37.00	1.11
CRDD-179	382.50	294.00	334.00	40.00	1.25
CRDD-180	385.25	246.00	286.00	40.00	0.74
CRDD-181	343.90	260.00	297.00	37.00	0.71
CRDD-182	421.42	351.00	395.00	44.00	1.38
CRDD-183	410.10	326.00	386.00	60.00	0.78
CRDD-184	421.30	345.00	388.00	43.00	3.27
CRDD-185	400.25	336.00	377.00	41.00	1.58
CRDD-186	410.00	334.00	371.00	37.00	0.65

11 SAMPLE PREPARATION, ANALYSIS AND SECURITY

To date Aura has completed no drilling at the Borborema Project. There is no information available for sample preparation and QA/QC measures for drilling and sampling prior to Crusader and Big River Gold. This section is partly taken from the Big River/Cascar Definitive Feasibility study (2019) report and summarizes the sample preparation, analyses and security practices of Cascar/ Big River on the Project. The Qualified Person has also reviewed the Cascar monthly quality assurance/ quality control (QA/QC) reports.

11.1 CORE HANDLING, LOGGING, AND SAMPLING PROTOCOLS

The drilling contractor (Servitec for Crusader) was responsible for transporting and delivering core boxes to the Borborema core shed. Drill cores and RC samples are stored in the core sheds at the Borborema site as shown below in Figure 49 and Figure 50.

After receiving the core boxes, the headers (labels) are checked for the purpose of the depth, progress, and core recovery, length or meterage, drilled by the drill rig. When carrying out measurements of drill cores, the boxes are marked with the number of the box, the beginning and end of the length of the box and drill hole ID. At the end of measuring and closing the boxes, the information was passed to the drill contractor to make the individual front panels for each box. After the measurement was completed, photographs of the dry and wet core boxes are taken.

Logging of diamond core and RC chips was detailed, identifying main mineral assemblages (and hence basic rock types), colour alteration, structure/fabric, quartz veining and percentage, and sulphide assemblages and abundance.

Geological logging is completed using standard nomenclature and is to be considered high quality. Basic geotechnical logging (RQD, etc.) was completed for all diamond holes, and detailed structural logs were completed for several holes. Core orientation was limited to selected holes, and generally only through the zone of the mineralized envelope.

Discontinuities (mechanical or natural breakage), foliation of layers and veins is determined by marking with crayons and with the help of a REFLEX device (IQ-LOGGER). The measurements were done by aligning the device in the orientation which was provided by the drilling contractor to indicate the actual orientation of the core. Data was transferred to the REFLEX software program and exported as a csv file. Rock Quality Index (RQD), is calculated at each drilled interval, adding all the cores in the interval, with a size greater than 10 cm and converted into percent value (Figure 51).

Prior to the Cascar/Crusader acquisition of the project, diamond core was selectively sampled at intervals from 0.55 metres up to 3 metres based on the interpreted geological contacts. Longer samples were taken where lithologies were not considered to be likely hosts for mineralisation. Due to subjective selection of lithological boundaries and the likelihood of open pit mining methods, Cascar sampled uniform 1 metre intervals for both RC and diamond core.

The core was cut in half lengthways with a diamond core saw. Half core was sent for assay and the remaining half core was stored at the project core shed. The vast majority of RC sample splitting was done at the rig by a splitter attached to the cyclone.

Cascar personnel then prepared plastic bags and labelled the bags with drill holes identification and information. Samples are accompanied by a worksheet for proper checking with information including hole ID, sample number and interval designation in metres. One label was inserted inside the sample bag and one attached to outside of the bag (Figure 52). Sample bags were also marked by hand in permanent ink. The sample numbers were electronically entered into the database, according to the proper sample intervals. This system then provided an electronic sample submittal form.

Figure 49: On-site drill core storage at Borborema Project.

Figure 50: Borborema core boxes in core shack.

Figure 51: IQ-LOGGER Tool for identifying marked core from oriented drill holes.

Figure 52: Sample bags prepared and ready to be shipped to the lab (Cascar, 2022).

11.2 DENSITY DETERMINATIONS

Bulk densities of geological materials encountered in drill core are required to determine mass for Mineral Resource estimation. Density data must be representative of the lithologies found in the deposit and determined on replicate samples.

Cascar had completed 36,444 bulk density samples during 2011 and 2012 drilling campaigns using the Archimedes method. This test is based on a 10 cm length of diamond core which is dried, weighed, waxed, and weighed dry and in water to determine the volume. Samples from within the oxide zone have been analysed separately from the fresh rock. The drill database provided has limited bulk density measurements for oxide samples however this represents a relatively small proportion of the deposit.

Table 27 shows the bulk density values used to populate the block model for fresh versus oxidised material in the 0.1 g/t Au envelope. These were calculated as a mean of the results falling within a 90% confidence range for the fresh and oxidised samples, which excluded those data clearly erroneously high. For the fresh material, the bulk density values for the fresh material within the mineralised zones (0.3 g/t Au) are also shown for comparison.

Table 27: Bulk density values statistics used in Mineral Resource Estimation.

Zone	No. Samples	Min.	Max.	Mean	St. Dev.	CV
Oxidised	1,806	1.440	3.410	2.650	0.174	0.066
Fresh	35,693	1.080	9.330	2.757	0.097	0.035
Fresh Mineralised	4,665	2.390	7.720	2.773	0.100	0.036

11.3 SAMPLE ASSAYING

Two Brazilian laboratories were contracted by Crusader for sample analyses: Bureau Veritas Laboratory (BV) and ALS Laboratory. In addition, check sampling was undertaken at Acme Analytical Laboratories Ltd (Acme) in Santiago, Chile and by Bureau Veritas' Ultratrace Laboratory in Perth, Western Australia. Big River used SGS GEOSOL Laboratórios LTDA (Rodovia MG010, Km 24,5, bairro Angicos, CEP: 33206-240. Vespasiano/MG.) for the 2021-2022 drilling campaign.

The analyses carried out by the four laboratories are summarised in Table 28 below.

Table 28: Laboratory analysis techniques used by Cascar.

Lab	Lab Code	Sample Digestion	Finish	Company	Main Element	Detection Limit ppm	Use
Bureau Veritas	FA001	Fire Assay	AAS	Crusader	Au	0.001	Normal
ALS	Au-AA26	Fire Assay	AAS	Crusader	Au	0.01	Normal
ACME	G6-50	Fire Assay	AAS	Crusader	Au	0.005	QC
Ultratrace	FA002	Fire Assay	ICPM	Crusader	Au	0.001	QC
SGS	FAA505	Fire Assay	AAS	Big River	Au		Normal

The entire sample preparation for Crusader 2010-2011 and 2021-2022 drilling campaigns was carried out in designated certified laboratories.

11.4 QA/QC PROGRAM

Crusader's QA/QC programme comprised submitting sample blanks, standard reference samples, sample duplicates, and inter-laboratory check samples. The approximate rate of sample submissions is summarised in Table 29.

Table 29: Sample submission rate by Cascar.

Sample Type	Frequency
Blanks	1/20
Reference Material	1/20
Duplicates	1/25 (RC only)
Interlab Check Assays	1/10

11.4.1 CRUSADER DRILLING QA/QC ANALYSIS-BUREAU VERITAS ASSAY DATA (2011-2012)

Between August 2010 and February 2011, the Bureau Veritas Laboratory in Brazil was used for sample assaying.

Blanks

Crusader submitted blanks (pure quartz) inserted every 20 samples. Laboratory blanks consist of fused flux only. The Bureau Veritas laboratory also randomly inserted pure quartz samples at the crushing stage. Blanks were used to test for contamination during the sample preparation process. Internal and laboratory blanks both show signs of contamination (Figure 53 and Figure 54).

The quartz wash samples have improved over time, but still report values above detection (Figure 55).

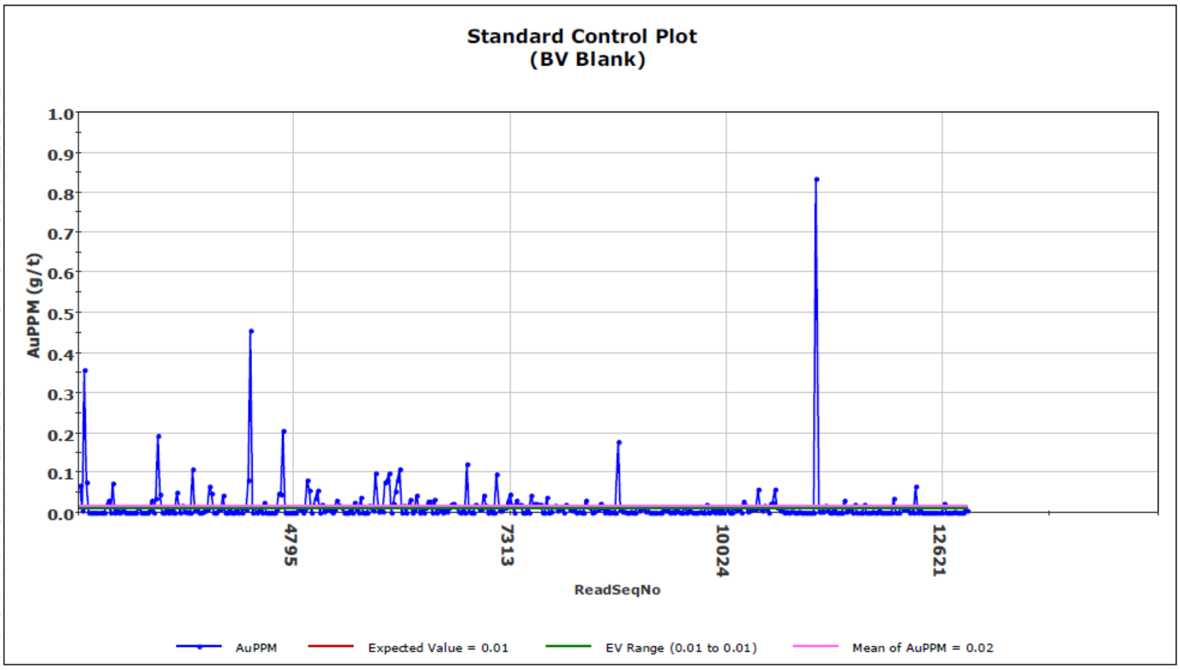


Figure 53: Field blanks performance (Crusader, 2012).

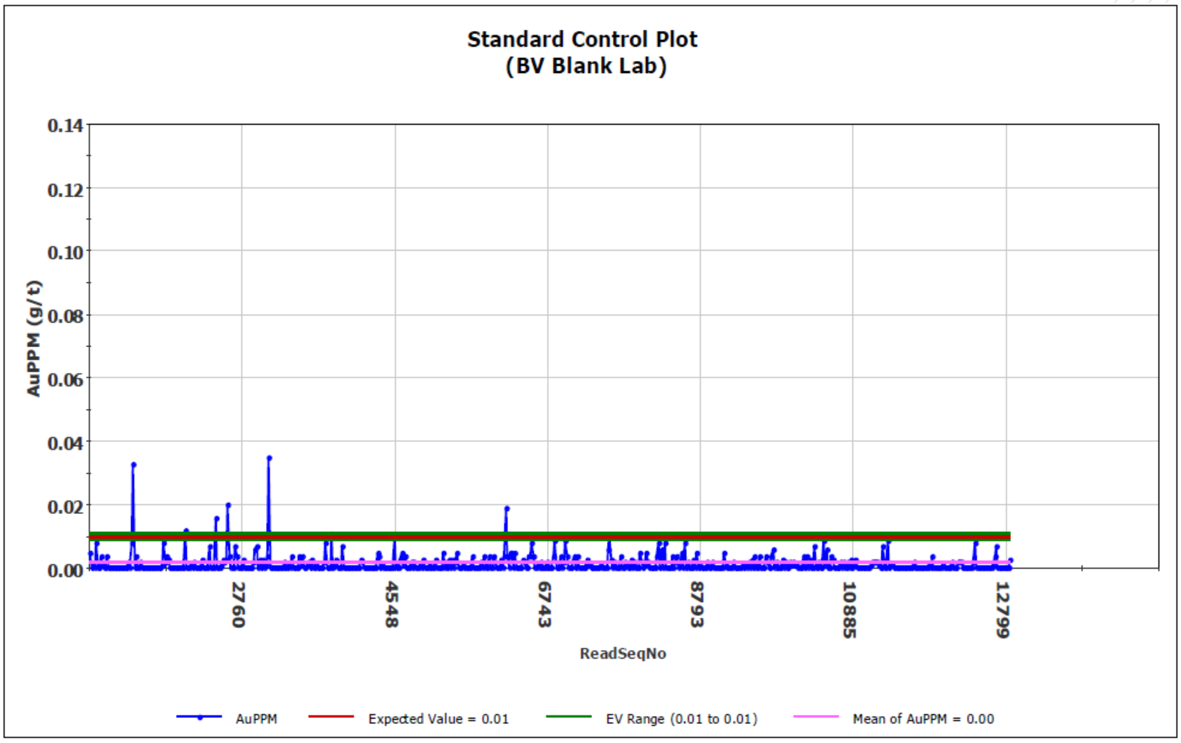


Figure 54: Lab blanks performance (Crusader,2012).

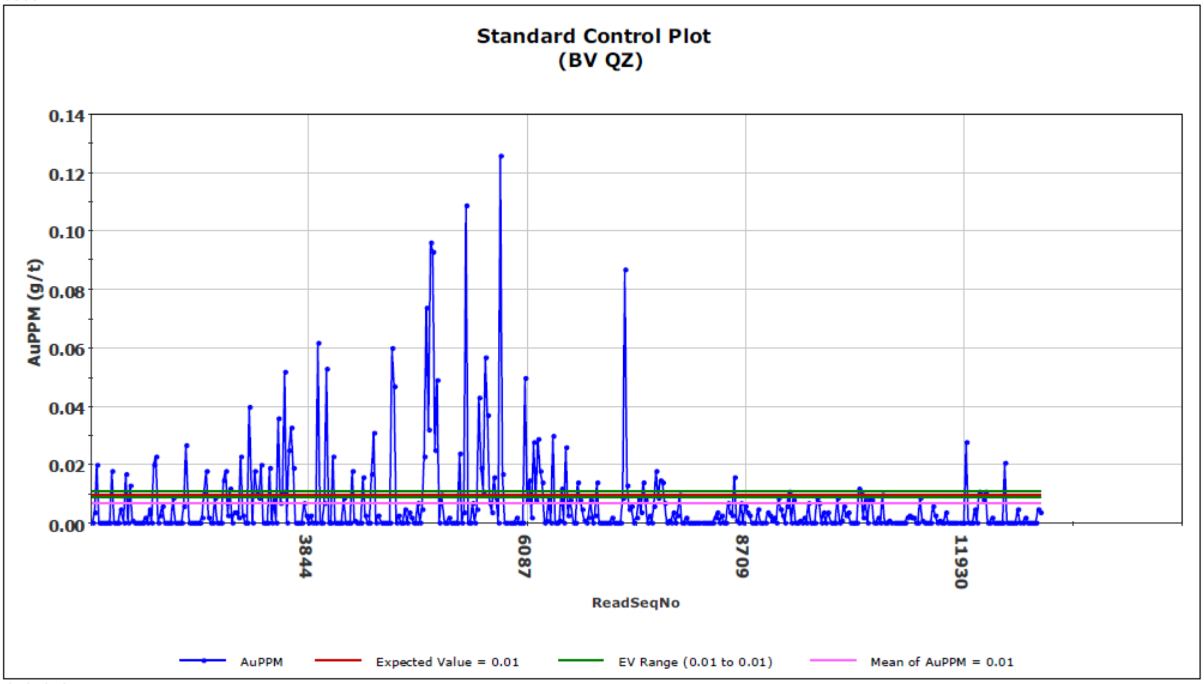


Figure 55: Lab blanks (quartz wash) performance (Crusader, 2012).

Standards

Certified Reference samples were also inserted every 20 samples to check the accuracy of the assay laboratory. The reference samples were labelled CAS1 through to CAS6 (Table 30). The first three were sourced from Geostats Pty Ltd and are as follows: G909-6, G908-7, and G907-7. The standards CAS4 to CAS6 were sourced from CDN Resource Laboratory in Canada but were only used for batches 1 to 7. These are CDN-GS-2E, CDN-GS-P8, and CDN-GS-5E respectively.

The CAS standards CAS1 (3% bias low and 30% of data in tolerance), CAS2 (11% bias low and 47% of data in tolerance), CAS3 (12% bias low and 39% of data in tolerance) all show results falling below the expected mean, and also lower than 2 standard deviations from that mean.

Table 30: Table of field and laboratory (BV) standards.

STD ID	Mean Au ppm	Exp. Value	Exp. Range	
CAS1	0.55	0.57	0.513	0.627
CAS2	4.25	4.82	4.338	5.302
CAS3	1.35	1.54	1.386	1.694
CAS4	1.4	1.52	1.368	1.672
CAS5	n/a	0.78	0.702	0.858
CAS6	4.91	4.83	4.347	5.313
OxF65	0.81	0.81	0.725	0.886
OxG83	0.99	1.00	0.902	1.102
Sj53	2.58	2.64	2.373	2.901
OxG60	1.01	1.02	0.92	1.13

Field Duplicates

Field duplicates are duplicate samples sent to the laboratory as original samples to test precision and repeatability of the sampling process. Field duplicates were taken at a rate of 1 in every 25 samples for the RC drilling only. The field duplicates taken from RC chips were riffle split. Field duplicates show significant scatter at all grade ranges. Only 43 % of the data are within =/-10 % precision limits (Figure 56).

Duplicate Pulp Samples

Duplicate Pulp Samples are duplicates generated after pulverisation of the coarse sample and during the stage of weighing before fusion with the flux. They are routinely inserted to the sample stream as part of the laboratory's internal QC. The Bureas Veritas repeat pulp samples are given a suffix of DFA, ALS samples given the prefix Ch and Ultratrace the suffix RPT.

Overall, the relative accuracy, measured in terms of mean half relative difference (HRD), is acceptable with a mean HRD of 1.67% returned. 61% of data is within +/- 10% precision limits (Figure 57).

Duplicate Coarse Rejects

Duplicate Coarse rejects are duplicates split after the crushing stage. Bureau Veritas refers to these samples as splits with the suffix of DUP. The duplicate core samples submitted to ALS are all coarse crush duplicates. 309 coarse reject duplicates (or laboratory splits) were undertaken by Bureau Veritas. These show significant scatter (r=0.91), but no relative bias (HRD = -0.33). 58% of data are within 10% precision (Figure 58).

	AlphaAuPPM	DupAuPPM	Units			Result
No. Pairs:	186	186			Pearson CC:	0.67
Minimum:	0.01	0.01	g/t		Spearman CC:	0.90
Maximum:	8.53	6.44	g/t		Mean HARD:	18.42
Mean:	0.41	0.38	g/t		Median HARD:	12.31
Median	0.10	0.11	g/t			
Std. Deviation:	1.08	0.78	g/t		Mean HRD:	-3.30
Coefficient of Variation:	2.59	2.05			Median HRD	-3.80

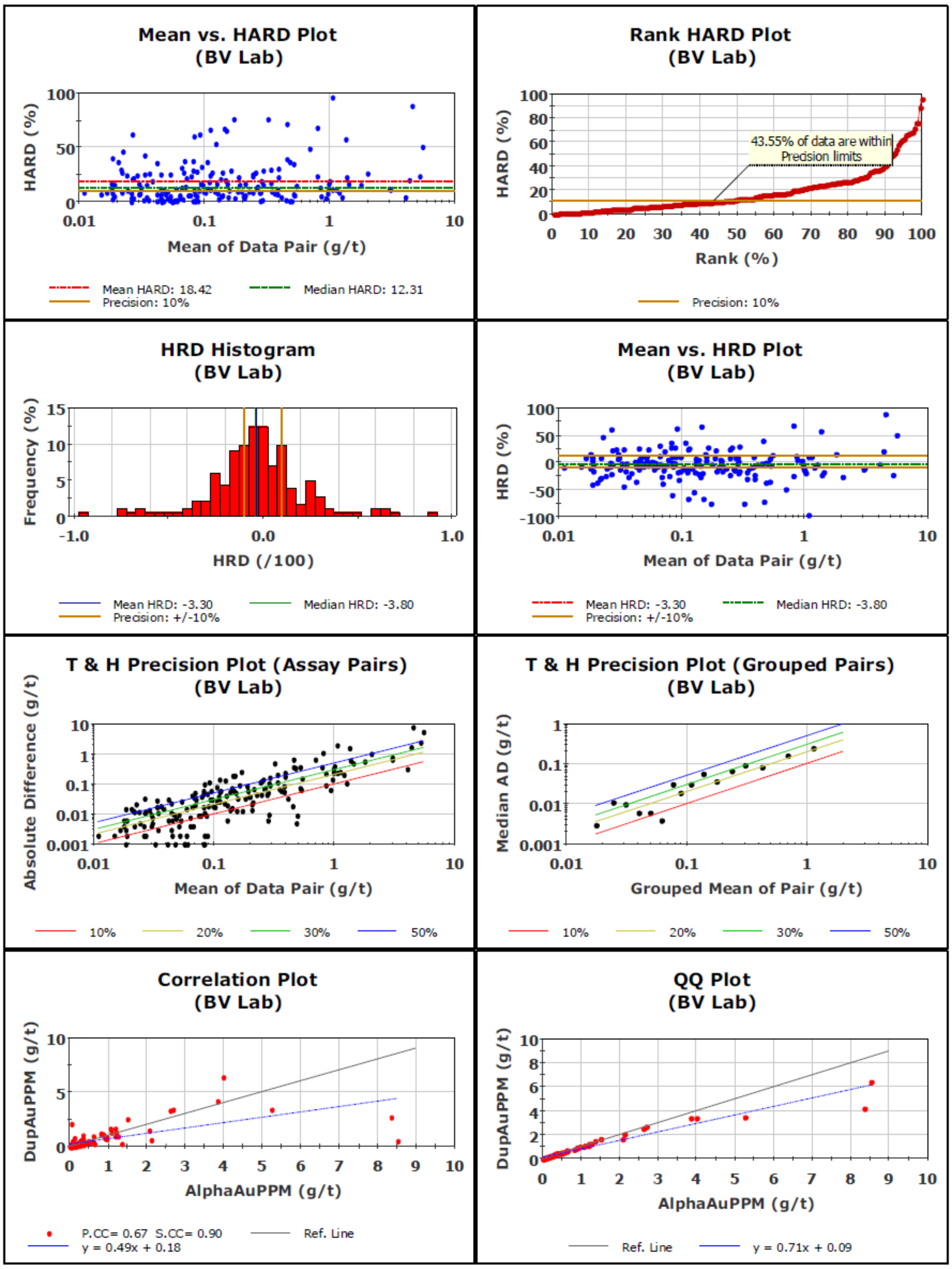


Figure 56: Field duplicates performance in BV lab (Crusader, 2012).

	AlphaAuPPM	RepeatAuPPM	Units			Result
No. Pairs:	560	560			Pearson CC:	0.99
Minimum:	0.01	0.01	g/t		Spearman CC:	0.95
Maximum:	50.11	50.08	g/t		Mean HARD:	11.31
Mean:	0.36	0.36	g/t		Median HARD:	7.14
Median	0.08	0.08	g/t			
Std. Deviation:	2.19	2.20	g/t		Mean HRD:	1.67
Coefficient of Variation:	6.01	6.06			Median HRD	0.13

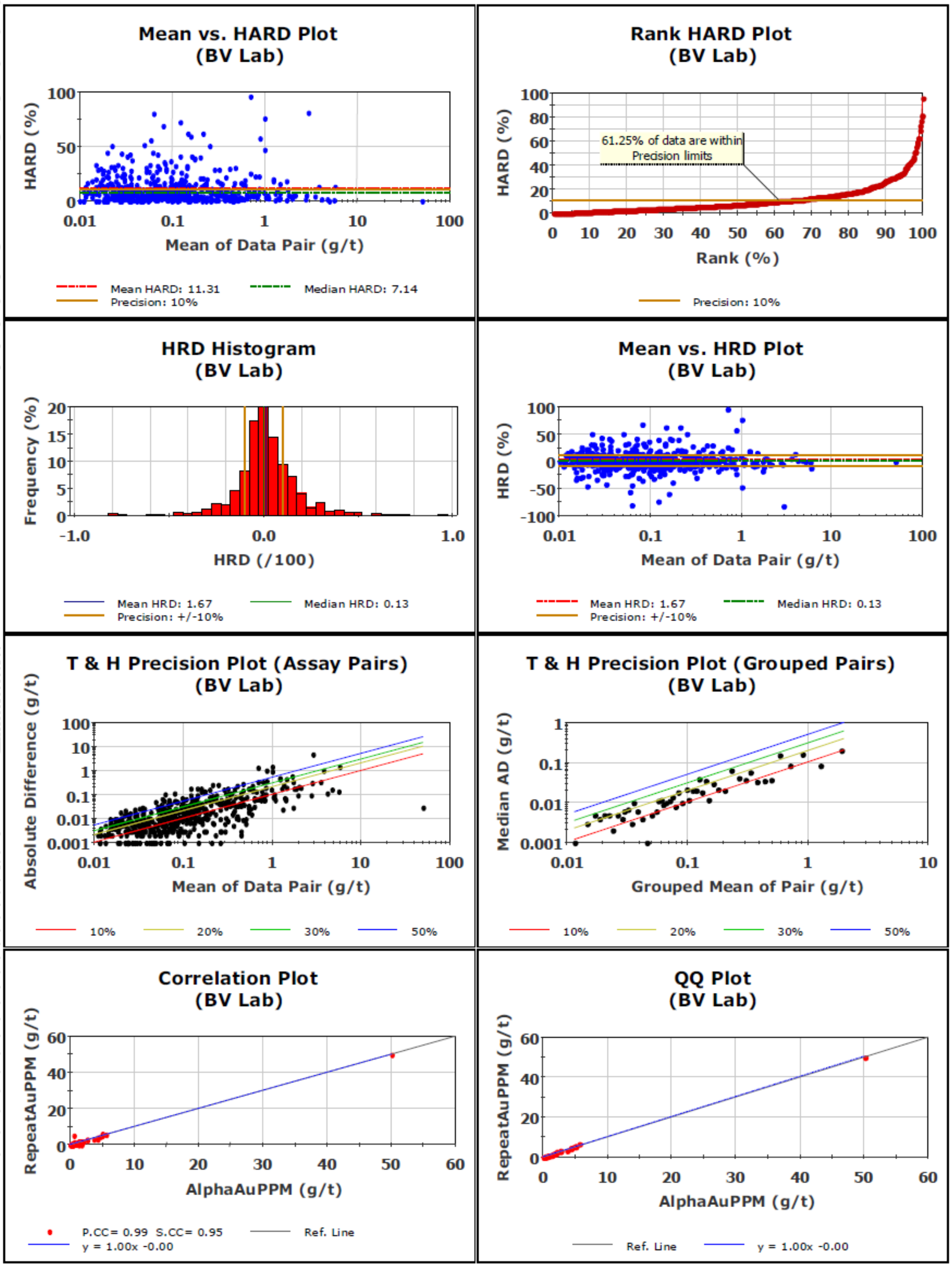


Figure 57: Pulp duplicates performance in BV lab (Crusader, 2012).

	AlphaAuPPM	SplitAuPPM	Units			Result
No. Pairs:	309	309			Pearson CC:	0.91
Minimum:	0.01	0.01	g/t		Spearman CC:	0.92
Maximum:	5.75	4.89	g/t		Mean HARD:	13.18
Mean:	0.31	0.30	g/t		Median HARD:	7.69
Median	0.08	0.09	g/t			
Std. Deviation:	0.64	0.59	g/t		Mean HRD:	-0.33
Coefficient of Variation:	2.09	1.98			Median HRD	0.00

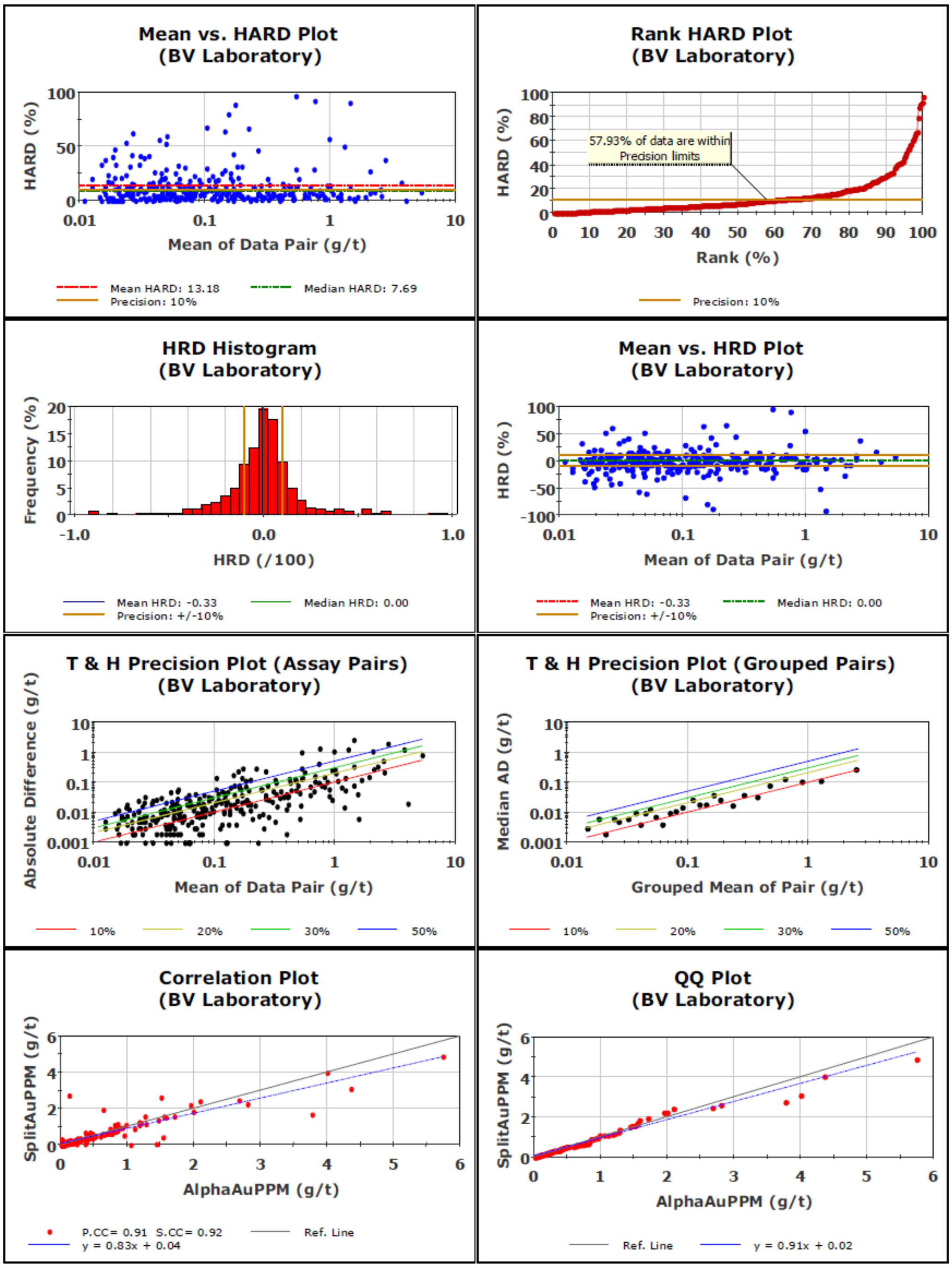


Figure 58: Coarse rejects duplicates performance in BV lab (Crusader, 2012).

11.4.2 CRUSADER DRILLING QA/QC ANALYSIS-ALS ASSAY DATA (2011-2012)

ALS was used to assay core samples drilled prior to August 2010, and then for all core and RC samples from sample batch 9 onwards.

Blanks

Crusader submitted blanks (pure quartz) inserted every 20 samples. Both field and lab blanks show no signs of contamination (Figure 59 and Figure 60).

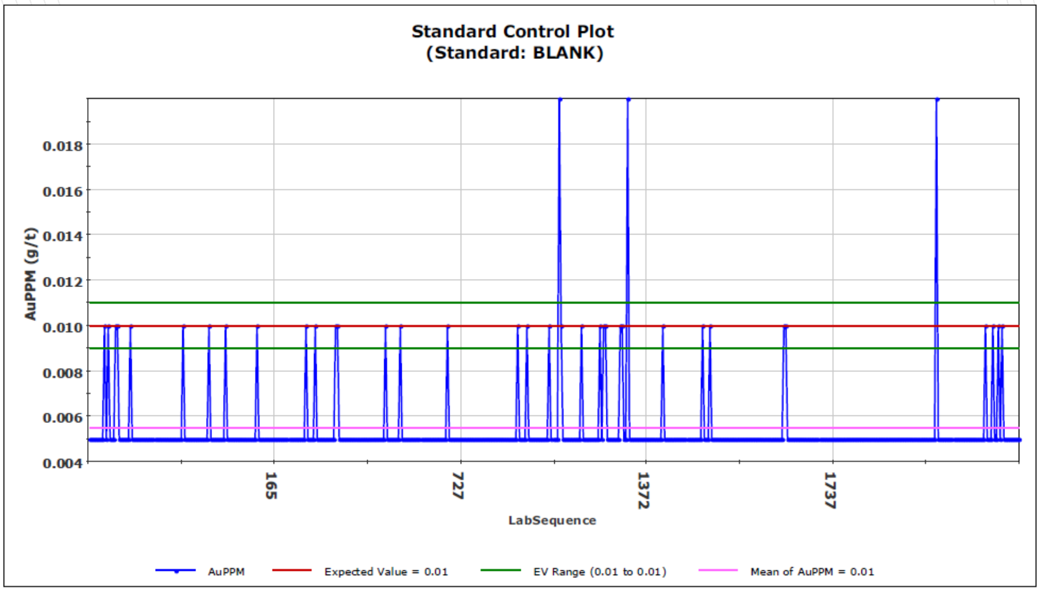


Figure 59: Field blanks (ALS lab) performance (Crusader,2012).

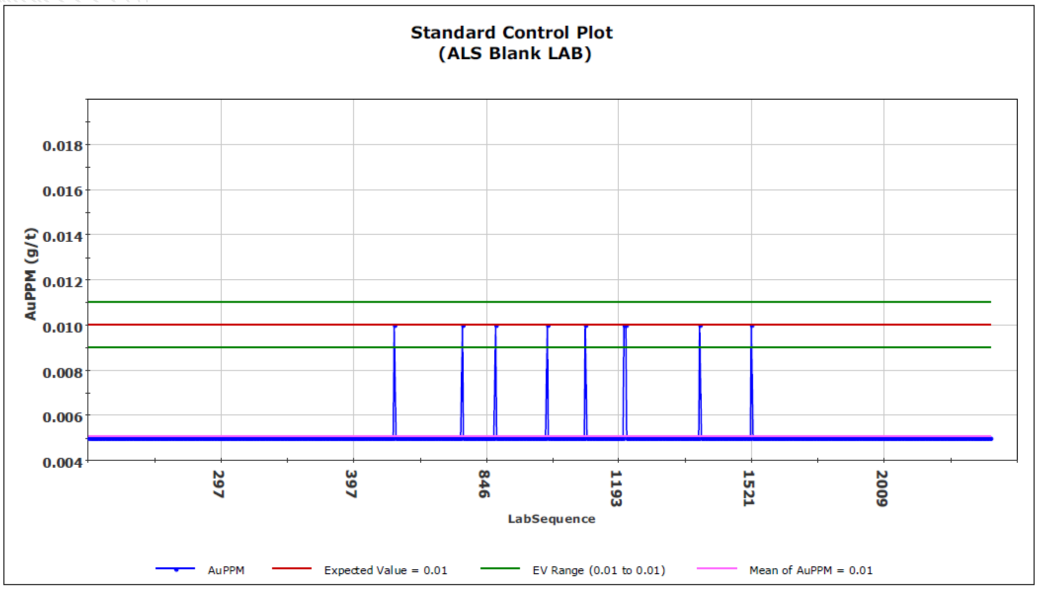


Figure 60: Lab blanks (ALS lab) performance (Crusader,2012).

Standards

Crusader sent the certified field standards listed in Table 31 (CAS1 to CAS5) to ALS for quality assurance and quality control purposes. The CAS standards (CAS1 to CAS5) all plot within acceptable limits. The laboratory standards are generally within acceptable limits.

Table 31: Table of field and laboratory (ALS) standards.

STD ID	Mean Au ppm	Exp. Value	Exp. Range	
CAS1	0.57	0.57	0.513	0.627
CAS2	4.80	4.82	4.338	5.302
CAS3	1.50	1.54	1.386	1.694
CAS4	1.49	1.52	1.368	1.672
CAS5	0.76	0.78	0.702	0.858
OxP76	14.97	14.98	14.40	15.45
SQ36	29.80	30.0	28.24	31.84
OxJ68	2.33	2.33	2.1	2.56
OxD87	0.41	0.42	0.38	0.46
GLG304-2	0.07	0.07	0.06	0.08

Duplicates

The charts in Figure 61 show that field duplicates have a low relative bias, but a poor correlation (r=78); 3% of data are within +/- 10% precision tolerance.

The ALS laboratory pulp duplicates (Figure 62) all show good correlation, with a low relative bias. Nearly 70% of the data are within 10% precision limits.

Summary
(All Data)

	AlphaAuPPM	DupAuPPM	Units			Result
No. Pairs:	139	139			Pearson CC:	0.78
Minimum:	0.01	0.01	g/t		Spearman CC:	0.96
Maximum:	3.81	5.37	g/t		Mean HARD:	12.72
Mean:	0.15	0.19	g/t		Median HARD:	0.00
Median	0.01	0.01	g/t			
Std. Deviation:	0.50	0.75	g/t		Mean HRD:	0.53
Coefficient of Variation:	3.34	3.96			Median HRD	0.00

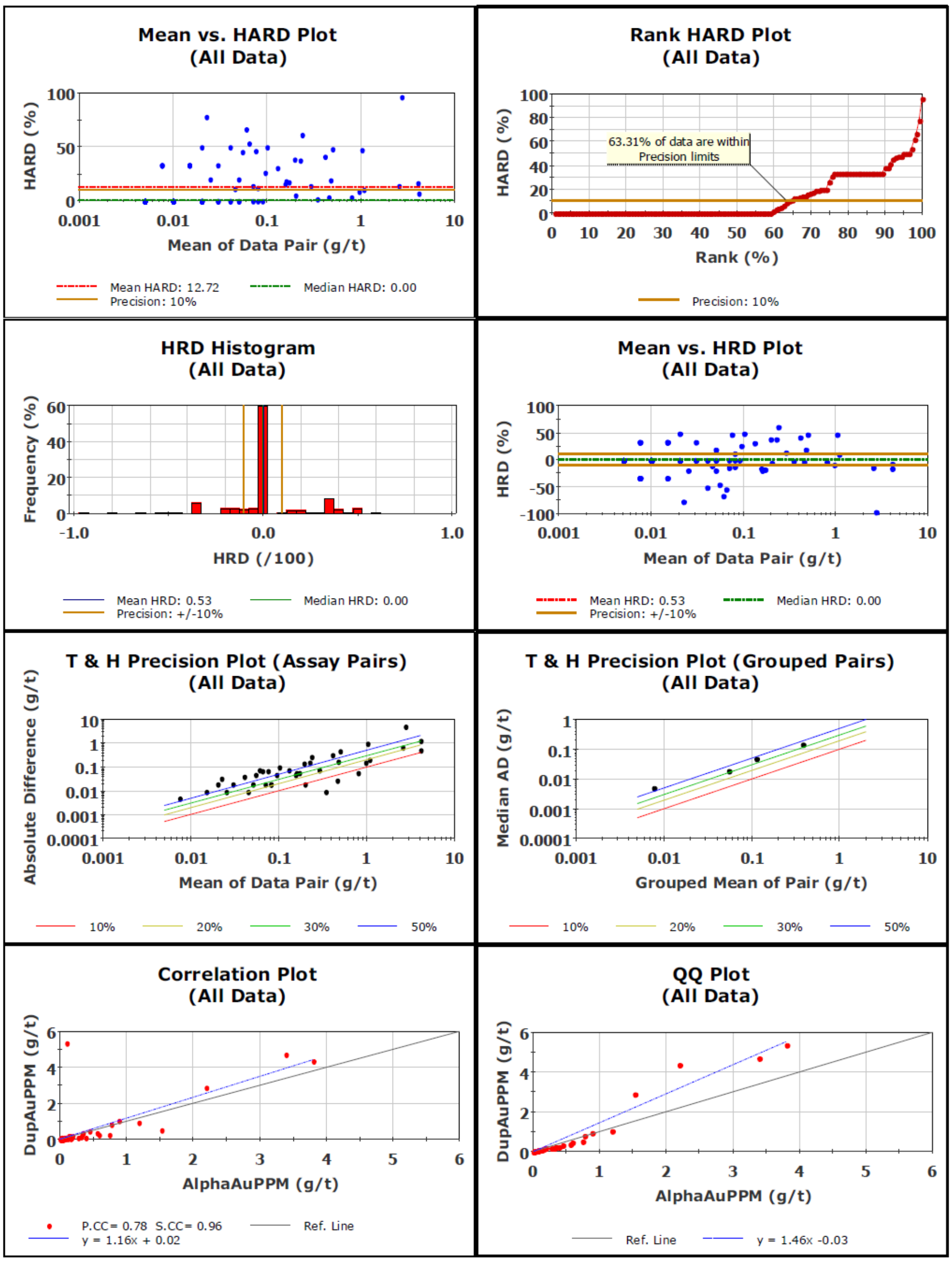


Figure 61: Field duplicates performance in ALS lab (Crusader, 2012).

Summary
(All Data)

	AlphaAuPPM	RepeatAuPPM	Units			Result
No. Pairs:	382	382			Pearson CC:	0.91
Minimum:	0.01	0.01	g/t		Spearman CC:	0.96
Maximum:	7.72	8.83	g/t		Mean HARD:	11.03
Mean:	0.14	0.13	g/t		Median HARD:	0.00
Median	0.01	0.01	g/t			
Std. Deviation:	0.59	0.57	g/t		Mean HRD:	1.26
Coefficient of Variation:	4.21	4.31			Median HRD	0.00

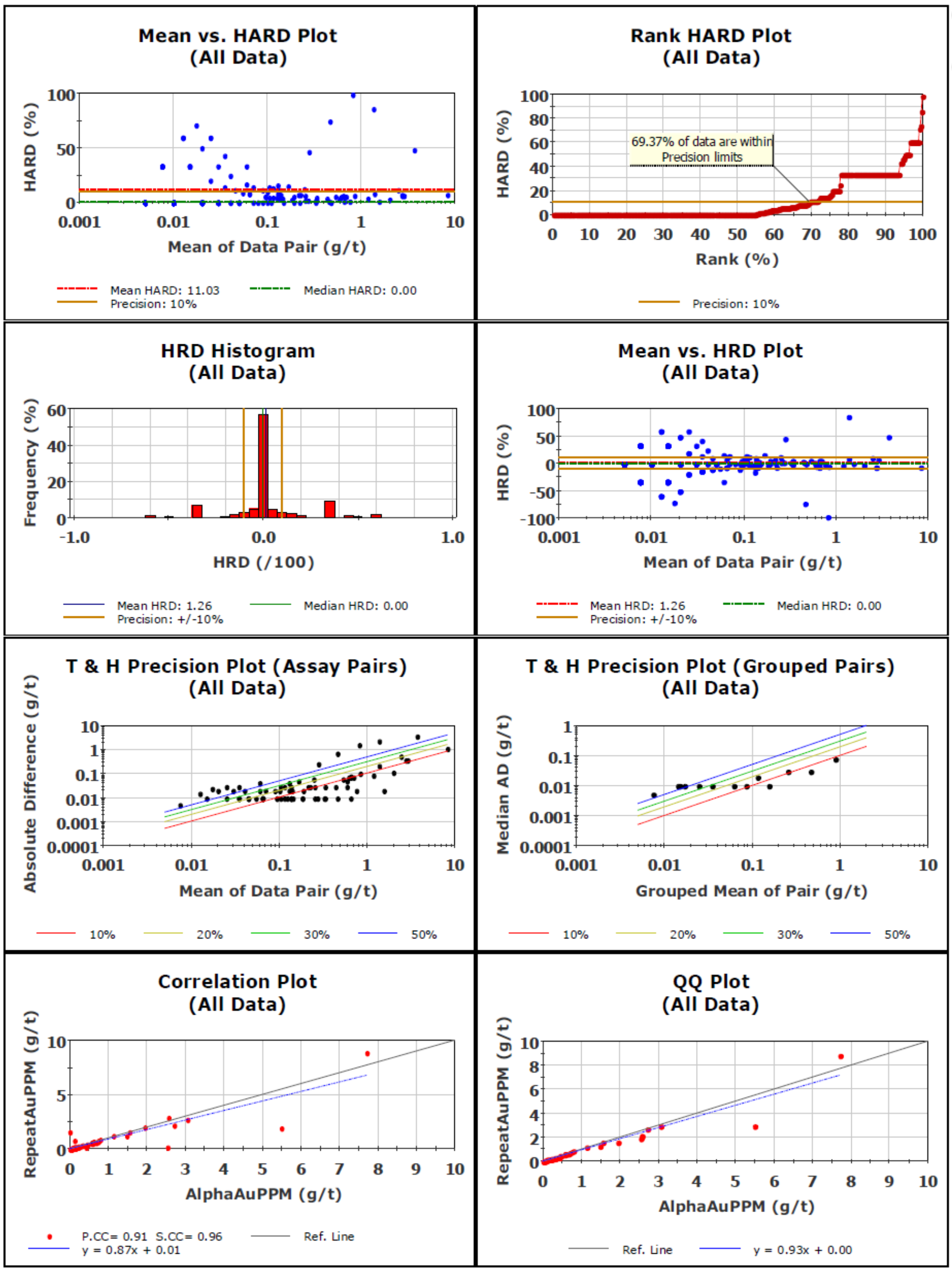


Figure 62: Pulp duplicates performance in ALS lab (Crusader, 2012).

11.4.3 CRUSADER DRILLING QA/QC ANALYSIS-INTER-LABORATORY CHECKS (2011-2012)

Laboratory checks were carried out on individual samples where the assays have returned anomalous or very high readings. These checks consist of a 30 g to 50 g sample depending on the laboratory method which is analysed by fire assay. The results are generally reported as AuCheck by ALS together with the original Au result.

The following inter-laboratory assay checks have been completed by Crusader:

- 9 work orders were re-assayed by Bureau Veritas Laboratory accounting for 670 samples;
- work orders were re-assayed by Ultratrace - some 900 samples;
- 1,166 samples were sent to ACME laboratory;

Table 32 summarizes the number of check assay samples from each of the assay laboratories. Note that 59 pulps submitted to ACME were not returned.

In September 2011, an additional 674 samples were sent to ACME Laboratory for umpire checks, and in February 2012 a further 662 samples were sent.

Table 32: Summary of laboratory check samples by Crusader (2011).

Type	ACME	BV Original	BV Re-Assays	ALS Original	Ultratrace Re-Assays	Samples Not Returned
Pulp	1012	789	71	235	71	59
Coarse Reject	95	95	3		12	
Total	1107	884	74	235	83	59

In December 2010, Crusader undertook a QA/QC analysis of batches 1 to 3 which had been analysed by the Bureau Veritas Lab (BV) in Brazil. In the QA/QC report, Crusader highlighted some significant problems mainly with poor accuracy results for the standards and contamination of the blanks. As a result of this review, nine (9) work orders were selected to be re-assayed by the BV laboratory.

Key findings from the re-sampled batches in Bureau Veritas (Brazil) are summarized below:

I. Field duplicates compare poorly with original results, which is probably due to the nature of the mineralisation. There are also only 31 sample pairs, which are not enough data to draw any meaningful conclusions, particularly when you are dealing with a low-grade deposit, and many samples are below the detection limit. It was recommended that additional field duplicates are inserted into the sampling stream to try and address this issue.

II. Lab repeats show better correlation, with some spurious values.

III. Lab splits show good correlation, with some scatter at higher grades. Sparse data is possibly due to the nature of the Au mineralisation.

IV. Blanks generally plot below detection limit of 0.001 g/t Au, the Bureau Veritas quartz blank samples show signs of contamination.

V. CAS standards CAS1, CAS2, CAS5 and CAS6 show inconsistencies. This is probably attributable to the fact that there was insufficient sample available for re-assay.

VI. Internal laboratory standards report within acceptable limits.

VII. Comparison of the original assays with the re-assay is very poor, with only 22% of the data falling within 10% precision limits. There is an overall relative bias of about 25% towards the original Bureau Veritas assays; this bias seems to be consistent at all grade ranges (Figure 63).

(Au Gt 0.1 LT 200)

	Orig Au ppm	Resamp Au ppm	Units			Result
No. Pairs:	303	303			Pearson CC:	0.63
Minimum:	0.10	0.00	g/t		Spearman CC:	0.54
Maximum:	8.25	8.73	g/t		Mean HARD:	36.74
Mean:	0.56	0.42	g/t		Median HARD:	29.82
Median	0.26	0.17	g/t			
Std. Deviation:	0.91	0.93	g/t		Mean HRD:	26.50
Coefficient of Variation:	1.61	2.22			Median HRD	23.88

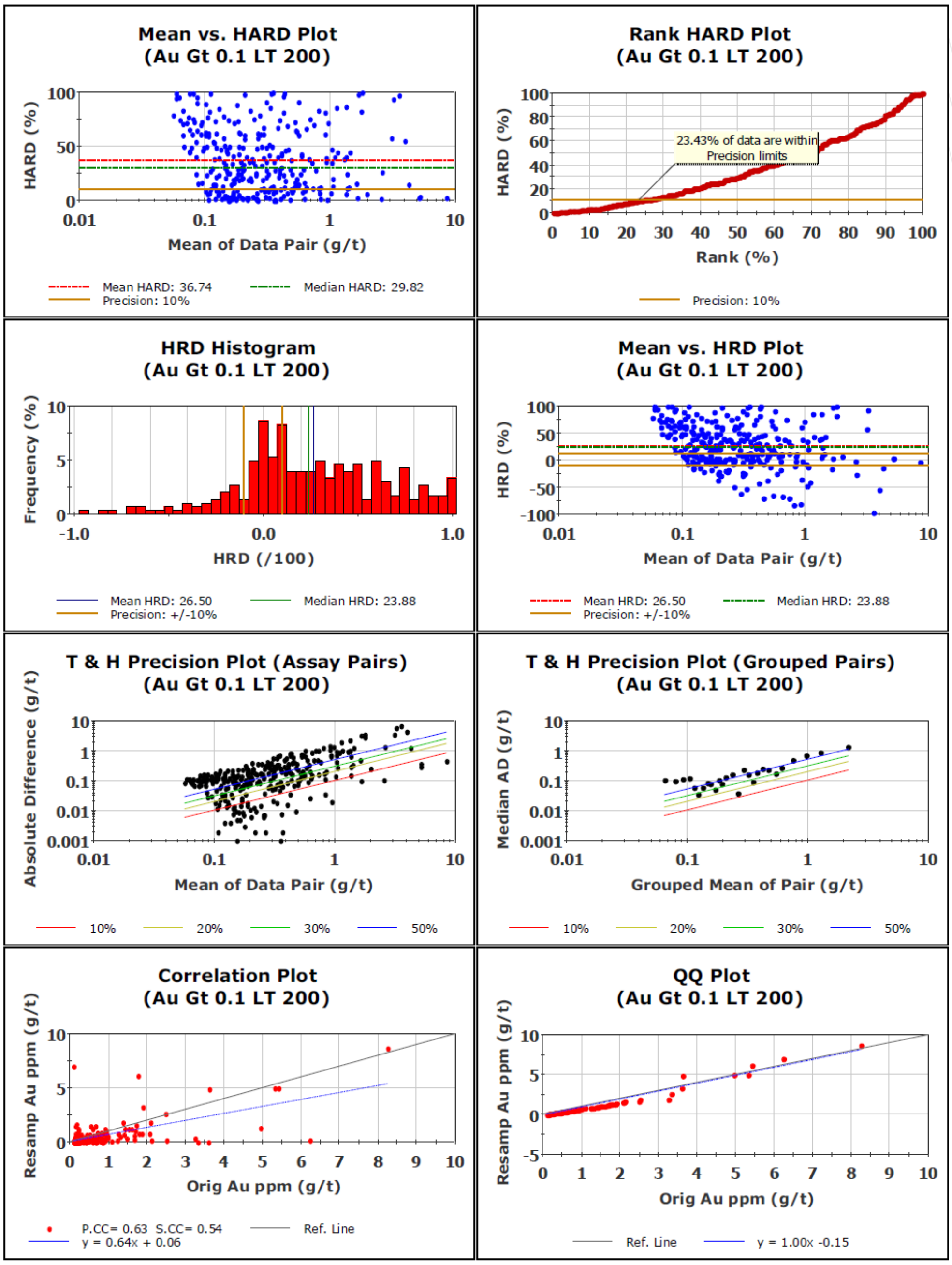


Figure 63: Comparison between original and re-assayed samples in BV lab (Crusader, 2012).

A series of QC analyses on the QA/QC data was done by third party consultants and Crusader geologists. The history of these QC analyses is described below. The flow chart in Figure 64 illustrates the workflow.

In January 2011, Crusader hired a consultant (Lauritz Barnes) to undertake another review of all QC data from batches 4 to 7 including some data which pre-dated batches 1 to 3. The findings were similar to those of December 2010. It was decided to take the pulps from 13 work orders (batches 4–7) and submit them for analyses at the Bureau Veritas – Ultratrace Laboratories in Perth, Western Australia. Subsequent batches from number 9 onwards have been analysed by ALS in Brazil.

Investigation of the Bureau Veritas re-assays showed no improvement of the QC data. The re-assaying of the pulps by Ultratrace was better. Key findings from this exercise are summarised below:

I. Field duplicates show good repeatability, with almost 60% of assays within 10% precision limits. All field duplicates are RC chips.

II. Lab repeats are fairly good (64 % of data within 10% precision limits), with limited bias.

III. Lab checks are fair, better for RC samples than core, but both data sets show scatter at higher grades where original assays is significantly higher than subsequent checks. This may indicate that re-homogenisation of the sample pulp has not occurred.

IV. Blanks are reporting above detection limits (0.001 g/t Au) for both the Crusader internal blanks and the Bureau Veritas quartz blanks. However, the highest value reported is 0.06 g/t, and this is an improvement on the Bureau Veritas laboratory.

V. No Crusader standards have been submitted for QC.

VI. Ultratrace internal standards report within acceptable limits of 2 standard deviations from the expected mean.

VII. Based on the available data the Ultratrace data appears to be both accurate and reports acceptable levels of precision.

VIII. Comparison of the original Bureau Veritas assays with the Ultratrace assays is poor, with only 28% of data falling with 10% precision limits (after removal of assays < 0.1 g/t Au). However, the relative precision is consistent across the grade range at approximately 30% and the relative bias, is less than 5%. The bias is in favour of the Bureau Veritas assaying.

This study indicated low confidence in the Bureau Veritas (BV) assay data, and therefore 1,166 samples from all batches (1 to 9) were sent to ACME Laboratory in Chile, for umpire checks. Summary findings of the ACME QC data are as follows:

IX. Blanks show no indications of contamination.

X. It is difficult to comment on laboratory precision as the internal checks have returned codes of insufficient sample for nearly half (13) of the original 28 samples. Of these, 7 samples have check assays within 10% difference.

XI. ACME results compare poorly with both sets of BV assay data (i.e. original and re-assays).

XII. ACME results compare well with ALS assay results.

XIII. ACME results compare favourably (with a few exceptions at the data extremes), with the Ultratrace re-assays.

XIV. There is no difference (where there are sufficient samples) between pulp and coarse reject samples.

XV. There is a slight negative bias for pulp samples (i.e. original results higher than ACME results, particularly at higher grades). 34% of pulp sample pairs are within 10% precision limits.

XVI. There is a slight negative bias (i.e. original results higher than ACME results, particularly at higher grades). 35% of sample pairs are within 10% precision limits.

Despite the relative lack of confidence in the BV results it was concluded that enough volume of samples had been re-analysed at ALS and ACME with reliable results to enable a JORC-compliant Mineral Resource Estimate. It was recommended that all BV samples used in the estimate be re-assayed at an umpire laboratory for inclusion in future Mineral Resource and Mineral Reserve Estimates. This task was completed by the ALS laboratory.

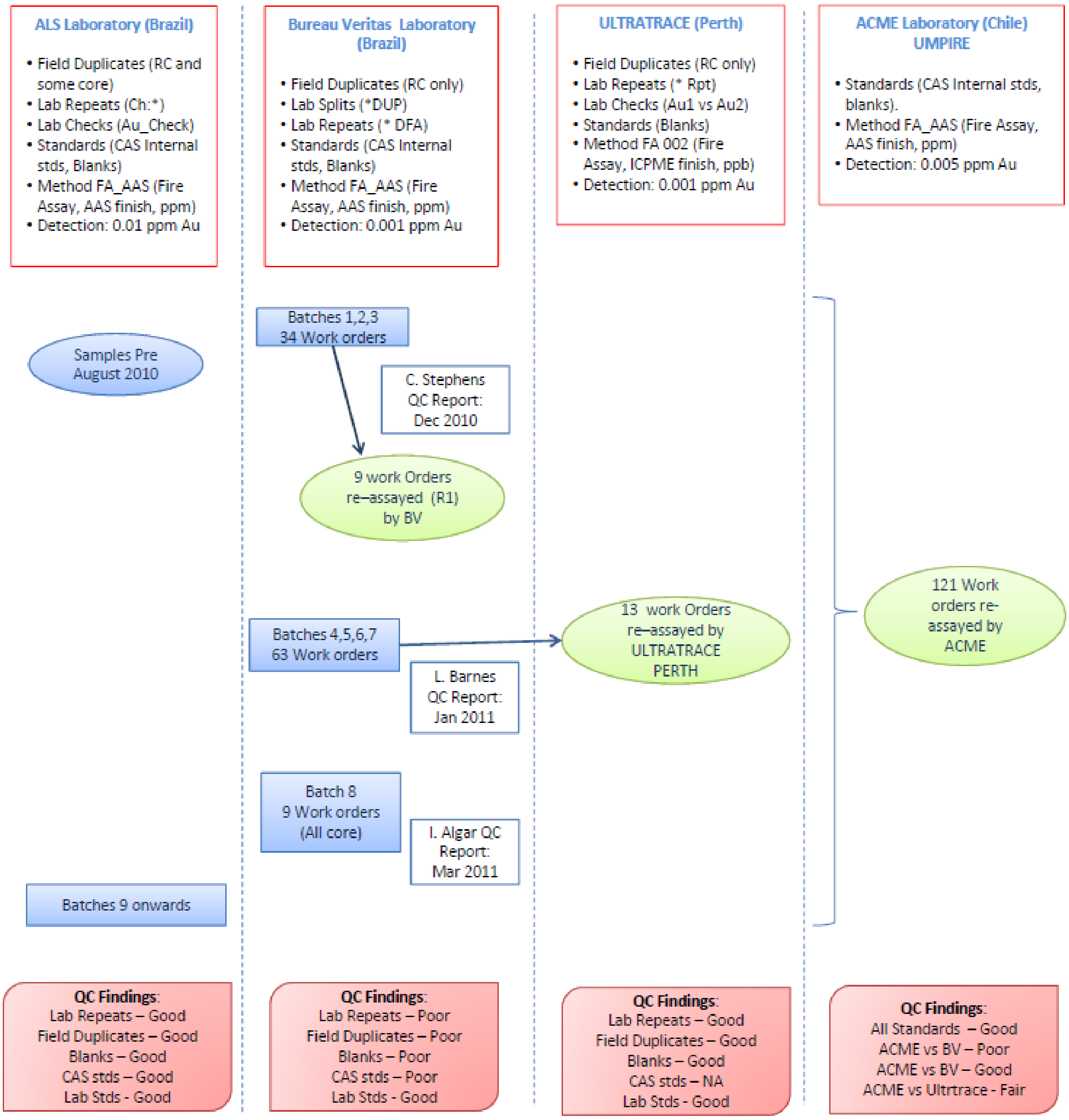


Figure 64: QC analysis flow chart (Big River, 2019).

In September 2011, 4541 original Bureau Veritas samples (coded as 1XX XXX and 3XX XXX series) were selected for re-assay by the ALS laboratory. These were re-numbered with code 9XX XXX sample numbers. 394 of these were standards (BLANK, CAS1, CAS2, CAS3). Of the original sample numbers chosen, 245 were standards, and 144 were QC samples (CHP-SPL3 duplicates). The direct comparison of the sample pairs shows that the correlation is poor with a correlation coefficient of r2=0.47 (Figure 65 and Figure 66). However, this was expected given the re-assays were undertaken due to low confidence in the original data.

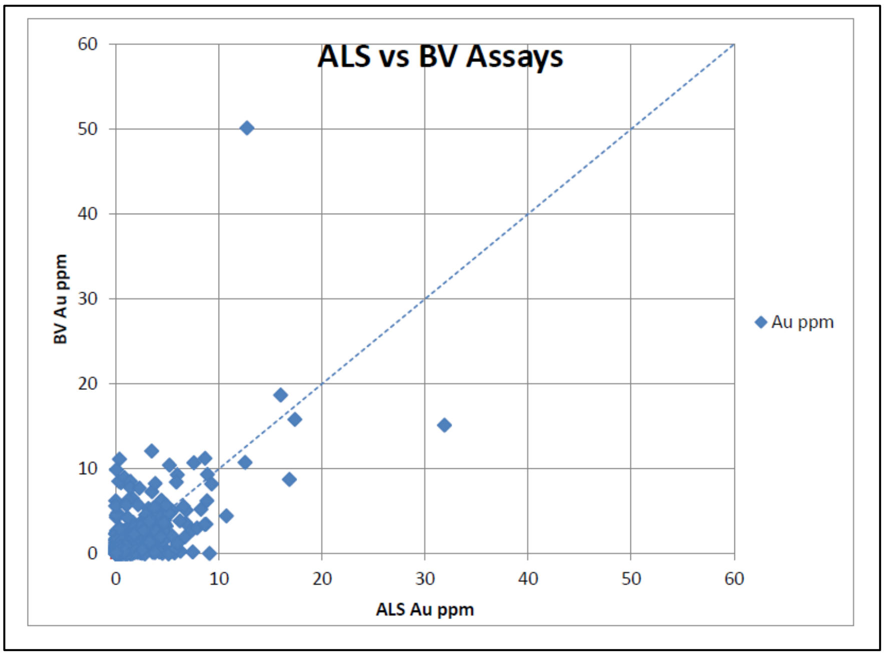


Figure 65: Comparison between original BV assays and re-assay by ALS - all data (Crusader, 2012).

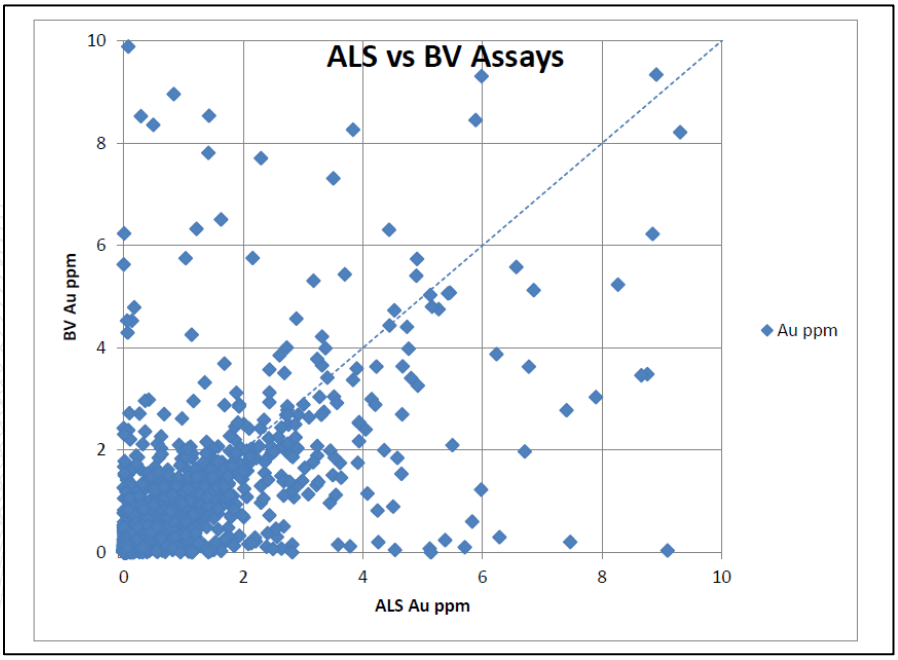


Figure 66: Comparison between original BV assays and re-assay by ALS - Au<10g/t (Crusader, 2012).

The re-assayed field duplicates showed a high degree of scatter and very poor repeatability (Figure 67). These field duplicates were all flagged with a sample type of CHP_SPL3 which indicates they were RC holes, and the samples were split using a 3-tier riffle splitter. It is not known whether these duplicates were also riffle split. This poor duplicate correlation is probably a combination of high nugget effect and poor duplicate sampling method.

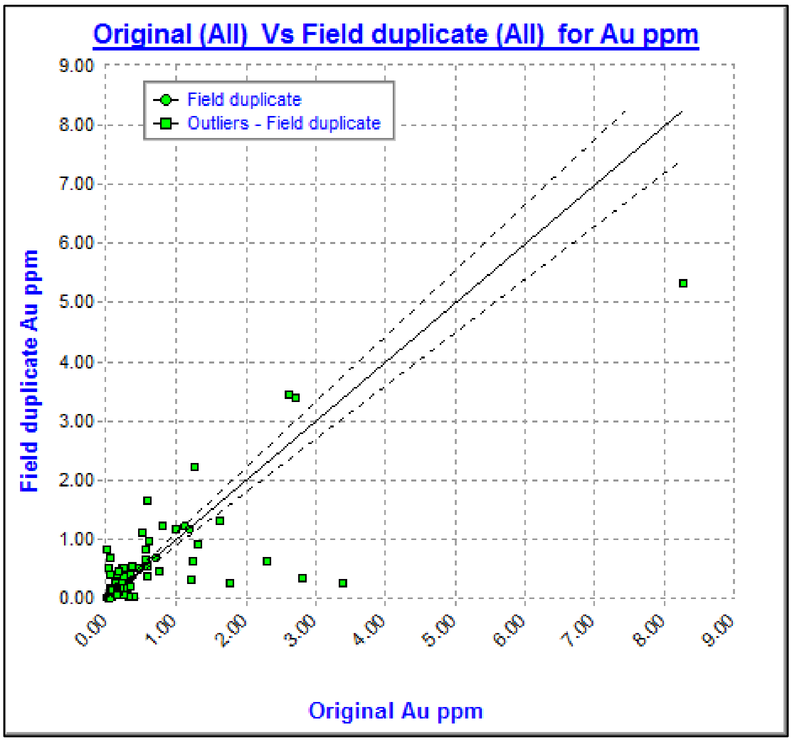


Figure 67: Comparison between original BV assays and re-assay by ALS- Field Duplicates (Crusader, 2012).

Several blanks appear to have been mislabelled in the sample renumbering process (Figure 68). These samples are all original BV standards, so there may have been insufficient sample for the resubmission, and they were replaced with other standards. The blanks submitted with the re-assays all appear to be reporting below or at detection.

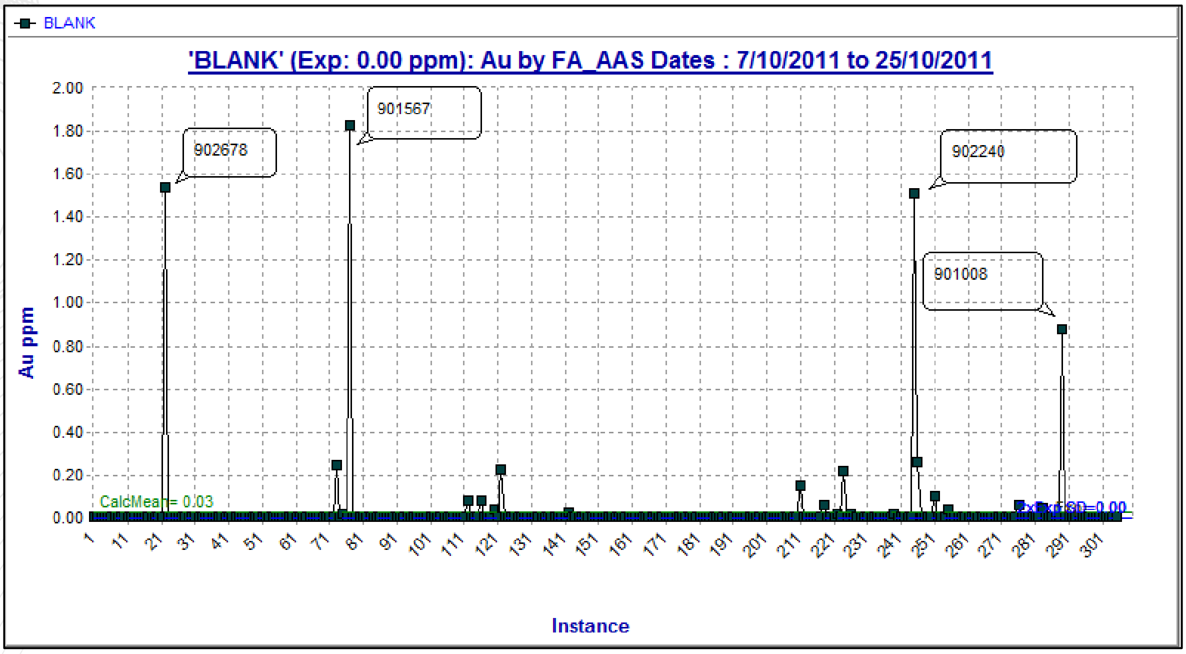


Figure 68: Comparison between original BV assays and re-assay by ALS - Blanks (Crusader, 2012).

Standards samples are all original BV standards, so there may have been insufficient sample for the resubmission, and they were replaced with other standards. Internal Crusader standards are all within expected limits. ALS standards all plot within acceptable limits. CAS1 is consistently biased low (7.2%) (Figure 69). The results are within acceptable tolerances. CAS2 results are good, with little bias. CAS 3 has a sample which appears to be mislabelled. Removing this outlier shows there is still one sample just outside of two standard deviations from the mean. This standard is also biased low (3.5%).

Table 33 shows all gold standards that were submitted with original assays to ALS lab. ALS standards all plot within acceptable limits (Figure 70).

Table 33: List of Standard Samples.

Au Standard(s)			No. of Samples	Calculated Values			
StandardCode	Value	SD		Mean Au	SD	CV	Mean Bias
BlankLab	0.00	0.000	283	0.01	0.0	0.17	0
GLG304-2	0.07	-	85	0.06	0.005	0.077	-8.7395
OxD87	0.42	-	25	0.40	0.010	0.024	-4.2857
SH55	1.38	0.045	4	1.37	0.017	0.013	-0.7273
OXJ68	2.33	-	16	2.32	0.040	0.017	-0.6170
SL34	5.89	0.140	34	5.87	0.064	0.011	-0.4652
SL61	5.93	0.057	6	6.02	0.095	0.016	1.4725
OxP91	14.82	0.100	9	15.11	0.646	0.043	1.9268
OxP76	14.98	0.295	75	14.93	0.277	0.019	-0.3115
SQ36	30.04	0.703	11	29.55	0.623	0.021	-1.6463

Note: SD = standard deviation.

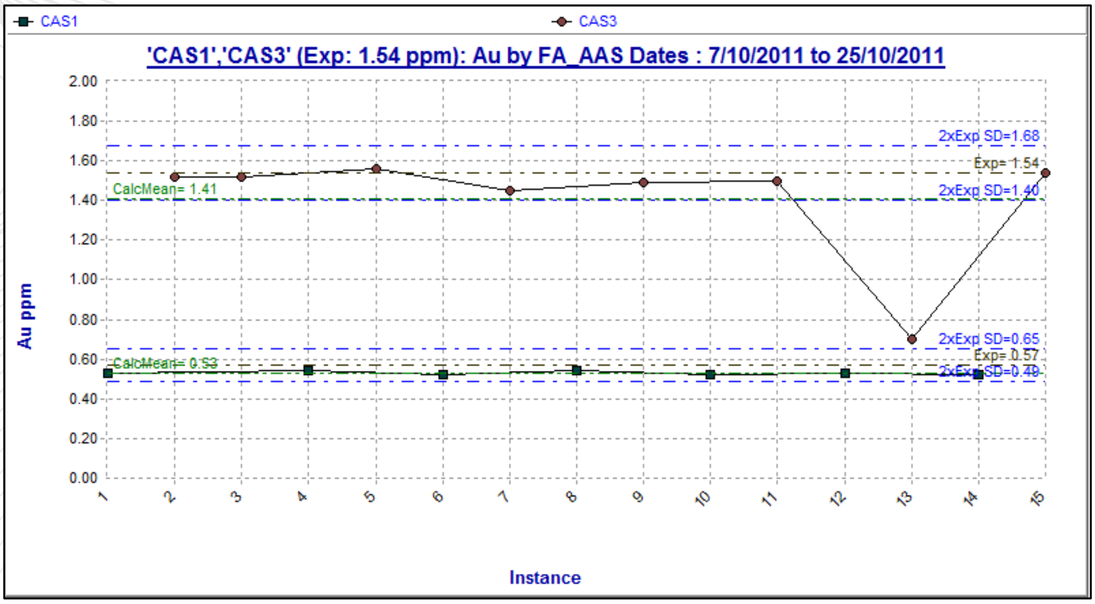


Figure 69: Comparison between original BV assays and re-assay by ALS-CAS1 and CAS3 Standards (Crusader, 2012).

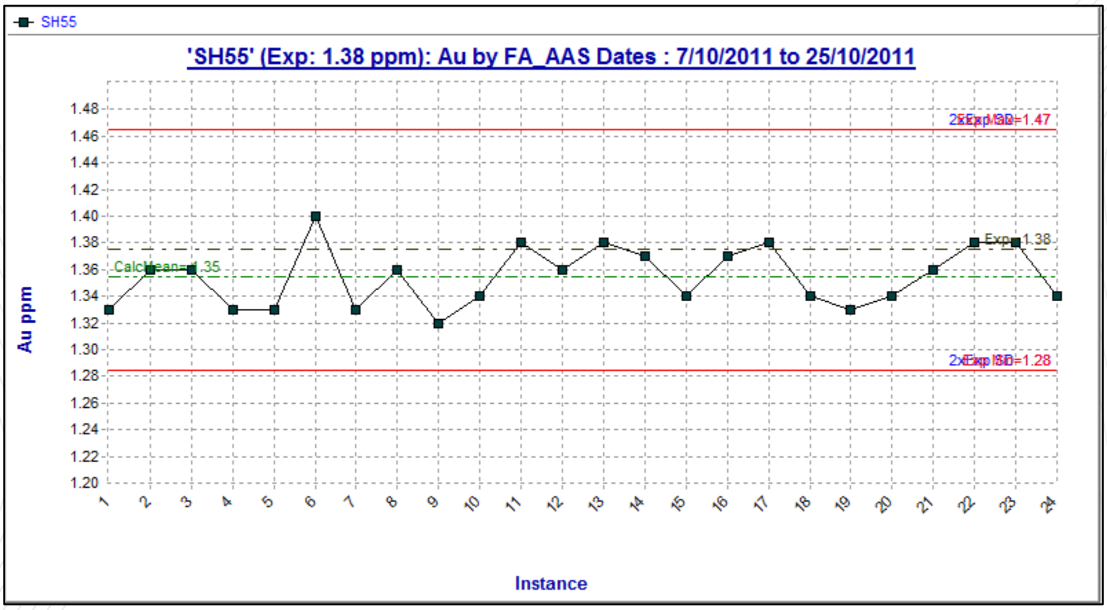


Figure 70: Example of ALS Standards Performance - SH55 (Crusader, 2012).

QA/QC analysis of the ALS laboratory for 2011 and 2012 samples indicated that inserted standards and blanks are within expected tolerances although the standards consistently have a low bias. Laboratory standards are generally within expected limits; however, some standards do have values outside of these limits. Laboratory repeats are good. Field duplicates and coarse crush duplicates have only been submitted from late 2011 and it is difficult to comment on the repeatability of the Au assays with a small sample population. Laboratory pulp repeats are good with 70% of repeat samples falling within a 10% range of the original results. Field duplicates are poor and with wide scatter. Coarse crush duplicates of core are better with 65% repeating within 10% of the original results. Laboratory checks (Au checks) are consistent with two results from 29 showing extreme differences (i.e., greater than 50%).

Approximately 900 sample pulps from 13 work orders prepared by Bureau Veritas laboratory in Brazil were sent to Ultratrace in Perth for re-analysis by Fire Assay. Included in the pulps were Bureau Veritas splits (duplicate samples) and Bureau Veritas quartz washes (Lab Blanks).

Field duplicates showed good repeatability, with almost 60% of assays being within 10% precision limits. All field duplicates are RC chips. Lab repeats are fairly good, 64 % of data within 10% precision limits, with limited bias. Blanks are reporting above detection limits (0.001 g/t Au) for both the Crusader internal blanks and the Bureau Veritas quartz blanks. However, the highest value reported is 0.06 g/t Au, and this was an improvement on the Bureau Veritas laboratory.

Comparison of the original BV assays with the Ultratrace assays is poor, with only 28% of data falling with 10% precision limits, after removal of assays <0.1 g/t Au. However, the relative precision is consistent across the grade range at approximately 30% (see the T&H plot Figure 11-23) and the relative bias, as measured in terms of the MRD, is less than 5%. The bias is in favour of the Bureau Veritas assaying (Figure 71).

In September 2011, 674 assays were sent to ACME for re-assays; only 48% of these checks are within 10% difference to the original ALS assay results. This result may reflect the nature of the mineralisation. Ongoing QC for the ALS assay results shows that field duplicates and coarse crush laboratory duplicates have poor repeatability. The results showed that ACME results compare poorly with both sets of BV assay data (i.e. original and re-assays). ACME results compare well with ALS assay results. ACME results compare favourably, with a few exceptions at the data extremes, with the Ultratrace re-assays. There is no difference, where there are sufficient samples, between pulp and coarse reject samples (Figure 72 and Figure 73).

A second set of checks on the ALS results was undertaken in February 2012. A total of 662 samples were sent to ACME for re-assays; only 49% of these checks are within 10% difference of the original ALS assay results, a similar result to the first set of checks carried out in September 2011 (Figure 74). Ongoing QC for the ALS assay results shows that field duplicates and coarse crush laboratory duplicates have poor repeatability.

Summary
(Au GT 0.1 g/t CHIPS)

	CheckAuPPM	AlphaAuPPM	Units			Result
No. Pairs:	244	244			Pearson CC:	0.85
Minimum:	0.10	0.00	g/t		Spearman CC:	0.77
Maximum:	13.18	12.00	g/t		Mean HARD:	22.42
Mean:	0.83	0.78	g/t		Median HARD:	16.37
Median	0.24	0.27	g/t			
Std. Deviation:	1.67	1.33	g/t		Mean HRD:	1.84
Coefficient of Variation:	2.00	1.71			Median HRD	-4.72

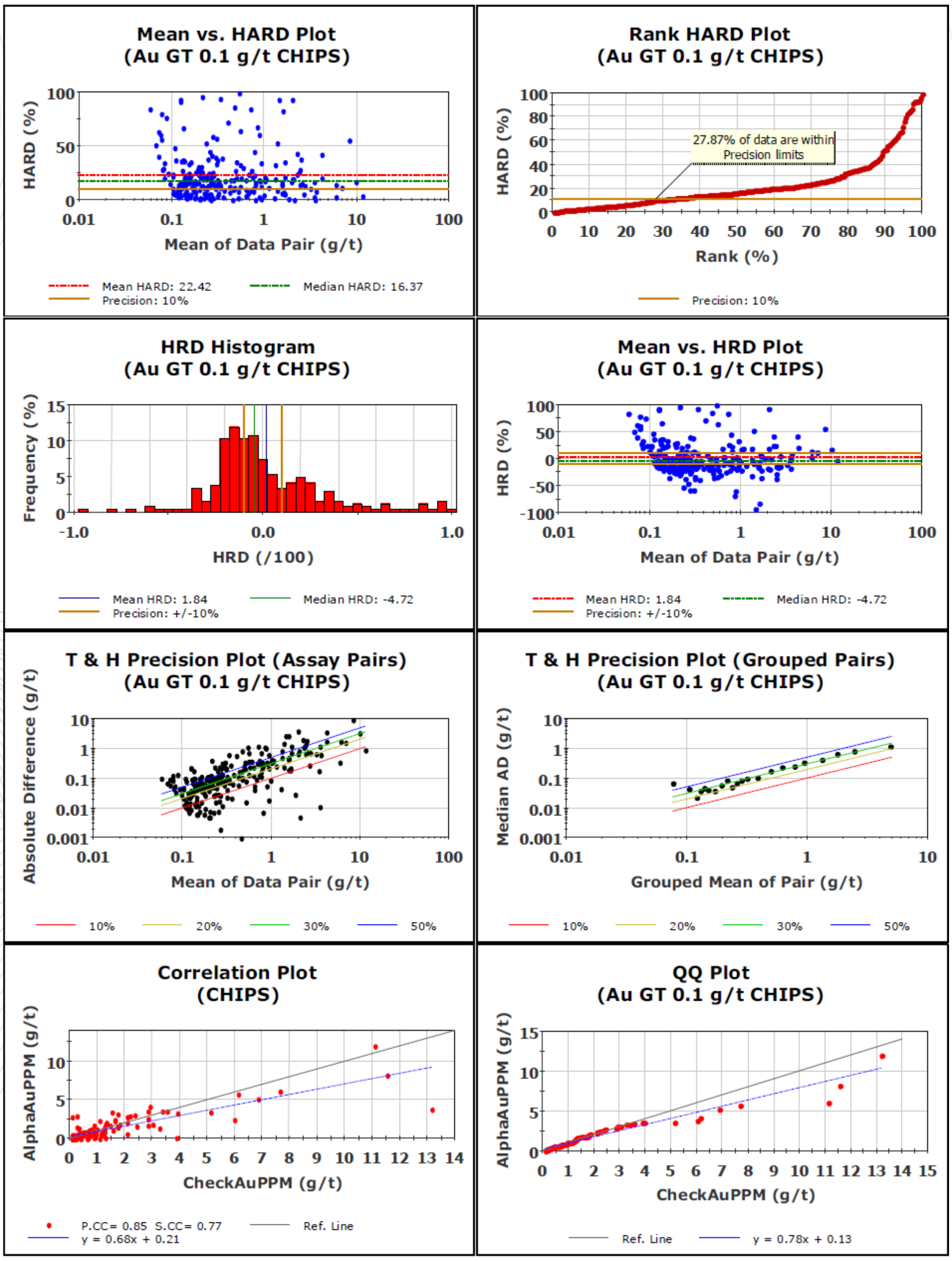


Figure 71: Comparison between original BV assays and re-assay by Ultratrace (Crusader, 2012).

(BV Orig Pulp vs ACME)

	OrigAuPPM	ACMEAuPPM	Units			Result
No. Pairs:	718	718			Pearson CC:	0.87
Minimum:	0.00	0.01	g/t		Spearman CC:	0.90
Maximum:	50.11	30.80	g/t		Mean HARD:	26.01
Mean:	1.44	1.49	g/t		Median HARD:	15.98
Median	0.52	0.54	g/t			
Std. Deviation:	2.95	2.65	g/t		Mean HRD:	-7.61
Coefficient of Variation:	2.05	1.77			Median HRD	-6.31

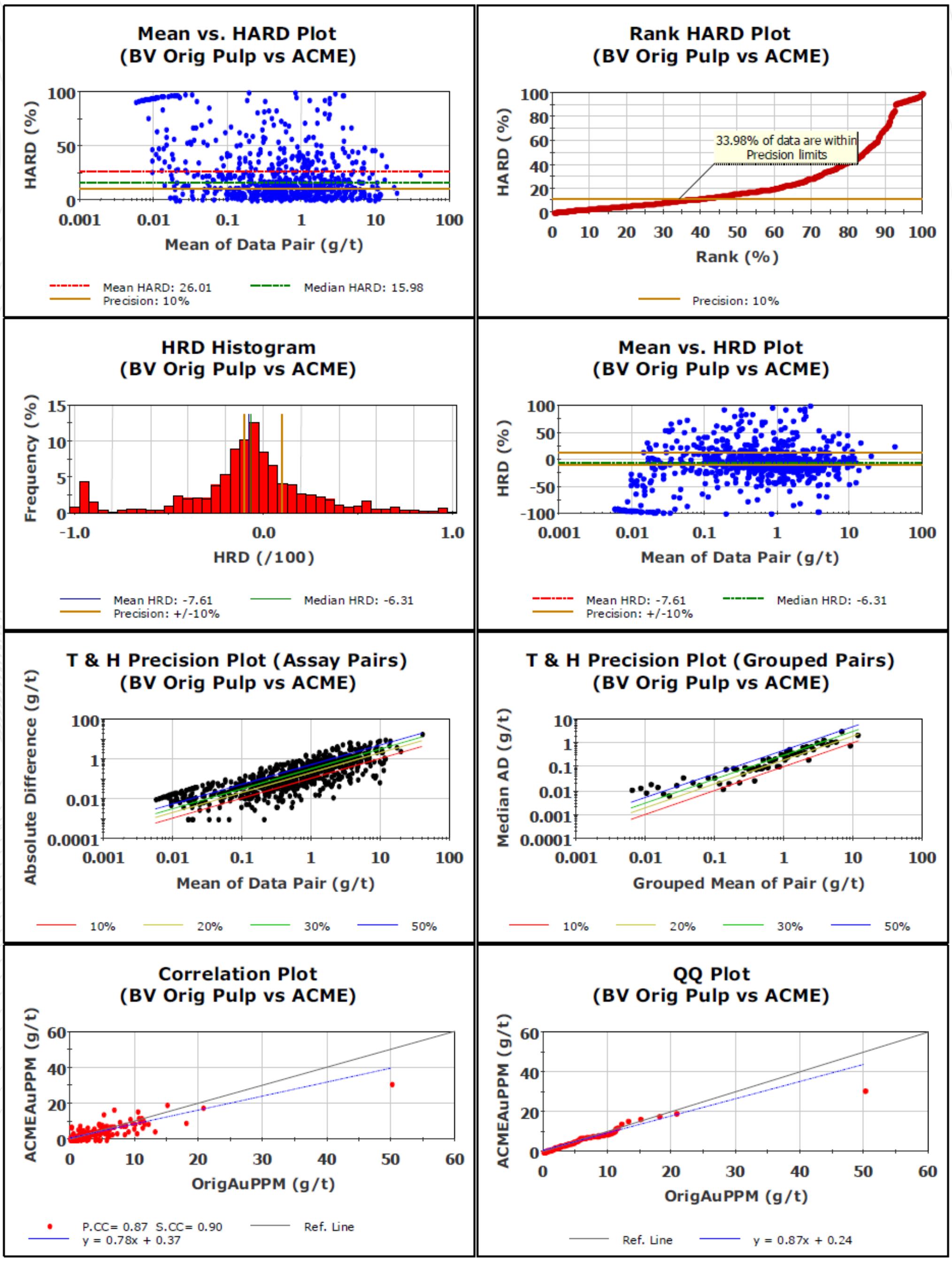


Figure 72: Comparison between original BV assays versus ACME Lab-Pulps (Crusader, 2012).

Summary
(BV Orig CR vs ACME)

	OrigAuPPM	ACMEAuPPM	Units			Result
No. Pairs:	91	91			Pearson CC:	0.92
Minimum:	0.00	0.01	g/t		Spearman CC:	0.87
Maximum:	9.34	8.61	g/t		Mean HARD:	26.21
Mean:	0.95	0.85	g/t		Median HARD:	15.32
Median	0.59	0.52	g/t			
Std. Deviation:	1.44	1.29	g/t		Mean HRD:	-4.72
Coefficient of Variation:	1.51	1.52			Median HRD	0.76

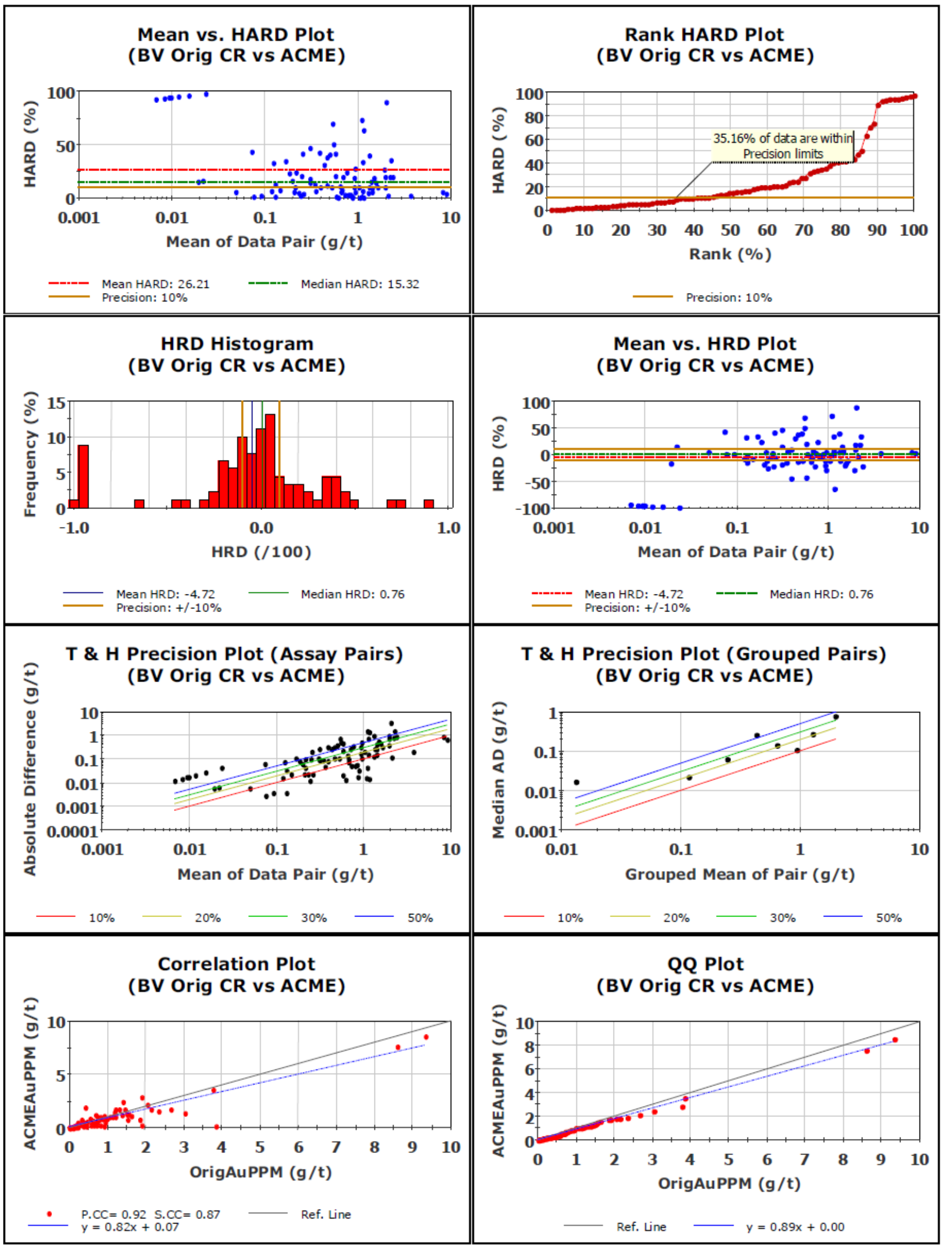


Figure 73: Comparison between original BV assays versus ACME Lab-Coarse Rejects (Crusader, 2012).

Summary
(ALS Orig Pulp vs ACME)

	OrigAuPPM	ACMEAuPPM	Units			Result
No. Pairs:	218	218			Pearson CC:	0.97
Minimum:	0.01	0.01	g/t		Spearman CC:	0.96
Maximum:	66.40	61.70	g/t		Mean HARD:	13.07
Mean:	1.74	1.60	g/t		Median HARD:	7.07
Median	0.53	0.48	g/t			
Std. Deviation:	5.31	4.80	g/t		Mean HRD:	2.41
Coefficient of Variation:	3.06	2.99			Median HRD	0.89

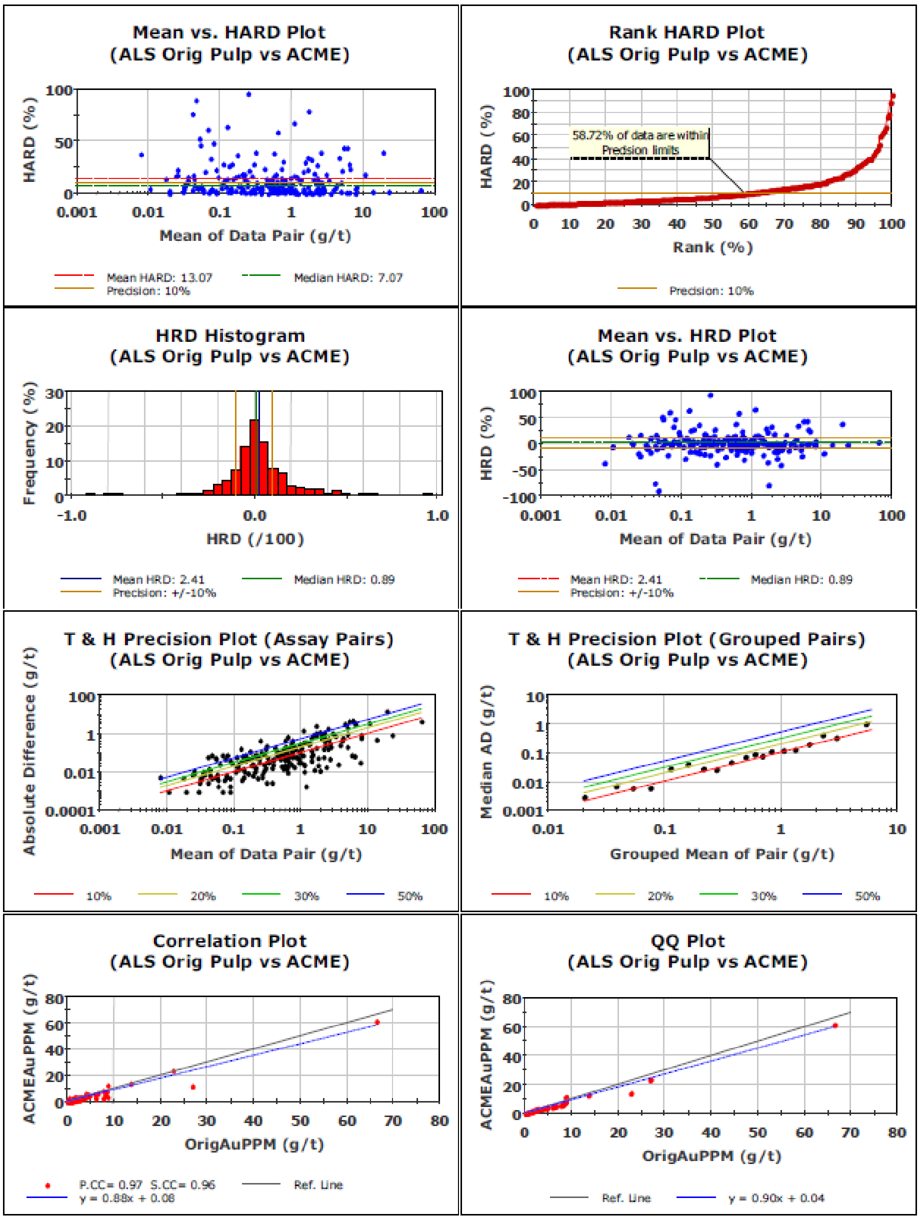


Figure 74: Comparison between ALS Lab assays versus ACME lab-pulps (Crusader, 2012).

11.4.4 INTERNAL QA/QC ANALYSIS FOR BIG RIVER DRILLING (2021-2022)

Big River drilled 14 diamond drill holes on the Project between December 2021 and April 2022. The Big River QA/QC program included the submittal of both blind and non-blind control samples into the sample stream being analyzed by the SGS laboratory. Big River maintained internal quality control by inserting blind control samples into the sample stream whilst external quality control was established by the laboratories who insert their own control samples into the sample stream being analyzed. The results of the internal and external QA/QC program are discussed below.

The following types of control samples were routinely analyzed as part of QA/QC program.

- Certified Reference Materials (CRM, “standards”).
- Blanks.
- Coarse Crush duplicate.

The following summary is the minimum number of control samples to be inserted into the sample stream being submitted to the laboratory:

- One high ore-grade and one low ore-grade CRM (or medium grade) in each analytical batch of 40 samples (5%).
- A minimum of one blank inserted in each batch mainly after mineralized zones.
- A minimum of two core duplicates in each analytical batch of 40 samples (5%). Duplicate samples analyses were requested to the lab after received the original results, an average of 5 samples per hole.

The control sample assay results of the internal QA/QC program were monitored, including the CRMs, blanks, and coarse duplicates. Additionally, systematic checks of the digital database were conducted against the original signed Certificates of Analysis from the laboratory.

The following criteria were used to establish acceptance and rejection thresholds for internal control samples analyzed for the Project.

For CRMs:

- Automatic batch failure if the CRM assay result is greater than three standard deviations of the accepted mean value of the CRM, then re-assay the batch.
- Contact the laboratory if trends on CRM plots suggest possible bias, work with lab to resolve the problem.

For Blanks:

- If assays on field blanks exceed three times the detection limit of 0.005 ppm Au, then automatic re-assaying of 20 samples surrounding the blank sample in the batch.

For Duplicate Samples:

- Assays from duplicates were not used to determine failed batches.

Blank Samples

A total of 77 blank samples were analysed by the laboratories for which no contamination was observed. The blank sample 329130 failed in the QA/QC with a value above 3 detection limits (0.015 ppm Au) and 24 samples surrounding the blank sample position in the batch were re-assayed, but the reanalysed samples returned with consistent results and the original data was considered to be preferable. Figure 75 shows a chart and statistics for the final blank samples results.

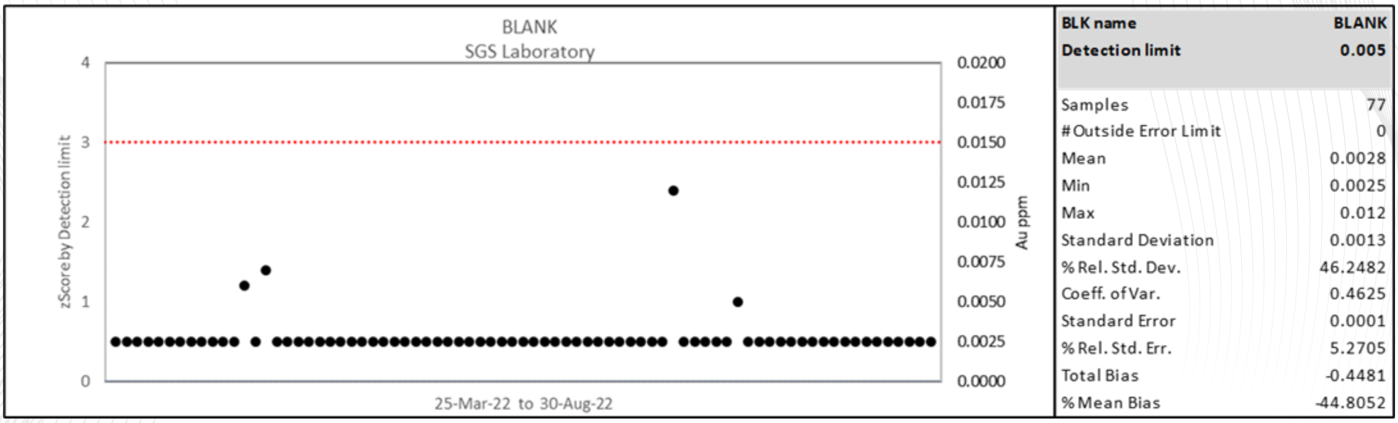


Figure 75: Internal QA/QC- Blank samples.

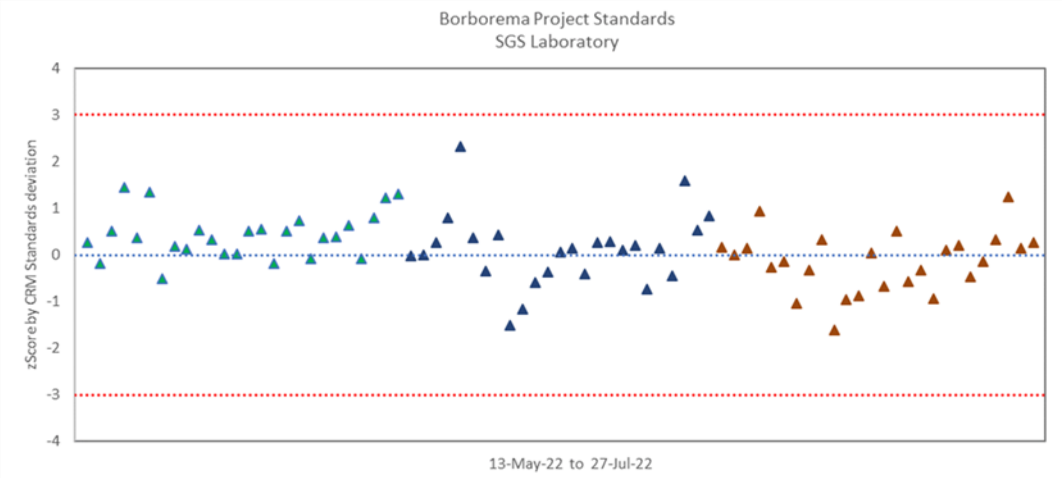
Standards

A total of 77 purchased certified standards were inserted into the sample stream during the 2022 drill program, including high, medium, and low gold grades, purchased from Geostats Pty Ltd. The summary details of these standards are shown in the Table 34 and Figure 76.

Table 34: List of field standard samples and respective values.

Standard ID	Gold Grade ppm	Standard Deviation	Expected Min	Expected Max
High (G315-7)	4.82	0.22	4.16	5.48
Medium (G319-4)	1.54	0.07	1.33	1.75
Low (G916-6)	0.57	0.03	0.48	0.66

The Standard performance was acceptable with only one instance of failure beyond the three standard deviation thresholds. The high-grade Standard sample 329300 was re-assayed and the original results were confirmed and kept as preferred. A minor positive bias is apparent in high standards G315-7 but is not considered to be significant. Figure 11-28 shows the charts for the 2021-2022 drill campaigns set of field standards and the statistics for the same samples.

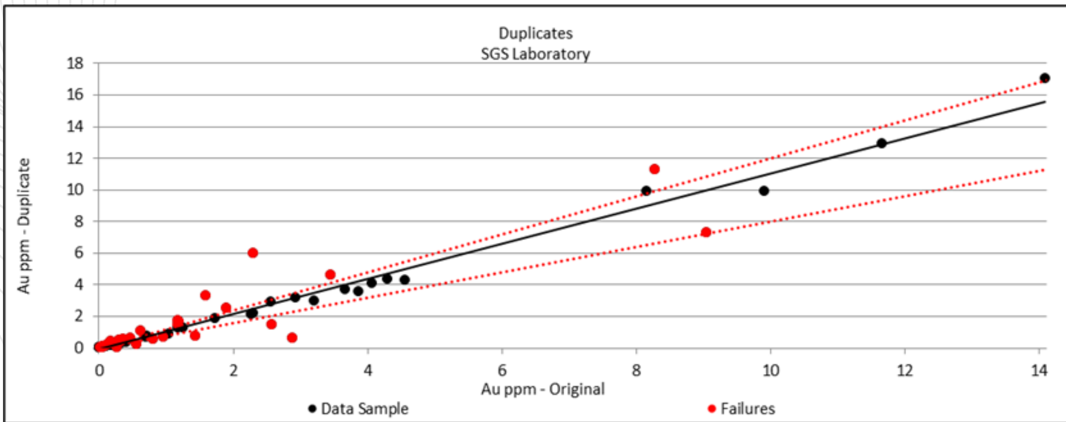


CRM Laboratory	Geostats		
CRM name	G315-7	G319-4	G916-6
CRM internal name	ALTO	MEDIO	BAIXO
Legend	▲	▲	▲
CRM Au ppm	4.82	1.54	0.57
CRM Standard deviation	0.22	0.07	0.03
Samples	26	25	26
# Outside Error Limit	0	0	0
Mean	4.9142	1.5477	0.5655
Min	4.708	1.434	0.522
Max	5.137	1.703	0.607
Standard Deviation	0.1102	0.0554	0.0189
%Rel. Std. Dev.	2.2418	3.5766	3.3473
Coeff. of Var.	0.0224	0.0358	0.0335
Standard Error	0.0216	0.0111	0.0037
%Rel. Std. Err.	0.4397	0.7153	0.6565
Total Bias	0.0195	0.005	-0.008
%Mean Bias	1.955	0.5013	-0.796

Figure 76: Internal QA/QC- Standard samples.

Coarse Rejects Duplicate Samples

A total of 77 coarse duplicate samples were analysed in the SGS laboratory as part of QA/QC program. Figure 77 shows in a scatter plot the performance of field duplicates samples and their statistics. A good correlation is shown between the duplicates and the original assays as defined by a correlation value of 0.97.

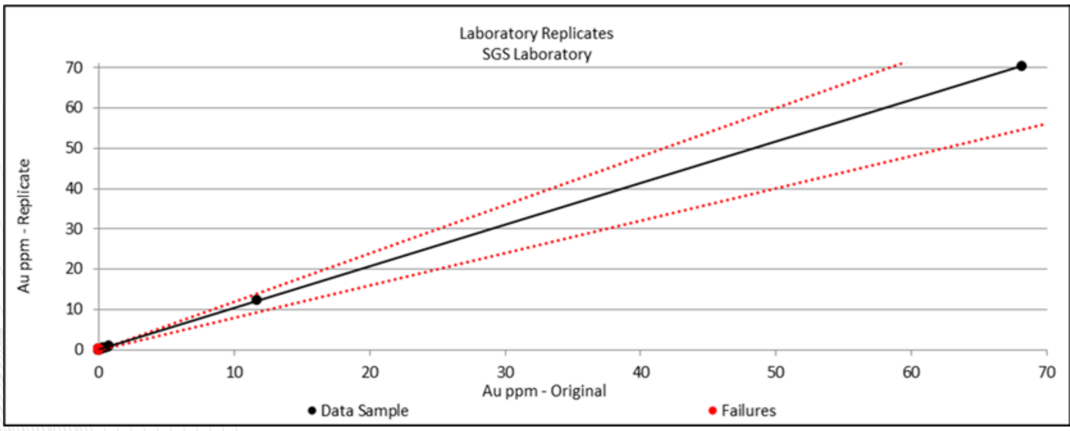


Summary of Data Au ppm		
	Assay	Duplicate
Samples	77	77
Minimum	0.003	0.003
Maximum	14.083	17.013
Mean	1.690	1.839
Std Deviation	2.824	3.220
Median	0.368	0.433
Variance	7.872	10.235
Coefficient Variance	1.671	1.751
Faults	29	
% Faults	37.662	
Correlation	0.972	

Figure 77: Internal QAQC- Coarse rejects samples.

Check Assays

A total of 50 samples were reanalyzed in 2022, due to the failure of one standard and one blank sample. The original results were kept as preferred for these samples. Figure 78 shows the chart and statistical information for the re-assays.



Summary of Data Au ppm	Assay	Reassay
Samples	49	49
Minimum	0.003	0.003
Maximum	60.406	68.157
Mean	2.874	2.703
Std Deviation	9.458	9.954
Median	0.214	0.211
Variance	87.636	97.065
Coefficient Variance	3.291	3.683
Faults	21	
% Faults	43	
Correlation	0.971	

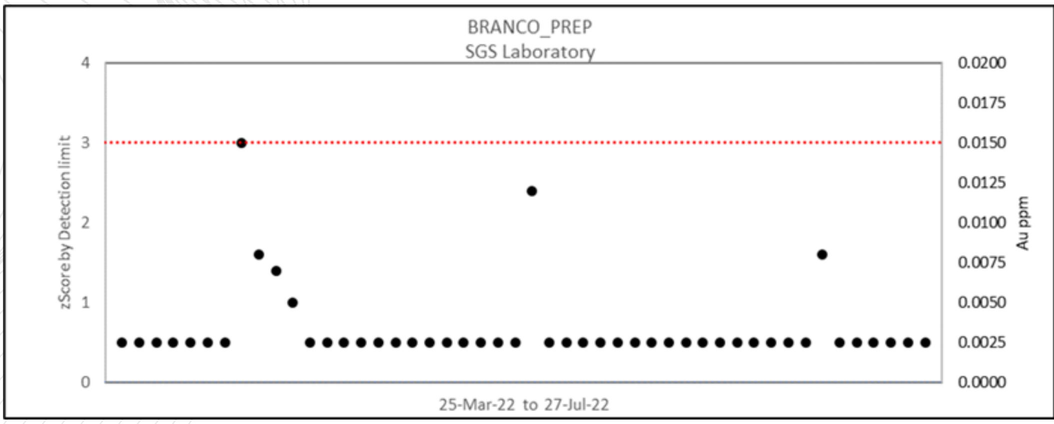
Figure 78: Internal QAQC - Re-assays.

11.4.5 EXTERNAL QA/QC ANALYSIS FOR BIG RIVER DRILLING (2021-2022)

Commercial laboratory contracted for the Project QA/QC, SGS Geosol Laboratórios LTDA, routinely inserted blanks, standards and replicates into each batch of samples to be analyzed. SGS Geosol includes the results of their internal QA/QC analyses with their analytical reports. The results of control sample analyses were stored in the laboratory's files while a copy was also stored in the Borborema's digital database. All analytical results were delivered in digital format to Big River's database manager while the Certificates of Analysis were provided separately. Copies of the digital assay files and certificates are stored in the Borborema digital database.

Blank Samples

The total of 48 blank samples were analysed by SGS laboratory as part of your QA/QC program. All returned results were approved with values below three times the detection limit for the method (0.015 ppm Au). Figure 79 shows a summary chart and statistics for the SGS blank samples.



BLK name	BRANCO_PREP
Detection limit	0.005
Samples	48
# Outside Error Limit	0
Mean	0.0033
Min	0.0025
Max	0.015
Standard Deviation	0.0025
% Rel. Std. Dev.	75.8147
Coeff. of Var.	0.7581
Standard Error	0.0004
% Rel. Std. Err.	10.9429
Total Bias	-0.3333
% Mean Bias	-33.3333

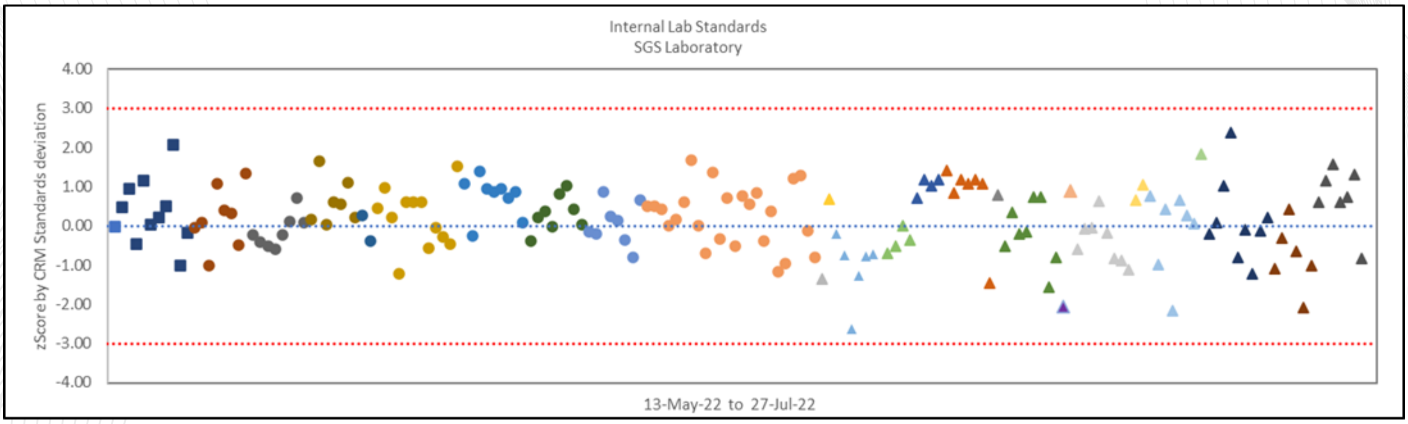
Figure 79: External QAQC-Blanks.

Standards

The SGS Geosol Laboratory included 28 CRMs in the sample batches sent during the 2022 drilling programs, as shown in the Figure 80 displaying a variation plot and statistical information for these samples. The charts show a good degree of analytical accuracy and precision as all CRM analyses were well within the threshold of three standard deviations of the mean. Therefore, no analytical batch was rejected by virtue of external CRM performance.

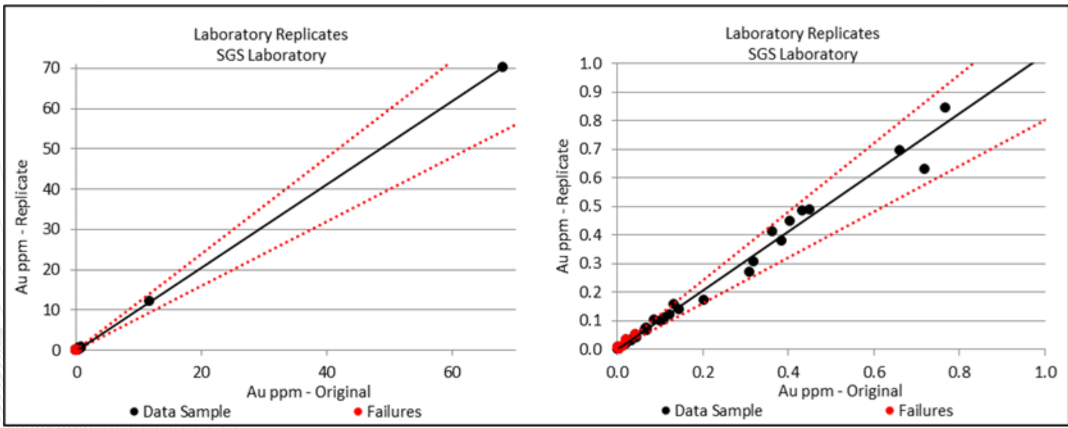
Replicates

Replicate pulp samples were used as external controls at the SGS laboratory as part of QA/QC program. As shown in Figure 81, a total of 39 accumulated duplicate samples were analyzed. A good degree of correlation is shown between the replicates and the original assays as defined by a correlation value of 0.99.



CRM laboratory	AMIS		CDN Resource									Geostats																
CRM name	AMIS0718	AMIS0720	CDN-CM-42	CDN-GS-1P5T	CDN-GS-12	CDN-GS-20A	CDN-GS-5X	CDN-GS-9C	CDN-GS-P5H	CDN-GS-P6D	CDN-ME-1702	G306-3	G306-4	G308-2	G310-3	G313-6	G314-8	G315-4	G315-7	G316-8	G317-4	G319-4	G398-10	G915-2	G916-5	G916-6	G919-9	GLG919-2
Legend	■	■	●	●	●	●	●	●	●	●	●	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
CRM Au ppm	1.33	1.19	0.58	1.75	1.16	21.12	5.04	8.97	0.50	0.77	3.24	8.66	21.57	1.11	0.07	4.94	1.03	0.32	0.30	6.11	23.97	0.50	4.07	4.98	19.92	30.94	0.95	0.64
CRM Standard deviatio	0.11	0.05	0.05	0.17	0.10	1.54	0.33	0.36	0.06	0.09	0.18	0.33	0.78	0.05	0.02	0.15	0.04	0.02	0.02	0.21	0.83	0.03	0.19	0.19	0.69	0.87	0.04	0.04
Samples	1	10	8	8	7	2	12	9	8	8	24	1	1	6	5	4	7	1	8	1	1	8	2	7	1	9	6	7
# Outside Error Limit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean	1.33	1.21	0.59	1.73	1.21	21.04	5.11	9.24	0.51	0.77	3.29	8.21	22.11	1.06	0.06	5.09	1.06	0.34	0.30	5.68	24.72	0.49	4.23	4.95	21.18	31.06	0.92	0.66
Min	1.33	1.14	0.53	1.65	1.16	20.52	4.64	8.88	0.48	0.69	3.03	8.21	22.11	0.98	0.06	5.05	0.97	0.34	0.27	5.68	24.72	0.47	4.20	4.57	21.18	29.89	0.87	0.61
Max	1.33	1.29	0.64	1.87	1.31	21.55	5.55	9.47	0.56	0.85	3.54	8.21	22.11	1.10	0.07	5.12	1.09	0.34	0.32	5.68	24.72	0.52	4.27	5.12	21.18	33.01	0.97	0.69
Standard Deviation		0.04	0.04	0.07	0.05	0.73	0.25	0.18	0.03	0.05	0.14			0.04	0.01	0.03	0.04		0.02			0.02	0.05	0.20		0.91	0.03	0.03
% Rel. Std. Dev.		3.42	6.56	4.18	4.51	3.46	4.88	1.98	5.03	6.59	4.22			3.96	8.89	0.63	3.73		5.33			3.52	1.20	4.08		2.93	3.65	4.16
Coeff. of Var.		0.03	0.07	0.04	0.05	0.03	0.05	0.02	0.05	0.07	0.04			0.04	0.09	0.01	0.04		0.05			0.04	0.01	0.04		0.03	0.04	0.04
Standard Error		0.01	0.01	0.03	0.02	0.51	0.07	0.06	0.01	0.02	0.03			0.02	0.00	0.02	0.01		0.01			0.01	0.04	0.08		0.30	0.01	0.01
% Rel. Std. Err.		1.08	2.32	1.48	1.70	2.44	1.41	0.66	1.78	2.33	0.86			1.61	3.98	0.31	1.41		1.88			1.24	0.85	1.54		0.98	1.49	1.57
Total Bias	0.00	0.02	0.02	-0.01	0.05	0.00	0.01	0.03	0.04	0.01	0.01	-0.05	0.02	-0.05	-0.12	0.03	0.03	0.05	-0.01	-0.07	0.03	-0.02	0.04	-0.01	0.06	0.00	-0.03	0.04
% Mean Bias	-0.15	1.51	1.84	-1.25	5.13	-0.39	1.34	2.98	3.52	0.62	1.42	-5.17	2.48	-4.76	-12.29	3.13	2.95	5.00	-1.13	-7.04	3.12	-2.27	3.98	-0.52	6.33	0.39	-3.28	4.11

Figure 80: External QA/QC - Lab standards.



Summary of Data Au ppm		
	Assay	Reassay
Samples	39	39
Minimum	0.003	0.003
Maximum	68.157	70.345
Mean	2.210	2.282
Std Deviation	10.995	11.350
Median	0.087	0.098
Variance	117.788	125.523
Coefficient Variance	4.975	4.973
Faults	6	
% Faults	15.385	
Total Coeff Variance	0.999	

Figure 81: External QA/QC - Lab replicates.

12 DATA VERIFICATION

This section provides an overview of data verification and validation methods employed by SRK Consulting (U.S.), Inc. (SRK) in reviewing the foundational geological, drilling, and gold analytical data used in support of Mineral Resource estimation. The Qualified Personconducted a site visit to the Project property and has reviewed the raw drilling data including assay and density information for the Project. SRK received the Borborema Project Access database which included four commas separated variable (.csv) files: collar, survey, assay, and geology. These files represent the base of verification.

12.1 SITE VISITE

The Qualified Person has conducted a personal site inspection of the Project as part of data verification. Mr. Erik Ronald, P.Geo. (PGO#3050), Principal Consultant at SRK visited the project site November 19 to 20, 2021. During the site visit, Mr. Ronald inspected the historical open pit, toured the general layout of the site, inspected the core shed and logging procedures, reviewed select drill core, and conducted interviews with site geological staff.

12.2 COLLAR AND DOWNHOLE SURVEY

In 2011, all drill hole collar locations were re-surveyed using differential global positioning system (DGPS) measurements after Borborema personnel discovered a minor error. After 2011, all drilling completed includes collars surveyed by DGPS, it is the opinion of the Qualified Person that all collars in the drilling database used for Mineral Resource calculations are considered accurate and reliable. The Qualified Person did not perform a validation check in the field to confirm collar locations.

Downhole surveys have been completed on all diamond drill holes based on historical documentation. No details were provided relating to the downhole survey tool(s) used during historical drilling campaigns. Many historical reverse circulation (RC) holes focused in the pit area do not include downhole surveys (prefix CRRC holes). Due to the relative shallow nature of the RC holes, tight spacing, and concentration in one area, it is the Qualified Person’s opinion that the lack of downhole data for these RC holes does not represent a material risk, but this potential uncertainty is considered as part of the Mineral Resource classification.

12.3 LOGGING

Geological logging is completed onsite by geological staff with the data logged including rock type, color, alteration, fabric, veining, and notes if sulphides are present. During the Qualified Person site visit, logged core was reviewed at the on-site core shed. As part of the logging review, the Qualified Person observed mineralization styles and noted that alteration and mineralization is subtle, with minor differences observed in both the psammite and pellitic host lithology. The Qualified Person notes two observed styles of mineralization represented as disseminated free gold and sulphide-hosted gold mineralization, typically observed within schistose planes and augens. The geological logging is considered satisfactory but notes that this data is not utilized for geological modeling or Mineral Resources.

12.4 ANALYTICAL VALIDATION

SRK performed a validation exercise for the drill hole database that covered all analyses performed at independent laboratories prior to 2022. Laboratory certificates were obtained from Aura to validate the original data against the drilling database. The validation exercise was performed in mid-2022 prior to the completion of the 2022 drill program.

Data verification efforts performed by SRK included comparison by sample ID of gold grade found in original laboratory certificate data against corresponding values for gold with matching IDs in the Aura-provided Microsoft Access assay database. Only gold values were provided and reviewed. SRK was provided scanned pdf certificate files from SGS laboratories and Excel (xls and csv) certificate files from ALS Laboratories.

From the certificate files provided, SRK identified 57,912 sample IDs in the certificates provided which contained values for gold to which SRK could match IDs in the database representing 79.71% of the values for gold in the assay database. Of those 57,912 matching sample IDs, 211 mismatched values were identified representing an error rate of 0.37% (99.63% match rate). Of the mismatching values, 151 can be traced to one scanned pdf (Caraiba.pdf) which includes all the SGS certificates indicating that many of the mismatched values may be the result of optical character recognition limitations due to the poor quality of the supplied pdf document.

Further, some of the mismatched values may have been transcription errors. For example, sample ID 901101 was found in the certificates with a value of 4.72 ppm but was found in the assay at 0.72 ppm. Sample ID 901100 was found in the database with a value of 0.72 ppm Au leading to our belief that a transcription error was at fault for this and many of the other 60 errors found for certificates not from the Caraiba.pdf file.

Of interest is the treatment in the assay database of values below detection threshold. Customarily, values identified in certificates as below detection threshold are clearly indicated in assay databases as being below the threshold. In this case, however, many values in the certificates identified as below detection threshold were included in the assay at the detection threshold. This is not considered good practice but has no material impact on the Mineral Resources.

SRK identified a low (0.37%) error rate between original source data found in certificates and the data in the assay database. Obvious errors which could be corrected were corrected prior to data use in estimation. In summary, it is the Qualified Persons opinion that the assay database has been verified and is appropriate for use in Mineral Resource Estimation.

12.5 REVERSE CIRCULATION TWIN REVIEW

SRK reviewed the use of reverse circulation (RC) sampling alongside diamond drill core (DDH) data in the deposit to determine reliability of the RC on grade and potential biases that may incur from RC sampling in a highly variable – moderate to high nugget deposit. In summary, it is SRK's opinion that minor biases and dilution is likely occurring in RC holes. That stated, the use of RC drilling does not represent a material risk to the deposit and close-spaced RC drilling can add value in identifying short range variability in mineral resources. SRK notes that RC drilling does represent most data used to inform the early mining period (years one through five) and as such, recommends additional diamond core drilling be completed in initial mining phases to provide additional support for tonnes and grade prediction using the robust method as validation during early mine start up.

SRK reviewed the previously completed RC versus DDH Q-Q plots and a twin analysis provided by Aura conducted by the property's previous owners (Figure 82). These summary reports and data indicate minor dilution in RC holes but given the discontinuous nature of gold mineralization, it is unclear how representative samples are and whether a true "twin" hole can be completed. Performing a visual validation of an area containing both drilling methods shows inconclusive results, in some locations there appears to be continuity of high grade while other areas show material differences (Figure 83).

Overall, it is SRK's opinion that Aura conduct diamond core drilling for all future Mineral Resource evaluation work on the Borborema deposit. This will eliminate the potential for sample loss and grade contamination known to be associated with the RC drilling method and exasperated by the high nugget nature of the Borborema deposit.

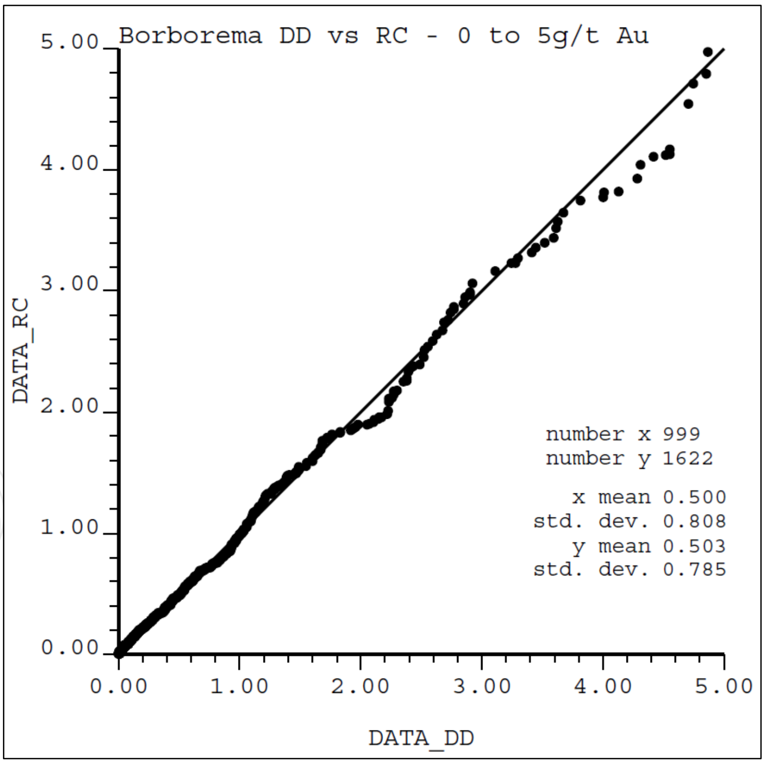


Figure 82: Q-Q plot of RC versus DDH assay less than 5 g/t Au. (Source: Big River data room, 2021).

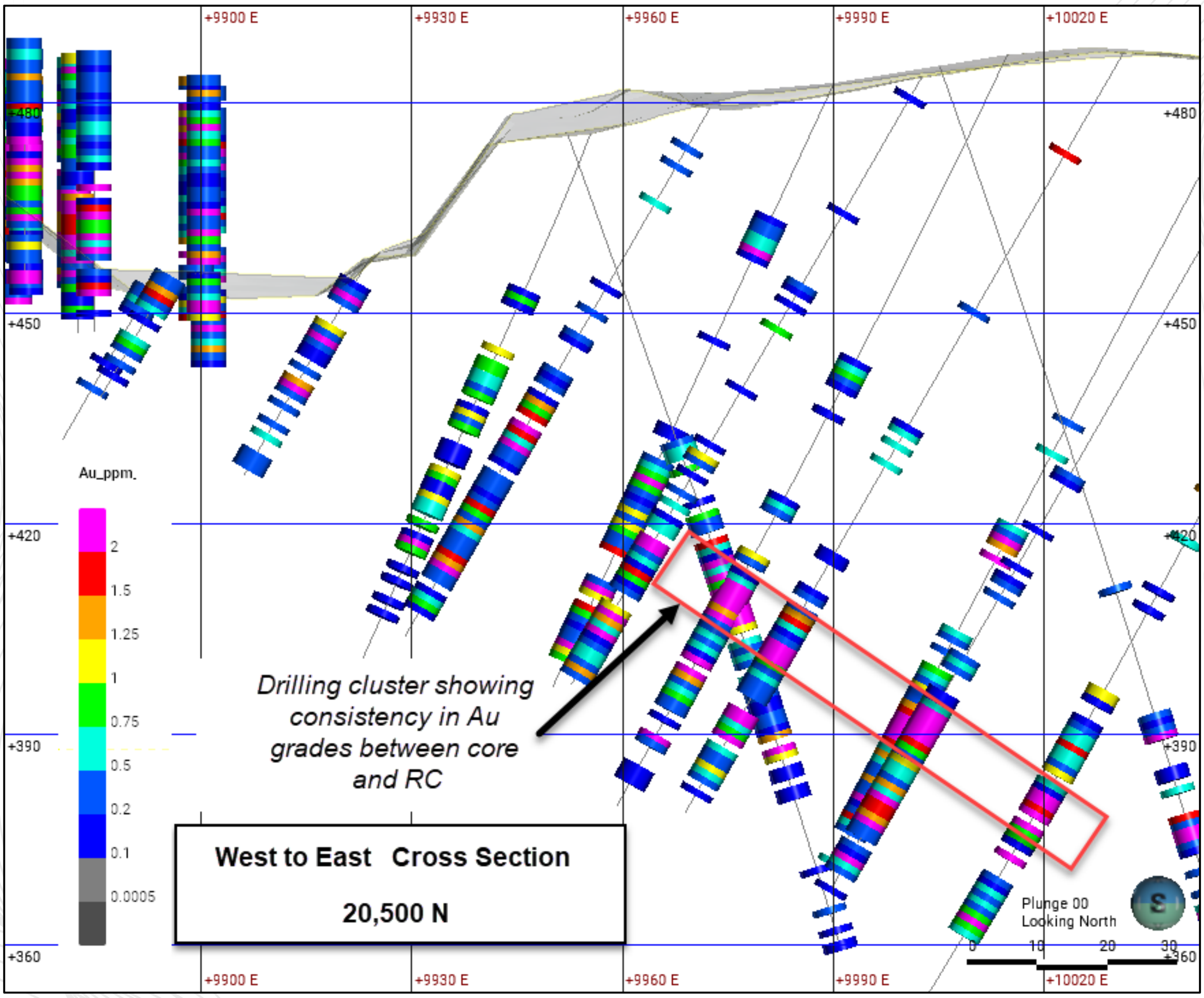


Figure 83: North-looking vertical cross section showing RC and DDH holes coloured by Au grade. (Source: SRK, 2021).

12.6 STATISTICAL DATA REVIEW

SRK performed a statistical review of the drilling database as part of the validation. The review included calculation of descriptive statistics, multiple charts, and review of potential outlier and erroneous data. This validation check aimed to identify errors common amongst databases including the use of zero values, treatment of below detection limits, negative or non-numeric values, extreme outlier identification, and interpretation of the distribution of gold values across the property. It is the Qualified Person's opinion that the statistical review did not identify major errors not already identified in associated validation steps as described in this section.

12.7 LIMITATIONS

The following are the known limitations on data verification as identified by the Qualified Person:

- Only gold analytical data was reviewed and validated.
- The Qualified Person did not supervise or oversee data acquisition of any drilling, logging, or analytical data used in the determination of Mineral Resources. Instead, the Qualified Person reviewed summary data, technical reporting,

and supporting documentation that summarize procedures and protocols. All descriptions of procedures and methods used in the collection of data supporting Mineral Resources were provided by Aura, a trusted source. Based on these documents, it is the Qualified Person's opinion that drilling and analytical data used in support of Mineral Resources were collected in a manner aligned with good industry practices sufficient for Mineral Resource classification.

- The Qualified Person has not conducted a visit or inspection to the analytical laboratories which provided the baseline analytical data supporting Mineral Resources. The laboratories used are considered reputable and independent laboratories suitable for the analyses performed.

- QA/QC summary data reviewed represented summary documentation and did not include a detailed review of raw quality control sample data. As such, errors may have been introduced or omitted prior to the Qualified Person's review.

- No independent duplicate samples were collected nor analyzed for verification purposes by the Qualified Person.

- The Qualified Person did not verify drill hole collar locations in the field but relied on historical collar surveys as accurate in X, Y, and Z coordinates. Collar locations were checked against LiDAR topography and satellite imagery and deemed acceptable.

- Historical open pit mining production data was not available for the Qualified Person to review.

12.8 OPINION ON DATA ADEQUACY

It is the Qualified Person's opinion that the raw drilling data used for estimating Mineral Resources has been adequately reviewed and classified in-line with CIM guidelines. Items identified as potential project risks, low confidence data, or lack of historical production data are accounted for in the Mineral Resource classification.

13 MINERAL PROCESSING AND METALLURGICAL TESTING

13.1 INTRODUCTION

The ore processing and metallurgical testing described in this section for the Borborema Project included various campaigns carried out during 2011 to 2019. Each campaign comprised different aspects such as ore characterization, comminution assessment, gold liberation and metallurgical testing. Selected aspects of each campaign are described in the following sections.

13.2 2011-2013 TESTING CAMPAIGNS

The technological reports summarizing the Borborema Project ore processing and metallurgical testing campaigns are listed in Table 35.

Table 35: 2011-2013 Test Reports.

Title	Author	Document	Date
Metallurgical Test work for Mineral Processing Flowsheet Determination for Borborema Project – Final Report	Test work Desenvolvimento de Processo LTDA	TWK-BORB-F-4105-RL-D21-001-R0	August 2011
Testes de Sedimentação Com Minério Do Projeto Borborema"	Test work Desenvolvimento de Processo LTDA	TWK-BORB-F-4105-RL-D21-002-R0	March 2012
Gravity Concentration, Leaching, Equilibrium Isotherm, Carbon Kinetic Test work	Test work Desenvolvimento de Processo LTDA	TWK-BORB-F-4105-RL-D21-003-R0	August 2012
Final Report Variability Leaching Tests with Borborema Ore	Test work Desenvolvimento De Processo LTDA	TWK-BORB-F-4105-RL-D21-004-R1	January 2013
Final Report Size Distribution and Leaching Tests with Borborema Ore"	Test work Desenvolvimento De Processo LTDA	TWK-BORB-F-4105-RL-D21-005-R1	January 2013
Characterisation of Borborema Ore Samples"	HDA Serviços S/S LTDA.	HDA-BORB-B-0012-RL-D21-001-R2	27 Mar 2013
Design of Borborema Industrial Comminution Circuit	HDA Serviços S/S LTDA.	HDA-BORB-B-0012-RL-D21-002-R2	30 Mar 2013
Survey of Gold Occurrences Borborema Classifier Overflow	ALS Metallurgy, Kamloops	KM3686	8 February 2013
Preliminary Assessment of Borborema Gold samples	ALS Metallurgy, Kamloops	KM3720	5 April 2013

Selected aspects of the reports listed in Table 35 are described in the following sections.

13.2.1 SELECTED SAMPLES FOR METALLURGICAL TESTING

Detailed description of the metallurgical composite samples (met samples) used, and the tests carried out, in the 2011-2013 metallurgical testing campaigns are shown in Table 36.

Table 36: Summary of Samples Used for the Metallurgical Tests.

Metallurgical Sample ID	Drill Hole Type	Sample Weight (kg)	Average Grade Au (ppm)	Date Sampled	Zone	Ore Type	Metallurgical Test work
CRMET-001	RC	27.0	1.22	Nov-2010	All	Oxides	PFS Metallurgical Test work
CRMET-002	RC	45.0	1.67	Dec-2010	All	Fresh (Sulphides)	PFS Metallurgical Test work
CRMET-003	DD	25.0	1.67	Feb-2011	All	Fresh (Sulphides)	PFS Metallurgical Test work
CRMET-004	RC	21.0	1.70	May-2011	All	Fresh (Sulphides)	Post-PFS Metallurgical Test work
CRMET-005	DD	25.0	NA	Aug-2011	Central	Trans / Fresh	WI & Comminutions
CRMET-006	DD	25.0	NA	Aug-2011	Northern	Trans / Fresh	WI & Comminutions
CRMET-007	DD	25.0	NA	Aug-2011	Southern	Trans / Fresh	WI & Comminutions
CRMET-008	RC	10.0	6.03	Nov-2011	Central	Transition	Granulometry Test of RC Sample
CRMET-009	DD	7.0	4.94	Nov-2011	Central	Fresh (Sulphides)	WI & Comminutions - BFS
CRMET-010	DD	6.0	0.41	Dec-2011	Central	Transition	WI & Comminutions - BFS

Metallurgical Sample ID	Drill Hole Type	Sample Weight (kg)	Average Grade Au (ppm)	Date Sampled	Zone	Ore Type	Metallurgical Test work
CRMET-011	DD	6.0	0.80	Dec-2011	Southern	Fresh (Sulphides)	WI & Comminutions - BFS
CRMET-012	DD	6.0	0.79	Dec-2011	Central	Fresh (Sulphides)	WI & Comminutions - BFS
CRMET-013	DD	6.0	0.58	Dec-2011	Northern	Fresh (Sulphides)	WI & Comminutions - BFS
CRMET-014	DD	100.0	NA	Jan-2012	All	All	WI & Comminutions - BFS
CRMET-015	DD	5.0	NA	Jan-2012	All	All	Pilot Plant Comminutions Tests
CRMET-016	RC	5.0	0.91	Jul-2012	Southern	Oxides	Zone Variation Leach Tests
CRMET-017	RC	5.0	2.39	Jul-2012	Central	Oxides	Zone Variation Leach Tests
CRMET-019	RC	5.0	0.95	Jul-2012	Northern	Oxides	Zone Variation Leach Tests
CRMET-020	RC	5.0	1.06	Jul-2012	Southern	Transition	Zone Variation Leach Tests
CRMET-021	RC	5.0	1.17	Jul-2012	Central	Transition	Zone Variation Leach Tests
CRMET-022	RC	5.0	1.56	Jul-2012	Central	Transition	Zone Variation Leach Tests
CRMET-023	RC	5.0	1.69	Jul-2012	Central	Transition	Zone Variation Leach Tests
CRMET-024	RC	5.0	1.50	Jul-2012	Northern	Transition	Zone Variation Leach Tests

Metallurgical Sample ID	Drill Hole Type	Sample Weight (kg)	Average Grade Au (ppm)	Date Sampled	Zone	Ore Type	Metallurgical Test work
CRMET-025	DD	5.0	1.33	Jul-2012	Southern	Fresh (Sulphides)	Zone Variation Leach Tests
CRMET-026	RC	5.0	1.33	Jul-2012	Southern	Fresh (Sulphides)	Zone Variation Leach Tests
CRMET-027	RC	5.0	1.59	Jul-2012	Central	Fresh (Sulphides)	Zone Variation Leach Tests
CRMET-028	RC	5.0	2.28	Jul-2012	Central	Fresh (Sulphides)	Zone Variation Leach Tests
CRMET-029	DD	5.0	1.09	Jul-2012	Central	Fresh (Sulphides)	Zone Variation Leach Tests
CRMET-030	DD	5.0	1.39	Jul-2012	Central	Fresh (Sulphides)	Zone Variation Leach Tests
CRMET-031	DD	5.0	2.12	Jul-2012	Central	Fresh (Sulphides)	Zone Variation Leach Tests
CRMET-032	DD	5.0	1.87	Jul-2012	Central	Fresh (Sulphides)	Zone Variation Leach Tests
CRMET-033	DD	5.0	1.68	Jul-2012	Central	Fresh (Sulphides)	Zone Variation Leach Tests
CRMET-034	DD	5.0	1.16	Jul-2012	Central	Fresh (Sulphides)	Zone Variation Leach Tests
CRMET-035	RC	5.0	1.76	Jul-2012	Central	Fresh (Sulphides)	Zone Variation Leach Tests
CRMET-036	DD	5.0	1.20	Jul-2012	Northern	Fresh (Sulphides)	Zone Variation Leach Tests

In July 2012, CRMET-016 to CRMET-036 metallurgical samples were chosen to assess variability aspects. These samples, weighing approximately 5 kg each, were obtained from slurries and coarse tailings from drilling campaigns as representative of respective ore type and zone within the Mineral Reserves. The locations of these samples are shown in Figure 84 in plan view and Figure 85 in longitudinal section.

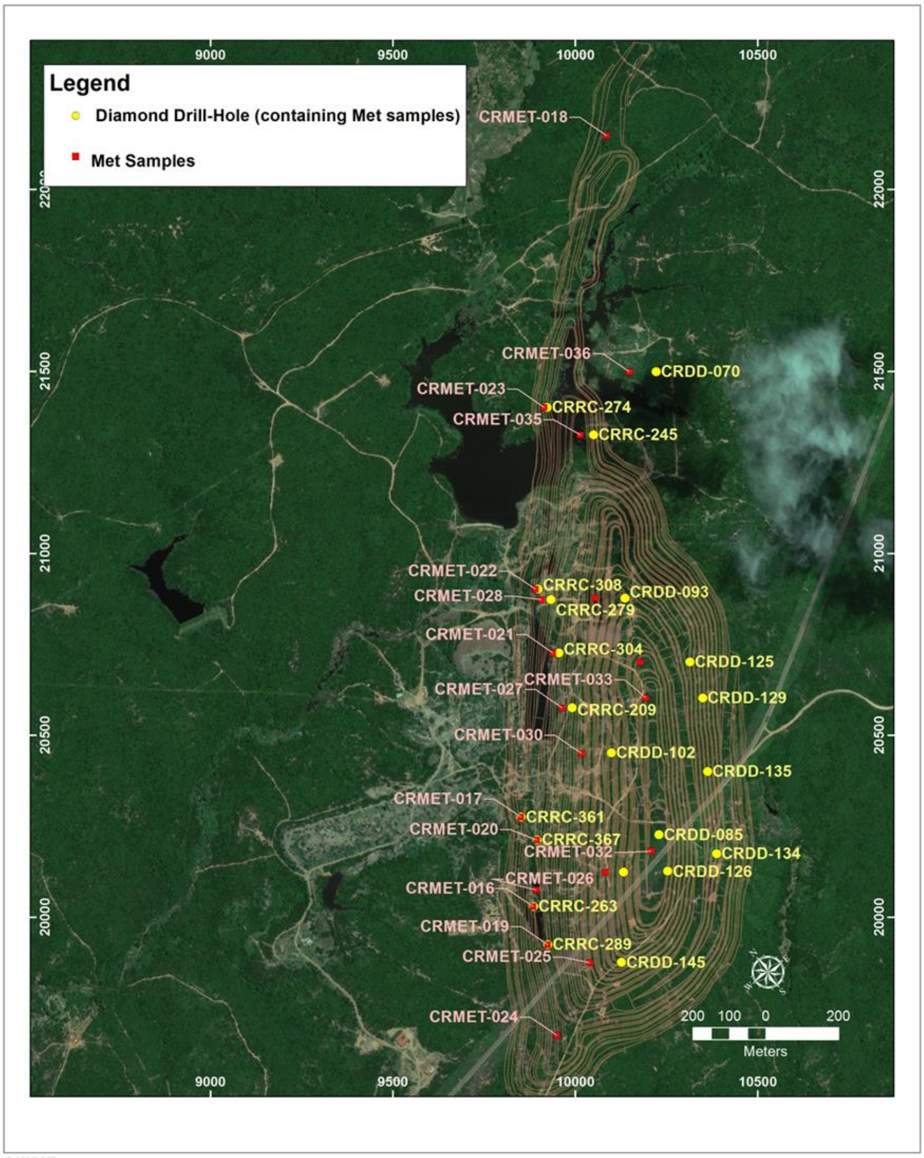


Figure 84: Variability Metallurgical Testing Sample Locations Map.

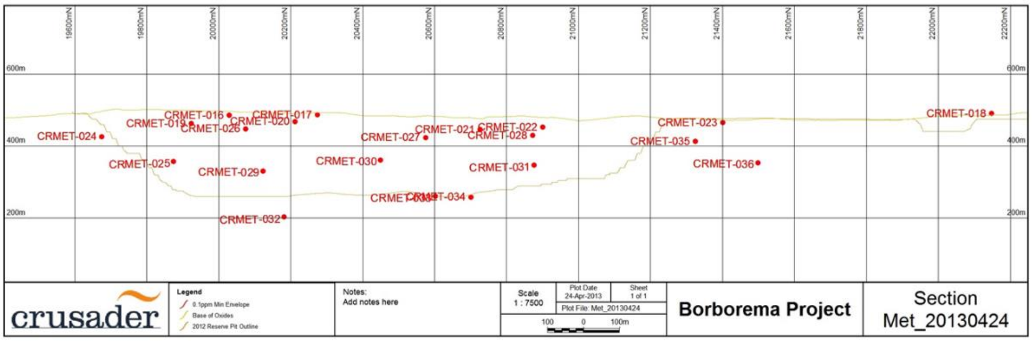


Figure 85: Variability Metallurgical Testing Sample Locations Longitudinal Section.

13.2.2 TESTWORK – 2012 CAMPAIGN

This section discusses the results of the tests carried out by TESTWORK in their laboratories at Nova Lima, MG, Brazil, from the report entitled "Gravity Concentration, Leaching, Equilibrium Isotherm, Carbon Kinetic" issued by TESTWORK on 09/05/2012 (2012b). The campaign supported the bankable feasibility study (BFS) prepared by Tetra Tech company, for a 4 Mtpy circuit capacity.

The campaign included gravity and cyanidation testing to assess the performance of carbon-in-leach (CIL) processing; Bond Work index ("BWi") determination for comminution characterization, together with sedimentation and flotation testing.

The summary of tests carried out in each sample is as follows:

- **Sample CRMET – 001:** Laboratory scale column leach for oxidized ore; roller bottle leach test for ore ground to P_{80} = 0.106 mm (150# Tyler) to determine maximum gold recovery;
- **Sample CRMET – 002:** Exploratory flotation tests; leach test (kinetic) without gravity concentration and varying grain size; leach in grinding test; size distribution and leaching test per fraction; gravity concentration curve; gravity concentration, followed by leach tests (kinetic) varying grain size; leach tests to optimize cyanide concentration; preliminary flotation test; sedimentation tests.
- **Sample CRMET – 003:** Determination of the BWi of the sample. This test was carried out at SGS laboratories in MG, Brazil.

The selected results obtained are listed in the following tables.

<u>Head Sample Analysis: </u>Table 37 to Table 39

Table 37: CRMET-001 – Head Sample Analysis.

Element	Unit	Data
S	%	0.14
Fe	%	5.5
Au	g/t	1.07
Ag	g/t	2.33
As	ppm	10.7
Hg	ppm	0.026
Cu	ppm	173.3

Table 38: Gold Grade Samples CRMET-001 and CRMET-002.

Sample CRMET - 001		
Gold (g/t)	Average	Std
1.037	1.07	0.034
1.067		
1.105		
Silver (g/t)	Average	Std
2.0	2.33	0.577
2.0		
3.0		

Sample CRMET - 001		
Gold (g/t)	Average	Std
2.411	1.59	0.459
1.357		
1.448		
1.419		
1.337		
Silver (g/t)	Average	Std
3.0	2.40	0.548

Table 39: Multi Element Analysis by ICP.

Element	Unit	CRMET - 001	CRMET - 002
C (CO_3)	%	<0.005	0.054
C (Elemental)	%	<0.005	0.009
C (Organic)	%	0.074	0.031
Al	%	7.67	7.64
Ca	%	1.25	1.39
Fe	%	4.91	4.77
K	%	2.04	2.2
Mg	%	1.63	1.69
Mn	%	0.19	0.11
Na	%	1.5	1.51
P	%	0.07	0.08
S	%	N.A.	0.61
Ti	%	0.44	0.42
As	ppm	39	102
Ba	ppm	432	431
Be	ppm	<3	<3
Bi	ppm	<20	<20
Cd	ppm	<3	<3
Co	ppm	15	16
Cr	ppm	45	49
Cu	ppm	151	127
La	ppm	22	21
Li	ppm	13	13
Mo	ppm	<3	<3
Ni	ppm	49	52
Pb	ppm	87	163
Sb	ppm	<10	<10
Sc	ppm	16	17
Se	ppm	<20	<20
Sn	ppm	<20	<20
Sr	ppm	129	130
Th	ppm	<20	<20
Tl	ppm	<20	<20
U	ppm	<20	<20
V	ppm	126	129
W	ppm	<20	<20
Y	ppm	12	13
Zn	ppm	117	103
Zr	ppm	85	94
Hg	ppm	N.A.	0.013

<u>Laboratory Leach Tests for Oxide Ore</u>: Table 40 to Table 42

Table 40: CRMET- 001 Size Distribution "As Received".

Mesh tyler	Size (mm)	Retained (%)	Retained Accum. (%)	% Passing Accum.
65	0.212	45.6	45.6	54.4
100	0.150	11.1	56.7	43.3
150	0.106	12.3	68.9	31.1
200	0.075	9.4	78.3	21.7
270	0.053	4.67	83.0	17.0
325	0.045	1.9	84.9	15.1
-325	-0.045	15.1	100	-

The CRMET-001 sample was ground to P_{80} = 0.075 mm and leached under the following condition:

Concentration: 50% of solids; pH = 10.5 – 11.0; 1000 g/t of NaCN and 24 hours contact time.

The results are listed in Table 41.

Table 41: Maximum Recovery Results CRMET-001.

Test n°	Reagents (g/t)			Gold			
	NaCN Initial	NaCN Consumption	Lime	Calculated Feed (g/t)	Tailing (g/t)	Recovery(%)	Recovery Average (%)
1	1000	647	1160	0.96	0.06	94.3%	90.1%
2	1000	684	1140	1.03	0.06	93.9%	
3	1000	583	1540	1.47	0.26	82.0%	

The following gold recovery tests were carried out on sample CRMET-002, Table 42.

Table 42: Size Distribution and Gold Recovery by Fraction – Sample CRMET-002.

Size Distribution						Gold Recovery by Fraction		
Mesh Tyler	Size (micron)	Mass (g)	% Retained	% Retained Acumulated	% Passing Accumulated	Au Feed (g/t)	Au Tailing (g/t)	Au Recovery (%)
100	150	119.26	11.8	11.8	88.2	0.50	0.07	85.7
115	125	72.17	7.2	19.0	81.0	0.86	0.10	88.9
150	106	46.47	4.6	23.6	76.4	1.17	0.15	87.7
200	75	187.55	18.6	42.3	57.7	0.58	0.10	82.6
270	53	149.20	14.8	57.1	42.9	0.95	0.09	90.5
-270	-53	431.83	42.9	100.0	0.0	1.57	0.05	97.1
	TOTAL	1006.48				1.10	0.07	93.3

<u>Leaching Curves without Gravity</u>: Table 43 to Table 46

Parameters of the kinetic test: 50% of solids: slurry pH adjusted to 10-11; Size P_{80} of 0.125; 0.106, and 0.075 mm; total residence time of 36 hours; sampling at 2, 6, 8, 20, 24, 36 hours; elements analysis for Au, Ag, CN, pH; cyanide initial concentration of 1,000 g/t: and carbon concentration 18 g/L of slurry (when used).

Table 43: Gold Tailings – CRMET-002 – Leaching Without Gravity.

Leaching without Gravity Concentration - Tailings Gold Grade (g/t)						
Time (h)	P_{80} = 125 micron without C	P_{80} = 125 micron with C	P_{80} = 106 micron without C	P_{80} = 106 micron with C	P_{80} = 75 micron without C	P_{80} = 75 micron with C
0	1.06	1.06	1.39	1.59	1.49	1.59
2	0.39	0.83	0.44	0.86	0.58	3.03
6	0.21	0.12	0.15	0.37	0.14	0.13
8	0.11	0.11	0.14	1.78	0.75	0.13
20	0.08	0.09	0.08	0.09	0.06	0.05
24	0.08	0.08	0.08	0.06	0.07	0.06
36	0.14	0.07	0.07	0.08	0.06	0.04

Table 44: Silver Tailings – CRMET-002 – Leaching Without Previous Gravity Testing.

Leaching without Gravity Concentration - Tailings Silver Grade (g/t)						
Time (h)	P80 = 125 micron without C	P80 = 125 micron with C	P80 = 106 micron without C	P80 = 106 micron with C	P80 = 75 micron without C	P80 = 75 micron with C
0	1.82	1.82	2.12	2.12	1.99	2.40
2	2.00	1.00	1.00	1.00	2.00	2.00
6	1.00	1.00	1.00	1.00	1.00	2.00
8	1.00	<1.00	1,00	1,00	1.00	1.00
20	1.00	<1.00	<1.00	<1.00	1.00	<1.00
24	1.00	1.00	1.00	<1.00	1.00	1.00
36	1.00	<1.00	<1.00	1.00	1.00	1.00

Table 45: Gold Recoveries – CRMET-002 – Leaching Without Previous Gravity Testing.

Leaching without Gravity Concentration - Gold Recovery (%)												
Time (h)	P_{80} =125micron without C		P_{80}=125 micron with C		P_{80} = 106micron without C		P_{80} = 106 micron with C		P_{80} = 75 micron without C		P_{80} = 75 micron with C	
	Real	Curve	Real	Curve	Real	Curve	Real	Curve	Real	Curve	Real	Curve
0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	68.8	58.8	21.9	51.6	67.0	61.1	46.0	43.4	61.3	61.3		58.3
6	77.8	88.4	88.8	85.3	84.4	91.8	76.7	80.4	86.4	92.2	91.9	91.2
8	87.2	91.3	89.6	89.9	89.4	94.8		87.6		95.2	92.1	94.9
20	92.0	93.0	91.5	93.7	94.4	96.6	94.3	96.1	97.0	97.0	97.1	97.5
24	93.0	93.0	92.6	93.8	96.6	96.6	96.3	96.2	95.7	97.0	96.3	97.5
36	87.2	93.0	93.8	93.8	92.9	96.6	94.8	96.3	94.0	97.0	97.5	97.5
K		0.5		0.4		0.5		0.3		0.5		0.456

Table 46: Silver Recoveries – CRMET-002 – Leaching Without Previous Gravity Testing.

Leaching without Gravity Concentration - Silver Recovery (%)						
Time (h)	P80 = 125 micron without C	P80 = 125 micron with C	P80 = 106 micron without C	P80 = 106 micron with C	P80 = 75 micron without C	P80 = 75 micron with C
0	0.0	0.0	0.0	0.0	0.0	0.0
2	23.7	44.9	44.2	52.7	26.7	16.7
6	35.5	44.9	51.9	52.7	36.8	16.7
8	36.3	44.9	47.5	52.7	43.6	58.3
20	46.9	44.9	48.9	52.7	55.1	58.3
24	36.1	44.9	70.3	52.7	48.2	58.3
36	41.5	44.9	37.5	52.7	41.2	58.3

GRG/GRS (Gravity Recoverable Gold and Silver): Table 47

Table 47: Gold Gravity Concentration Testing.

SAMPLE WEIGHT (g):							4000 g			
ID	Weight (g)		Mass (%)	Cumulative Mass (%)	Au Grade (g/t)	Au (mg)	Cumulative Au Grade (g/t)	Au Recovery (%)	Au Cumulative Recovery (%)	Milling time (min)
Conc. 1	47.25		1.18	1.12	50.15	2.370	50.15	35.60	35.60	5
Conc. 2	23.9		0.60	1.8	45.79	1.094	48.69	16.44	52.04	10
Conc. 3	50.4		1.26	3.0	14.86	0.749	34.66	11.25	63.29	19
Tailing	3878.5		96.96		0.63	2.443	1.08	36.71	100	
Feed Recalc.	4000.0				1.66	6.656				
Feed Anal.	4000.0				1.59					

Gravity Concentration Curve: Table 48 and Table 49

Table 48: Gold Gravity Concentration - CRMET - 002 - P80 of 0.075 mm.

SAMPLE WEIGHT (g): 4000 g									
ID	Weight(g)		Mass (%)	Cumulative Mass (%)	Au Grade (g/t)	Au (mg)	Cumulative Au Grade (g/t)	Au Recovery (%)	Au Cumulative Recovery (%)
Pan	6.59		0.16	0.2	316.45	2.085	316.45	33.72	33.72
Conc. 2	11.94		0.30	0.5	23.27	0.278	127.54	4.49	38.21
Conc. 3	5.83		0.15	0.6	105.07	0.613	122.16	9.90	48.11
Conc. 4	28.50		0.71	1.3	18.42	0.525	66.23	8.49	56.60

Conc. 5	19.34		0.48	1.8	7.80	0.151	50.58	2.44	59.04
Tailing	3927.8		98.20		0.64	2.533	1.55	40.96	100.00
Feed Calc.	4000.0				1.55	6.185			
Feed Anal.					1.59				

Table 49: Silver Gravity Concentration - CRMET - 002 - P80 of 0.075 mm.

SAMPLE WEIGHT (g): 4000 g									
ID	Weight (g)		Mass (%)	Cumulative Mass (%)	Ag Grade (g/t)	Ag (mg)	Ag Cumulative Grade (g/t)	Ag Recovery (%)	Ag Cumulative Recovery (%)
Pan	6.59		0.16	0.2	1210	0.797	121.00	8.52	8.52
Conc. 2	11.94		0.30	0.5	9.0	0.107	48.83	1.15	9.67
Conc. 3	5.83		0.15	0.6	39.0	0.227	46.48	2.43	12.10
Conc. 4	28.5		0.71	1.3	9,0	0.257	26.27	2.74	14.84
Conc. 5	19.34		0.48	1.8	6,0	0.116	20.84	1.24	16.08
Tailing	3927.8		98.20		2.0	7.856	2.34	83.92	100.00
Feed Calc.	4000.0				2.34	9.36			
Feed Anal.					2.40				

Gravity Concentration followed by Kinetic Leaching Tests: Table 50 to Table 52

Table 50: Gold and Silver Gravity Concentration Before Leaching - CRMET - 002 - P80 of 0.125 mm.

SAMPLE WEIGHT (g): 4000									
ID	Weight (g)		Mass (%)	Mass (%))	Au Grade (g/t)	Au (mg)	Cumulative Au Grade (g/t)	Au Recovery (%)	Au Cumulative Recovery (%)
Conc. 1	54.06		1.35	1.4	62.031	3.353	62.03	52.40	52.40
Tailing	3945.9		98.65		0.772	3.046	1.60	47.60	100.00
Feed Calc.	4000.0			1.47	1.60	6.400			
Feed Anal.	4000.0				1.59				
ID	Weight (g)		Mass (%)	Mass (%)	Ag Grade (g/t)	Ag (mg)	Cumulative Ag Grade (g/t)	Ag Recovery (%)	Ag Cumulative Recovery (%)
Conc. 1	54.06		1.35	1.4	18,0	0.973	18.00	10.98	10.98
Tailing	3945.9		98.65		2,0	7.892	2.22	89.02	100.00
Feed Calc.	4000.0				2.22	8.865			
Feed Anal.	4000.0				2.40				

Table 51: Gold and Silver Gravity Concentration Before Leaching - CRMET - 002 - P80 of 0.105 mm.

SAMPLE WEIGHT (g): 4000 g									
ID	Weight (g)		Mass (%)	Cumulative Mass (%)	Au Grade (g/t)	Au (mg)	Cumulative Au Grade (g/t)	Au Recovery (%)	Cumulative Au Recovery (%)
Conc. 1	44.96		1.12	1.1	55.847	2.511	55.85	45.78	45.78
Tailing	3955.0		98.88		0.752	2.974	1.37	54.22	100.00
Feed Calc.	4000.0				1.37	5.485			
Feed Anal.	4000.0				1.59				
ID	Weight (g)		Mass (%)	Cumulative Mass (%)	Ag Grade (g/t)	Ag (mg)	Cumulative Ag Grade (g/t)	Ag Recovery (%)	Cumulative Ag Recovery (%)
Conc. 1	44.96		1.12	1.1	19	0.854	19.00	9.75	9.75
Tailing	3955.0		98.88		2.000	7.91	2.19	90.25	100.00
Feed Calc.	4000.0				2.19	8.764			
Feed Anal.	4000.0				2.40				

Table 52: Gold and Silver Gravity Concentration Before Leaching - CRMET - 002 - P80 of 0.075 mm.

SAMPLE WEIGHT (g): 4000 g									
ID	Weight (g)		Mass (%)	Cumulative Mass (%)	Au Grade (g/t)	Au (mg)	Cumulative Au Grade (g/t)	Au Recovery (%)	Cumulative Au Recovery (%)
Conc. 1	29.15		0.73	0.7	84.368	2.429	84.37	43.64	43.64
Tailing	3970.9		99.27		0.800	3.177	1.41	56.36	100.00
Feed Calc.	4000.0				1.41	5.636			
Feed Anal.	4000.0				1.59				
ID	Weight (g)		Mass (%)	Cumulative Mass (%)	Ag Grade (g/t)	Ag (mg)	Cumulative Ag Grade (g/t)	Ag recovery (%)	Cumulative Ag Recovery (%)
Conc. 1	29.15		0.73	0.7	20	0.583	20.00	6.84	6.84
Tailing	3970.9		99.27		2.000	7.942	2.13	93.16	100.00
Feed Calc	4000.0				2.13	8.525			
Feed Anal.	4000.0				2.40				

Summary of Gold and Silver Gravity Recovery by grinding size - Sample CRMET-002: Table 53

Table 53: Gravity Recovery - Gold and Silver.

Size P80	**125 micron**	**106 micron**	**75 micron**
Mesh Tyler	115	150	200
Au Recovery (%)	52.4	45.8	43.64
Ag Recovery (%)	10.98	9.75	6.84

Leaching after Gold Gravity Recovery: Table 54 and Table 55

Table 54: Gold Tailings - CRMET - 002 - Leaching after Gravity Testing.

Leaching with Gravity Concentration - Tailings Gold Grade (g/t)						
Time (h)	P_{80} = 125 micron without C	P_{80} = 125 micron with C	P_{80} = 105 micron without C	P_{80} 105 = micron with C	P_{80} = 74 micron without C	P_{80} = 74 micron with C
0	0.64	0.64	0.58	0.58	0.75	0.75
2	0.16	0.15	0.12	0.11	0.08	0.07
6	0.14	0.13	0.10	0.09	0.07	0.06
8	0.12	0.09	0.08	0.08	0.06	0.05
20	0.13	0.09	0.07	0.07	0.06	0.08
24	0.09	0.09	0.07	0.01	0.04	0.05
36	0.08	0.08	0.08	0.06	0.07	0.05

Table 55: Gold Recovery - CRMET -002 - Leaching after Gravity Testing

Leaching with Gravity Concentration - Gold Recovery (%)												
Time (h)	P80=125 micron without C		P80 =125 micron with C		P80 = 106micron without C		P80 =106micron with C		P80 = 75micron without C		P80 = 75micron with C	
	Real	Curve	Real	Curve	Real	Curve	Real	Curve	Real	Curve	Real	Curve
0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	78.8	65.9	77.3	77.4	82.7	81.3	81.0	81.7	88.3	77,0	90.1	77.9
6	72.3	86.1	80.3	86.9	85.5	89.3	85.0	89.8	91.4	91.9	92.3	92.9
8	82.1	87.1	85.8	87.0	89.0	89.4	86.7	89.8	91.5	92.2	93.7	93.3
20	77.8	87.4	85.9	87.0	88.5	89.4	87.8	89.8	92.3	92.3	89.6	93.3
24	86.9	87.4	86.3	87.0	89.4	89.4	99,0	89.8	93.7	92.3	93.3	93.3
36	87.4	87.4	87,0	87.0	89.0	89.4	89.8	89.8	90.8	92.3	94.0	93.3
K		0.7		1.1		1.2		1.2		0.9		0.9

Bond Work index (BWi):

The BWi result obtained for the CRMET -003 sample was as 1 5.8 kWh/st equivalent to 17.4 kWh/t.

Settling Tests Results: Table 56

The settling testing campaign was carried out using the ore ground to a P_{80} of 0.075 mm, aiming to obtain a 40% solids slurry for the thickening prior to pulp leaching. The test summary is listed in Table 56, which shows that the targeted solids concentration was obtained in all of the tests.

Table 56: Summary of Settling Tests Results.

Flocculant		% Solids Feed	Settling Rate (m/h)	Unit area ($m^2/t/d$)	O/F Characteristc	Final % Solids	Thickener Diameter (m)
Type	(gpt)						
H2O - 20A	5	15	6.22	0.106	clear	52	37
	10	15	5.45	0.107	clear	44	38
	20	15	8.71	0.118	clear	47	37
	15	5	43.56	0.205	clear	40	39
	15	11	21.78	0.106	clear	50	52
	15	15	4.84	0.106	clear	40	37
	15	15	7.26	0.079	clear	49	32
	15	20	5.45	0.073	clear	50	31

<u>Flotation Tests:</u> Table 57 and Table 58

Three exploration flotation tests were carried out to assess the respective gold recoveries. The adopted test conditions were as follows:

% solids 30%
P80 74 µ
pH 7,5 - 8,0
Froth MIBCOL (as required to have a good froth)
Collector Test 1 PAX – 100 g/t (4 x 25 g/t)
Test 2 Dithiophosfate – 100 g/t (4 x 25 g/t)
Test 3 PAX – 50 gpt (1 x 30 g/t + 2 x 10 g/t) and Dithiophosfate 50 g/t (1 x 30 g/t + 2 x 10 g/t)
OBS: No gravity concentration before flotation.

The flotation test results are listed in Table 57.

Table 57: Summary of Flotation Tests Results.

Test 1				Test 2				Test 3			
Parameter	Feed	Conc.	Tail	Parameter	Feed	Conc.	Tail	Parameter	Feed	Conc.	Tail
Ore (g)	1.000	48.1	951.9	Ore (g)	1.000	57.1	942.9	Ore (g)	1.000	56.5	943.5
% solids	30	18	27	% solids	30	18	27	% solids	30	18	27
Au Grade (g/t)	1.59	26.74	0.32	Au Grade (g/t)	1.59	22.7	0.31	Au Grade (g/t)	1.59	24,0	0.25
Mass Pull (%)	100	4.81	95.19	Mass Pull (%)	100	5.71	94.29	Mass Pull (%)	100	5.65	94.35
Recovery (%)	-	80.8	19.2	Recovery (%)	-	81.6	18.4	Recovery (%)	-	85.2	14.8

Further testing was carried out with sample CRMET 005 by TESTWORK, including gold gravity concentration, leaching and adsorption on activated carbon, together with cyanide neutralization. The obtained results are listed in Table 58. The sample head grades as obtained by SGS-Geosol are listed in Table 58.

Table 58: CRMET–005 - Head Sample Analysis.

ID	Au (g/t)	Ag (g/t)
CAS-AL 1-T1	1.00	1.8
CAS-AL 2-T1	4.83	2.4
CAS-AL 3-T1	1.15	3.3
CAS-AL 4-T1	1.21	2.0
CAS-AL 5-T1	0.86	1.9
Average	1.06	2.03
SD	0.16	0.26

<u>Gravity Concentration Tests: Table 59</u>

Table 59: Gravity Concentration Results – Gold, Silver and Tailing GRG.

Gold						Silver								Tailing		
ID	Weight (kg)	Mass (%)	Au Grade (g/t)	Au (mg)	Au Recovery (%)	ID	Weight (kg)	Mass (%)	Ag Grade (g/t)	Ag (mg)	Ag Recovery (%)			ID	Au (ppm)	Ag (ppm)
Concentrate	0.076	0.33%	209.5	15.834	44,5%	Concentrate	0.076	0.33%	60,0	4.536	9.8%			CAS-RG1-CT1	0.90	1.7
Tailing	22.92	99.67%	0.86	19.715	55,5%	Tailing	22.924	99.67%	1.83	41.952	90.2%			CAS-RG2-CT1	0.81	1.6
Calculated Feed	23.0		1.55	35.549		Calculated Feed	23.0		2.02	46.488				CAS-RG3-CT1	0.88	2.2
Analyzed Feed	23.0		1.06			Analyzed Feed	23.0		2.03					Average	0.86	1.83

<u>Kinetic Leaching Test without Activated Carbon: Table 60 and Table 61</u>

Table 60: Leaching Test Results – No Activated Carbon.

<u>Conditions of tests:</u>	Parameters
% of solids	50% solids
Slurry pH	10.5 -11.0 (adjusted with lime)
P80	105 microns
Residence Total Time	24 hours
Sampling	2, 4, 6, 16, 22, 24 hours.
Analysis	Au, CN, pH
Cyanide Initial Conc.	1,000 g/t
Activated Carbon in the slurry	No carbon in pulp

Table 61: Leaching Test Results – No Activated Carbon.

Time (hours)	Au Tail Grade (g/t)	Au Solution Grade (g/t)	Au Feed (g/t)	Au Recovery (%)	Ag Tail Grade (g/t)	Ag Feed (g/t)	Ag Recovery (%)
0	0.994	-	-	0.0	2.14	-	0.0
2	0.140	0.823	0.96	85.5	1.40	2.27	38.2
4	0.120	0.800	0.92	87.0	1.30	2.11	38.4
6	0.110	0.824	0.93	88.2	1.10	1.96	44.0
16	0.090	0.829	0.92	90.2	1.10	1.99	44.7
22	0,120	0.989	1.11	89.2	1.20	2.19	45.2
24	0.100	1.018	1.12	91.1	1.30	2.30	43.4
Average			0.99			2.14	
Analyzed Feed			0.86			1.83	

Kinetic Leaching Test with Activated Carbon: Table 62 and Table 63

Table 62: Leaching Test Results – With Activated Carbon.

Conditions of tests	Parameters
% of solids	50%
Slurry pH	10.5 to 11.0 (ajusted with lime)
P80	105 µm
Residence Total Time	24 hs
Sampling	2, 4, 6, 16, 22, 24 hs
Analysis	Au, CN, pH
Cyanide Initial Conc.	1,000.0 g/t
Actived carbon in the slurry	18.0 g/L

Table 63: Leaching Test Results – No Activated Carbon.

Time (hours)	Au Tail Grade (g/t)	Au Solution Grade (g/t)	Au Feed (g/t)	Au Recovery (%)	Ag Tail Grade (g/t)	Ag Feed (g/t)	Ag Recovery (%)
0	0.994	0.000	-	0.0	2.14	-	0.0
2	0.150	0.100	0.99	84.9	1.40	2.14	34.6
4	0.110	0.098	0.99	88.9	1.10	2.14	48.6
6	0.100	0.070	0.99	89.9	1.30	2.14	39.3
16	0.090	0.080	0.99	90.9	1.20	2.14	43.9
22	0.100	0.040	0.99	89.9	1.20	2.14	43.9
24	0.080	0.080	0.99	91.9	1.10	2.14	48.6

Cyanide Neutralization: Sample CRMET-005: Table 64 to Table 73, Figure 86

Table 64: CN Neutralization Using Sodium Metabisulfite (SMBS) as Oxidant.

Time (h)	Test 1		test 2		Test 3	
	Ratio SO_2:CN	4:1	Ratio SO_2:CN	2:1	Ratio SO_2:CN	2:1
	Catalyst (Copper Sulphate)	20 mg Cu^+/L	Catalyst (Copper Sulphate)	20 mg Cu^+/L	Catalyst (Carbon G210 PICA)	18.0 g/L
	pH	6 to 9	pH	6 to 9	pH	6 to 9
	Aeration	6NL/min	Aeration	6NL/min	Aeration	6NL/min
	NaCN (mg/L)	Neutralization	NaCN (mg/L)	Neutralization	NaCN (mg/L)	Neutralization
0	260	0.0%	280	0.0%	150	0.0%
0.5	36	86.2%	45	83.9%	16	89.3%
1.0	18	93.1%	21	92.5%	11	92.7%
1.5	5	98.1%	7	97.5%	5	96.7%
2.0	< 1	99.6%	<1	99.6%	<1	99.3%

The TESTWORK report (2012b) also included leach testing of different samples for assessing variability in gold extraction as a function of ore type and gold grade. The first testing route comprised both gravity and leaching tests while the second route involved leaching test only. Twenty samples identified as CRMET 16 to 36 were classified in three ore types, i.e., oxides, transition, and sulfide, as shown in Table 65.

Table 65: Samples Used in the Variability Tests.

OxZone	Zone	Section	SiteID	Depth From	Depth To	AuPPM	MetSample
Oxide	Southern Zone	20025	CRRC-263	0	5	0.91	**CRMET-016**
Oxide	Central Zone	20775	CRRC-361	0	5	2.39	**CRMET-017**
Oxide	Northern Zone	22150	CRRC-085	1	6	0.95	**CRMET-018**
Transitional	Southern Zone	19925	CRRC-289	30	35	1.06	**CRMET-019**
Transitional	Central Zone	20212,5	CRRC-367	13	18	1.70	**CRMET-020**
Transitional	Central Zone	20725	CRRC-304	29	34	1.56	**CRMET-021**
Transitional	Central Zone	20900	CRRC-308	17	22	1.69	**CRMET-022**
Transitional	Northern Zone	21400	CRRC-274	14	19	1.50	**CRMET-023**
Fresh	Southern Zone	19675	CRRC-126	74	79	1.33	**CRMET-024**
Fresh	Southern Zone	19875	CRDD-145	167	172	1.33	**CRMET-025**
Fresh	Central Zone	20075	CRRC-135	50	55	1.59	**CRMET-026**
Fresh	Central Zone	20575	CRRC-209	63	69	2.28	**CRMET-027**
Fresh	Central Zone	20875	CRRC-279	49	54	1.09	**CRMET-028**
Fresh	Central Zone	20125	CRDD-074	171	176	1.39	**CRMET-029**
Fresh	Central Zone	20450	CRDD-102	150	155	2.12	**CRMET-030**
Fresh	Central Zone	20875	CRDD-093	157	162	1.87	**CRMET-031**
Fresh	Central Zone	20175	CRDD-134	346	351	1.68	**CRMET-032**
Fresh	Central Zone	20600	CRDD-129	284	289	1.16	**CRMET-033**
Fresh	Central Zone	20700	CRDD-125	270	275	1.76	**CRMET-034**
Fresh	Northern Zone	21325	CRRC-245	71	76	1.20	**CRMET-035**
Fresh	Northern Zone	21500	CRDD-070	140	145	1.17	**CRMET-036**

The conditions adopted in the leaching tests were as follows:

- P_{80} of 0.105 mm.
- Carbon-in-pulp concentration: 18 g/L.
- Solids concentrations: 50% of solids.
- pH: 10.5 to 11.0.
- Initial NaCN concentration: 700 ppm.
- Leaching time: 16 hours.

Figure 86 shows the adopted leach test procedures.

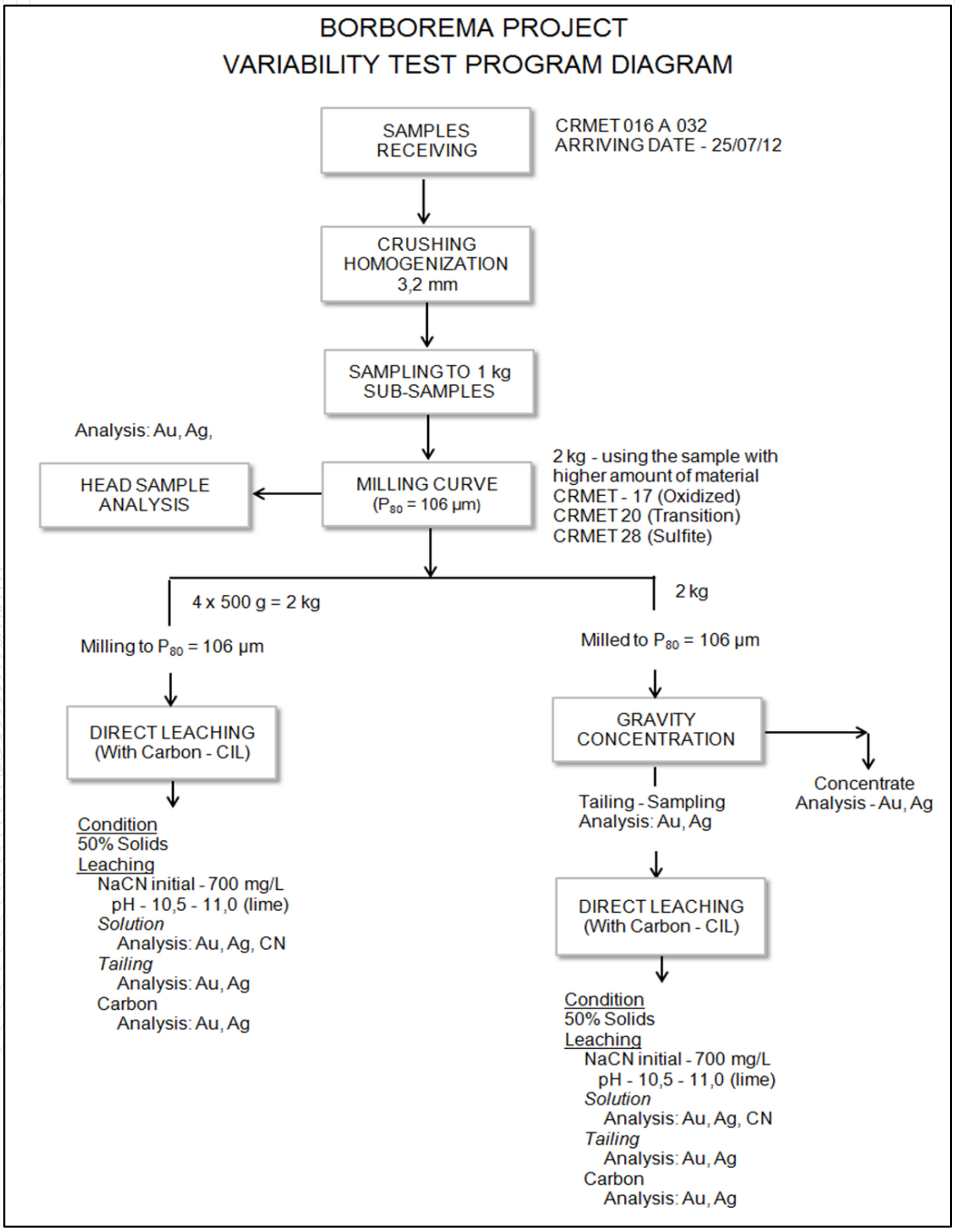


Figure 86: Leach Test Procedures - Variability Testing.

The variability test results are presented in Table 66 to Table 73.

Table 66: Variability Tests Results – Oxide Samples.

Sample	CRMET 16				CRMET 17			
Type	Oxidized				Oxidized			
	Au		Ag		Au		Ag	
Analyzed Feed (g/t)	2.34		13.0		2.14		1.02	
Calc. Feed (g/t)	1.01		7.16		1.9		1.00	
Leaching	Tailings	Recov.	Tailings	Recov.	Tailings	Recov.	Tailings	Recov.
	0.069	97.1%	3.21	75.3%	0.39	81.8%	0.45	55.9%
	0.122	94.8%	3.94	69.7%	0.32	85.0%	0.465	54.4%
	0.084	96.4%	3.66	71.8%	0.28	86.9%	0.485	52.5%
	0.104	95.6%	3.45	73.5%	0.32	85.0%	0.479	53.0%
Global Recov. Average	95.98%		72.6%		84.7%		53.9%	

Table 67: Variability Tests Results – Transition Samples.

Sample	CRMET 19				CRMET 20				CRMET 21			
Type	Transition				Transition				Transition			
	Au		Ag		Au		Ag		Au		Ag	
Analyzed Feed (g/t)	0.90		0.38		0.94		1.26		1.22		5.89	
Calc. Feed (g/t)	0.96		0.30		0.82		0.75		1.64		4.92	
Leaching	Tailings	Recov.	Tailings	Recov.	Tailings	Recov.	Tailings	Recov.	Tailings	Recov.	Tailings	Recov.
	0.051	94.3%	0.12	68.4%	0.092	90.2%	0.29	77.0%	0.043	96.5%	4.09	30.6%
	0.048	94.7%	0.01	97.4%	0.065	93.1%	0.25	80.2%	0.326	73.3%	4.59	22.1%
	0.05	94.4%	0.14	63.2%	0.075	92.0%	0.30	76.2%	0.026	97.9%	4.02	31.7%
	0.034	96.2%	0.04	89.5%	0.08	91.5%	0.23	81.7%	0.049	96.0%	4.13	29.9%
Global Recov. Average	94.9%		79.6%		91.7%		78.8%		90.9%		28.6%	

Table 68: Variability Tests Results – Transition Samples.

Sample	CRMET 22				CRMET 23			
Type	Transition				Transition			
	Au		Ag		Au		Ag	
Analyzed Feed (g/t)	1.08		0.52		1.15		0.51	
Calc. Feed (g/t)	0.97		0.32		1.07		0.28	
Leaching	Tailings	Recov.	Tailings	Recov.	Tailings	Recov.	Tailings	Recov.
	0.053	95.1%	0.10	80.8%	0.067	94.2%	<0.01	98.0%
	0.050	95.4%	0.08	84.6%	0.067	94.2%	<0.01	98.0%
	0.056	94.8%	0.03	94.2%	0.073	93.7%	0.02	96.1%
	0.052	95.2%	0.02	96.2%	0.083	92.8%	0.07	86.3%
Global Recov. Average	95.10%		88.90%		93.70%		94.6%	

Table 69: Variability Tests Results – Sulphite Samples – South Area.

Sample	CRMET 24				CRMET 25			
Type	Sulphite - South				Sulphite - South			
	Au		Ag		Au		Ag	
Analyzed Feed (g/t)	1.33		2.18		0.99		2.07	
Calc. Feed (g/t)	1.24		1.71		1.23		1.23	
Leaching	Tailings	Recov.	Tailings	Recov.	Tailings	Recov.	Tailings	Recov.
	0.053	96.0%	0.78	64.2%	0.219	77.9%	0.96	53.6%
	0.065	95.1%	0.85	61.0%	0.073	92.6%	0.60	71.0%
	0.052	96.1%	0.75	65.6%	0,075	92.4%	0.58	72.0%
	0.064	95.1%	0.76	65.1%	0,066	93.3%	0.59	71.5%
Global Recov. Average	95.6%		64.0%		89.1%		67.0%	

Table 70: Variability Tests Results – Sulphite Samples – Centre Area.

Sample	CRMET 26				CRMET 27				CRMET 28			
Type	Sulphite - Center				Sulphite - Center				Sulphite - Center			
	Au		Ag		Au		Ag		Au		Ag	
Analyzed Feed (g/t)	1.54		1.24		2.30		7.55		0.79		0.51	
Calc. Feed (g/t)	1.34		0.65		2.18		5.56		0.88		0.73	
Leaching	Tailings	Recov.	Tailings	Recov.	Tailings	Recov.	Tailings	Recov.	Tailings	Recov.	Tailings	Recov.
	0.091	94.1%	0.14	88.7%	0.11	95,20%	4.59	39.2%	0.066	91.6%	0.25	51.0%
	0.087	94.4%	0.12	90.3%	0.11	95,20%	4.94	34.6%	0.066	91.6%	0.15	70.6%
	0.082	94.7%	0.17	86.3%	0.10	95,70%	4.56	39.6%	0.072	90.9%	0.40	21.6%
	0.064	95.8%	0.15	87.9%	0.10	95,70%	5.19	31.3%	0.087	89.0%	0.23	54.9%
Global Recov. Average	94.7%		88.3%		95.40%		36.2%		90.8%		49.5%	

Table 71: Variability Tests Results – Sulphite Samples - Centre Area.

Sample	CRMET 29				CRMET 30				CRMET 31			
Type	Sulphite - Center				Sulphite - Center				Sulphite - Center			
	Au		Ag		Au		Ag		Au		Ag	
Analyzed Feed (g/t)	1.80		0.96		3.58		1.49		2.01		0.87	
Calc. Feed (g/t)	1.17		0.77		2.27		1.34		2.06		1.06	
Leaching	Tailings	Recov.	Tailings	Recov.	Tailings	Recov.	Tailings	Recov.	Tailings	Recov.	Tailings	Recov.
	0.123	93.2%	0.45	53.1%	0.33	90,80%	0.69	53.7%	0.128	93.6%	0.46	47.1%
	0.132	92.7%	0.48	50.0%	0.56	84,30%	0.73	51.0%	0.146	92.7%	0.58	33.3%
	0.143	92.1%	0.39	59.4%	0.40	88,80%	0.65	56.4%	0.227	88.7%	0.50	42.5%
	0.117	93.5%	0.42	56.3%	0.36	90,00%	0.73	51.%	0.163	91.9%	0.44	49.4%
Global Recov. Average	92.8%		54.7%		88.5%		53.0%		91.7%		43.1%	

Table 72: Variability Tests Results – Sulphite Samples - Centre Area.

Sample	CRMET 32				CRMET 33				CRMET 34			
Type	Sulphite - Center				Sulphite - Center				Sulphite - Center			
	Au		Ag		Au		Ag		Au		Ag	
Analyzed Feed (g/t)	1.26		2.61		1.60		2.03		1.75		0.68	
Calc. Feed (g/t)	1.41		1.23		2.21		1.61		1.31		0.59	
Leaching	Tailings	Recov.	Tailings	Recov.	Tailings	Recov.	Tailings	Recov.	Tailings	Recov.	Tailings	Recov.
	0.161	87.2%	0.73	72.0%	0.188	88.3%	0.83	59.1%	0.204	88.3%	0.25	63.30%
	0.333	73.6%	0.78	70.1%	0.201	87.4%	0.86	57.6%	0.213	87.8%	0.27	60.30%
	0.154	87.8%	0.80	69.3%	0.199	87.6%	0.90	55.7%	0.193	89.0%	0.28	58.80%
	0.198	84.3%	0.78	70.1%	0.314	80.4%	0.87	57.1%	0.191	98.1%	0.28	58.80%
Global Recov. Average	83.2%		70.4%		85.9%		54.7%		88.6%		60.3%	

Table 73: Variability Tests Results – Sulphite Samples - North Area.

Sample	CRMET 35				CRMET 36			
Type	Sulphite - North				Sulphite - North			
	Au		Ag		Au		Ag	
Analyzed Feed (g/t)	1.12		0.52		1.13		0.47	
Calc. Feed (g/t)	1.16		0.48		1.02		0.46	
Leaching	Tailings	Recov.	Tailings	Recov.	Tailings	Recov.	Tailings	Recov.
	0.089	92,10%	0.12	76.9%	0.187	83,50%	0.24	48.9%
	0.107	90,40%	0.12	76.9%	0.224	80,20%	0.15	68.1%
	0.092	91,80%	0.12	76.9%	0.156	86,20%	0.16	66.0%
	0.121	89,20%	0.15	71.2%	0.176	84,40%	0.10	78.7%
Global Recov. Average	90.9%		75.5%		83.6%		65.4%	

Leaching Testes with Gravity Concentration: Table 74 to Table 81.

Table 74: Variability Tests Results – Oxide Samples.

Sample	CRMET 16				CRMET 17				CRMET 18			
Type	Oxidized				Oxidized				Oxidized			
	Au		Ag		Au		Ag		Au		Ag	
Analyzed Feed (g/t)	1.06		13.0		3.11		1.77		NA		NA	
Calc. Feed (g/t)	1.57		11.25		2.34		1.30		1.49		0.96	
Gravity Conc. Recov. (%)	54.9%		14.2%		11.4%		12.6%		24.7%		9.6%	
Leaching Feed (g/t)	0.73		9.94		2.13		1.17		1.15		0.89	
Leaching	Tailings	Recov.	Tailings	Recov.	Tailings	Recov.	Tailings	Recov.	Tailings	Recov.	Tailings	Recov.
	0.031	95.8%	2.86	71.2%	0.458	78.5%	0.95	18.8%	0.106	90.7%	0.30	66.3%
	0.031	95.8%	3.16	68.2%	0.456	78.6%	0.71	39.3%	0.128	88.8%	0.26	70.8%
	0.046	93.6%	2.50	74.8%	0.457	78.5%	0.68	41.9%	0.121	89.5%	0.27	69.7%
Global Recov. Average	97.7%		74.8%		80.4%		40.0%		92.1%		71.0%	

Table 75: Variability Tests Results – Transition Samples.

Sample	CRMET 19				CRMET 20				CRMET 21			
Type	Transition				Transition				Transition			
	Au		Ag		Au		Ag		Au		Ag	
Analyzed Feed (g/t)	0.95		1.08		1.04		1.31		1.13		7.16	
Calc. Feed (g/t)	1.13		0.99		1.12		1.55		1.46		7.08	
Gravity Conc. Recov. (%)	57.90%		20.60%		30.50%		15.40%		54.80%		27.60%	
Leaching Feed (g/t)	0.49		0.81		0.80		1.35		0.68		5.28	
Leaching	Tailings	Recov.	Tailings	Recov.	Tailings	Recov.	Tailings	Recov.	Tailings	Recov.	Tailings	Recov.
	0.033	93.30%	0.30	62.96%	0.041	94.90%	0.39	71.11%	0.019	97,20%	3.61	31.63%
	0.023	95.40%	0.28	65.43%	0.033	95.80%	0.46	65.93%	0.015	97,80%	3.53	33.14%
	0.021	95.80%	0.29	64.20%	0.034	95.80%	0.41	69.63%	<0.010	98,50%	3.31	37.31%
Global Recov. Average	97.80%		70.70%		96.80%		72.90%		97.83%		50.80%	

Table 76: Variability Tests Results – Transition Samples.

Sample	CRMET 22				CRMET 23			
Type	Transition				Transition			
	Au		Ag		Au		Ag	
Analyzed Feed (g/t)	1.22		1.02		1.20		1.09	
Calc. Feed (g/t)	1.95		1.37		1.53		1.07	
Gravity Conc. Recov. (%)	28.50%		17.00%		54.40%		21.80%	
Leaching Feed (g/t)	1.43		1.17		0.72		0.86	
Leaching	Tailings	Recov.	Tailings	Recov.	Tailings	Recov.	Tailings	Recov.
	0.086	94.00%	0.70	40.20%	0.046	93.60%	0.51	40.70%
	0.064	95.50%	0.55	53.00%	0.042	94.20%	0.30	65.10%
	0.055	96.20%	1.14	29.89%	0.045	93.70%	0.28	67.40%
Global Recov. Average	96.50%		41.08%		97.10%		66.00%	

Table 77: Variability Tests Results – Sulphite Samples – South Area.

Sample	CRMET 24				CRMET 25			
Type	Sulphite - South				Sulphite - South			
	Au		Ag		Au		Ag	
Analyzed Feed (g/t)	1.36		2.64		0.83		1.58	
Calc. Feed (g/t)	1.46		3.22		1.20		1.65	
Gravity Conc. Recov. (%)	54.90%		27.10%		58.10%		24.70%	
Leaching Feed (g/t)	0.68		2.42		0.52		1.28	
Leaching	Tailings	Recov.	Tailings	Recov.	Tailings	Recov.	Tailings	Recov.
	0.042	93.90%	0.82	66.10%	0.044	91.50%	0.82	35.90%
	0.039	94.30%	0.95	60.70%	0.045	91.40%	0.75	41.40%
	0.039	94.20%	0.94	61.20%	0.049	90.50%	0.76	40.60%
Global Recov. Average	97.30%		72.00%		96.20%		53.00%	

Table 78: Variability Tests Results – Sulphite Samples – Center Area.

Sample	CRMET 26				CRMET 27				CRMET 28			
Type	Sulphite - Center				Sulphite - Center				Sulphite - Center			
	Au		Ag		Au		Ag		Au		Ag	
Analyzed Feed (g/t)	1.37		1.35		2.02		6.56		0.91		1.99	
Calc. Feed (g/t)	1.72		1.64		1.95		7.34		1.04		1.26	
Gravity Conc. Recov. (%)	37.20%		16.50%		34.40%		28.60%		40.90%		12.00%	
Leaching Feed (g/t)	1.11		1.41		1.32		5,4		0.63		1.14	
Leaching	Tailings	Recov.	Tailings	Recov.	Tailings	Recov.	Tailings	Recov.	Tailings	Recov.	Tailings	Recov.
	0.094	91.50%	0.47	66.70%	0.076	94.20%	3.31	38.70%	0.048	92.50%	0.70	38.60%
	0.070	93.70%	0.46	67.40%	0.071	94.70%	3.50	35.20%	0.051	92.00%	0.52	54.40%
	0.077	93.10%	0.50	64.50%	0.071	94.60%	3.38	37.40%	0.065	89.60%	0.38	66.70%
Global Recov. Average	95.30%		70.90%		96.30%		53.70%		94.80%		57.60%	

Table 79: Variability Tests Results – Sulphite Samples - Centre Area.

Sample	CRMET 29				CRMET 30				CRMET 31			
Type	Sulphite - Center				Sulphite - Center				Sulphite - Center			
	Au		Ag		Au		Ag		Au		Ag	
Analyzed Feed (g/t)	1.15		1.12		2.26		1.85		1.68		1.49	
Calc. Feed (g/t)	2.48		1.37		2.43		1.99		1.77		1.62	
Gravity Conc. Recov. (%)	19.80%		16.20%		39.40%		24.90%		50.50%		23.40%	
Leaching Feed (g/t)	2.05		1.18		1.52		1.54		0.90		1.28	
Leaching	Tailings	Recov.	Tailings	Recov.	Tailings	Recov.	Tailings	Recov.	Tailings	Recov.	Tailings	Recov.
	0.118	94.20%	0.64	45.80%	0.318	79.10%	0.77	50.00%	0.101	88.80%	0.62	51.60%
	0.109	94.70%	0.59	50.00%	0.314	79.30%	0.90	41.60%	0.092	89.90%	0.46	64.10%
	0.100	95.10%	0.67	43.20%	0.322	78.80%	0.86	44.20%	0.085	90.50%	0.57	55.50%
Global Recov. Average	95.60%		53.70%		86.90%		57.60%		94.80%		66.10%	

Table 80: Variability Tests Results – Sulphite Samples - Centre Area.

Sample	CRMET 32				CRMET 33				CRMET 34			
Type	Sulphite - Center				Sulphite - Center				Sulphite - Center			
	Au		Ag		Au		Ag		Au		Ag	
Analyzed Feed (g/t)	1.18		1.18		1.25		2.12		2.36		1.31	
Calc. Feed (g/t)	1.32		1.32		1.79		2.11		1.60		1.39	
Gravity Conc. Recov. (%)	40.60%		15.30%		36.10%		13.40%		39.50%		10.00%	
Leaching Feed (g/t)	0.81		1.64		1.19		1.88		1.00		1.29	
Leaching	Tailings	Recov.	Tailings	Recov.	Tailings	Recov.	Tailings	Recov.	Tailings	Recov.	Tailings	Recov.
	0.136	83.20%	0.95	42.10%	0.116	90.30%	1.76	6.40%	0.171	82,90%	0.55	57.40%
	0.135	83.30%	0.97	40.90%	0.107	91.00%	1.17	37.80%	0.180	82,00%	0.47	63.60%
	0.143	82.40%	1.07	34.80%	0.115	90.30%	1.12	40.40%	0.195	80,50%	0.49	62.00%
Global Recov. Average	89.60%		24.60%		93.70%		35.90%		88.60%		63.80%	

Table 81: Variability Tests Results – Sulphite Samples - North Area.

Sample	CRMET 35				CRMET 36			
Type	Sulphite - North				Sulphite - North			
	Au		Ag		Au		Ag	
Analyzed Feed (g/t)	1.35		1.06		1.11		0,95	
Calc. Feed (g/t)	1.64		1.29		1.33		0.81	
Gravity Conc. Recov. (%)	47.40%		14.90%		39.90%		15.70%	
Leaching Feed (g/t)	0,89		1.13		0.83		0.70	
Leaching	Tailings	Recov.	Tailings	Recov.	Tailings	Recov.	Tailings	Recov.
	0.081	90.90%	0.33	70.80%	0.138	83.40%	0.43	38.60%
	0.091	89.80%	0.35	69.00%	0.138	83.30%	0.38	45.70%
	0.083	90.70%	0.33	70.80%	0.143	82.70%	0.34	51.40%
Global Recov. Average	94.80%		73.90%		89.50%		52.50%	

<u>Final report, size distribution and leaching tests: Table 82 to Table 85</u>

The TESTWORK (2013b) report also included leaching test results of a sample obtained in the pilot plant test work carried out on sample CRMET – 015 at the facilities of the Instituto de Pesquisas Tecnológicas – IPT, in São Paulo, SP. The size distribution of the sample is listed in Table 82. Table 83 and Table 84 show, respectively, gold distribution by size and gold recovery from the leaching test by size.

Table 82: Pilot Plant Sample - Size Distribution.

Mesh Tyler	Size (µm)	Mass (g)	% Retained Simple	% Retained Accum.	% Passing Accum.
65	212	24.70	24.9%	24.9%	75.1%
100	150	15.10	15.2%	40.1%	59.9%
150	106	16.15	16.3%	56.4%	43.6%
200	75	9.44	9.5%	65.9%	34.1%
325	45	12.87	13.0%	78.9%	21.1%
-325	-45	20.98	21.1%	100.0%	0.0%
	TOTAL	99.24			

Table 83: Pilot Plant Sample - Gold Distribution.

Mesh	Size	Au Grade	Au	% Au Retained	% Au Retained	% Au Passing
Tyler	(µm)	(gpt)	(µg)	Simple	Accum.	Accum.
65	212	0.41	10.19	20.2%	20.2%	79.8%
100	150	0.60	9.11	18.1%	38.3%	61.7%
150	106	0.41	6.68	13.2%	51.6%	48.4%
200	75	0.36	3.37	6.7%	58.2%	41.8%
325	45	0.42	5.35	10.6%	68.8%	31.2%
-325	-45	0.75	15.70	31.2%	100.0%	0.0%

Table 84: Gold Recovery by Size Fraction.

Mesh	Size	Au Grade by Fraction	Au Tailing by Fraction	Au Recov. by Fraction	Au Recovery relative to the Feed	
Tyler	(µm)	(gpt)	(gpt)	Au (%)	Au (%) Simple	Au (%) Accum
65	212	0.41	0.22	46.0%	9.3%	9.3%
100	150	0.60	0.25	58.4%	10.6%	19.9%
150	106	0.41	0.07	82.3%	10.9%	30.8%
200	75	0.36	0.07	81.8%	5.5%	36.2%
325	45	0.42	0.06	86.5%	9.2%	45.4%
-325	-45	0.75	0.04	94.5%	29.5%	74.9%

The same sample obtained from the ball milling pilot plant was further ground and used in a gravity test performed in a Knelson MD3 Gravimetric Concentrator under the following conditions:

- Sample mass: 5.0 kg.
- Dilution water flow rate: 5.0 L/minute.
- Applied G-force: 60 Gs.

Tailings from the gravity test were leached according to the following conditions:

- Activated carbon concentration: 18.0 g/L.
- PH adjusted to 10-11.
- Solids concentration: 50% solids.
- Leaching Time: 16 hours.
- Initial NaCN concentration: 700 ppm.

The results obtained in the gravity and the leaching tests are shown in Table 85.

Table 85: Gold Recovery in Gravity and Leaching Tests.

Gravity Concentration					Tailing Leaching			
Feed Grade Analyzed (g/t)	Feed Grade Calculated (g/t)	Gravity Conc. Grade (g/t)	Gravity Conc. Mass (%)	Gravity Conc. Recov. (%)	Feed (g/t)	Tailings Average (g/t)	Leaching Recov. (%)	Global Recov. (%)
0.40	0.46	3.80	1.50%	12.34%	0.41	0.095	76.8%	79.54%
1.23	1.32	13.0	1.50%	14.83%	1.14	0.817	28.4%	38.05%

13.2.3 HDA – 2013 CAMPAIGN

The work carried out by HDA Serviços in 2013 comprised the following:

- Ore characterization assessments.
- Pilot plant campaign.
- Simulations of comminution circuits - Base Case - mass balance, equipment design, and selection.
- Comminution circuit simulations - six additional scenarios - mass balance, equipment design, and selection.
- Comparison of the Base Case and additional simulated scenarios – equipment, installed power, energy consumption, and consumption of balls and coating.

The samples used in the HDA characterization campaign were as follows:

#	Sample ID
1	CRMET005
2	CRMET006
3	CRMET007
4	CRMET009
5	CRMET010
6	CRMET011
7	CRMET012
8	CRMET013
9	Full DWT
10	Pilot Plant

The results of the tests carried out by HDA are summarized as follows:

Impact Resistance Test – DWT, Sample: Full DWT:

- A*b = 60.39 (moderately low).
- A = 61.6.
- b = 0.99.
- ta = 0.73 (moderately high).
- Specific weight = 2.64.
- Ai = 0.23 (samples: CRMET005, 006 and 007).

Bond Work Index (BWi):

- Sample: CRMET005 - Closing screen: 0.105 mm (150# Tyler) → WI = 23.3 kWh/t.
- Sample: CRMET006 - Closing screen: 0.105 mm (150# Tyler) → WI = 22.9 kWh/t.
- Sample: CRMET007 - Closing screen: 0.105 mm (150# Tyler) → WI = 23.5 kWh/t.
- Average CRMET005 to CRMET007 - Closing screen: 0.105 mm (150# Tyler) → WI = 23.2 kWh/t.

Sample: Pilot Plant:

- Closing screen: 0.297 mm (48# Tyler) → WI = 11.9 kWh/t.
- Closing screen: 0.210 mm (70# Tyler) → WI = 14.0 kWh/t.
- Closing screen: 0.149 mm (100# Tyler) → WI = 20.8 kWh/t.
- Closing screen: 0.105 mm (150# Tyler) → WI = 23.6 kWh/t (predicted).

The comments and conclusions derived from the Borborema Project characterization campaign at this stage of the studies are that the main sample ("Full DWT") indicates moderately low resistance to high-energy particle breakage. Such a characteristic would be suitable for a milling medium such as autogenous or semi-autogenous, as a single particle would be resilient in a high-energy environment. The same characteristics indicate that there will be no particular need to crush pebbles in AG/SAG grinding, as the grinding energy will balance the accumulation of grinding media and consumption within the mill load.

The variability assessment indicates two samples with similar characteristics (CRMET 11 and 12), two relatively more resistant (CRMET 009 and 013), along with one significantly less resistant to high particle breakage energy (CRMET 010).

The average value of the Bond Index obtained for samples CRMET 005, 006, and 007 are considered very high (23.2 kWh/t). However, the three tests performed on the "Pilot Plant" sample indicated a notable reduction in the BWi value as the test screen opening was increased. Such a bias often results from the combination of grain size and the opening of the BWi test screen. In this case, the intensity of such a reduction, 20.8 kWh/t to 11.9 kWh/t for screen openings of 0.149 mm and 0.297 mm respectively, indicates that high resistance to the type of mineral grinding is driving the balance between grain size and test screen opening. Such a situation is supported by information provided by Crusader that the Borborema material has a significant mica mineral content, which generally show exponentially high BWi values. Although the Abrasion Index was considered average for the three samples tested (CRMET 005, 006, and 007).

The above test results indicated that material from the Borborema Project could be suitable for grinding in autogenous or semi-autogenous mills, and it would be unlikely that there would be a need to include a pebble crusher.

13.2.4 ALS METALLURGY KAMLOOPS – 2013 CAMPAIGN

In April 2013, ALS METALLURGY KAMLOOPS, Canada prepared a report on the mineralogical study program for the Borborema Project. The objective of this program was to determine the mineralogical status of gold in the Borborema selected samples. To achieve these goals, five composite samples were examined for gold and scanned by QEMSCAN using the Trace Mineral Search (TMS) protocol to locate and quantify occurrences of gold. This system uses a scanning electron microscope to identify the gold, but it can quickly scan the millions of minima needed to complete the analyses. Samples were also tested using a cyanide leaching procedure in bottles on rollers for 48 hours to determine the cyanide leach response. In summary, the unoptimized cyanide leaching tests achieved between 82 and 97 percent gold inheritance for the five Exceptions. Gold search routines, performed on all samples, located 18 occurrences of gold, which on average were small, but mostly susceptible to cyanide leaching. The relatively small population of gold occurrences located for each composite sample has rendered the relationship between metallurgy and gold mineralogy inconclusive. Additional particle surveys could increase the gold occurrence population, but this would not be recommended. Relatively good leaching performance and evidence of coarse gold from various head-content analyses warrant testing on coarse evidence roller bottles to determine whether leaching gold recovery may be a viable process for this deposit.

Chemical composition:

The gold grade of the five composite samples was determined by fire assay digestion with AA finish. A summary of the gold head grade data is shown in Table 86.

Table 86: Statistical Summary of Gold Head Assaying.

Measurement Type	Gold Head Assays - g/tonne				
	Centro	Norte	Sulfuro	Oxido	Transicion
Measured Head A	1.03	0.81	0.89	0.96	1.21
Measured Head B	1.22	0.85	1.01	0.89	1.07
Size Fraction	1.34	1.03	1.04	1.45	1.92
Cyanide Calculated	1.31	1.15	1.32	0.78	1.28
Average	**1.23**	**0.96**	**1.06**	**1.02**	**1.37**
Relative Stdev	**11.4**	**16.4**	**17.0**	**28.9**	**27.5**

As shown in the Table 86, the average gold content in the samples ranged from 0.96 to 1.37 g/t Au. Analysis data for a single-head sample exhibited considerable variation. The variation was beyond the standard deviation typical of the analytical method. This suggests sampling errors are often related to the presence of some coarse gold.

Gold occurrence:

Gold occurrence data for the composites are presented in Table 87, together with Figure 87 and Figure 88. Data were generated by ADIS scans of the composite samples. The following comments may be of interest when reviewing the data:

- A total of around 10 million particles were searched for all composites. Eighteen occurrences of gold were located. On average, gold occurrences had a mean circular diameter of 0.006 mm, which is relatively small. There was evidence of coarse gold, and an occurrence of gold with a diameter greater than 0.022 mm was observed.
- By sample, the gold occurrence data did not indicate a specific trend, however, it is expected that gold will be observed as released or as adhesions that behave well under leaching.
- The population occurrence of gold per sample was relatively low and the analysis may not be indicative of the true distribution of gold. To improve the gold mineralogy statistics, additional particle searches would be needed.
- Gold is associated with quartz and feldspar. Part of the gold was observed with biotite.

Table 87: Summary of Gold Search Statistics.

Composite	Au Grade	Gold Occurrences	Avg Circular Diameter (µm)	No. of Slides	Particles Scanned 1×10^5
Centro	1.52	5	15	22	17.7
Norte	1.35	6	3.8	24	13.6
Sulfuro	1.35	3	2.8	15	9.6
Oxido	1.60	2	5.0	15	30.0
Transicion	1.37	2	1.2	19	29.4

Note: Gold grade in g/tonne and was calculated from the size by assay data.

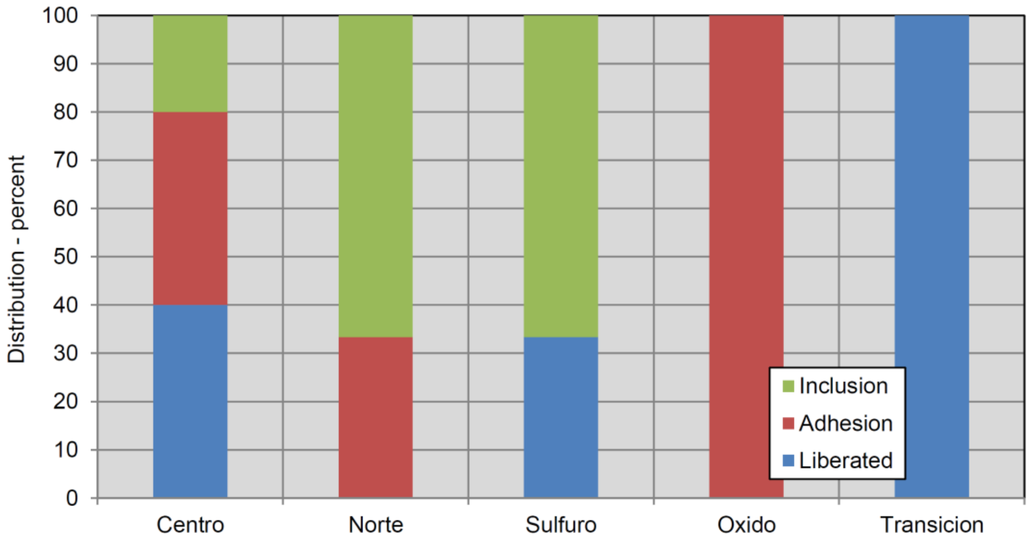


Figure 87: Distribution of Gold Occurrences by Type.

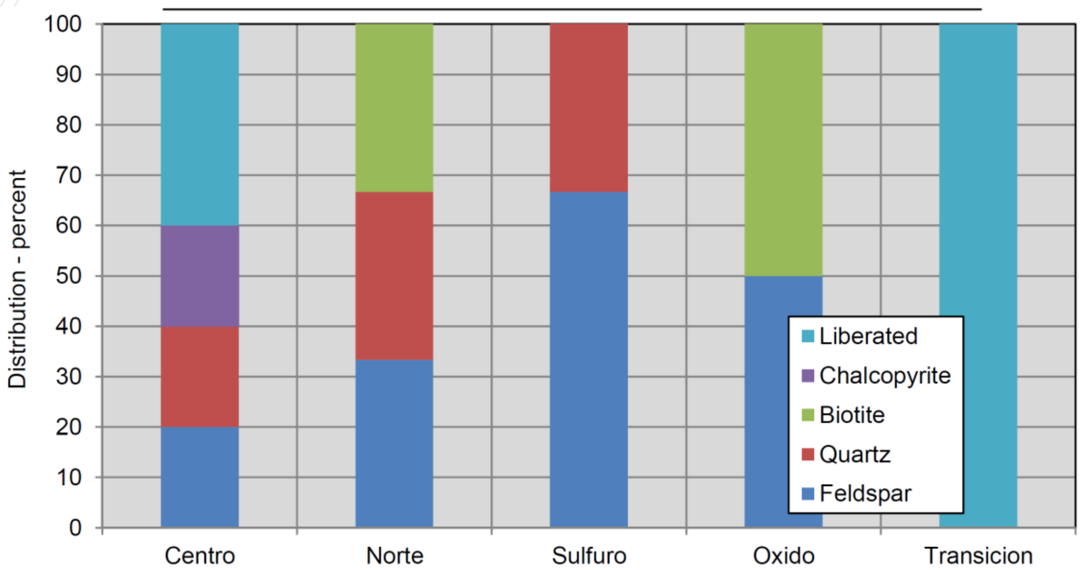


Figure 88: Distribution of Gold Occurrence and Mineral Association.

Leaching test results:

Each composite sample was milled to a P_{80} of 0.105 mm. Forty-eight hour bottle tests on rollers with the presence of cyanide were carried out on the ground sample. Tests were conducted at pH 11, modulated by lime. Cyanide levels of the leach solution were accepted at 1,000 ppm. Oxygen was sprayed into the bottle at the beginning of each leaching period.

Table 88 shows the respective reagent consumption, while Figure 89 shows a graph representing the kinetic leaching curves.

Table 88: Summary of Cyanide Leach Conditions.

Composite	Primary Grind µm K80	Reagent Consumption (kg/tonne)	
		Lime	NaCN
Oxido	97	1.7	2.8
Centro	115	1.1	0.8
Norte	114	1.1	0.7
Sulfuro	109	1.3	0.9
Transicion	88	1.3	0.9

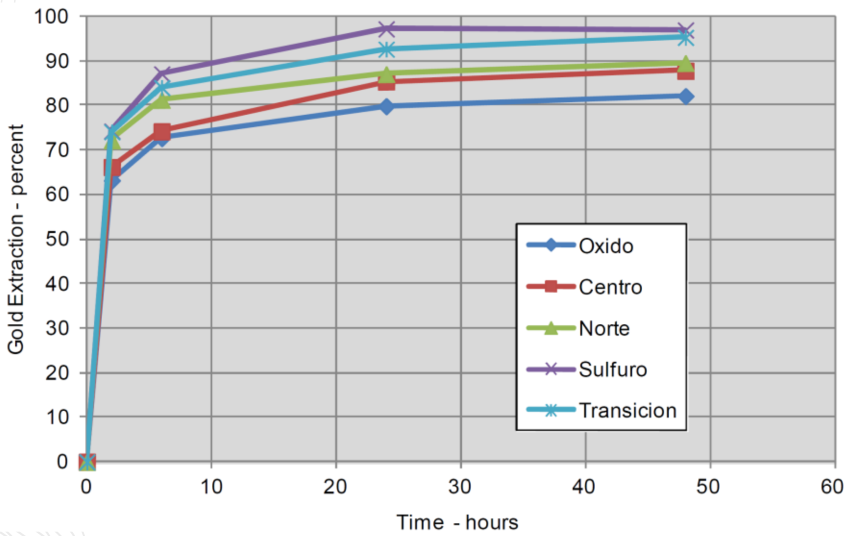


Figure 89: Kinetic Response for Gold Leaching.

The following comments were highlighted:

- Cyanide consumption was relatively inexpensive, except for the Composite Oxidized sample;
- Lime consumption was relatively high, without optimization, on average around 1.3 kg/t;
- Gold recovery ranged from 82% to 97%;
- The results were relatively good considering that the tests were on individual samples without optimization;
- Bottle testing on rolls with thick material should be considered as a possible process option for this deposit.

13.3 ALS METALLURGY – 2016 CAMPAIGN

In August 2016, Crusader Resources Ltd, the previous owner of the Borborema Project, requested ALS Metallurgy, Australia to carry out a defined program for metallurgical testing (ALS, 2016), except for geological drill holes. Samples were received in September 2016, and the following test work was carried out:

- Sample preparation and composition.
- Comminution test work including:
  - Determination of resistance to uniaxial resistance (UCS).
  - Determination of the specific gravity (SG);
  - Determination of the crushing work index (CWi); the JK Drop Weight Test (JKDWT).
  - SMC Test (definition of parameters for the SAG mill calculator (Mia; Mic; Mih), A*b; ta;
  - Determination of the Bond abrasion index (Ai).
  - Determination of the work index for rod mill (RWi).
  - Determination of work index for ball mill (BWi).
  - Levin test for open circuit grinding.
- Analysis of granulometric distribution by size.
- Determination of the head-grade of the composite sample.
- Mineralogical analysis of samples.

Tests to determine comminution parameters were conducted by JKTech in Australia and are contained in the JKDW AND SMC TEST® REPORT (JKTech Job No: 16001/P73) prepared for ALS Metallurgy WA Perth, Western Australia. JKDW (JK drop weight) and SMC (SAG mill comminution) test analysis data for fourteen samples from the Borborema Project were received from ALS Metallurgy, WA, on January 9, 2017, by JKTech for the JKDW and SMC test analysis. The samples were identified as MET 12-1F (26-29m), MET 12-1F (41-44m), MET 12-2F (41-44m), MET 12-3G (131-135m), MET 12-3G (141-145m), MET 12-4F (61-64m), MET 12-4F (73-77m), MET 12-5F (125-128m), MET 12-5F (133-136m), MET 12-6F (62-65m), MET 12-6F (72-75m), MET 12-7F (101-104m), MET 12-8F (57-60m) and MET 12-8F (62-65m). Data were analyzed to determine the JKSimMet and SMC Test comminution parameters.

SMC test results were forwarded to SMC Testing Pty Ltd for SMC test data analysis. The samples tested were:

- JKDW test - (MET 12-3G (131-135m), MET 12-3G (141-145m) and MET 12-4F (73-77m); and
- SMC test - (MET 12-1F (26-29m), MET 12-1F (41-44m), MET 12-2F (41-44m), MET 12-3G (131-135m), MET 12-3G (141-145m), MET 12-4F (61- 64m), MET 12-4F (73-77m), MET 12-5F (125-128m), MET 12-5F (133-136m), MET 12-6F (62-65m), MET 12-6F (72-75m), MET 12-7F (101-104m), MET 12-8F (57-60m) and MET 12-8F (62-65m)).

The analysis and report were completed on January 13, 2017. Summary of test results are described below.

<u>Unconfirmed Compressive Strength Determination (UCS):</u>

Twenty-seven (27) Exception (full and ¾) were tested for determining the respective unconfined compression strength (UCS), The results are listed in Table 89.

Table 89: Borborema Project: Unconfirmed Compressive Strength Determination.

Borborema Project: UNCOFINED COMPRESSIVE STENGTH DETERMINATION				
Test ID	**Drill Hole (m)**	**UCS (mPa)**	**Strength**	**Failure Mode**
18	MET-12-1F (26-27)	39.770	Medium Strong	Columnar
19	MET-12-1F (26-27)	7.629	Weak	Shear
20	MET-12-1F (28-29)	7.275	Weak	Shear
4	MET-12-1F (41-42)	5.576	Very weak	Shear
6	MET-12-1F (42-43)	24.680	Medium Strong	Shear
7	MET-12-1F (42-43)	5.212	Very weak	Shear
3	MET-12-1F (43-44)	54.076	Medium Strong	Shear
21	MET-12-3G (132-133)	7.753	Weak	Shear
22	MET-12-3G (134-135)	37.858	Medium Strong	Columnar
23	MET-12-3G (14-142)	47.924	Medium Strong	Columnar
24	MET-12-3G (142-143)	14.433	Weak	Shear
10	MET-12-3G (143-144)	24.846	Medium Strong	Columnar
11	MET-12-4F (62-63)	14.303	Weak	Shear
12	MET-12-4F (62-63)	16.641	Weak	Columnar
14	MET-12-4F (63-64)	12.100	Weak	Shear
13	MET-12-4F (62-63)	13.313	Weak	Columnar
15	MET-12-4F (74-75)	10.507	Weak	Columnar
16	MET-12-4F (76-77)	8.271	Weak	Shear
17	MET-12-4F (76-77)	4.873	Very weak	Shear
27	MET-12-5F (125-126)	54.559	Medium Strong	Shear
25	MET-12-5F (126-127)	44.117	Medium Strong	Shear/Columnar
26	MET-12-5F (126-127)	34.402	Medium Strong	Columnar
2	MET-12-5F (127-128)	26.019	Medium Strong	Shear
1	MET-12-5F (133-134)	35.254	Medium Strong	Shear
9	MET-12-6F (74-75)	6.498	Weak	Shear
8	MET-12-7F (103-104)	24.852	Medium Strong	Columnar
5	MET 112-8F (58-59)	3.644	Very weak	CataCasis

Comminution Test Work:

A summary of all comminution testing results is presented in Table 90 and Table 91.

Table 90: Comminution Test work – Summary I.

Drill Hole ID	UCS (MPa)	Bond Work Indices kWh/t			Bond Ai
		CWi	RWi	BWi (*)	
1F	5.212 - 54.076	8.2 - 8.6	12.1 - 14.3	16.0 - 17.6	0.0804 - 0.1227
2F	-	-	11.9 - 13.3	16.8 - 17.7	0.1034 - 0.1134
3G	7.753 - 47.924	9.4 - 9.8	10.5 - 12.4	17.4 - 17.6	0.0792 - 0.0946
4F	4.873 - 16.641	7.2 - 8.4	-	17.2 - 18.1	-
5F	26.019 - 54.559	5.9 - 8.0	11.7	15.1 - 17.0	0.1137
6F	6.498	5.2	11.9	17.0 - 18.8	0.1288
7F	24.852	5.9 - 8.4	-	15.1 - 19.1	-
8F	3.644	4.1 - 6.9	-	17.6	-

Note: (*) mesh closure 150 µ

Table 91: Comminution Test work – Summary II.

DWT -JK Drop Weight Testwork									
Drill Hole ID	DWi (kWh/m^3)	Sg	Derived Values						
			A	b	A*b	Mia (kWh/t)	Mih (kWh/t)	Mic (kWh/t)	t_a
MET 12-3G (131 - 135 m)	-	-	56.4	1.24	69.9	-	-	-	0.83
MET 12-3G (141 - 145 m)	-	-	56.5	1.15	65.0	-	-	-	0.83
MET 12-4F (73 - 77 m)	-	-	54.3	1.49	80.9	-	-	-	0.92
SMC Testwork									
MET 12 -1F (26 - 29 m)	4.37	2.80	64.1	0.98	62.82	13.60	9.20	4.8	0.59
MET 12 - 1F (41 - 44 m)	5.10	2.80	64.7	0.84	54.35	15.30	10.70	5.5	0.51
MET 12 - 1F (41 - 44 m)	4.72	2.80	66.2	0.88	58.26	14.40	9.70	5.00	0.54
MET 12 - 3G (131 - 135 m)	3.83	2.80	63.1	1.15	72.57	12.10	8.00	4.10	0.68
MET 12 - 3G (141 - 145 m)	4.45	2.80	61.6	1.02	62.83	13.60	9.30	4.80	0.58
MET 12 -4 F (61 - 64m)	4.49	2.80	65.6	0.96	62.98	13.50	9.20	4.80	0.58
MET 12 - 4F (73 - 77m)	3.83	2.80	63.7	1.14	72.62	12.10	8.00	4.10	0.68
MET 12 - 5F (125 - 128 m)	5.42	2.80	63.7	0.80	50.96	16.10	11.40	5.90	0.48
MET 12 - 5F (133 - 136 m)	5.44	2.80	61.6	0.82	50.51	16.10	11.40	5.90	0.48
MET 12 - 6F (62 - 65m)	4.89	2.80	62.9	0.90	56.61	14.80	10.20	5.30	0.53
MET 12 -7F (72 75 m)	3.81	2.80	66.8	1.07	71.48	12.30	8.20	4.20	0.66
MET 12 -7F (102 - 104 m)	5.08	2.80	65.4	0.83	54.28	15.30	10.70	5.50	0.51
MET 12 -8F (57 - 60 m)	5.03	2.80	66.4	0.81	53.78	15.40	10.70	5.50	0.51
MET 12 -8F (62 - 65 m)	4.56	2.80	62.6	0.96	60.10	14.00	9.60	5.00	0.57

Size by Size Teste Work:

Three composed sub-samples (2F 12, 3G 15 e, 6F 29) were prepared for gold grade by size determinations. The results are shown in Table 92.

Table 92: Gold Grade by Size Results.

BORBOREMA PROJECT: SIZE-by-SIZE TESTWORK						
Screen size (µm)	Distribution (%)					
	2F 12		3G 15		6F 29	
	Sizing	Au (g/t, %)	Sizing	Au (g/t, %)	Sizing	An lq/t, %)
3350	0.0	-	0.0	-	0.00	-
1000	56.15	0.53, 47.62	54.04	0.23, 32.78	51.41	1.04, 43.40
150	29.35	0.73, 34.29	31.62	0.36, 29.60	32.73	1.32, 35.11
< 150	14.50	0.78, 18.09	14.34	1.00, 37.62	15.86	1.66, 21.48
Total	100.00	0.62	100.00	0.38, 100.00	100.00	1.23, 100.00

Sub-samples were selected for assaying the elements listed in Table 93.

Table 93: Head Assays.

BORBOREMA PROJECT: HEAD ASSAYS							
Comp. ID	Au½ (g/t)	Au (ave) (g/t)	Ag (g/t)	Hg (ppm)	$S_{sulphur}$ (%)	$S_{sulphide}$ (%)	Cu (ppm)
1F-1	0.26/0.34	0.34	3.6	0.20	0.16	< 0.02	165
1F-2	8.45/7.91	7.13	14.4	0.20	1.92	0.92	535
1F-3	1.15/0.98	1.28	1.2	0.10	0.44	0.40	95
1F-4	0.33/0.55	0.44	0.9	< 0.1	0.46	0.40	130
1F-5	0.86/0.62	0.78	3.0	< 0.1	0.96	0.76	170
1F-6	1.15/1.02	1.10	3.0	< 0.1	0.74	0.58	185
2F-7	0.78/0.29	0.55	< 0.3	< 0.1	0.10	0.06	35
2F-8	0.41/0.29	0.55	1.2	< 0.1	0.26	0.20	70
2F-9	0.74/0.67	0.67	1.2	< 0.1	0.50	0.42	100
2F-10	0.58/0.77	1.27	1.5	< 0.1	1.00	0.82	180
2F-11	0.67/0.61	0.66	2.7	< 0.1	0.68	0.48	120
2F-12	1.43/0.88	1.10	1.2	< 0.1	0.42	0.30	105
2F-13	18.2/4.64	7.95	6.3	< 0.1	0.92	0.76	310
3G-14	0.97/13.1	3.30	3.0	< 0.1	0.44	0.40	80
3G-15	0.37/0.38	1.37	2.7	< 0.1	0.68	0.46	100
3G-16	1.64/4.49	3.46	1.5	< 0.1	0.54	0.38	95
3G-17	1.00/2.44	1.39	1.2	< 0.1	0.64	0.44	170
3G-18	2.40/0.95	1.47	2.4	< 0.1	1.22	1.06	215
3G-19	2.29/3.54	2.14	1.2	< 0.1	0.62	0.52	155
3G-20	4.00/4.26	3.13	2.1	< 0.1	0.72	0.62	160
4F-21	1.50/1.41	1.44	3.0	< 0.1	0.88	0.70	185
4F-22	3.63/5.76	4.12	1.2	< 0.1	0.62	0.46	165
4F-23	2.37/2.47	2.49	6.0	< 0.1	0.86	0.62	165
5F-24	9.01/1.26	4.00	0.6	< 0.1	0.42	0.28	65
5F-25	0.82/0.80	1.31	0.9	< 0.1	0.26	0.18	80
5F-26	2.44/1.12	1.88	1.5	< 0.1	0.90	0.70	130
5F-27	0.46/0.91	0.76	1.2	< 0.1	0.64	0.48	130
5F-28	1.63/1.48	1.58	1.5	< 0.1	0.58	0.42	220
6F-29	8.55/2.00	3.61	4.5	< 0.1	0.40	0.30	120
6F-30	1.79/1.50	1.51	3.6	< 0.1	0.68	0.54	190
6F-31	0.80/0.70	3.51	2.7	< 0.1	0.58	0.44	65
6F-32	0.18/0.18	1.83	1.2	< 0.1	0.56	0.44	125
6F-33	1.01/0.74	0.82	6.9	< 0.1	0.90	0.64	220
7F-34	3.59/0.71	1.72	1.2	< 0.1	0.38	0.30	115
7F-35	0.72/0.74	0.76	0.3	< 0.1	0.12	0.10	60
7F-36	15.9/0.93	4.06	0.9	< 0.1	0.30	0.24	50
7F-37	0.61/0.50	0.61	0.9	< 0.1	0.30	0.20	90
8F-38	0.19/0.14	0.17	9.6	< 0.1	0.76	0.66	155
8F-39	1.60/1.66	1.83	1.2	< 0.1	0.20	0.16	55
8F-40	0.57/0.45	0.67	1.8	< 0.1	0.72	0.70	190

13.4 WAVE INTERNATIONAL/ALS AMMTEC - 2019 CAMPAIGN

Wave International (WAVE, 2019) was contracted to conduct a metallurgical testing campaign to validate the mineral processing flow sheet, as well as to enhance the variability studies. The program was conducted by ALS Ammtec in Perth, Australia between July and September 2019. The testing program comprised the following items:

- Test work to establish optimal leaching conditions (particle size and cyanide concentration) in composite samples.
- Determination of reagent consumption under ideal conditions.
- Leach tests on master composite samples for sequential CIL/CIP (carbon-in-leach/carbon-in-pulp) circuit simulation, equilibrium charging and cyanide detoxification, and establishing operating parameters.
- Cycloning test and investigation to determine the behavior of mica present in the ore.
- Leaching performance on 10 samples for variability study at a grind size of P_{80} <106 µm.

In addition, ALS Ammtec also prepared samples for shipment to Outotec for thickening and filtration tests. OMC - ORWAY MINERAL CONSULTANTS (OMC, 2019) was contracted for the comminution testing.

ALS Metallurgical Tests Program

Tests were performed with "Master Composite" and Variability samples, according to the following program:

- Direct Cyanide Whole of ore test work Master Composite sample.
- Flotation Tests, Reagents Scheme and Results.
- Direct Cyanide Whole of ore test work Variability sample.
- Equilibrium Carbon Loading test work Master Composite sample.
- Sequential Batch CIP test – Program: JR5276 – gold adsorption data.
- Head Assay – Master Composite and Variability samples.
- SO_2/Air (INCO) Cyanide Detoxification test work.
- Borborema Mica Screen Analysis P_{80} < 0.106 mm.
- Variability Composites: Gravity Separation/Direct Cyanide Leaching test work.
- Semi-quantitative XRD analysis.

The obtained results are listed in Table 94 to Table 104.

Table 94: Summary Direct Leach Testing - Master Composite.

SAMPLE ID	Variation	Test #	Grind Size (P80 µm)	Gold Extraction 4Hrs (%)	Gold Extraction 8Hrs (%)	Gold Extraction 12Hrs (%)	Gold Extraction 24Hrs (%)	Total Gold Extraction (%)	Residue Grade (Aug/t)	Calculated Head (Aug/t)	Assyed Head (Aug/t)	NaCN Consumption (kg/t)	Lime Consumption (kg/t)
MP2029	Grind Optimization	JR5216	125	58.38	68.12	72.25	78.76	78.76	0.28	1.32	1.30	0.12	0.51
Master Composite 2019	Grind Optimization	JR5217	106	72.23	83.28	88.87	92.43	92.43	0.12	1.55	1.30	0.15	0.61
Master Composite 2019	Grind Optimization	JR5218	90	68.34	76.99	82.69	90.18	90.18	0.13	1.32	1.30	0.15	0.57
Master Composite 2019	NaCN Optimization 250	JR5254	106	55.14	67.57	72.65	83.07	91.88	0.16	2.00	1.30	0.18	0.43
Master Composite 2019	NaCN Optimization 300	JR5255	106	60.34	71.88	78.75	86.87	92.61	0.11	1.48	1.30	0.21	0.46
Master Composite 2019	NaCN Optimization 350	JR5256	106	60.45	73.60	78.87	89.73	94.98	0.08	1.68	1.30	0.22	0.50
Master Composite 2019	NaCN Optimization 450	JR5257	106	60.92	72.16	75.92	86.18	93.52	0.09	1.46	1.30	0.27	0.40
Master Composite 2019	Bulk Leach	JR5276	106	67.69	78.23	81.56	87.11	92.11	0.11	1.35	1.30	0.33	0.55

Table 95: Summary Direct Leach Testing.

SAMPLE ID	TEST#	SIZE (µm)	EXT 4HS	EXT 8HS	EXT 12HS	EXT 24HS	Total Ext (%) 36 hs	Head Calc.	Residue Grade	Extraction
Master Composite 2019	JR5217	106	72.23	83.28	89.87	92.43	92.43	1.55	0.12	92.43%
Master Composite 2019	JR5254	106	55.14	65.57	72.65	83.07	91.88	2.00	0.16	91.88%
Master Composite 2019	JR5255	106	60.34	71.88	78.75	86.67	92.61	1.48	0.11	92.61%
Master Composite 2019	JR5256	106	60.45	73.60	78.87	89.73	94.98	1.68	0.08	94.98%
Master Composite 2019	JR5257	106	60.92	72.16	75.92	86.18	93.52	1.46	0.09	93.52%
Master Composite 2019	JR5276	106	67.69	78.23	81.56	87.11	92.11	1.35	0.11	92.11%

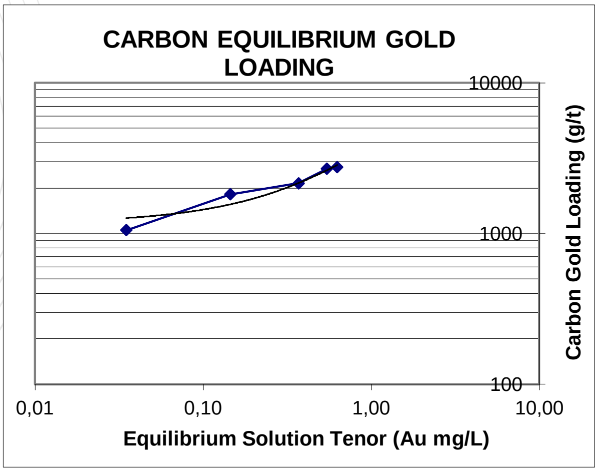
Table 96: Summary Direct Leach Testing - Variability Sample.

SAMPLE ID	TEST #	GRIND SIZE (P80 um)	GOLD EXTRACTION 4Hrs (%)	GOLD EXTRACTION 8Hrs (%)	GOLD EXTRACTION 12Hrs (%)	GOLD EXTRACTION 24Hrs (%)	TOTAL GOLD EXTRACTION (%)	RESIDUE GRADE (Au g/t)	CALCULATED HEAD (Au g/t)	ASSAYED HEAD (Au g/t)	NaCN CONSUMPTION (kg/t)	LIME CONSUMPTION (kg/t)
MET-12-6F 62-65m	JR5277	106	63.94	78.25	83.19	93.65	95.16	0.06	1.25	1.27	0.26	0.40
MET-12-6F 71-72m	JR5278	106	53.18	67.41	73.22	89.94	91.73	0.03	0.35	0.33	0.22	0.67
MET-12-1F 31-32m	JR5279	106	84.33	93.89	94.89	96.83	97.77	0.02	0.67	0.77	0.23	0.38
MET-12-4F 64-65m	JR5280	106	74.38	82.97	86.91	91.03	92.11	0.28	3.49	3.65	0.26	0.36
MET-12-8F 62-65m	JR5281	106	54.01	70.18	82.54	91.44	94.29	0.01	0.22	0.13	0.22	0.46
MET-12-7F 104-106m	JR5282	106	79.13	86.15	90.52	91.49	94.27	0.04	0.68	0.77	0.22	0.57
MET-12-2F 41-45m	JR5284	106	60.14	72.74	77.03	87.72	90.89	0.07	0.79	0.81	0.29	0.53
MET-12-3G 141-145m	JR5285	106	63.21	74.42	79.44	86.95	90.24	0.19	1.91	1.69	0.26	0.34
MET-12-1F 41-44m	JR5286	106	71.96	80.93	85.44	90.17	92.66	0.22	3.03	4.37	0.22	0.38

Table 97: Loading Carbon Testing - Master Composite Sample.

EQUILIBRIUM CARBON LOADING TESTWORK

Test No.	Carbon Conc (g/L)	Carbon Added (g)	Solution (mL)	Initial Soln [Au] (mg/L)	Final Solution Assay [Au] (mg/L)	Loading Au g/t (calc)
1	0.77	0.383	500	0.840	0.035	1051
2	0.38	0.191	500	0.840	0.145	1819
3	0.22	0.109	500	0.840	0.370	2156
4	0.11	0.055	500	0.840	0.545	2682
5	0.08	0.038	500	0.840	0.630	2763



Log(soln)	Log(assay load)
-1.456	3.022
-0.839	3.260
-0.432	3.334
-0.264	3.428
-0.201	3.441

3.505 intercept
0.992 correl
0.326 slope

Log (X/M) = Slope * log C + Intercept

For 0.20 mgpl solution:
Log (X/M) = 3.2772
X/M = 1893

For 0.50 mgpl solution:
Log (X/M) = 3.4067
X/M = 2551

For 1.00 mgpl solution:
Log (X/M) = 3.5047
X/M = 3197

C. Flaming Modelling

Carbon Loading Capacity

log (X/M) = m log C + log K

EQUIL LOADING

3197 at 1.00 mgpl
2551 at 0.50 mgpl
1893 at 0.20 mgpl

Where
X/M = mg of gold adsorbed per gram of carbon at equilibrium.
C = mgpl of gold remaining in solution.
m = constant (slope)
K = constant (intercept)

Table 98: Sequential Batch CIP Test – Master Composite Sample.

PROJECT:	A17445
CLIENT:	WAVE INT. / BIG RIVER GOLD
TEST No.:	JR5276
SAMPLE IDENTITY:	MASTER COMPOSITE (2019)
DATE:	AUG-2019

CARBON TYPE :	HAYCARB YAO 6x12			
CARBON WEIGHT (g) :	3.2	40 g carbon/Litro de pulp		
SLURRY % SOLIDS (%) :	40.0			
SOLUTION WEIGHT (g) :	4500.0	(PER CONTACT)	Eqv Vol (ml) :	4500.0
SLURRY SAMPLE VOLUME (mls) :	80.0		Eqv Vol (ml) :	64.515
ORE SG :	2.80			
SOLUTION SG :	1.00			

SEQUENTIAL BATCH CIP TEST : JR5276 – *GOLD ADSORPTION DATA*

TEST RESULTS

CYCLE	SOLUTION VOLUME (mls)	ELAPSED TIME Cycle (Hours)	ELAPSED TIME Cumulative (Hours)	SOLUTION GOLD Au (ppm)	CARBON CALC'd LOADING Incremental Au (ppm)	CARBON CALC'd LOADING Cumulative Au (ppm)	CARBON ASSAY LOADING Cumulative Au (ppm)
1	4500	0.00	0.00	0.840	0	0	
	4435	0.50	0.50	0.755	120	120	
	4371	1.00	1.00	0.635	166	286	
	4306	2.00	2.00	0.540	130	416	
2	4500	0.00	2.00	0.840	0	416	
	4435	0.50	2.50	0.830	14	430	
	4371	1.00	3.00	0.785	62	492	
	4306	2.00	4.00	0.690	130	622	
3	4500	0.00	4.00	0.840	0	622	
	4435	0.50	4.50	0.835	7	629	
	4371	1.00	5.00	0.790	62	691	
	4306	2.00	6.00	0.695	130	821	
	4242	3.00	7.00	0.615	108	929	
	417	4.00	8.00	0.580	46	975	
	4112	20.00	24.00	0.130	587	1562	

FLEMING KINETIC CONSTANTS, REGRESSION OVER FIRST 6 HOURS

Fleming k (hr^{-1}) : 152.98 Fleming n : 0.705

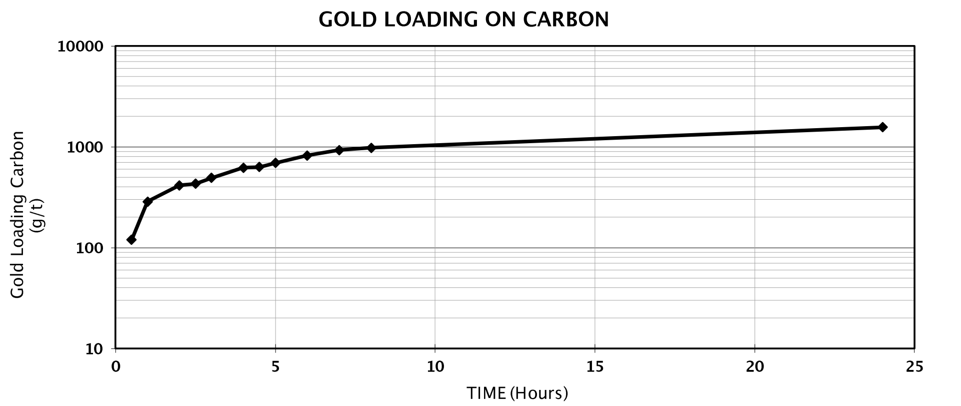


Table 99: Flotation Tests Conditions and Results.

Description	Datas					
Project	A17445	A17445	A17445	A17445	A17445	A17445
Sample Composite	MC-BS Au	MC - GS Au	MC - Q Au	MC - BS Mica	MC - GS Mica	MC - Q Mica
Test Number	JRF1027	JRF1028	JRF1029	JRF1024	JRF1025	JRF1026
Grind Size P80 (µm)	125	125	125	125	125	125
Water Type	Perth Tap Water	Perth Tap Water	Perth Tap Water	Perth Tap Water	Perth Tap Water	Perth Tap Water
Pulp Density (% solids)	35	35	35	35	35	35
Reagents:	-	-	-	-	-	-
$CuSO_4$ (g/t)	100	100	100	-	-	-
PAX (g/t)	160	160	-	-	-	-
MIBC (mL)	-	-	-	0.20	0.30	0.25
Aero 3030C	-	-	-	250		
pH	7.70	8.19	8.14	7.69	8.30	8.20
Float time (min)	15	15	15	15	15	15
Cell Volume (L)	2.2	2.2	2.2	2.2	2.2	2.2
Head Assay Calc. (Au g/t)	2.21	1.85	0.77	1.37	0.91	0.72
Tail Assay (g/t)	0.20	0.14	0.10	0.66	0.48	0.10
Mass Pull (%)	5.99	4.40	5.90	9.26	10.23	12.17
Gold Recovery (%)	91.5	92.77	87.76	56.25	52.87	87.79

Table 100: Head Assay - Master Composite

ANALYTE	Grade	ANALYTE	Grade
Ag(ppm)	<2.00	Fe(%)	4.7
Al(%)	7.36	Hg(ppm)	<0.1
As(ppm)	<10.0	K(%)	2.65
Au(ppm)	0.84	Li(ppm)	20.0
Au(ppm)_rpt1	1.37	Mg(%)	1.88
Au(ppm)	4.31	Mn(ppm)	1100.0
Au(ppm)_rpt1	2.67	Mo(ppm)	<5.0
Au(ppm)	3.55	Na(%)	1.55
Au(ppm)_rpt1	1.03	Ni(ppm)	70.0
SFA (g/t)	1.30	P(ppm)	700.0
Ba(ppm)	450	Pb(ppm)	195.0
Be(ppm)	<5.0	S(%)	0.60
Bi(ppm)	<10.0	S^{-2}(%)	0.52
C(%)	0.12	SiO2(%)	56.0
C org(%)	0.06	Sr(ppm)	126.0
Ca(%)	1.40	Ti(ppm)	4800.0
Cd(ppm)	<5.0	V(ppm)	134.0
Co(ppm)	25.0	Y(ppm)	<100.0
Cr(ppm)	130.0	Zn(ppm)	138.0
Cu(ppm)	136.0	-	-

Table 101: Screen Fire Assay Results.

Screen Fire Assay							
Sample Description	Oversize (+75µm)		Undersize (-75µm)				Head Au Grade (g/t)
	Mass (g)	Au (g/t)	Mass (g)	Au_1 (g/t)	Au_2 (g/t)	Au_{Ave} (g/t)	
MASTER COMPOSITE	21.39	17.0	978.34	1.01	0.90	0.96	1.30

Distribution										
+75µm				-75µm				Total		
Mass	Gold			Mass	Gold			Gold		
Dist	units	Dist	g/t*	Dist	units	Dist	g/t*	units	Dist	g/t*
2.14%	364	28.0%	0.36	97.9%	934	72.0%	0.93	1298	100.0%	1.30

g/t* = Expressed as equivalent g/t in Feed Grade

Table 102: Head Assay - Variability Composites.

ANALYTE	VC1	VC2	VC3	VC4	VC5	VC6	VC7	VC8	VC9	VC10
Ag(ppm)	2.0	4.0	<2.0	4.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Al(%)	7.52	7.48	8.36	8.4	7.16	7.72	8.0	7.88	8.28	7.76
As(ppm)	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Au(ppm)	1.07	0.43	0.65	4.17	0.11	0.64	5.09	0.84	1.6	26.9
Au(ppm)_rpt1	1.10	0.31	0.95	3.26	0.10	0.67	3.5	2.39	1.34	22.9
SFA (g/t)	1.27	0.33	0.76	3.65	0.13	0.77	2.09	0.81	1.68	4.37
Ba(ppm)	500.0	400.0	500.0	700.0	1200.0	1300.0	2400.0	500.0	500.0	500.0
Be(ppm)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Bi(ppm)	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
C(%)	0.12	0.18	0.03	0.09	0.12	0.15	0.09	0.09	0.06	0.06
C org(%)	<0.03	<0.03	<0.03	<0.03	<0.03	0,.5	<0.03	<0.03	0.03	0.03
Ca(%)	1.60	1.80	1.60	2.8	1.30	1.6	1.40	1.0	1.8	1.5
Cd(ppm)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Co(ppm)	25.0	20.0	25.0	25.0	35.0	25.0	25.0	25.0	25.0	20.0
Cr(ppm)	210.0	150.0	100.0	100.0	120.0	100.0	110.0	90.0	100.0	130.0
Cu(ppm)	238.0	128.0	94.0	162.0	212.0	70.0	122.0	180.0	186.0	118.0
Fe(%)	5.00	5.18	5.30	5.58	5.4	4.8	5.36	5.32	5.42	4.92
Hg(ppm)	<0.10	<0.10	<0.10	<0.10	<0.1	<0.10	<0.1	<0.1	<0.10	<0.1
K(%)	2.39	2.35	2.53	2.61	2.21	2.16	3.18	3.24	2.82	2.7
Li(ppm)	25.0	20.0	20.0	10.0	15.0	25.0	20.0	20.0	20.0	15.0
Mg(%)	1.96	1.76	2.12	2.08	1.6	1.92	1.96	2.12	2.16	1.96
Mn(ppm)	1200.0	1100.0	1100.0	1700.0	1100.0	1000.0	1300.0	1300.0	1200.0	1200.0
Mo(ppm)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Na(%)	1.45	1.68	1.89	0.978	1.66	1.9	1.56	1.3	1.59	1.63
Ni(ppm)	70.0	55.0	60.0	70.0	50.0	60.0	65.0	60.0	65.0	60.0
P(ppm)	800.0	1000.0	600.0	1000.0	800.0	500.0	1000.0	800.0	1000.0	900.0
Pb(ppm)	165.0	145.0	65.0	200.0	165.0	15.0	155.0	160.0	45.0	85.0
S(%)	0.44	1.32	0.40	0.96	1.28	0.12	0.74	0.94	0.64	0.6
S^{-2}(%)	0.40	1.14	0.38	0.84	1.10	0.10	0.66	0.82	0.52	0.5
SiO2(%)	62.6	61.0	60.2	58.2	63.6	61.2	60.4	58.2	61.0	62.6
Sr(ppm)	132.0	132.0	148.0	176.0	124.0	160.0	116.0	100.0	142.0	128.0
Ti(ppm)	6000.0	6200.0	5600.0	5000.0	4800.0	5000.0	5400.0	4800.0	5200.0	5200.0
V(ppm)	136.0	106.0	118.0	138.0	102.0	128.0	152.0	150.0	148.0	126.0
Y(ppm)	<100.0	<100.0	<100.0	<100.0	<100.0	<100.0	<100.0	<100.0	<100.0	<100.0
Zn(ppm)	116.0	94.0	100.0	110.0	90.0	108.0	106.0	110.0	102.0	92.0

Table 103: SO2/Air (INCO) Cyanide Detoxification Test Conditions and Results.

Feed Slurry Details	
Parameter	Value
Slurry % solids	40.0
Solution Sg	1.0
Solids Sg	2.7
Slurry Sg	1.337

Sample	Tests	Slurry pH	Solution Feed Analysis (mg/l - unless stated otherwise)						
			Titr'd NaCN %	Calc CN_T	CN_P	Cu	Fe	Ni	Zn
JR5276 CIP Tailings	D1, Bulk	10.39	0.008	103.0	57.5	13.4	15.6	2.80	0.78

Note: CN_P is equivalent to CN_{WAD}

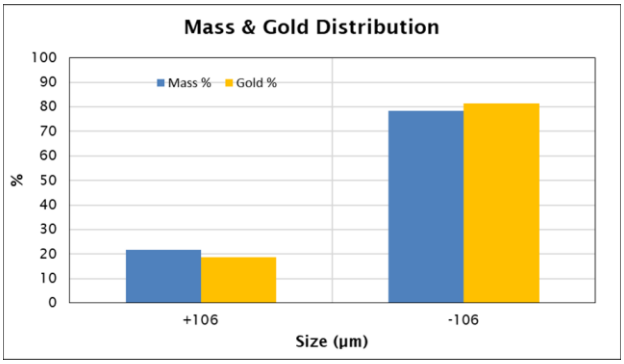
Notes:	Test No.	Test parameters		Solution Assays (from last 2 samples) (mg/l)								
				Reagents Used								
		pH	Ret'n time	SO_2 (g/g CN_P)	$CuSO_4.5H_2O$ (mg/L)	Lime 60% CaO (g/g SO_2)	CN_P	Cu	Fe	Ni	Zn	Calc CN_T
5:1 SO_2:W_{AD} CN	D1	8.52	56.39	4.70	116.0	3.56	1.29	0.18	<0.10	0.43	<0.02	1.56
6:1 SO_2:W_{AD} CN	Bulk	8.70	59.06	5.90	118.0	0.72	0.82	0.17	1.70	0.25	<0.02	5.50

Test	Slurry Feed Rate	Solids Feed Rate	Reagent Solution Flow Rates			Reagent Solution Strength			Reagent Consumption		
			$Na_2S_2O_5$	$CuSO_4$.5H2O	Lime 60% CaO	$Na_2S_2O_5$	$CuSO_4$.5H2O	Lime 60% CaO	$Na_2S_2O_5$	$CuSO_4$.5H2O	Lime 60% CaO
	(ml/hr)	(g/hr)	(ml/hr)	(ml/hr)	(ml/hr)	(g/l)	(g/l)	(g/l)	(kg/t)	(kg/t)	(kg/t)
D1	800,0	427.7	9.67	9.83	31.67	27.34	7.56	20.0	0.62	0.17	0.99
Bulk	5000.0	2673.3	19.67	10.0	50.0	105.32	47.25	20.0	0.77	0.18	0.25
									Expressed as kg per tonne of solids		

Table 104: Mica Screen Analysis.

SIZE-BY-SIZE Au ASSAYS						
Size (µm)	Mass (g)	Mass (%)	Au (g/t)	Au Dist'n (%)	Muscovite *	Annite – biotite – phlogopite*
+106	216.7	21.72	1.13	18.6	26	64
-106	781.2	78.28	1.37	81.4	16	29
TOTAL	**997.9**	**100.0**		**100.0**		

* % of fraction by mass



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Semi-quantitative XRD analysis

A master composite sample was submitted to ALS Metallurgy for semi-quantitative X-ray analysis. Table 105 shows the results.

Table 105: X-Ray Semi-Quantitative Assay.

Mineral or mineral group	Sample 1
	Master Comp
	Mass %
Pyrite	1
Clay mineral	< 1
Kaolinite	< 1
Chlorite	1
Annite - biotite - phlogopite	41
Muscovite	5
Clinopyroxene	1
Calcic amphibole	< 1
Plagioclase	19
Quartz	32

Comminution Testing Results

Comminution tests were performed by JKTech under the supervision of ALS Metallurgy. The following parameters for comminution were evaluated: uniaxial compressive strength (UCS); Bond crushing work index (CWi); Bond ball mill work index (BWi); Bond rod mill work index (RWi), SMC, JKDWT and Bond Abrasion Index (Ai).

A summary of the sample inventory and composition ranges is shown in Table 106.

Table 106: Summary of Sample Inventory and Composition Interval.

Master Composite ID	Received Interval (m)	Composite Interval ID	Mass (kg)
MET-12-1F	0-7	IF 1	24.0
	10-14	IF 2	30.0
	26-29	IF 3	29.4*
	32-40, 41-43	IF 4	50.0
	43-50, 51-54	IF 5	50.0
	66-70, 72-75	IF 6	27.0
MET-12-2F	19-23	2F 7	25.0
	24-29	2F 8	35.0
	34-38	2F 9	32.0
	41-44	2F 10	38.18*
	55-60, 61-63	2F 11	33.0
	66-70, 71-73	2F 12	45.0
	81-88	2F 13	35.0
MET-12-3G	86-89, 91-98	3G 14	38.0
	118-120, 121-122	3G 15	25.0
	127-130	3G 16	30.0
	131-135	3G 17	57.38*
	135-139	3G 18	25.0
	141-145	3G 19	57.08*
	161-170, 171-174	3G 20	51.0
MET-12-4F	61-64	4F 21	44.0*
	73-77	4F 22	56.58*
	88-91, 92-95	4F 23	30.0
MET-12-5F	111-112, 113-118	5F 24	32.0
	125-128	5F 25	43.08*
	133-136	5F 26	43.14*
	143-148	5F 27	24.0
	171-179	5F 28	16.0
MET-12-6F	44-52, 53-57	6F 29	51.0
	62-65	6F 30	43.34*
	72-75	6F 31	41.52*
	84-90	6F 32	40.0
	93-100, 101-106	6F 33	48.0
MET-12-7F	85-89	7F 34	20.0
	101-104	7F 35	40.16*
	120-121, 122-124	7F 36	24.0
	144-148	7F 37	28.0
MET-12-8F	27-31	8F 38	16.0
	57-60	8F 39	36.14*
	62-65	8F 40	38.60*

*Comminution sample interval

Table 107 summarizes the comminution test results.

Table 107: Summary of the Comminution Tests.

	Units	MET 12 - 1F (26-29m)	MET 12 - 1F (41-44m)	MET 12 - 2F (41-44m)	MET 12 - 3G (131-135m)	MET 12 - 3G (141-145m)	MET 12 - 4F (61-64m)
		SMC	SMC	SMC	SMC	SMC	SMC
BWI Sample No.		1F3	1F4	2F10	3G17	3G19	4F21
RWI Sample No.		1F3	1F5*	2F10	3G17	3G19	
AI Sample No.		1F3	1F5*	2F10	3G17	3G19	
Lithology		BioSch	Q	BioSch	BioSch	Q	Q
Bond Abrasion Index – Ai	g	0.080	0.123	0.103	0.079	0.095	
Bond Crusher Work Index	kWh/t	10.9	12.7	11.8	9.3	10.8	10.8
Rod Mill Work Index	kWh/t						
P_{80}	µm	635	712	651	639	657	
Wi	kWh/t	12.1	14.3	13.3	10.5	12.4	
Ball Mill Work Index							
Closing screen	µm	150	150	150	150	150	150
Wi	kWh/t	16.0	17.6	17.7	17.6	17.4	17.2
F_{80}	µm	2633	2841	2454	2039	2457	2523
P_{80}	µm	131	126	125	130	123	123
Net grams of screen u/s per rev.	g/rev	1.542	1.315	1.330	1.432	1.341	1.354
SG		2.8	2.8	2.8	2.8	2.8	2.8
Appearance Functions							
A		64.1	64.7	66.2	63.1	61.6	65.6
b		0.98	0.84	0.88	1.15	1.02	0.96
A x b		62.8	54.3	58.3	72.6	62.8	63.0
ta		0.59	0.51	0.54	0.68	0.58	0.58

*RWi and Ai conducted on different sample to BWi

	Units	MET 12 - 4F (73-77m)	MET 12 - 5F (125-128m)	MET 12 - 5F (133-136m)	MET 12 - 6F (62-65m)	MET 12 - 6F (72-75m)	MET 12 - 7F (101-104m)
		SMC	SMC	SMC	SMC	SMC	SMC
BWI Sample No.		4F22	5F25	5F26	6F29	6F31	7F35
RWI Sample No.			5F25		6F29		
AI Sample No.			5F25		6F29		
Lithology		GarnSch	GarnSch	Q	GarnSch	Q	GarnSch
Bond Abrasion Index – Ai	g		0.114		0.129		
Bond Crusher Work Index	kWh/t	9.3	13.6	13.8	12.2	9.4	12.7
Rod Mill Work Index	kWh/t						
P_{80}	µm		604		685		
Wi	kWh/t		11.7		11.9		
Ball Mill Work Index							
Closing screen	µm	150	150		150	150	150
Wi	kWh/t	18.1	15.1	17.0	17.0	18.8	15.1
F_{80}	µm	2178	2539	2494	2120	2542	2535
P_{80}	µm	130	130	129	130	126	130
Net grams of screen u/s per rev.	g/rev	1.366	1.655		1.482	1.236	1.656
SG		2.8	2.8	2.8	2.8	2.8	2.8
Appearance Functions							
A		63.7	63.7	61.6	62.9	66.8	65.4
b		1.14	0.80	0.82	0.90	1.07	0.83
A x b		72.6	51.0	50.5	56.6	71.5	54.3
ta		0.68	0.48	0.48	0.53	0.66	0.51

	Units	MET 12 - 8F (57-60m)	MET 12 - 8F (62-65m)	MET 12 - 3G (131-135m)	MET 12 - 3G (141-145m)	MET 12 - 4F (73-77m)
		SMC	SMC	JK	JK	JK
BWI Sample No.		7F37	8F40	3G17	3G19	4F21
RWI Sample No.						
AI Sample No.						
Lithology		GarnSch	Q	BioSch	Q	Q
Bond Abrasion Index – Ai	g			0.079	0.095	
Bond Crusher Work Index	kWh/t	13.3	11.4	9.6	10.5	8.2
Rod Mill Work Index	kWh/t					
P_{80}	µm			639	657	
Wi	kWh/t			10.5	12.4	
Ball Mill Work Index						
Closing screen	µm	150	150	150	150	150
Wi	kWh/t	19.1	17.6	17.6	17.4	17.2
F_{80}	µm	2304	2612	2039	2457	2523
P_{80}	µm	124	128	130	123	123
Net grams of screen u/s per rev.	g/rev	1.218	1.350	1.432	1.341	1.354
SG		2.7	2.8	2.8	2.8	2.8
Appearance Functions						
A		66.4	62.6	56.4	56.5	54.3
b		0.81	0.96	1.24	1.15	1.49
A x b		53.8	60.1	69.9	65.0	80.9
Ta		0.51	0.57	0.83	0.83	0.92

The statistical analysis of the comminution test results is presented in Table 108.

Table 108: Statistical Analysis of the Comminution Test Results.

Parameters	Axb	BWi, kWh/t	Ai
Number of Samples Tested	17	17	9
Mean	62.4	17.3	0.100
Standard Deviation	8.8	1.1	0.019
Design	53.6	18.1	0.123
Statistical Analysis			
Confidence Level, %	90	90	90
Calculated Accuracy Level, ±%	5.6	2.5	10.4
BFS Study Accuracy Level, ±%	10	10	10

14 MINERAL RESOURCE ESTIMATES

SRK Consulting (U.S.), Inc. (“SRK”) performed the Mineral Resource Estimate in support of the Borborema Feasibility Study (FS) report with an effective date of 31 January 2023. Mineral Resource work was performed or supervised by Erik Ronald, P.Geo (PGO#3050), and Principal Consultant with SRK acting as the Qualified Person for Mineral Resources.

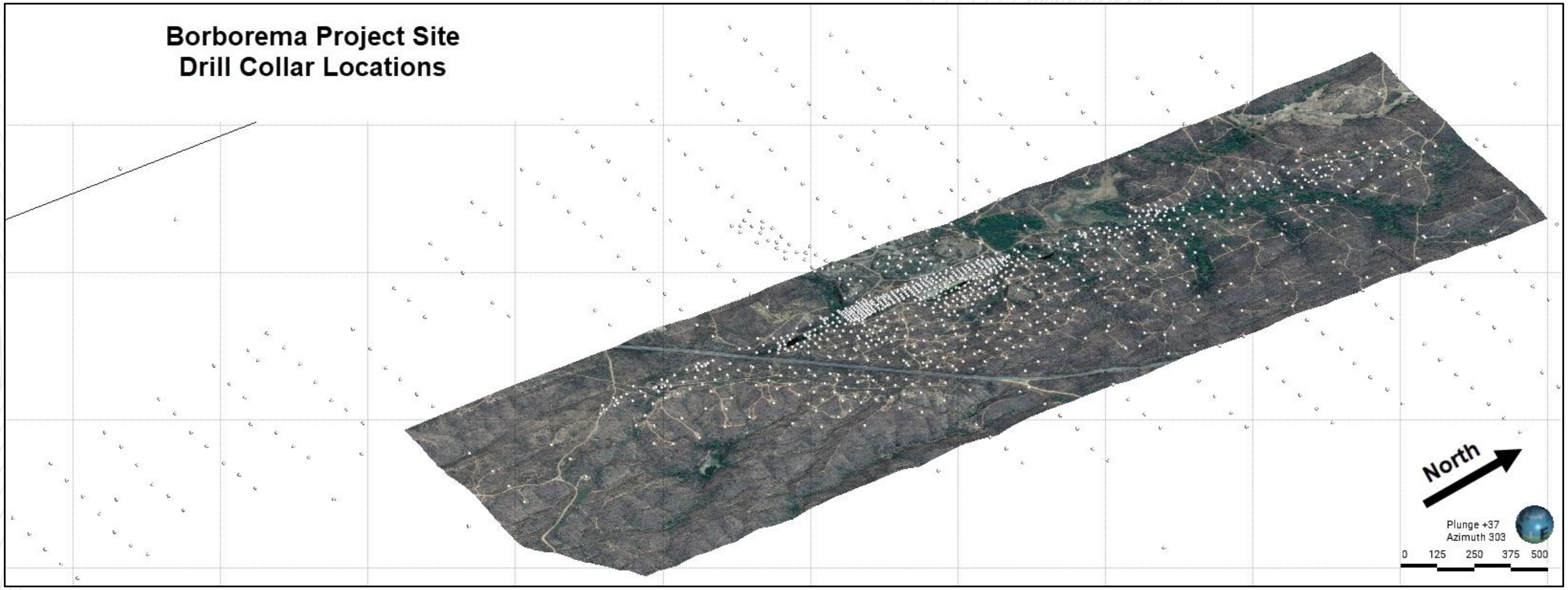
All supporting drilling and geological data were provided by Aura and reviewed by the Qualified Person. SRK constructed the block model, performed grade shell modeling of mineralization, interpolation of gold concentrations, scripting of bulk density, assigning Mineral Resource classification based on CIM guidelines, and calculating the Mineral Resource statement.

The Mineral Resource block model and all supporting drilling and modeling data are projected in the Borborema local grid (BLG).

14.1 RESOURCE DRILLHOLE DATABASE

The drill hole database (DHDB) supporting the Mineral Resources contains 1,370 drill holes totalling 109,578 m across the entire property. Drilling on the property includes auger, rotary-at-bit (RAB), reverse circulation (RC), and diamond drill core (DDH) drill methods. The RC and DDH drill collar locations are focused on evaluating the north-south trending mineralisation while other methods were used further afield for exploration purposes (Figure 90).

A breakdown of drilling method, number of holes and total meterage is presented in Table 109. Within the broader property-wide database, 1,041 drill holes intercept the broad gold-mineralization zone, defined as greater than 0.1 g/t Au and are thus utilized in the determination of Mineral Resources. Drilling was conducted from 1985 through 2022 on the Borborema Property.



Source: SRK, 2023

Figure 90: Oblique view of the Borborema Project site showing drill collar locations.

Table 109: Drilling database on the Borborema Property.

Drilling Method	No.	Metres
Auger	48	250
RAB	98	238
DD	303	58,519
RC	921	50,571
Total	**1370**	**109,578**

Source: SRK, 2023

14.1.1 Assay

The property drilling database contains 74,038 sample intervals within the drilling database that used for the Mineral Resource estimation. There is limited multi-element analytical data via ICP including:

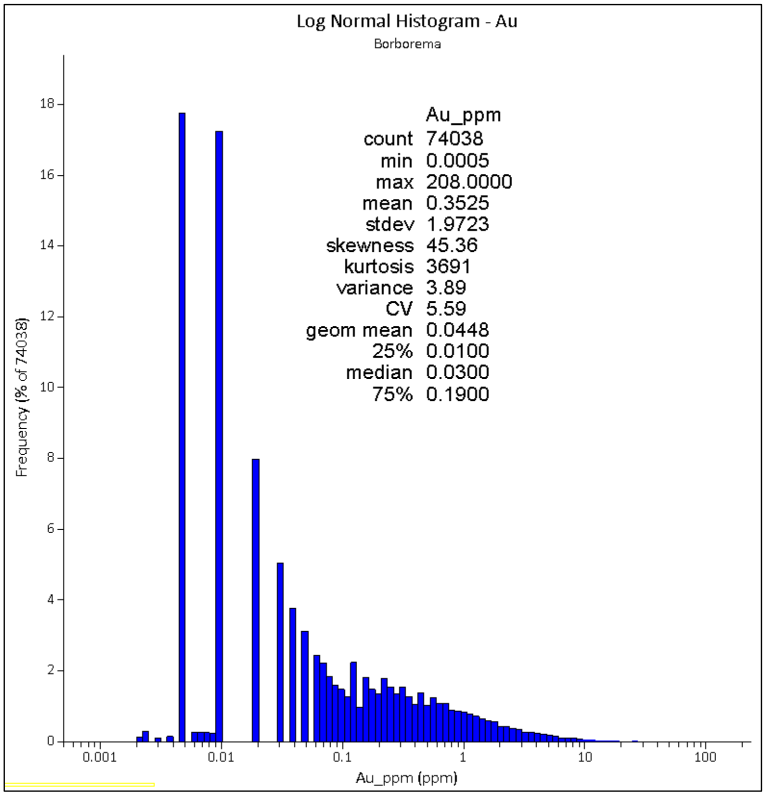
- 74,038 samples analyzed for Au.
- 2,053 samples analyzed for Ag.
- 666 samples analyzed for As.
- 666 samples analyzed for S.

For model construction and estimation, only gold (Au) values were provided to SRK from Aura for data validation and Mineral Resource modeling with the expanded database provided to SRK post-model completion. SRK has recommended re-assay of historical samples for multi-element analyses as well as all future drilling to include an expanded suite of elements for deposit characterization.

The average raw sampling interval length is 1 m with some samples at 4 m and 2 m lengths.

The Qualified Person notes that there are minor silver occurrences on the property of greater than 10 g/t Ag which should be assessed for their economic potential, in addition to a detailed review of deleterious materials. The lack of incorporating fundamental geochemical data, both potentially economic and deleterious, introduces uncertainly into the model and the ability to predict recoverability, zones of elevated deleterious materials (As, Fe, S, etc.), and the ability to evaluate exploration targets. The Qualified Person has accounted for this lack of data and certainly through Mineral Resource classification.

The gold population distribution is shown in Figure 91 as a log-normal chart. Gold values across the property are represented by a log-normal distribution characterized by the majority of samples being low grades (<0.1 ppm Au) with a long tail of extreme high grades (>10 ppm Au). Given the type of deposit and nature of mineralization, this is the expected distribution for the gold population which includes targeted holes in the mineralized area along with regional exploration data.



Source: SRK, 2023

Figure 91: Log histogram of total Au population on the Borborema Property.

14.1.2 BULK DENSITY

There are 29,617 specific gravity ("SG") measurements from drilling data in the database used for the Mineral Resource Estimate. These measurements are collected from drill core by company personnel using the immersion method via the specific gravity apparatus onsite. The SG data demonstrates low variance across all samples. Within the sulphide zone, the Qualified Person notes the generally unaltered nature and the lithologic similarity of the main two rock types (biotite schist and quartz schist) hosting mineralization. Bulk density was applied to the Mineral Resource block model by oxidation zone including allotment for the mineralized sulphide zone. The applied bulk density values utilized in the Mineral Resource block model by domain are shown in Table 110.

Table 110: Assigned bulk density for the Borborema Mineral Resource Block Model.

Zone	Bulk Density (g/cm^3)
Oxide	2.65
Sulfide	2.76
Mineralized Sulfide	2.77

Source: SRK, 2023

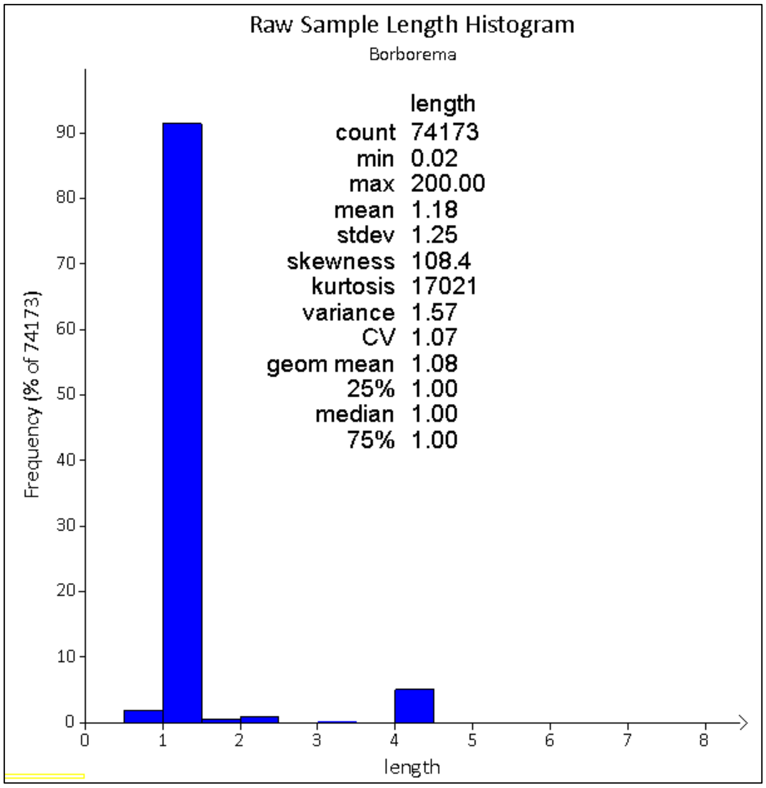
14.2 EXPLORATORY DATA ANALYSIS

Exploratory data analysis ("EDA") was performed focused on gold values in the drilling database as provided by Aura. EDA included an assessment of composite length, high-end outlier analysis, descriptive statistics, and domain assessment within the mineralized grade shells.

14.2.1 COMPOSITING AND OUTLIER ANALYSIS

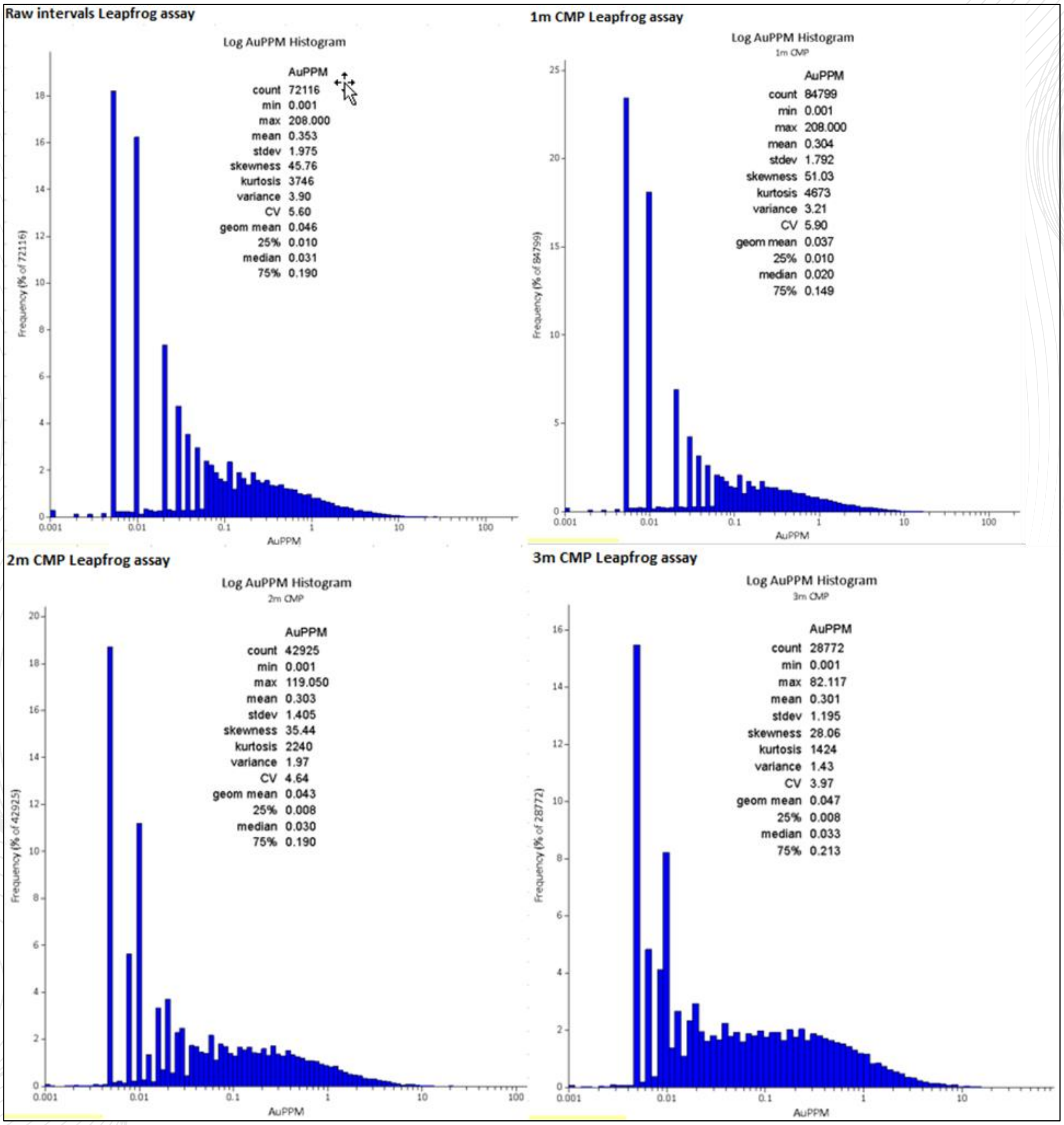
SRK reviewed raw, 1 m, 2 m, and 3 m composite lengths to determine material effect or bias on these various composite lengths. A 2 m composite was used for estimation of the 2022 Mineral Resource model. It is this Qualified Person's opinion that use of a 2 m composite is considered appropriate based on the raw sampling intervals, with the majority collected at 1 m length and other campaigns which used up to a 4 m sample for analyses (Figure 92). This composite length is the same as the previous 2012 model. Table *111* illustrates differences in the compositing lengths reviewed.

The population distribution of gold grades is shown in Figure 93. The mean value does not materially vary while the variance is reduced with increasing composite length, as expected.



Source: SRK, 2023

Figure 92: Raw sample interval lengths.



Source: SRK, 2021

Figure 93: Log histograms of Au (g/t) by composite length.

Summary descriptive statistics are provided in Table 109 showing minor differences between raw data and the three composite lengths.

Table 111: Summary Au and SG descriptive statistics by composite length.

Raw data (Leapfrog project export)										
Column	**Count**	**Mean**	**Median**	**Min**	**Max**	**Variance**	**StDev**	**CV**	**IQR**	**Outlier**
AuPPM	72116	0.353	0.031	0.001	208	3.9	1.975	5.6	0.18	0.46
SG	29617	2.724	2.74	2.63	2.74	0	0.039	0.01	0	2.74
1m comp										
Column	**Count**	**Mean**	**Median**	**Min**	**Max**	**Variance**	**StDev**	**CV**	**IQR**	**Outlier**
AuPPM	84799	0.304	0.02	0.001	208	3.21	1.792	5.9	0.139	0.3575
SG	35988	2.723	2.74	2.63	2.74	0	0.04	0.01	0	2.74
2m comp										
Column	**Count**	**Mean**	**Median**	**Min**	**Max**	**Variance**	**StDev**	**CV**	**IQR**	**Outlier**
AuPPM	42925	0.303	0.03	0.001	119.1	1.97	1.405	4.64	0.182	0.463
SG	18125	2.723	2.74	2.63	2.74	0	0.04	0.01	0	2.74
3m comp										
Column	**Count**	**Mean**	**Median**	**Min**	**Max**	**Variance**	**StDev**	**CV**	**IQR**	**Outlier**
AuPPM	28772	0.301	0.033	0.001	82.12	1.43	1.195	3.97	0.205	0.5205
SG	12152	2.723	2.74	2.63	2.74	0	0.038	0.01	0	2.74

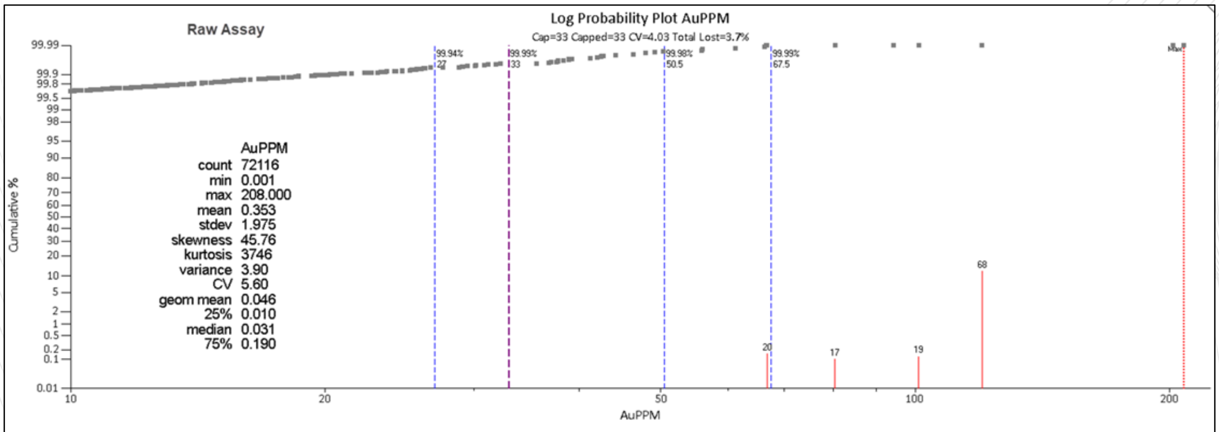
Source: SRK, 2021

Table 112: Summary length statistics for composite length analysis.

	COUNT	AVG ENGTH	MIN	MAX	MEDIAN	CV
raw	72786	1.181	0.2	200	1	1.07
1 m	85322	1.000	0.5	1.49	1	0.02
2 m	43084	1.988	0.5	2.48	2	0.06
3 m	28845	2.958	0.5	3.48	3	0.09

Source: SRK, 2021

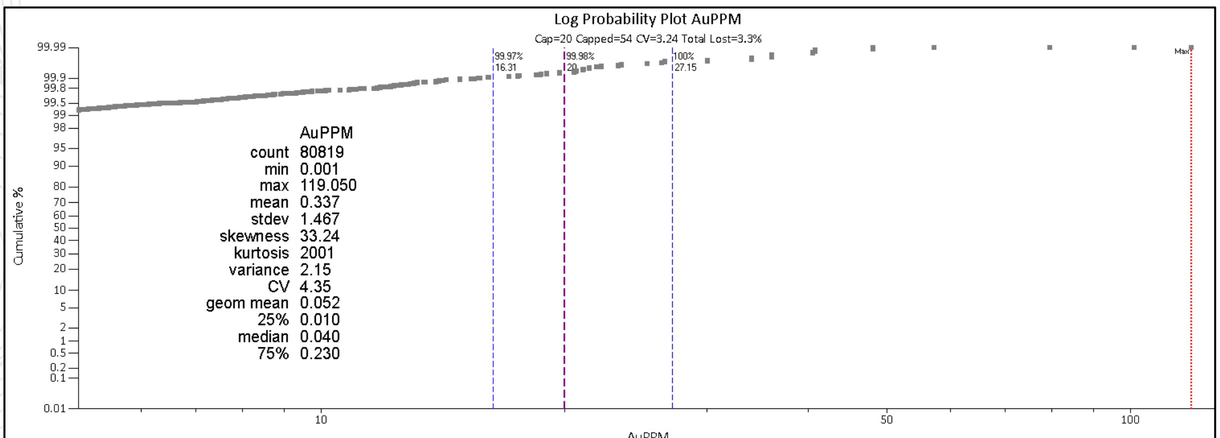
A comparative, upper capping analysis was performed to review potential gold outliers and assess the potential estimation impact. Figure 94 and Figure 95 illustrate the log probability charts used to assess the impact of Au capping on both raw and composited Au data, respectively. SRK selected multiple upper-end capping limits and various domains to assess local and global sensitivity and impacts of capping. Ultimately, a 20 g/t Au upper cap value from 2 m composited data was set as the upper capping limit within the broadly defined mineralized domain defined by a numeric indicator model at a 0.1 g/t Au threshold. The impact of this upper cap resulted in the capping of 54 composites, 3.3% total metal loss while obtained a 26% improvement in the Coefficient of Variation ("CV") (Figure 94).



Column	_Filter	Cap	Capped	Percentile	Capped%	Lost Total%	Lost CV%	Count	Min	Max	Mean	Total	Variance	CV
AuPPM								72116	0.001	208	0.353	25429	3.9	5.6
AuPPM		67.5	6	99.99%	0.01%	1.60%	18%	72116	0.001	67.5	0.347	25028	2.57	4.62
AuPPM		50.5	12	99.98%	0.02%	2.30%	22%	72116	0.001	50.5	0.345	24856	2.29	4.39
AuPPM		33	33	99.99%	0.05%	3.70%	28%	72116	0.001	33	0.339	24475	1.87	4.03
AuPPM		27	44	99.94%	0.10%	4.70%	31%	72116	0.001	27	0.336	24244	1.68	3.85
AuPPM	AuPPM > 33							33	35.6	208	61.9	2043	1776	0.68
AuPPM	AuPPM <= 33							72083	0.001	32.3	0.324	23386	1.38	3.62

Source: SRK, 2021

Figure 94: Capping analysis on raw data.



Column	_Filter	Cap	Capped	Percentile	Capped%	Lost Total%	Lost CV%	Count	Min	Max	Mean	Total	Variance	CV
AuPPM								80819	0.001	119.1	0.337	27270	2.15	4.35
AuPPM		27.15	24	100%	0.03%	2.40%	22%	80819	0.001	27.15	0.329	26609	1.25	3.4
AuPPM		20	54	99.98%	0.10%	3.30%	26%	80819	0.001	20	0.326	26364	1.11	3.24
AuPPM		16.31	75	99.97%	0.10%	4.20%	29%	80819	0.001	16.31	0.323	26120	1.01	3.11
AuPPM	AuPPM > 20							54	20.54	119.1	36.79	1987	622.4	0.68
AuPPM	AuPPM <= 20							80765	0.001	19.73	0.313	25284	0.86	2.96

Source: SRK, 2021

Figure 95: Capping analysis on 2 m composites.

14.2.2 STATISTICAL ANALYSES

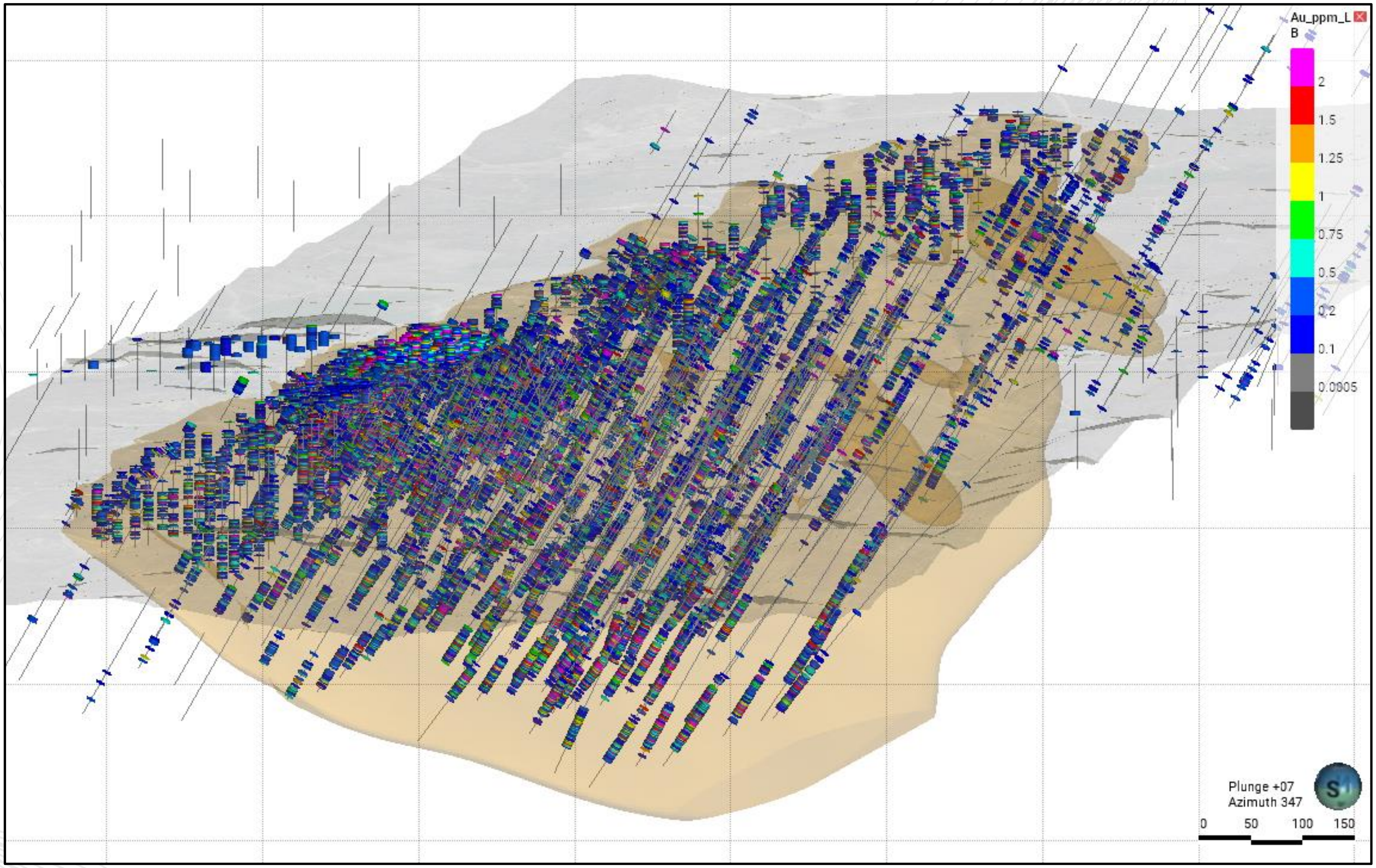
SRK performed statistical analyses on the drilling database provided by Aura. The database initially only contained gold (Au) values, but additional multi-element analyses were provided after the model was completed in 2022. Table *113* provides summary descriptive statistics for the entire Borborema drilling database for several key elements. Elements in addition to Au were assessed as part of the EDA but the Qualified Person notes these data are not incorporated in the modeling but are for general informational purposes only.

Table 113: Summary descriptive statistics for raw assay data.

	Au_ppm	Ag_ppm	As_ppm	S_pct	W_ppm	Sb_ppm
Mean	0.353	0.91	81.01	0.199	7.43	2.83
Median	0.03	0.5	2.5	0.095	5	2.5
Mode	0.005	0.25	2.5	0.01	5	2.5
Standard Deviation	2.0	2.1	194.0	0.3	38.8	1.8
Sample Variance	3.9	4.6	37634.4	0.1	1505.2	3.2
Minimum	0.0005	0.03	0.2	0.005	0.6	0.02
Maximum	208	43	1775	2.71	930	9
Count	74038	2053	666	666	666	666

Source: SRK, 2023

As part of the EDA, SRK performed a variety of grade shell modeling analyses to assess a reasonable volume which represents the broad mineralized envelop across the deposit. Ultimately, a gold mineralization grade shell was constructed at a 0.1 g/t Au threshold using the indicator numeric modeling function in Leapfrog® Geo software (Figure 96). This volume was generated based on the 2 m composited, uncapped samples, a probability value (ISO value) of 0.4, spheroidal interpolant with a 350 m base range. The resultant volume is a satisfactory representation of gold mineralization across the Borborema Property. This mineralized shell was used to evaluate zones of continuous gold mineralization and negate the influence of anomalous samples outside the main mineralized area of interest. Summary statistics are provided in Table *114* for data in and out of the 0.1 g/t Au grade shell as well as the capped gold data population.



Source: SRK, 2023

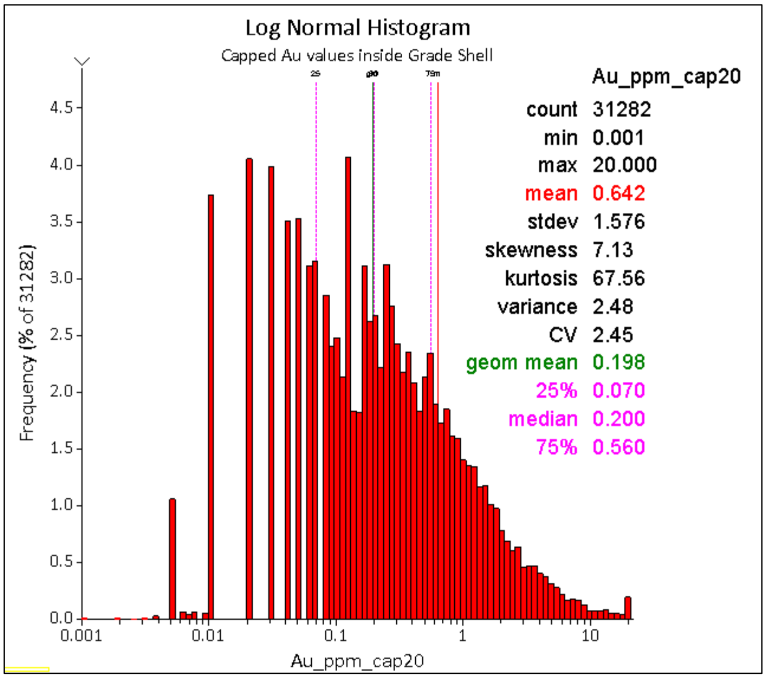
Figure 96: Oblique view of 0.1 g/t Au grade shell with drilling.

Table 114: Summary descriptive statistics for 2 m composited uncapped and capped Au by mineralization Shell.

Variable	Volume	0.1 g/t shell	Count	Mean	Min	Max	Median	Variance	StDev	CV	IQR	Outlier
Au capped (g/t)	All		75,769	0.333	0.001	20	0.04	1.42	1.19	3.58	0.18	0.46
Au capped (g/t)	mineralized	Inside	31,282	0.642	0.001	20	0.20	2.48	1.58	2.45	0.49	1.30
Au capped (g/t)	mineralized	Outside	29,859	0.064	0.001	20	0.01	0.13	0.36	5.65	0.03	0.09
Au (g/t)	All		75,769	0.355	0.001	208	0.04	3.87	1.97	5.54	0.18	0.46
Au (g/t)	mineralized	Inside	31,282	0.673	0.001	120	0.20	4.89	2.21	3.29	0.49	1.30
Au (g/t)	mineralized	Outside	29,859	0.071	0.001	202	0.01	1.54	1.24	17.44	0.03	0.09

Source: SRK, 2023

A histogram showing the log normal distribution of capped gold values within the 0.1 g/t Au grade shell is shown in Figure 97. The capped and composited gold values contained within the 0.1 g/t Au mineralized grade shell represent the baseline data used in the Mineral Resource Estimate.



Source: SRK, 2023

Figure 97: Log-histogram of capped Au composite values within the 0.1 g/t Au grade shell.

14.2.3 Spatial Continuity

The spatial continuity of gold grades across the Borborema deposit was assessed though experimental and modeled semi-variograms calculated using Leapfrog® Geo and Isatis software. SRK calculated multiple experimental semi-variograms investigating the sensitivity of continuity parameters to multiple thresholds on indicator grade shells and differences between drilling methods (DDH and RC).

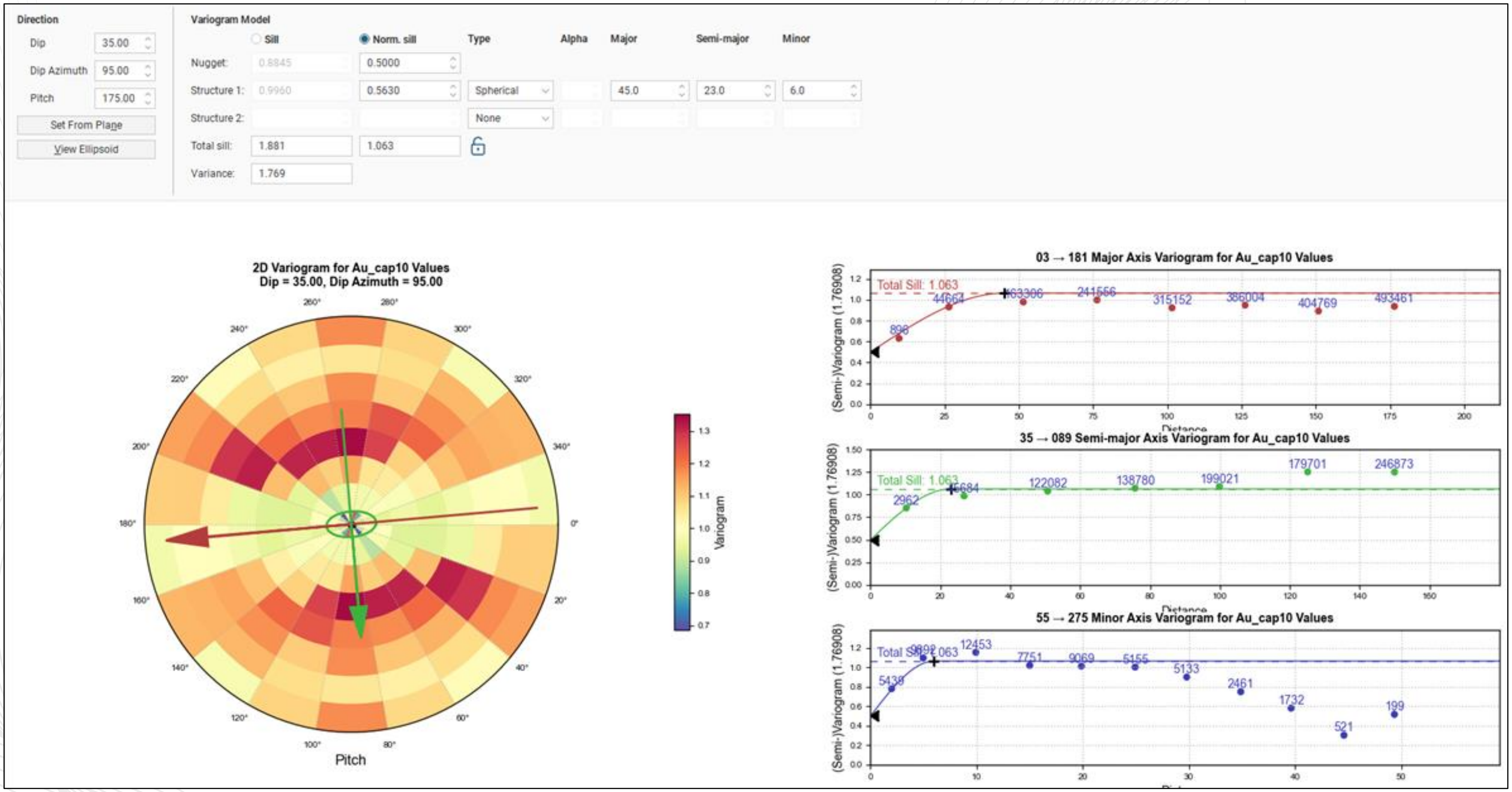
Summary findings from the variography analyses includes:

- The nugget effect is relatively consistent across multiple sensitivity trials at 40% to 50% of the sill regardless of grade shell, capping, or exclusion of RC data. Given the known deposit style of orogenic gold, observed mineralization in core, the two styles of observed gold mineralization (free and sulphide hosted), and spatial distribution of grades, a high nugget effect is expected.

- Ranges are short, typically less than the 50 m. This is also the mean drill spacing across the deposit which indicates a relatively low degree of continuity between samples. SRK notes that this is a common feature in some low continuity deposits where the range will appear correlated with drill spacing and may result in early-project over confidence at wider spacing drilling.

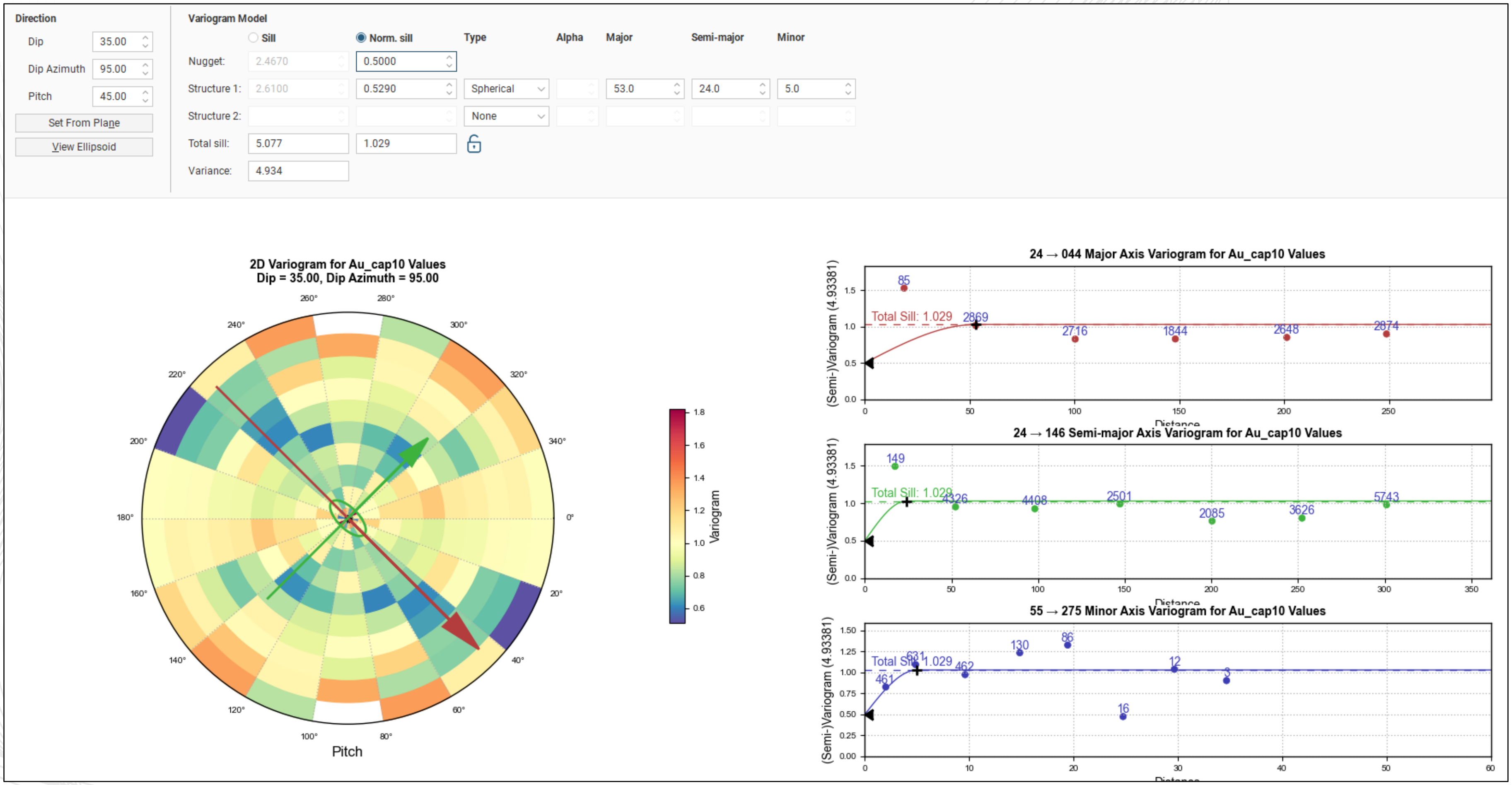
- Anisotropy varies by grade shell with the lower grade shell thresholds (0.1 and 0.2 g/t Au) showing continuity trends along the main north-south structure while higher grade shell's (0.5 and 1.0 g/t Au) show the major direction of continuity to be oblique of the north-south structure. This finding may support a theory of higher-grade, secondary shoots oriented oblique to the main structure.

Example variography is shown at two grade shells for the same capped composites in Figure 98 and Figure 99 with summary variography parameters shown in Table *115*. Ultimately, the spatial continuity analysis was conducted on composited and capped data constrained by grade shells as no geological domain model has been constructed at Borborema. Final modeled variography used for estimation purposes is shown in Table *115*.



Source: SRK, 2021

Figure 98: Variography within the 0.2 g/t Au grade shell – capped at 20 g/t Au.



Source: SRK, 2023

Figure 99: Variography within the 1.0 g/t Au grade shell – capped at 20 g/t Au.

Table 115: Summary modeled variography by estimation zone.

Search Neighborhood	Direction			Nugget			Structure						
Variogram Name	**Dip**	**Dip Azimuth**	**Pitch**	**Variance**	**Nugget**	**Normalized Nugget**	**Sill**	**Normalized Sill**	**Structure**	**Major**	**Semi-major**	**Minor**
Variomodel_0.2GS_2m_cap20	35	95	170	2.1	1.0	0.5	1.4	0.66	Spherical	50	16	6
Variomodel_0.5GS_2m_cap20	35	95	75	3.9	2.1	0.55	2.0	0.51	Spherical	50	45	6
Variomodel_1.0GS_2m_cap20	35	95	175	7.7	3.9	0.5	5.3	0.69	Spherical	50	30	6

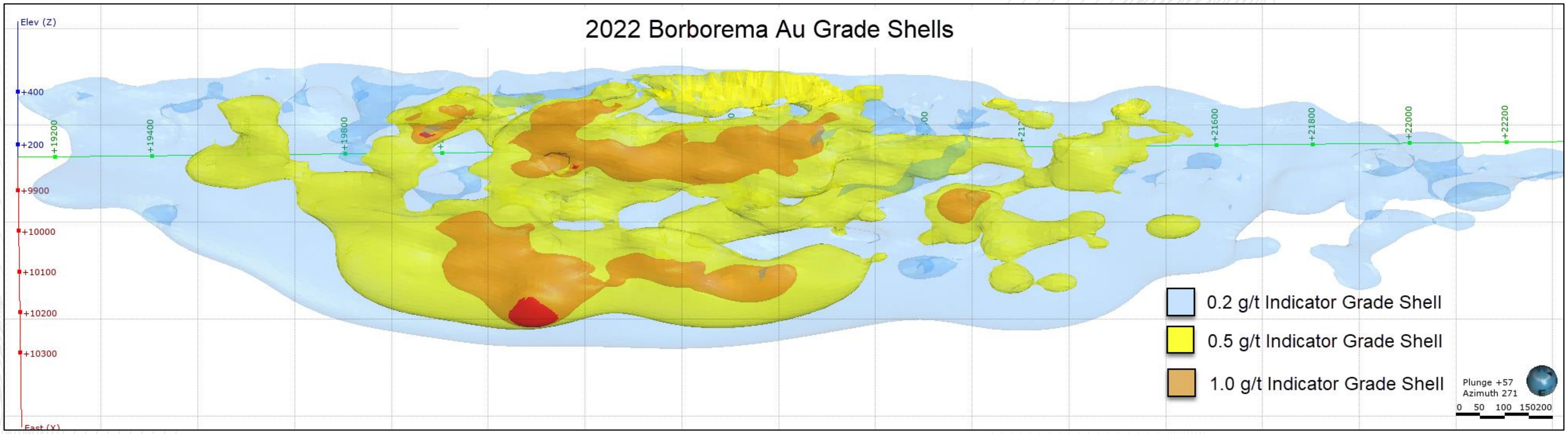
Source: SRK, 2023

14.3 GEOLOGIC MODEL

The Borborema Mineral Resource block model does not utilize a lithological model to confine the grade estimation but instead, utilizes multiple gold grade shells to define estimation domains. This approach was used due to the inability to model lithostratigraphic correlations across the deposit due to a lack of detailed structural data from drill core. As the gold mineralization is predominantly controlled by a primary structural zone trending north-south and dipping ~35° to the east, it was this orientation which was used to define the broad grade shell directionality and trend.

The Mineral Resource block model utilized a minimum 0.2 g/t Au grade shell to constrain the estimation and thus, define the overall mineralization envelop with potential for economic material. Within the 0.2 g/t Au grade shell, SRK has utilized two additional nested gold grade shells of 0.5 and 1.0 g/t Au, also created in Leapfrog® Geo using the indicator numeric modeling tools. Parameters of the indicator grade shells include a 0.4 ISO value (probability), anisotropic trend aligned with the primary mineralization zone at 35° dip and 90° dip direction. The indicator interpolant utilized a spheroidal model with a base range of 300 m.

As a check, SRK calculated indicator grade shells at the following thresholds: 0.1, 0.15, 0.2, 0.3, 0.4, 0.5, 1.0, 1.25, 1.5, and 2.0 g/t Au using 2 m composited data. These indicator shells were assessed for sensitivity by varying the input parameters (range, probability, etc.), and reviewing the spatial continuity of grade (Figure 100). From these shells, a generalized zonation of gold grades can be inferred (Figure 101) but SRK notes that these areas of interpreted mineralization are not considered conclusive nor are they supported by robust field observational data but represent one potential interpretation of grade distribution based solely on statistics.



Source: SRK, 2023

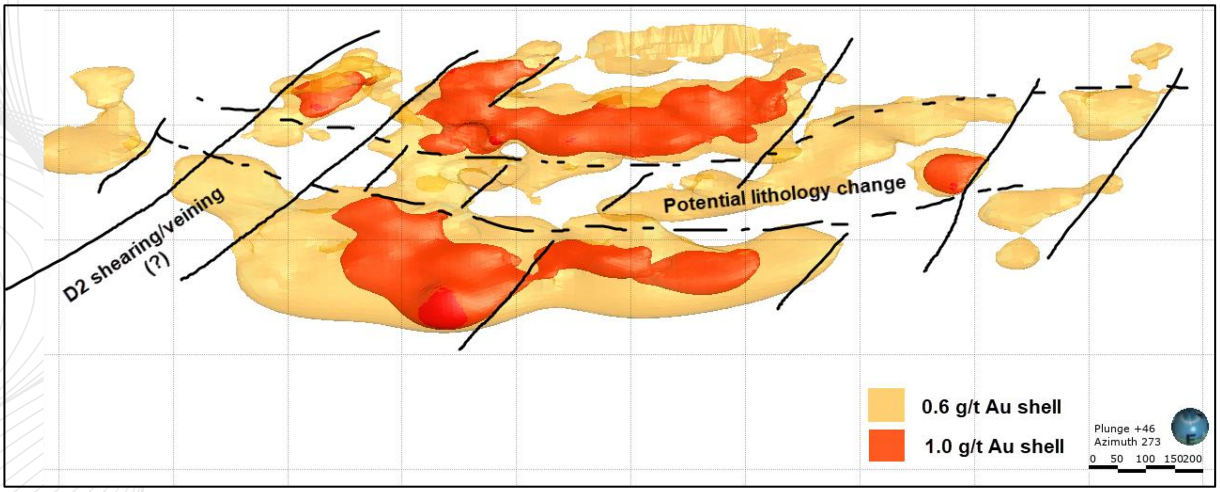
Figure 100: Longitudinal view of Au grade shells, viewing west.

In addition to reviewing how spatially continuous the multiple grade shells appear, summary statistics (Table *116* through Table *118*) from each shell were compared to determine the percentage of internal dilution or robustness (how many samples of below-threshold were incorporated in each grade shell).

Summary findings from the grade shell sensitivity analysis include:

- Use of the 0.1 g/t Au grade shell is considered satisfactory in delineating minimal mineralization from areas of no or trace gold occurrences.
- A 0.2 g/t Au grade shell improves mean internal grade values by 20%, thus removing a material portion of low-grade material on the edges of the mineralized area.
- Spatial continuity of all grade shells appears satisfactory up to 1.0 g/t Au, after which the high-grade portion appears highly discontinuous.
- Overall, the mineralization appears to be consistent along two main, sub-parallel zones with strike consistent with historical interpretation (Figure 101) for the discrete two higher-grade zones.

Additionally, based on the spatial continuity observed across the various grade shells, a secondary structural component controlling higher-grade mineralization is possible along with potential separation of the pellitic and psammitic lithology (Figure 14-12). Whether these zones correspond to receptive lithology or increase in secondary structures amenable for gold deposition is unknown based on the limited data provided, but it is recommended that further analyses be conducted.



Source: SRK, 2021

Figure 101: SRK interpretation of grade shell mineralization.

Table 116: Summary statistical evaluation of the 0.2 g/t Au grade shell.

	ISO	Threshold
0.2 g/t Au Grade Shell	40%	0.30
Indicator Statistics		
Total number of samples	**30,455**	
Cut-off value	0.3	
	≥ cut-off	**< cut-off**
Number of points	7,511	22,944
Percentage	24.66%	75.34%
Mean value	1.29436	0.0660627
Minimum value	0.3	5.00E-04
Maximum value	101.021	0.29715
Standard deviation	2.54742	0.0739537
Coefficient of variance	1.96808	1.11945
Variance	6.48932	0.00546914
Output Volume Statistics		
Resolution	20	
Iso-value	0.4	
	Inside	**Outside**
≥ cut-off		
Number of samples	5,705	1,806
Percentage	18.73%	5.93%
< cut-off		
Number of samples	2,689	20,255
Percentage	8.83%	66.51%
All Points		
Mean value	1.00631	0.126501
Minimum value	0.0005	5.00E-04
Maximum value	79.45	101.021
Standard deviation	2.15857	0.784754
Coefficient of variance	2.14504	6.20354
Variance	4.65944	0.615838
Volume	30,851,303	486,168,985
Number of parts	6	4
Dilution	32.0%	
Exclusion	24.0%	
Model vs. Bound Volume % Diff	517,020,288	6%

Source: SRK, 2021

Table 117: Summary statistical evaluation of the 0.5 g/t Au grade shell.

	ISO	Threshold
0.5 g/t Au Grade Shell	45%	0.50
Indicator Statistics		
Total number of samples	**30,455**	
Cut-off value	0.5	
	≥ cut-off	**< cut-off**
Number of points	5,055	25,400
Percentage	16.60%	83.40%
Mean value	1.73549	0.0970391
Minimum value	0.5	5.00E-04
Maximum value	101.021	0.49979
Standard deviation	3.00757	0.119263
Coefficient of variance	1.73298	1.22902
Variance	9.04548	0.0142236
Output Volume Statistics		
Resolution	20	
Iso-value	0.45	
	Inside	**Outside**
≥ cut-off		
Number of samples	2,491	2,564
Percentage	8.18%	8.42%
< cut-off		
Number of samples	987	24,413
Percentage	3.24%	80.16%
All Points		
Mean value	1.56858	0.214338
Minimum value	0.015	5.00E-04
Maximum value	79.45	101.021
Standard deviation	2.95829	0.88891
Coefficient of variance	1.88597	4.14724
Variance	8.75151	0.790162
Volume	11,153,160	505,867,128
Number of parts	4	2
Dilution	28.4%	
Exclusion	50.7%	
Model vs. Bound Volume % Diff	517,020,288	2%

Source: SRK, 2021

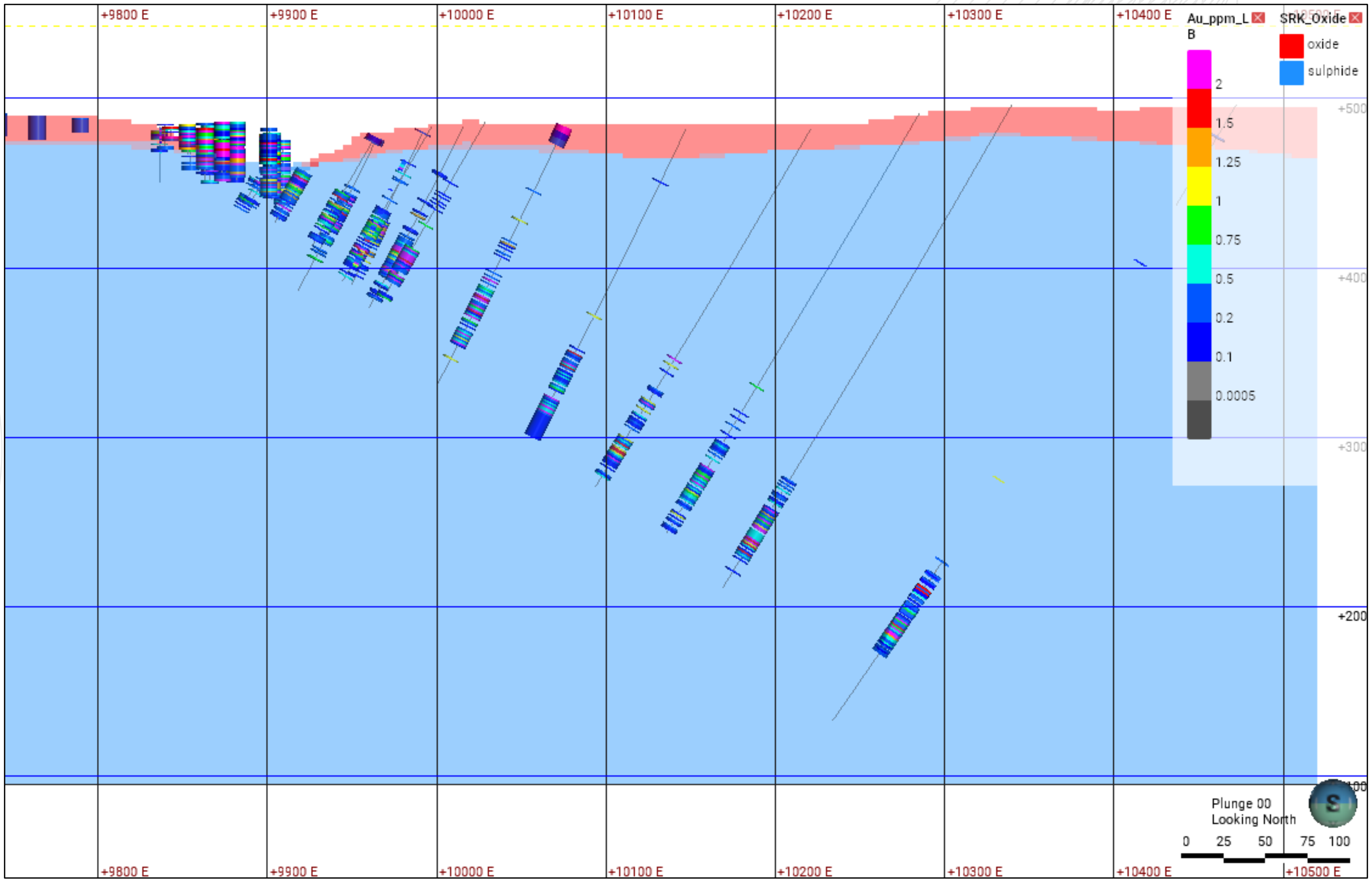
Table 118: Summary statistical evaluation of the 1.0 g/t Au grade shell.

	ISO	Threshold
1.0 g/t Au Grade Shell	40%	1.00
Indicator Statistics		
Total number of samples	**31,598**	
Cut-off value	1	
	≥ cut-off	**< cut-off**
Number of points	2,578	29,020
Percentage Mean value Minimum value	8.16% 2.72687 1	91.84% 0.147062 5.00E-04
Maximum value Standard deviation Coefficient of variance Variance	101.021 3.96387 1.45364 15.7123	0.9964 0.209367 1.42367 0.0438346
Output Volume Statistics		
Resolution Iso-value	20 0.4	
	Inside	**Outside**
≥ cut-off		
Number of samples Percentage	527 1.67%	2,051 6.49%
< cut-off		
Number of samples Percentage	298 0.94%	28,722 90.90%
All Points		
Mean value Minimum value	2.35567 0.02	0.303973 5.00E-04
Maximum value Standard deviation	79.45 4.24774	101.021 1.12963
Coefficient of variance Variance	1.8032 18.0433	3.71621 1.27606
Volume Number of parts	2,738,051 2	755,675,242 1
Dilution Exclusion Model vs. Bound Volume % Diff	36.1% 79.6% 758,413,293	 0%

Source: SRK, 2021

14.3.1 Oxidation Model

SRK utilized an oxidation boundary surface constructed in 2012 by the previous site owner to discriminate oxide from sulphide mineralization as the logging data was considered too variable and of lower confidence to construct this surface. The oxidation model is used to code bulk density in the resource block model, shown in Figure 102. The boundary surface provided was not reviewed prior to use in the 2022 model as lithologic logging was deemed unreliable for an assessment. SRK notes the surface is utilized to provide an approximate indicator of the transition but recognizes the confidence in the boundary is considered poor. Additionally, no transition zone between the oxidation and reduced areas was modeled. Therefore, the simplicity of the oxidation boundary is in question and the Qualified Person has accounted for this uncertainly through Mineral Resource classification.



Source: SRK, 2022

Figure 102: North looking, vertical cross section showing oxide and sulphide zones with drilling.

14.4 BLOCK MODEL

SRK created a digital 3-D Mineral Resource block model using Leapfrog® Geo software in 2023. The model extents and block size were influenced by the property extents, geometry of mineralization, previous block model (2012), expected selective mining unit (SMU), and mean data spacing across the deposit which is nominally 50 m. The 2022 Mineral Resource block model construction parameters are shown in Table *119* with Figure 103 illustrating the spatial extents of the model. The block model and supporting data are in the local Borborema deposit grid.

Table 119: 2022 Borborema block model parameters.

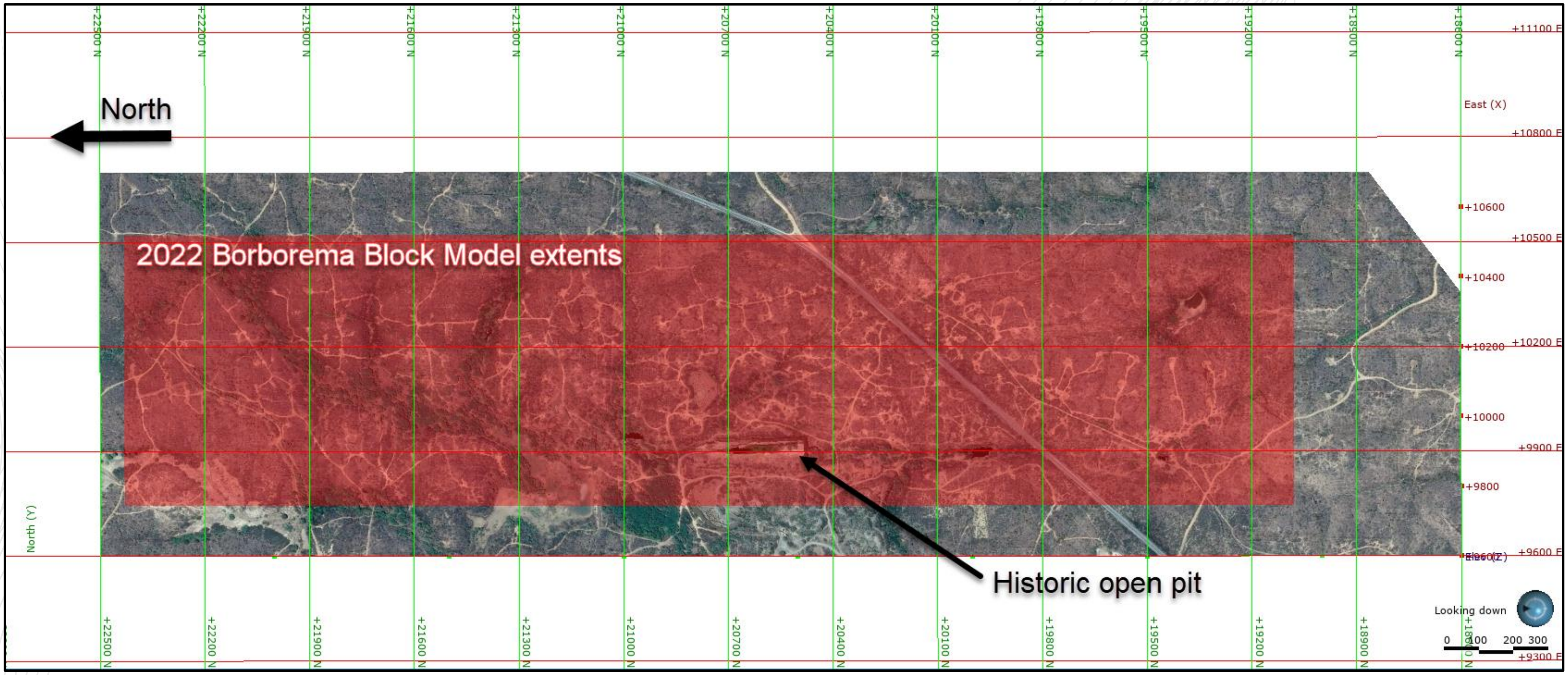
Parameters (m)	X	Y	Z
Origin	9745	19080	530
Offset	775	3350	400
Block Size	25	25	5
Sub-block size	5	5	2.5
Rotation	None		

Source: SRK, 2022

Variables in the 2022 Mineral Resource block model include:

- Broad zone of mineralization based on the 0.2 g/t Au grade shell.
- Oxidation model domain: oxidized or reduced (sulphide).
- Assigned bulk density (g/cm^3).
- Estimated gold grade (g/t Au).
- Economic pit shell (as provided to SRK by Aura).
- Mineral Resource classification.

The Qualified Person notes that the model may be improved based on multiple recommendations as summarized in Section 26 of this technical report.



Source: SRK, 2022

Figure 103: Borborema block model extents.

14.5 GRADE INTERPOLATION

The 2023 Mineral Resource block model gold grade was estimated using Ordinary Kriging (“OK”) and inverse distance weighted squared (“DW2”) methodologies constrained within soft-boundaried, nested grade shells at 0.2 g/t, 0.5 g/t, and 1.0 g/t Au indicatory grade shells (Figure 14-12). This method was selected as preferred after multiple trials of various grade shells, alternative estimation methods, and changing search neighborhood parameters were reviewed by SRK. The aim of the nested grade shell approach is to constrain higher grade gold mineralization into specific zones of occurrences while limiting the potential over-influence of outlier high-grade composites to impact the mean block grades. Due to the lack of modeled structural and geological information, it is SRK’s opinion that the nested shell approach provides a satisfactory representation of gold distribution across the Borborema deposit.

The 2012 historical Mineral Resources utilized a multiple indicator kriging (“MIK”) estimation method. This method utilized multiple indicator bins across the gold distribution for the deposit and aims to account for spatial continuity differences between domains to reproduce the input histogram. SRK reviewed this methodology but determined that MIK may result in an over-estimate of high-grade samples due to limited data in upper indictor bins and an over-reliance on modeled indicator variography, which commonly display poor robustness or well-structured semi-variograms. It is the Qualified Persons opinion, that the 2022 estimation approach is an improvement over the MIK estimation method because it utilizes more data in less bins, resulting in robust spatial continuity assumptions, is constrained within multiple grade shells assessed for continuity and quality and maintains the ability to control the extreme high-grade samples that may bias Mineral Resource estimation.

The near surface oxidized zone domain is not utilized for gold grade domains but are utilized to account for differences in recovery assumptions and bulk density. There is limited evidence of different gold grade distributions between the oxide and reduced zones, no mineralogical supporting data suggesting the spatial continuity of oxide gold zones, and a relatively low confidence in the oxide-reduced zone boundary, as discussed in the previous section.

SRK utilized a nested, soft-boundary grade shell technique with shells at 0.2, 0.5, and 1.0 g/t Au to limit the influence of outlier data to the broader mineralized volume which displays general lower-grade attributes. A multi-pass method was used for estimation based on domains defined by gold grade shells as described in Section 14.3. The pass method was implemented to ensure all blocks within the model contain grade and provide a quantitative means of assessing the relative confidence to aid in classification due to the less restrictive nature of each progressive pass search neighborhood. Summary search neighborhoods by domain and pass are presented in Table *120*. No variable orientation was utilized due to the consistent planar nature of the mineralization.

It is the Qualified Person’s opinion that the 2022 Mineral Resources for the Borborema deposit represents a satisfactory evaluation of the quantity and quality of material as it pertains to gold mineralization. The model is considered acceptable for use in mine planning and the reporting of Mineral Resources under Canadian NI 43-101 guidelines.

Table 120: Summary neighbourhood search parameters by estimation pass.

General					Ellipsoid Ranges (m)			Ellipsoid Directions			Number of Samples		Outlier Restrictions			Drillhole Limit	Discretization		
Interpolant Name	Method	Domain	Boundary	Composites	Max.	Interm.	Min.	Dip	Dip Azimuth	Pitch	Min.	Max.	Method	Distance (m)	Threshold	Max Samples per Hole	X	Y	Z
OK_Au_cap20_0.2GS_P1	OK	0.2 g/t Au grade shell	Soft	Au_ppm_cap20	100	30	12	35	95	170	4	6	Clamp	50	10	3	5	5	5
OK_Au_cap20_0.2GS_P2	OK	0.2 g/t Au grade shell	Soft	Au_ppm_cap20	100	40	10	35	95	170	3	6	Clamp	50	10	2	5	5	5
OK_Au_cap20_0.5GS_P1	OK	0.5 g/t Au grade shell	Soft	Au_ppm_cap20	60	30	5	35	95	13	4	6	Clamp	50	10	3	5	5	5
OK_Au_cap20_0.5GS_P2	OK	0.5 g/t Au grade shell	Soft	Au_ppm_cap20	80	60	10	35	95	13	3	6	Clamp	50	10	2	5	5	5
IDW2_Au_cap20_0.20GS_P3	IDW2	0.5 g/t Au grade shell	Soft	Au_ppm_cap20	200	150	75	35	95	170	2	6	None				5	5	5
OK_Au_cap20_1.0GS_P1	OK	1.0 g/t Au grade shell	Soft	Au_ppm_cap20	60	30	6	35	95	145	4	6	Clamp	25	10	3	5	5	5

Source: SRK, 2022

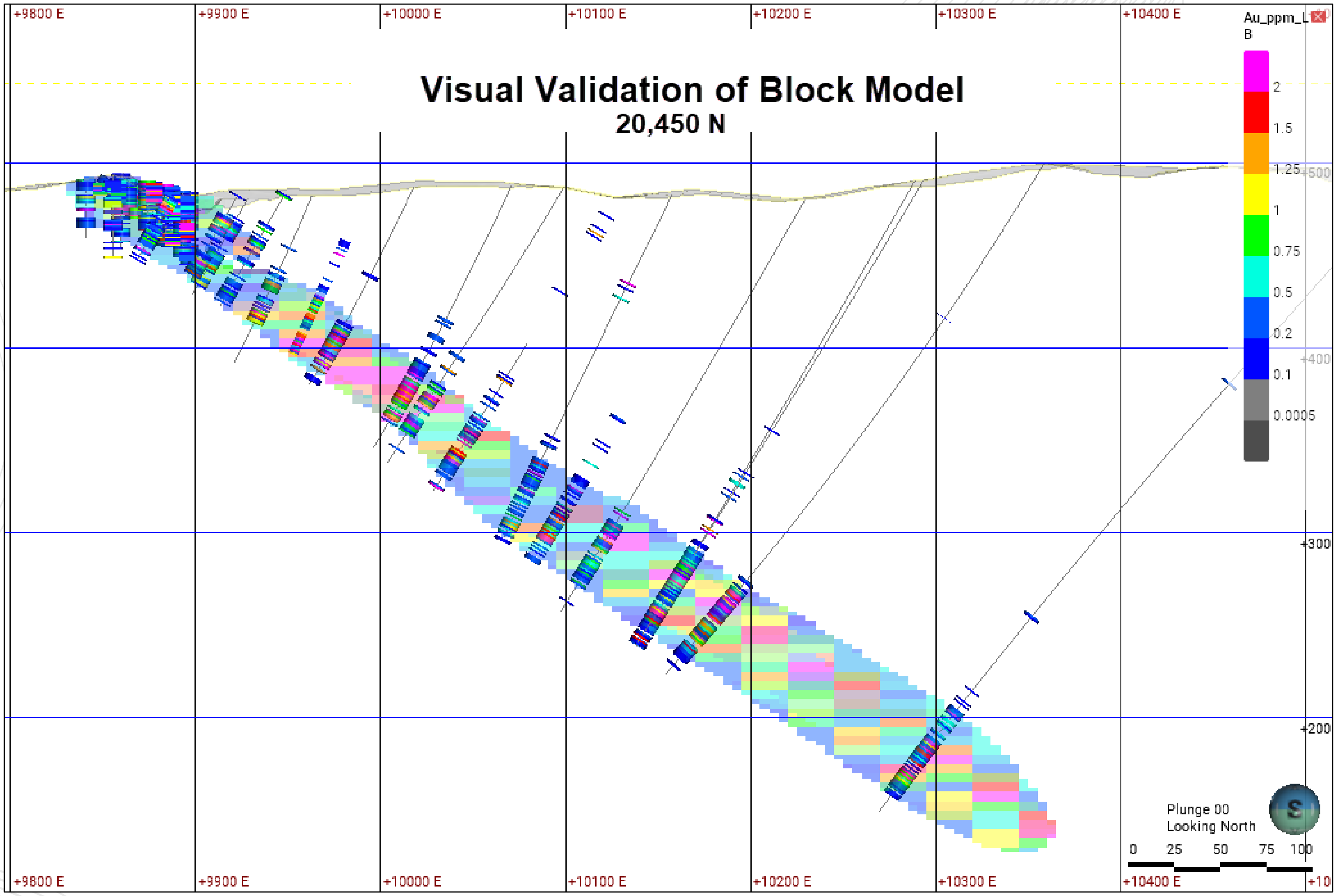
14.6 MODEL VALIDATION

The 2022 Mineral Resource block model was validated by SRK using a combination of visual and statistical comparisons to raw drilling and composited as spatially de-clustered data in a nearest neighbor estimation. Validation was performed using a combination of Leapfrog® Geo and X-10 Geo software. It is the Qualified Person's opinion that the 2022 Mineral Resource block model is satisfactory for use in the prediction of quantity and quality of material for mine planning, economics, and associated studies as well as for the application of Mineral Resource classification and reporting.

Though the Borborema deposit was historically mined, no production reconciliation data was available to SRK for model validation purposes. SRK notes that given the high variability of the gold mineralization, challenges with lack of lithological-based domains, and the nested grade shell approach to estimation, future model updates would be improved if production data can be utilized for both model calibration of estimation parameters and in reconciliation of the block model.

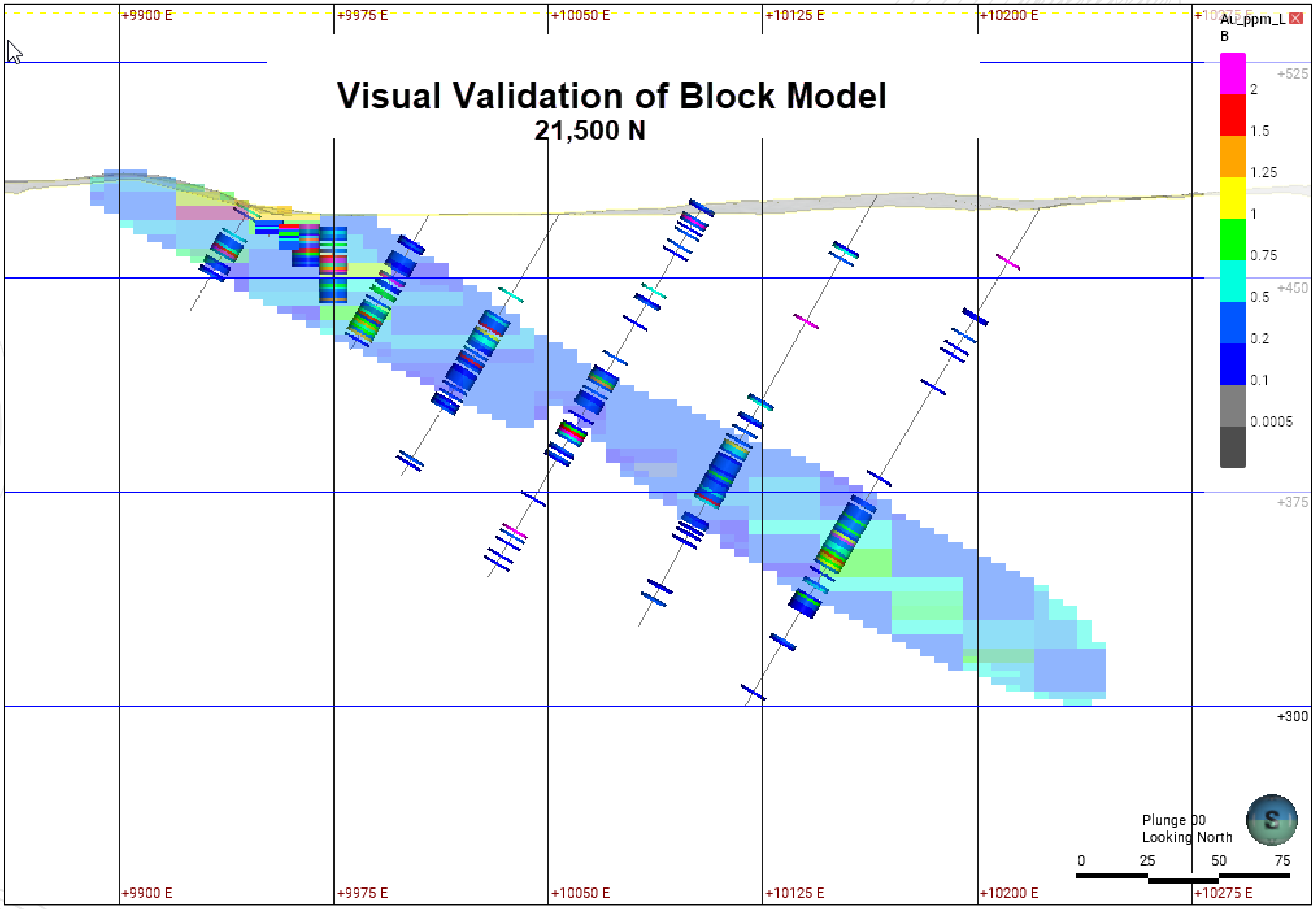
14.6.1 Visual Comparison

The estimated block gold grades and raw drilling intervals were compared visually along west to east vertical cross sections on the property. The Qualified Person notes challenges in visual block validation due to the high nugget effect, block geometry, and low continuity of gold grades across the deposit but also notes that detailed visual inspection appears satisfactory for block volume estimates considering drill sample variance. Example cross sections used in the visual validation are presented in Figure 104 and Figure 105.



Source: SRK, 2022

Figure 104: Vertical cross section looking north showing blocks and drilling coloured by gold values (ppm Au).



Source: SRK, 2022

Figure 105: Vertical cross section looking north showing blocks and drilling coloured by Gold Values (ppm Au).

14.6.2 Comparative Statistics

The 2022 Mineral Resource block model was validated using a variety of statistical comparisons and analyses. These include general descriptive statistics comparing composite grades and estimated block grades along with swath plots for mean spatial comparisons of data. It is the Qualified Person's opinion that the 2022 Mineral Resource model provides acceptable validation and correlation with de-clustered composite grades to support confidence in Mineral Resource classification. Differences in observed grades between raw, composited, spatially de-clustered composites (represented as the nearest neighbour ("NN") estimate), and block gold values are explained by a combination of volume-variance differences, locally clustered drilling data, and the discontinuous nature of the deposit (i.e., high nugget effect and short ranges).

In reviewing general statistics of estimated blocks (Table *121*), the estimated block grades show a lower variance than the de-clustered composited values which is expected given the volume-variance relationship of comparing point composite data with estimated block volumes (Figure 106). Comparing mean values between the spatially de-clustered composites with estimated block gold grades show satisfactory comparison.

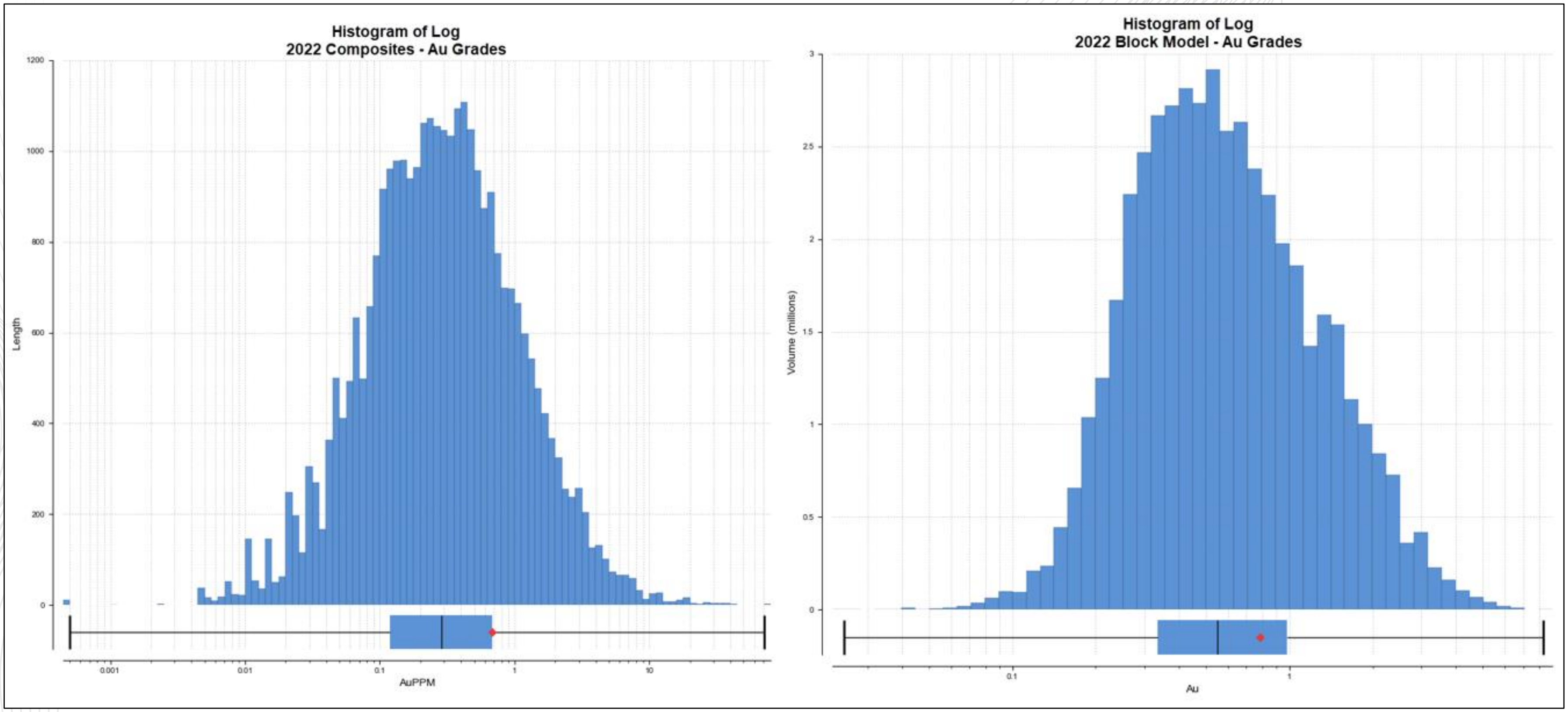
A swath plot analysis was performed to assess conditional bias or smoothing and demonstrates that when comparing the estimated block grades via OK to the NN estimate, the mean values show strong correlation (Figure 107). Given that NN represents spatially de-clustered composites, this suggests only minor clustering of data, evident in the historical pit area.

Table 121: Statistical comparison of block and composited Au grades.

Estimated Au (g/t) Block Grades		**Nearest Neighbor Au (g/t) Grades**	
Blocks within Econ Shell		**De-clustered within Econ shell**	
Block Count	260,381	Block Count	260,381
Volume	33,766,812	Volume	33,766,813
Mean	0.875	Mean	0.876
SD	0.755	SD	1.577
CV	0.863	CV	1.800
Variance	0.570	Variance	2.486
Minimum	0.025	Minimum	0.0005
Q1	0.381	Q1	0.182
Q2	0.635	Q2	0.420
Q3	1.093	Q3	0.940
Maximum	8.25	Maximum	20.00

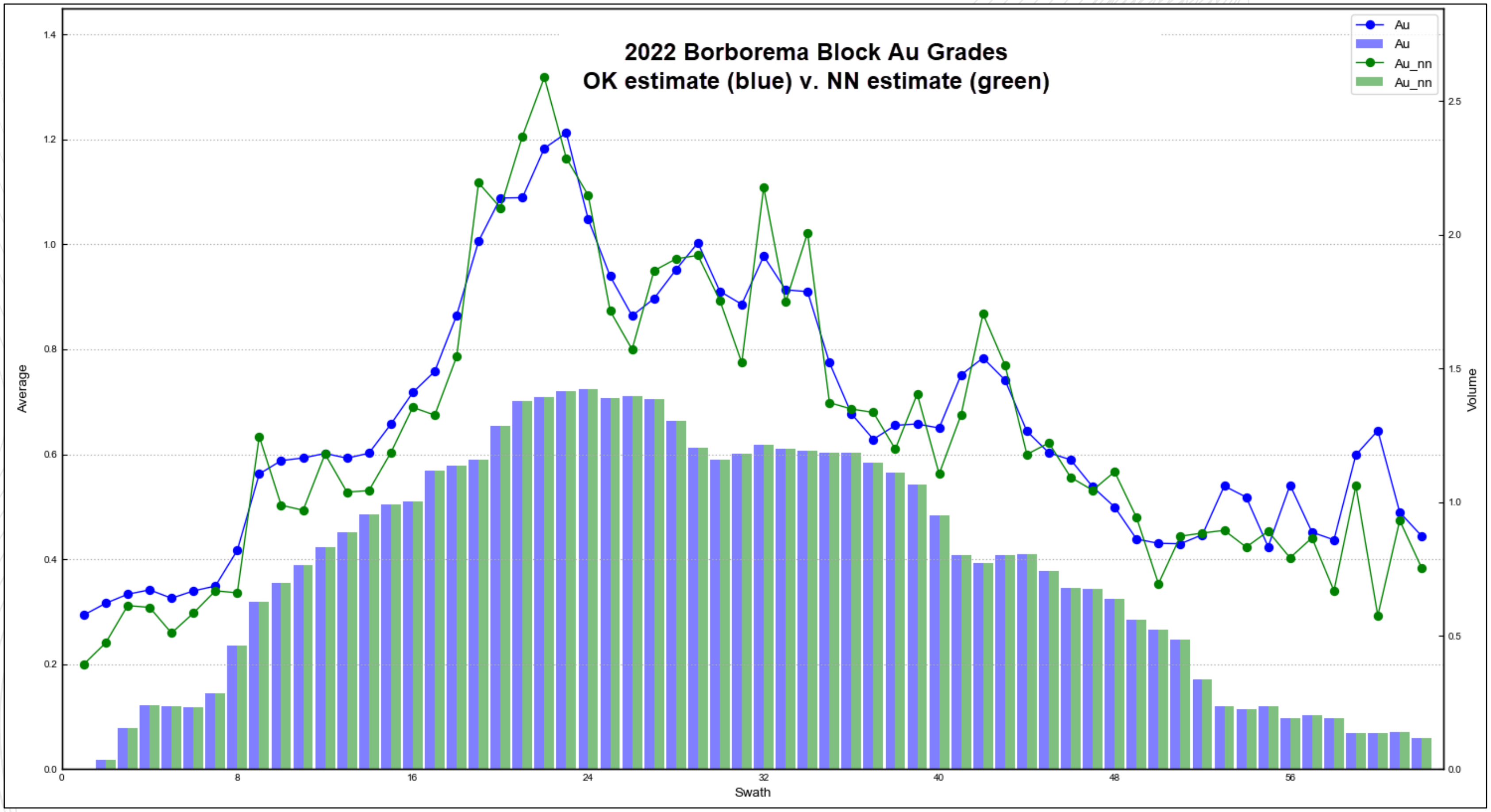
Source: SRK, 2022

Note: Spatially de-clustered composited data is assessed using the nearest neighbor estimate.



Source: SRK, 2022

Figure 106: Distribution comparison between composites (Left) and blocks (Right).



Source: SRK, 2022

Figure 107: Swath plot for Au estimation - Ordinary Kriging (OK) versus Nearest Neighbour (NN) estimation.

14.7 REASONABLE PROSPECTS FOR EVENTUAL ECONOMIC EXTRACTION

In order to establish reasonable prospects for eventual economic extraction ("RPEEE") as per NI 43-101 definitions of Mineral Resources, SRK applied an economic cut-off grade ("CoG") to blocks constrained within an economic pit shell on the Borborema Property. The economic assumptions for establishing the Mineral Resource CoG were provided by Aura and shown in Figure 108. Pricing and other assumptions are considered long-term in nature for establishing Mineral Resources and it is the opinion that these numbers are acceptable for use in Mineral Resources.

Input Data		
Discount Rate	5%	per annum
Sales Price	1,800.00	USD/oz
Sales Price	57.8713	USD/g
Ore Recovery	95%	
Mining Dilution	5%	
Metallurgical Recovery	91.5%	
M Cost - Weathered	2.20	USD/t
M Cost - Fresh Ore	3.00	USD/t
M Cost - Fresh Waste	2.60	USD/t
M fixed Cost	0.20	USD/t
Sustaining Cost	0.62	USD/t milled
Processing Cost	14.82	USD/t feed
G&A	14,316,501	R$/t
Plant throughput	2,000,000	t/y
G&A	1.38	USD/t
Oz / grams	31.1035	g/oz
Gold Payable + Sales	28.00	USD/oz
Incremental cost	0.02	USD/t per bench
CFEM	1.5%	
COG	0.33	g/t

Figure 108: Economic assumptions for Mineral Resource Cut-off Grade and economic shell (Deswik, 2023).

The constraining Mineral Resource pit shell was constructed by Bruno Tomaselli from Deswik, Brazil and provided to SRK. This shell utilizes a 1.0 revenue factor, 37° slope on the west and 60° slope on the east, 2 Mtpy mining rate, and 5% discount rate. A long section of the Mineral Resource pit shell is shown in Figure 109.

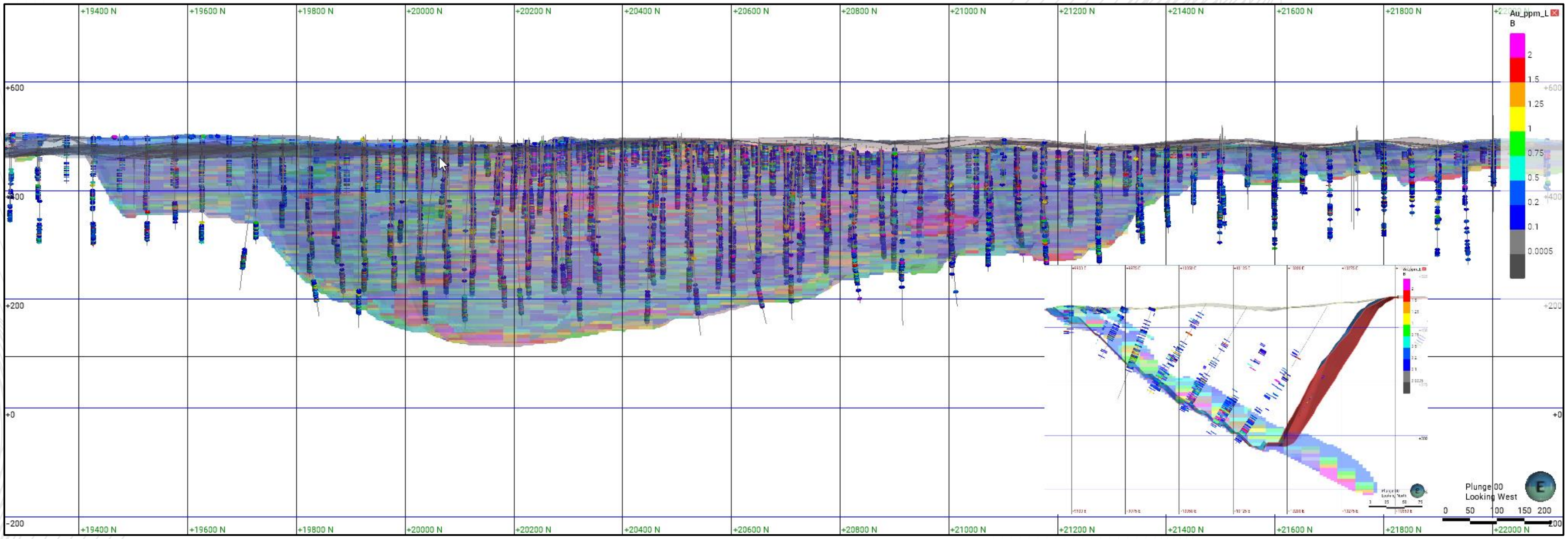


Figure 109: Long section, looking west of the economic pit shell. Insert image shows cross section, looking North (Source: SRK, 2022).

14.8 MINERAL RESOURCE CLASSIFICATION

Mineral Resources are classified in accordance with NI 43-101 and CIM definitions into Measured, Indicated, and Inferred classifications based on identified uncertainly and risks. Blocks are assigned a classification based on the following criteria:

Measured Mineral Resources – the Borborema gold deposit does not contain Measured Mineral Resources at this time due to uncertainties related to:

- Lack of a lithostructural model in an orogenic gold deposit.
- Inherent variability of economic gold grades and relatively high nugget effect.
- Lack of supporting detail on the oxidation model supporting recovery assumptions for near-surface mineralization.
- Lack of detailed topography survey across the property.
- Lack of deposit-wide geochemical data to assess the potential for deleterious elements.
- Inconsistent geological logging across the property.
- Estimation not accounting for the two identified styles of gold mineralization observed at the deposit.

Indicated Mineral Resources – the Borborema gold deposit contains Indicated Mineral Resources based on the following criteria:

- Validation of analytical gold data used in the estimate.
- Review of summary QA/QC supporting information.
- Use of diamond drill core for sample assay.
- Mean drill spacing less than or equal to approximately 75 m.
- Interpolated block gold grades supported by drilling data on all sides spatially.
- Volume within Qualified Person created Indicated classification volume.

Inferred Mineral Resources – the Borborema gold deposit contains Inferred Mineral Resources based on the following criteria:

- Validation of analytical gold data used in the estimate.
- Review of summary QA/QC supporting information.
- Use of diamond drill core or RC drilling for sample assay.
- Mean drill spacing less than or equal to approximately 100 m.

- Minor volume of mineralized material extrapolated at depth.
- Volume within Qualified Person created Inferred classification volume.

14.9 MINERAL RESOURCE STATEMENT

The Mineral Resource statement is presented in Table *122* with an effective date of January 31, 2023. The Mineral Resource Estimate and classification were performed by SRK.

Table 122: Borborema Mineral Resource estimate* as of January 31, 2023.

CLASS	Au COG	OXIDATION	MASS (Mt)	AVERAGE (Au g/t)	TOTAL METAL (Au Kt oz)
INDICATED	0.33 g/t	OXIDE	2.4	0.79	62
		SULFIDE	61.3	1.02	2,015
		TOTAL	63.7	1.01	2,077
INFERRED	0.33 g/t	OXIDE	0.1	0.83	3
		SULFIDE	10.8	1.13	390
		TOTAL	10.9	1.13	393

***Notes:**

1. Mineral Resources are reported inclusive of Mineral Reserves. Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability.
2. Mineral Resources have been categorized subject to the opinion of a Qualified Person based on the quality of informing data for the estimate, consistency of geological/grade distribution, data quality, and have been validated using visual and statistical analyses.
3. Mineral Resources tonnages and contained metal have been rounded to reflect the accuracy of the estimate, and numbers may not add due to rounding.
4. The economic CoG for Mineral Resources is based on the long-term outlook sale price of US$1,800/troy ounce of gold, 92.1% recovery, average mining costs of US$2.00/t, processing costs of US$14.82/t, G&A of US$1.38, and sustaining capital costs of US$0.62/t.
5. An overall 61° (east side) and 37° (west side) pit slope angle, 0% mining dilution, and 100% mining recovery have been used.
6. Mineral Resources were reported above the economic 0.33 g/t Au CoG and are constrained by an optimized pit shell.
7. The Qualified Person for Mineral Resources is Erik Ronald, P. Geo (PGO #3050), Principal Consultant with SRK Consulting (U.S.), Inc. based in Denver, USA.

14.10 MINERAL RESOURCE SENSITIVITY

The sensitivity of Mineral Resources to changes in the economic CoG is presented below through the grade-tonnage curve in Figure 110. As the economic CoG is at 0.33 g/t Au, any material changes to the Project economic assumptions may materially affect the Mineral Resource tonnage and average grades.

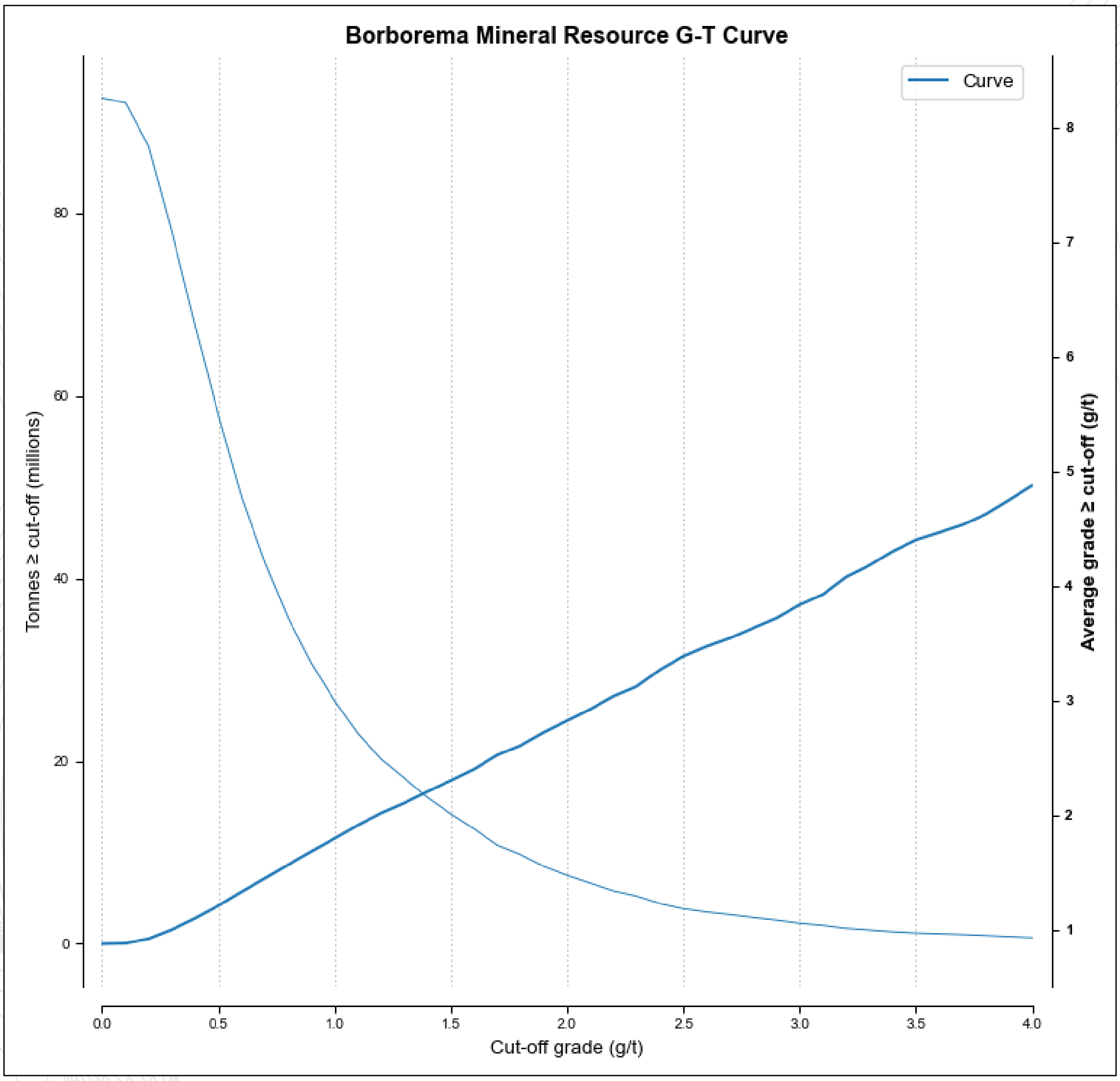


Figure 110: Grade x Tonnage curve.

14.11 RELEVANT FACTORS

Factors that may affect the Mineral Resource statement at Borborema include:

- Ability to accurately perform grade control for short-range mine planning and reconcile production data.
- Changes to metal price assumptions in long-term outlook.
- Changes to the input assumptions on the economic CoG and pit shell including mining, process, capital, and G&A costs, recovery assumptions, and mining dilution.
- Future identification and assessment of potentially deleterious materials or elements that may materially affect the ability to mine or the recovery of gold to the baseline assumptions.

- Changes to the assumptions on the ability for the site to operate related to water, dump and tailings storage, environmental permitting, land title, social license to operation in the local community, and other regulatory or governance changes.

14.12 OPINION ON MINERAL RESOURCE ESTIMATES

In the opinion of the Qualified Person, the Mineral Resource Estimate and statement for the Borborema Project conforms to satisfactory industry practices and satisfies the requirements of the CIM Definition Standards required for disclosure under NI 43-101.

15 MINERAL RESERVE ESTIMATION

15.1 INTRODUCTION

The Mineral Reserve Estimate for the Borborema Project deposit was reported using the 2014 CIM Definition Standards.

Mineral Reserves amenable to open pit mining methods were estimated through an open pit optimization exercise using the Measured and Indicated Mineral Resources in the block model provided by SRK. Mineral Reserves were reported within detailed engineered pit designs and life-of-mine (LOM) plans based on these pit shell designs. The Mineral Reserves inside the engineered pit designs were reported using cut-off grades (COG) estimated by rock type, based on a gold price of US$1,472/oz that includes an allowance for refining costs and a R$:US$ exchange rate of 5.2:1. The Mineral Reserves are contained within two zones. Proven and Probable Mineral Reserves that have an effective date of 31 July 2023 are estimated to be 22.5 Mt at 1.12 g/t Au grade.

There are two waste rock disposal areas that will be located on site. Both waste rock storage facilities will be used to dispose of waste from both pits. They are named Waste Rock Storage Facility 1 and 2 (WRSF1 and WRSF2).

A high voltage transmission line (HVTL) constrains the pit to the north and a highway paved road (BR-226) constrains the pit to the south.

Aura owns the surface rights to the required land in the area and has already been granted the Environmental Installation License (LI) for all the required structures for the pit, except for WRSF2, which will only start operation in 2029.

Current open pit mine life is eleven years and four months, not including the pre-stripping period.

The envisaged site layout plan is shown in Figure 111 including all pits, waste rock storage facilities and the following limits: highway road (BR-226 road), high voltage transmission line (HVTL) and the environmental installation license (LI).

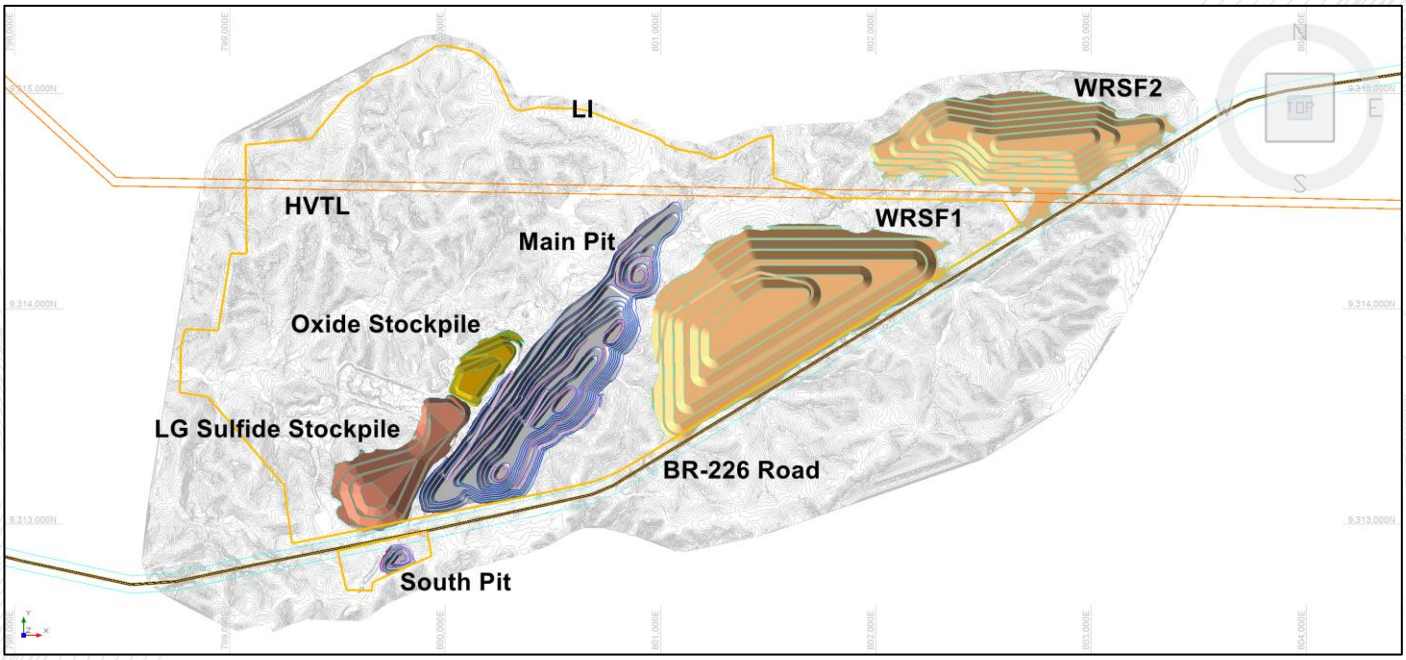


Figure 111: Site General Layout.

Note: Figure prepared by Deswik, 2023.

Test work and processing results indicate that the Mineral Reserves are all amenable to processing using a conventional gold processing route, which includes comminution, carbon-in-leach (CIL), elution and refining.

15.2 MINERAL RESERVE STATEMENT

The Mineral Reserve Estimates are presented in Table 123. Estimated waste tonnages is 85 Mt.

Table 123: Mineral Reserves Borborema Project, Effective Date July 31, 2023.

Classification	Tonnage (kt)	Au Grade (g/t)	Au Content (koz)
Proven	-	-	-
Probable	22,455	1.12	812
Total	**22,455**	**1.12**	**812**

Notes:

1. CIM (2014) definitions were followed for Mineral Reserves.
2. Mineral Reserves have an effective date of 31 July 2023. The Qualified Person for the estimate is Bruno Yoshida Tomaselli, B.Sc., FAusIMM, an employee of Deswik.
3. Mineral Reserves are confined within an optimized pit shell that uses the following parameters: gold price including refining costs: US$1,472/oz; mining costs: US$2.40/t weathered material, US$2.80/t waste fresh rock, US$3.20/t ore fresh rock; processing costs: US$14.82/t processed; general and administrative costs: US$2.8 M/a; sustaining costs: US$0.62/t processed; process recovery of 92.1%; mining dilution of 5%; ore recovery of 95%; and pit inter-ramp angles that range from 36–64°.
4. Tonnages and grades have been rounded in accordance with reporting guidelines. Totals may not sum due to rounding.

15.3 MINERAL RESERVE ESTIMATION

15.3.1 RESERVE BLOCK MODEL

The mining engineering work related to the pit optimizations and engineered pit designs was carried out using the block models prepared by SRK in December 2022 for the Borborema Project deposit. A parent block size of 25 m x 25 m x 5 m (X, Y, Z) metres was used for the Borborema Project deposit. The models contain blocks coded with the following information:

- Au grade.
- Weathering information (weathered and fresh rock).
- Resource classification (Measured, Indicated, and Inferred).
- Density.

Life-of-mine (LOM) final designs have been compiled for the open pits and these were the base used for estimating the Mineral Reserves for the Borborema Project.

15.3.2 OPEN PIT OPTIMIZATION

The open pit optimizations were carried out by means of the Pseudoflow algorithm in Deswik.CAD software (version 2022.2). Using mining costs, processing costs, selling costs, gold recovery values and an overall pit slope, the pit optimizer determines an ultimate pit shell that delineates the volume of material that can be extracted to maximize value.

A series of pit optimizations were produced using a range of revenue factors in order to produce an industry standard pit-by-pit graph. This process was used to evaluate the sensitivity of the pit optimizations to changes in mineral selling prices, as well as to evaluate the effect of the pit size and stripping ratios on the Project net present value (NPV). The optimization process produces a series of nested pit shells that prioritize the mining of the most economic material. Less profitable material (lower grade and / or high strip ratio) is by definition only mined in later pit shells as the input commodity selling price is increased.

From these results, appropriate pit shells for the deposit were selected as a basis for the engineered pit designs and Mineral Reserve Estimates. All pit optimizations were run using reasonable and relevant economic, cost, recovery, and pit slope assumptions, and were run on diluted gold grades. Only Mineral Resource blocks classified as either Measured or Indicated were allowed to drive the pit optimizer for Mineral Reserve reporting purposes.

15.3.3 DILUTION AND EXTRACTION

Total dilution is calculated as the sum of planned and unplanned dilution:

- Planned dilution: non-ore material (below cut-off grade) that lies within the designed boundaries (mining lines) as determined by the selectivity of mining method, the continuity of the orebody along strike and along dip, and the complexity of the orebody shape.
- Unplanned dilution: additional non-ore material (below cut-off grade) which is derived from rock outside the boundaries (mining lines), incorporated due to blast induced over break and/or the difficulty to separate ore/waste during mining excavation.

Taking into consideration the geometry of the ore body and the operational shape of the open pit, 5% dilution was assumed.

Mining recovery was assumed to be 95% of in situ ore material.

15.3.4 COST PARAMETERS FOR PIT OPTIMIZATION

The key pit optimization parameters used to derive the economic pit shells for the deposits are summarized in Table 124. The optimizations were based on parameters and cost data projected for the Project and based on current quotations for the Project.

Table 124: Pit Optimization Parameters.

Modifying Factor	Value
Gold price	US$ 1,500/oz
Gold Refining Charge	US$ 28/oz
Royalties (CFEM[1])	1.5% of Gross Revenue
Exchange rate	R$ 5.2:US$ 1
Costs	
Mining fixed	US$ 0.20/t
Mining weathered	US$ 2.20/t
Mining fresh rock ore	US$ 3.00/t
Mining fresh rock waste	US$ 2.60/t
Processing	US$ 14.82/t processed
G&A	US$ 2,753,173/year
Sustaining	US$ 0.62/t processed
Plant recovery	92.1%
Mining recovery	95%
Total Dilution (planned and unplanned)	5%
Weathered rock pit design parameters	
Face angle	43.5°
Bench height	20 m
Berm width	6 m
Inter ramp angle	36.5°
Fresh rock pit design parameters	
Face angle	55 – 80°
Bench height	20 m
Berm width	6 m
Inter ramp angle	45 – 64.5°
Ramp width	13.2 m

[1] Note: CFEM is the Brazilian government royalty

Mining costs were based on the Mining Contract rates quoted for this Project and on current mine scheduling and transportation profiles submitted to the contractor.

15.3.5 PIT OPTIMIZATION MILL RECOVERY

Test work indicated that a gold product is achievable with a metallurgical recovery of 92.1%, based on samples collected on site and test work conducted by ALS.

15.3.6 CUT-OFF GRADES

The cut-off grade is the lowest average grade that a selective mining unit must have before it is considered for mining. Both planned and unplanned dilution are included. The minimum cut-off grade that defines boundary material that should be mined is the mine cut-off grade, and is estimated using the following formula:

COG = (M + P + O) / [r * (V – R)]

Where:

M = mining cost difference between mining as ore and waste material.

P = processing cost.

O = overhead (general & administrative) cost.

r = proportion of valuable product recovered from the mined material.

V = value of one unit of valuable product.

R = refining costs, defined as costs that are related to the unit of valuable material produced.

Considering the parameters and assumptions presented on Table 124, the gold cut-off grade calculated for the Borborema Project is 0.40 g/t Au.

15.3.7 PIT OPTIMIZATION RESULTS

A series of pit shells were run using revenue factors ranging from 10% to 100% of the estimated selling price, at an R$ to US$ exchange rate of 5.0:1, and using the other parameters listed in the sections above. The results of the pit optimization are presented in Table 125 and Figure 112.

Table 125: Pit Optimization Run Results (In Situ Values).

Phase	RF	Tonnage (kt)	Waste (kt)	Au Grade (g/t)	NPV (US$ 000)		Strip Ratio
					Best Case	Worst Case	
5	10%	5	6	5.56	932	932	1.11
6	13%	12	9	4.74	1,851	1,851	0.80
7	15%	32	23	3.93	4,143	4,143	0.73
8	18%	47	41	3.57	5,510	5,510	0.86
9	20%	58	57	3.40	6,336	6,335	0.98
10	23%	74	80	3.14	7,373	7,372	1.08
11	25%	103	110	2.84	9,131	9,127	1.06
12	28%	175	204	2.49	13,152	13,144	1.17
13	30%	238	269	2.28	16,061	16,046	1.13
14	33%	291	323	2.16	18,376	18,354	1.11
15	35%	388	502	2.02	22,324	22,287	1.30
16	38%	625	900	1.83	31,141	31,066	1.44

Phase	RF	Tonnage (kt)	Waste (kt)	Au Grade (g/t)	NPV (US$ 000)		Strip Ratio
					Best Case	Worst Case	
17	40%	1,113	1,822	1.71	49,274	49,115	1.64
18	43%	1,708	3,304	1.66	70,329	69,968	1.93
19	45%	2,031	3,819	1.60	79,396	78,834	1.88
20	48%	2,534	4,970	1.56	93,496	92,565	1.96
21	50%	6,141	15,292	1.48	187,626	184,515	2.49
22	53%	6,554	16,037	1.46	195,989	192,200	2.45
23	55%	7,751	20,023	1.45	221,116	215,247	2.58
24	58%	8,566	23,314	1.44	237,603	230,248	2.72
25	60%	9,548	26,268	1.41	252,260	242,039	2.75
26	63%	12,068	32,962	1.35	286,030	269,167	2.73
27	65%	12,762	34,420	1.33	293,716	274,688	2.70
28	68%	15,622	46,604	1.30	324,178	297,512	2.98
29	70%	16,202	48,012	1.29	329,055	300,190	2.96
30	73%	16,651	49,225	1.28	332,451	301,784	2.96
31	75%	17,408	51,709	1.27	337,695	303,777	2.97
32	78%	18,087	53,754	1.26	341,474	304,230	2.97
33	80%	18,816	55,977	1.24	345,125	304,180	2.97
34	83%	19,393	57,588	1.23	347,422	303,686	2.97
35	85%	20,330	62,315	1.22	350,979	302,467	3.07
36	88%	20,817	63,778	1.21	352,432	301,474	3.06
37	90%	23,155	77,911	1.20	358,269	294,571	3.36
38	93%	23,473	78,703	1.19	358,744	293,186	3.35
39	**95%**	**23,717**	**79,230**	**1.18**	**359,012**	**291,969**	**3.34**
40	98%	29,131	124,149	1.18	357,604	263,856	4.26
41	100%	29,517	125,844	1.17	357,706	261,649	4.26

Note: RF = revenue factor.

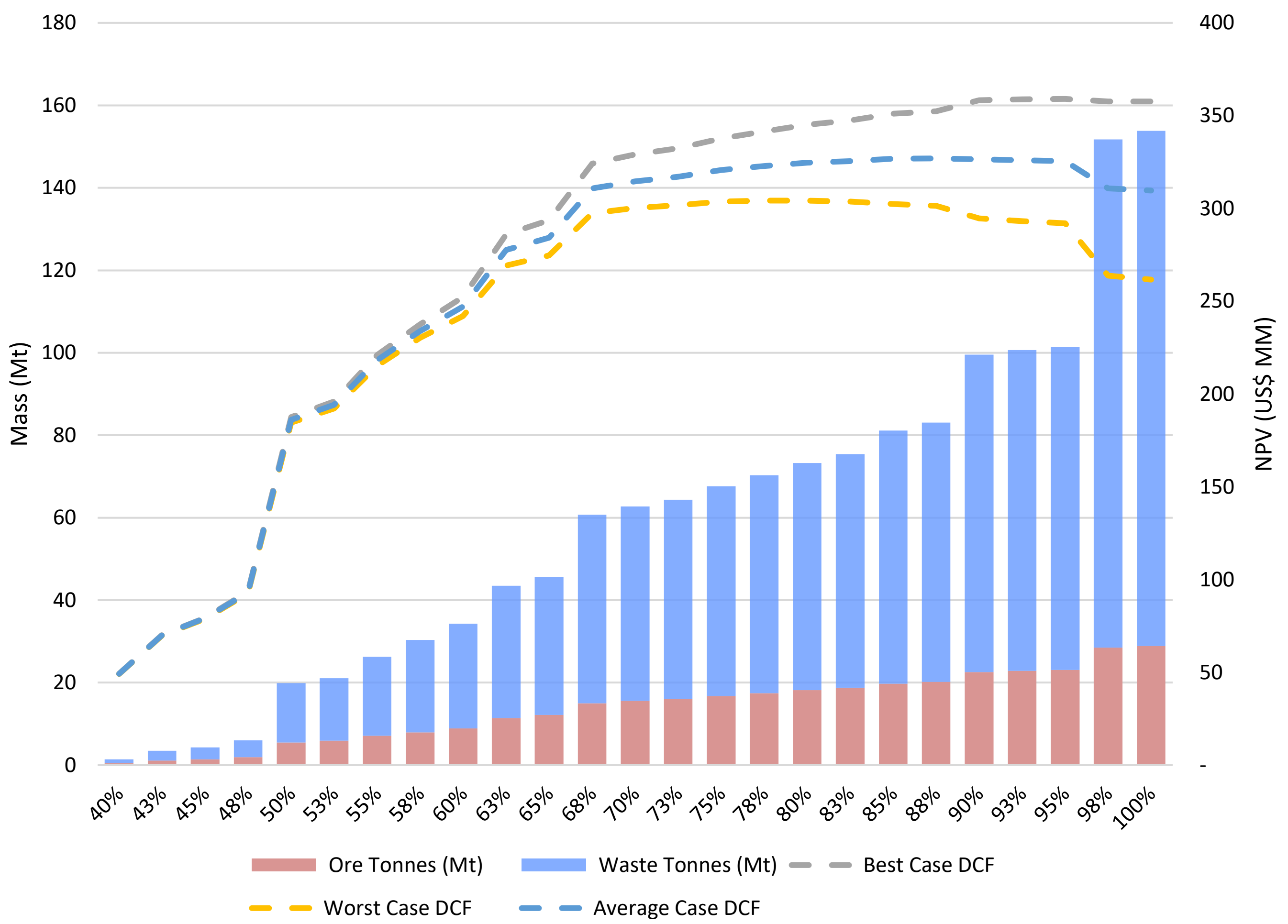


Figure 112: Pit Optimization Results.

Note: Figure prepared by Deswik, 2023. (US$MM = millions of United States dollars).

The 95% revenue factor price shell was selected as the base case for design, considering mine scheduling will be a mix of best case and worst case, this shell generates maximum ore recovery before the worst-case break point.

15.4 FACTORS THAT MAY AFFECT THE MINERAL RESERVE ESTIMATES

The main factors that may impact the Mineral Reserve Estimates are as follows:

- Metal prices and exchange rate assumptions.
- Mining, process, and operating cost.
- Recovery assumptions.

The Qualified Person is not aware of any environmental, legal, title, taxation, socioeconomic, marketing, and political or other relevant factors that are not discussed in this Report that would materially affect the estimation of Mineral Reserves.

16 MINING METHODS

16.1 OVERVIEW

At the Borborema Project, the ore is very close to surface and continues at depth. The initial 11 years and 4 months is planned for open pit mining.

The proposed mining operations are based on the use of hydraulic excavators and a haul truck fleet engaged in conventional open pit mining techniques.

Excavated material will be loaded into trucks and hauled to either the run-of-mine (ROM) pad, the low-grade stockpile, oxide ore stockpile or the waste rock storage facilities (WRSF). Ore excavation and haulage will be monitored by quality control personnel employed by the Geology department and details of material movement will be recorded by a radio dispatch system. Weathered material is considered to be free to dig with transitional material to be lightly blasted to loosen it for digging. Fresh rock will be typically blasted on 5 m benches for ore domain and 10 m benches for the waste domain.

16.2 GEOTECHNICAL CONSIDERATIONS

Deswik utilized the same slope angles suggested by Cascar (Cascar do Brasil, 2019) to run all pit optimization analysis and designs.

For the preparation of this study a full assessment of the available technical data was made. A site visit to confirm the main structural features of the pit, check drill hole descriptions for location, depth and validation of previous descriptions were performed.

The Borborema Project pit is composed of foliated, bent and transposed, slightly fractured, basically groundless schist rocks, having two distinct rock masses. The upper rock portion, to an average depth of 40 meters, is Class III/IV massive schist, ranging from regular to poor. At 40 metres the rock changes to a Class II / I schist, ranging from good to very good. The pit is aligned with the main local structural features of the Morro Pelado and São Francisco Shear Zones that are parallel to the schistosity/foliation of the lenses of the different schist types.

Schist lenses have subparallel direction to the shear zones, but have a smaller dip around 45°, and are extremely bent (corrugated), while the transposition of the bending axes have parallel direction, with sharp dips around 60°. The main ruptures occur in the transpositions. Throughout, foliation and slabbing occur due to foliation waving and cycling (periods of saturation and drying with expansion of placoid minerals). These foliations were mapped by Big River in 2012, which determined failures and foliations with altitude / angle of 125/46° and inferred of 125/60°.

There are two important structural features: schistosity/foliation and faults (transposition) with similar directions, but with different dips. The schistosity has a lower dip and is very bent, corrugated and may be responsible for slabbing the face of the individual slopes. Perpendicular joints (fractures) to foliation with high dips (80°) are uncommon and of little persistence, at most 2 metres.

Strength parameters were obtained through laboratory tests consisting of simple compression tests, Uniaxial Compressive Strength (“UCS”), and triaxial tests performed on drill hole samples. For the UCS tests, two series of tests were made, the first perpendicular to foliation and another parallel to foliation. Due to the high degree of bending, samples that characterized both foliation positions were selected, but do not necessarily represent the behavior of the rock mass.

Average UCS was 105 MPa for the perpendicular to foliation samples and 30 MPa for the parallel to foliation samples.

Seven samples were collected for triaxial tests, four perpendicular to foliation and three parallel to foliation. The test results are:

- Samples parallel to foliation
    - Cohesion (C): 2.7 Mpa.
    - Angle of internal friction (ϕ): 39°.
- Samples oblique to foliation
    - Cohesion (C): 16 Mpa (Maximum Envelope), 10 Mpa (Minimum Envelope).
    - Angle of internal friction (ϕ): 58° (Maximum Envelope), 33° (Minimum Envelope).

As expected for massive Class II schists, the results show very high cohesion and friction angles, even for the minimum envelope.

The Borborema Project mine pit has an elongated geometry in the direction of the main regional structures, i.e., in a northeast-southwest direction. Sectorization was made according to the material change state, structural spatial arrangement, and mechanisms of expected ruptures.

Inter-ramp angles (IRA) used for this study are based on geotechnical sectors and are summarized in Table 126.

Table 126: Recommended inter-ramp slope angles.

Sector	IRA	Face Angle (°)	Bench Height (m)	Berm Width (m)
Oxide	36.5	43	20	6
North wall	45	55	20	6
South wall	64	80	20	6

For the stability analyses of the open pit mine, the Rocscience Slide2 software (version 9.024) was used aiming to obtain the Factor of Safety for the evaluated geotechnical structure. The generalized strength criteria of Hoek and Brown (2002), Mohr Coulomb, and Barton-Bandis were applied to the regions of shale, saprolite, and foliation zones, respectively. The geotechnical parameters adopted for these regions were obtained based on the reports from BVP Engenharia (2012) and GE21 Consultoria Minerall(2019), and the assumed failure mechanism was non-circular due to the presence of discontinuities. Figure 113 and Figure 114 show the factors of safety for the western portion of the pit, which is considered the most critical section in geotechnical terms.

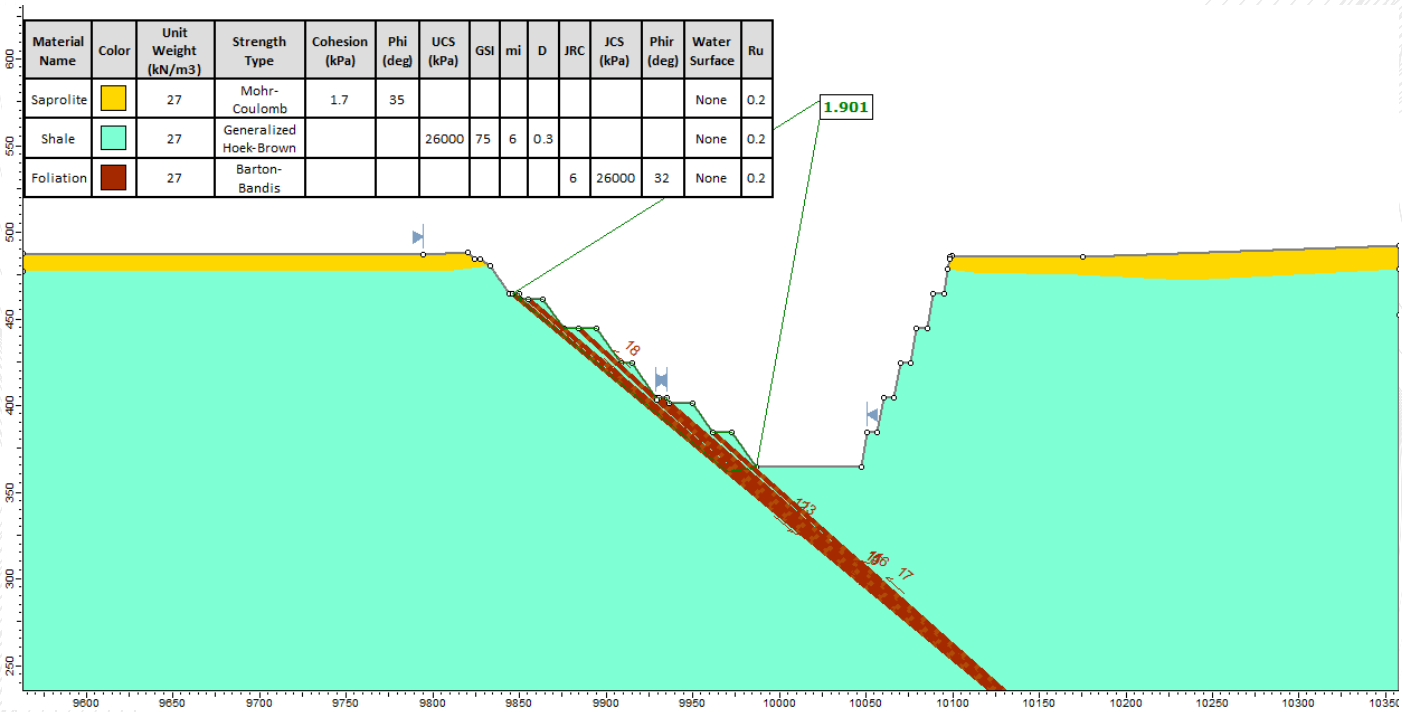


Figure 113: Stability analysis of the western slope – overall.

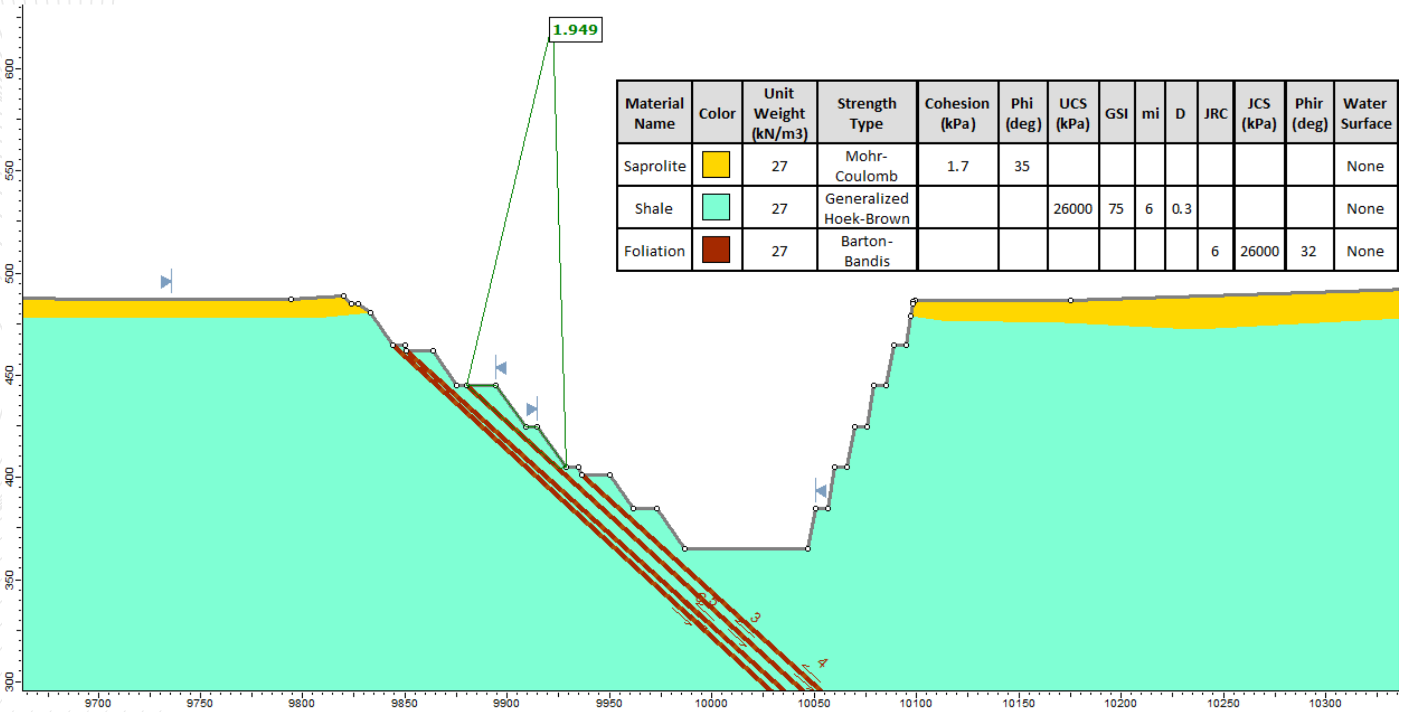


Figure 114: Stability analysis of the western slope - inter-ramp.

All the obtained factors of safety from the stability analysis indicate satisfactory safety conditions (FS ⩾1.30), in accordance with international best practices in geotechnical engineering.

16.3 HYDROGEOLOGICAL CONSIDERATIONS

According to Cascar do Brasil (2019), the occurrence of a regional aquifer in the pit region is not expected. Some minor, isolated, low flow springs that will not influence the stability of the slopes may occur. Any spring water will be managed by mining operations, without the need for dewatering wells. Water will simply be collected and directed to areas where it can be pumped out of the pit, without interfering with mining operations.

Precipitation in the basin is in the order of 695 mm and evapotranspiration is 2,645 mm per annum, before infiltration.

16.4 ENGINEERED PIT DESIGNS

The engineered pit designs were completed using the pit optimization shells as a guide to maximize the value and amount of gold recovered inside the ultimate pits. The resulting pit designs include practical geometry that is required in an operational mine, such as the haul road to access all the benches, recommended pit slopes with geotechnical berms, proper benching configuration, and smoothed pit walls. The last benches of both pits have a half ramp design to reduce the amount of stripping necessary to mine the ore from those benches.

The following parameters were used to design the final pit:

- Bench height: 20 m.
- Ramp width 2 lanes: 13.2 m.
- Ramp width 1 lane: 9.3 m.
- Ramp maximum gradient: 10%.
- Berm width: 6 m.
- Face angle: 43.5° (oxide), 55° (east wall), 80° (west wall).
- Road constraint south: 40 m from center line for each side.
- High voltage transmission line north: 20 m from center line for each side.

The resulting engineered pit designs were used to estimate the Mineral Reserves in this Report and are shown in Figure 115.

Figure 115: Final pit design.

Note: Figure prepared by Deswik, 2023

16.5 GRADE CONTROL

Although the Project mineralisation is disseminated, a grade control method should be applied to improve the accuracy and confidence level over the mined grades. A reverse circulation drill is intended to be used in the mine to perform grade control activities.

16.6 PRODUCTION SCHEDULE

Pushbacks or pit phases were designed to drive the mine scheduling. Pushbacks were designed based on pit shells from the pit optimization. Figure 116 shows the designed phases of mine development.

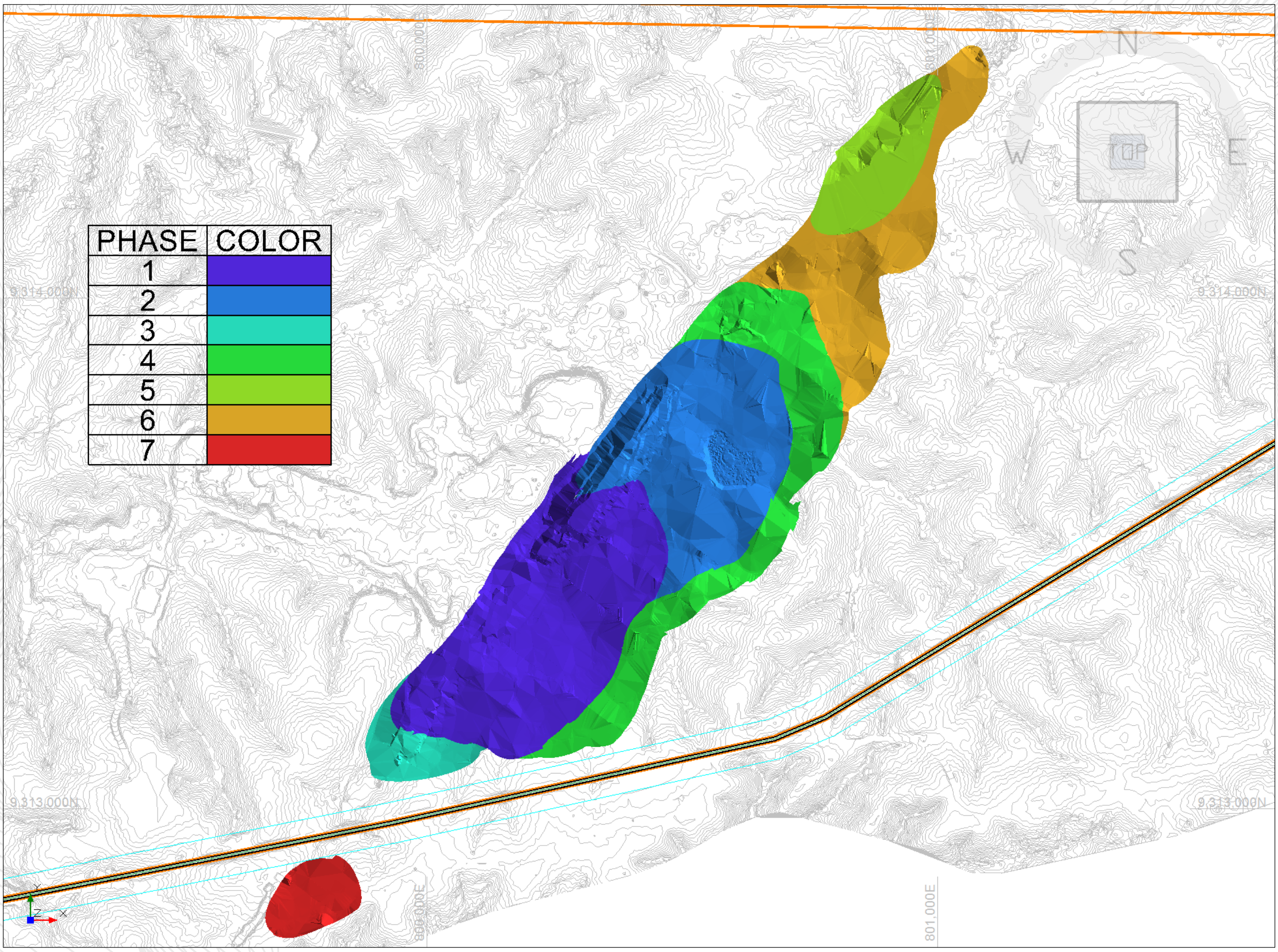


Figure 116: Pushbacks.

Note: Figure prepared by Deswik, 2023

Mine scheduling assumptions are as follows:

- Plant capacity: 2.0 Mtpy.
- 10 months of pre-stripping operation, totalling 7.2 Mt of material movement (from Apr/24 to Jan/25).
- The plant's ramp-up should be without oxidized material, proportions are listed in Table 127.

Table 127: Ramp-up target production.

Month	% of Full Production	Mass of sulphide Ore (t)
1	40%	66,667
2	60%	100,000
3	80%	133,333
4	90%	150,000

Month	% of Full Production	Mass of sulphide Ore (t)
5	100%	166,667

- Plant operation begins on 25/02/25, with production for that month proportional to the number of operating days (7.14 kt).
- The maximum proportion of oxidized material in the plant is 10%.
- Total material movement: approximately 14 Mtpy.
- Sink rate: 100 m (5 benches of 20 m).
- Maximum capacity of sulphide stockpile: 5.8 Mt.
- Maximum capacity of oxidized stockpile: 850 kt.

Table 128 shows the mine scheduling for the Borborema Project. Pre-stripping and the first year of operation is shown on a monthly basis, the second year of operation is shown on a quarterly basis and then annually until the end of the life of mine (LOM). Numbers are based on operational designs for each period. The end of the period operational pits design is discussed in section 24.

Table 128: Mine Scheduling

Period		ROM	Au	Waste	Pit to Stockpile		Pit to Plant		Stockpile to Plant		Plant Feed			
Year	Month	(kt)	(g/t)	(kt)	Oxide (kt)	Sulphide (kt)	Oxide (kt)	Sulphide (kt)	Oxide (kt)	Sulphide (kt)	Mass (kt)	Au (g/t)	Au Rec (koz)	Oxide (%)
0	1	18	1.45	443	18	0	0	0	0	0	0	0.00	0	0.0
	2	6	0.48	483	6	0	0	0	0	0	0	0.00	0	0.0
	3	11	0.43	502	11	0	0	0	0	0	0	0.00	0	0.0
	4	188	0.95	399	111	77	0	0	0	0	0	0.00	0	0.0
	5	29	0.92	636	10	19	0	0	0	0	0	0.00	0	0.0
	6	91	0.87	594	46	45	0	0	0	0	0	0.00	0	0.0
	7	74	1.42	745	45	29	0	0	0	0	0	0.00	0	0.0
	8	32	0.67	828	4	28	0	0	0	0	0	0.00	0	0.0
	9	45	0.73	973	10	35	0	0	0	0	0	0.00	0	0.0
1	1	48	1.37	1,026	13	34	0	0	0	0	0	0.00	0	0.0
	2	28	0.60	1,108	9	13	0	6	0	1	7	0.89	0	0.0
	3	146	0.89	924	48	39	0	59	0	8	67	1.17	2	0.0
	4	143	0.81	949	21	67	0	54	0	46	100	1.05	3	0.0
	5	223	1.00	947	4	85	0	133	0	0	133	1.42	6	0.0
	6	111	1.20	981	0	25	0	86	0	64	150	1.12	5	0.0
	7	152	1.17	905	0	61	0	90	0	76	167	1.15	6	0.0
	8	91	1.20	911	0	20	0	71	17	79	167	1.01	5	10.0
	9	152	1.00	958	0	23	0	129	17	21	167	1.02	5	10.0
	10	125	0.78	906	0	52	0	73	17	77	167	0.85	4	10.0
	11	124	0.82	789	0	44	0	80	17	70	167	0.82	4	10.0
	12	476	1.01	731	0	310	0	167	0	0	167	1.81	9	0.0
2	1-3	689	1.00	2,624	0	293	0	396	50	54	500	1.17	17	10.0
	4-6	1,010	1.07	2,314	0	524	0	486	14	0	500	1.35	20	2.8
	7-9	862	1.14	2,656	0	362	0	500	0	0	500	1.53	23	0.0

Period		ROM (kt)	Au (g/t)	Waste (kt)	Pit to Stockpile		Pit to Plant		Stockpile to Plant		Plant Feed			
Year	Month				Oxide (kt)	Sulphide (kt)	Oxide (kt)	Sulphide (kt)	Oxide (kt)	Sulphide (kt)	Mass (kt)	Au (g/t)	Au Rec (koz)	Oxide (%)
	10-12	930	1.56	2,471	66	364	37	463	0	0	500	1.81	27	7.4
3	1-12	3,378	1.26	11,036	501	877	153	1,847	0	0	2,000	1.90	113	7.7
4	1-12	2,941	0.98	10,510	49	1,167	99	1,626	101	174	2,000	1.24	74	10.0
5	1-12	3,483	1.14	10,528	3	1,480	34	1,966	0	0	2,000	1.42	84	1.7
6	1-12	1,760	1.07	11,585	0	637	0	1,123	200	677	2,000	1.07	63	10.0
7	1-12	2,229	1.02	11,519	0	378	0	1,851	0	149	2,000	1.11	66	0.0
8	1-12	2,015	1.20	1,451	0	452	0	1,563	0	437	2,000	1.30	77	0.0
9	1-12	843	1.28	1,116	2	0	13	828	187	972	2,000	0.93	55	10.0
10	1-12	0	0.00	0	0	0	0	0	200	1,800	2,000	0.55	32	10.0
11	1-12	0	0.00	0	0	0	0	0	161	1,839	2,000	0.55	32	8.1
12	1-12	0	0.00	0	0	0	0	0	0	998	998	0.53	16	0.0
TOTAL		**22,455**	**1.12**	**84,549**	**980**	**7,543**	**337**	**13,596**	**980**	**7,543**	**22,455**	**1.12**	**748**	**5.9**

16.7 BLASTING AND EXPLOSIVES

The drill and blast requirements will include:

- Operational bench height: 10 m waste, 5 m ore.
- Hole diameter for both ore and waste is 5 inches.
- Ore parameters
  - burden and spacing are estimated at 3.0 m x 3.5 m respectively.
  - hole length 6.0 m, including 1.0 m subdrill.
  - stemming 2.0 m.
  - powder factor of 0.44 kg/t.
- Waste parameters
  - burden and spacing are estimated at 3.5 m x 4.0 m respectively.
  - hole length 11.2 m, including 1.2 m subdrill.
  - stemming 2.1 m.
  - powder factor of 0.37 kg/t.

In Brazil the blasting activities for an open pit are generally performed by a contractor, who manages the explosives magazine, down the hole delivery truck fleet. and completes all the paperwork for operational control and for presentation before the authorities to abide by the law and maintain good practice.

Estimated explosive and accessories consumption per year of operation is presented in Table 129.

Table 129: Explosives and accessories consumption by year.

Type	Unit	Year									
		0	1	2	3	4	5	6	7	8	9
Emulsion	t	1,994	4,412	4,933	5,169	4,776	5,070	4,475	4,704	1,517	790
Booster 340G	units	18,572	42,874	51,420	53,205	48,719	52,591	43,232	46,369	18,093	8,924
Delay Detonators - 9M	units	3,530	12,980	24,660	23,863	20,776	24,601	12,433	15,745	14,235	5,957
Delay Detonators - 12M	units	15,043	29,894	26,760	29,342	27,943	27,990	30,800	30,624	3,858	2,967
Connection 6m - 17ms	units	3,714	8,575	10,284	10,641	9,744	10,518	8,646	9,274	3,619	1,785
Connection 6m - 25ms	units	3,714	8,575	10,284	10,641	9,744	10,518	8,646	9,274	3,619	1,785
Connection 6m - 42ms	units	6,686	15,435	18,511	19,154	17,539	18,933	15,564	16,693	6,514	3,213
Connection 6m - 65ms	units	743	1,715	2,057	2,128	1,949	2,104	1,729	1,855	724	357
Fuse-Detonator	units	371	857	1,028	1,064	974	1,052	865	927	362	178
Detonating cord NP10	m	2,500	6,000	7,000	7,000	6,500	7,000	6,000	6,500	3,000	2,000
Detonating cord NP5	m	15,000	60,000	67,500	67,500	63,750	67,500	60,000	63,750	18,750	11,250
Packaged emulsion 2 1/2" x 24"	units	10,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	10,000	10,000

16.8 MINING EQUIPMENT

The open pit mining activities were assumed to be primarily undertaken by a contractor-operated fleet.

The proposed annual material movement is approximately 14 Mt, which is suitable for on-highway trucks. For both ore and waste, an excavator of 4.4 m³ (CAT 374 or similar) was selected to load 40 t class trucks (Actros 8x4 or similar). Five passes of the excavator can entirely load the truck in a total of 1.8 minutes. Wheel loaders (CAT 980 or similar) will be used on both stockpiles, the ROM pad and to load dry tailings.

The proposed mining fleet, and peak fleet numbers, is summarized in Table 130.

Table 130: Major open pit equipment requirements.

Description	Equipment Type	Class	Number of Units
Loading	Hydraulic Excavator	4.4 m³	3
Hauling	On-Highway Trucks	40 t	24
Drilling	Drill	Rotary Drill 5”	5
Ancillary	Track Dozer	325 HP	3
	Motor Grader	12 ft	2
	Hydraulic Excavator Small	2.1 m³	1
	Wheel Loader	4.4 m³	3
	RC Drill		1
Support	Lube/ Fuel Truck		2
	Water Truck		2
	Maintenance Truck		1
	Munck Truck		2
	Low Bed Truck		1
	Hydraulic Excavator – Breaker		1
	Lighting Tower		9
	Pick-ups		10
TOTAL			**70**

16.9 LABOUR

The mine personnel will work three shifts with four crews to provide coverage 24 hours a day, 7 days a week. The production and maintenance will be carried out by contractors. The total labour force for the mine is presented in Table 131 for the peak and represents a total of 427 people.

Table 131: Mine Labour Peak Number.

Company	Position	Peak Number
Aura Minerals	Manager	2

Company	Position	Peak Number
	Engineer	7
	Geologist	6
	Technician	8
Contractor	Manager	1
	Engineer	10
	Technician	26
	Operator	148
	Maintenance	125
	Assistant	94
TOTAL		**427**

16.10 PIT DEWATERING

In the pits, any water drainage will be directed through the benches to the bottom of the pit where it will be collected in a sump and pumped to the surface. The pit sump and pump system will have to be re-established for each sinking cut. Water from the pits will be used for haul road dust suppression and/or requirements in the crushing facility.

Groundwater is not expected inside the pit limits. If there is any groundwater, it will not be possible to separate the surface runoff in the base of the pit from groundwater. Any water that cannot be diverted would have to be pumped from the sump at the base of the pit, or from diversion sumps on haul ramps.

Each Waste Rock Storage Facility (WRSF) will have its own sedimentation pond that will collect runoff from the WRSF. The ramps and benches will be constructed in order to facilitate the drainage to this pond. Cleaning of this pond will occur during the dry season.

17 RECOVERY METHODS

17.1 PROCESS FLOW SHEET SELECTION

The design of the Borborema Project process plant was based on the metallurgical test work carried out combined with best practices for the gold industry. The ore is essentially a combination of biotite schist, schist in quartz veins, and garnet schist. Gold characterization campaigns indicated that gold is distributed from relatively coarse to fine grained. Therefore, gravity concentration was included in the industrial circuit flow sheet, followed by gold cyanidation, the latter was adopted as metallurgical testing resulted in adequate extraction and kinetics.

The processing plant sequence, in order comprises primary crushing, crushed material stocking, and a single stage grinding in a close configuration with hydrocyclones together with gravimetric concentration, followed by cyanidation (carbon-in-leach - CIL) of the grinding circuit product. After the CIL circuit, the pulp still containing residual cyanide is thickened to recover cyanide-containing water, which is recirculated into the circuit. The cyanide neutralization of the thickened pulp underflow is carried out by using the INCO process (air/SO_2 in the presence of copper sulfate as a catalyst). Lime milk is used to adjust the pH. The detoxified slurry is further thickened, followed by filtering and subsequent stacking of dry tailing (DST). A simplified flow sheet of the described process is shown in Figure 117. According to Figure 117, the CIL stage, here referred as hybrid, consists of a leaching tank ahead of six tanks containing leaching pulp in the presence of activated carbon. This configuration is an industry common practice for enhancing CIL performance, as well as reducing capital cost.

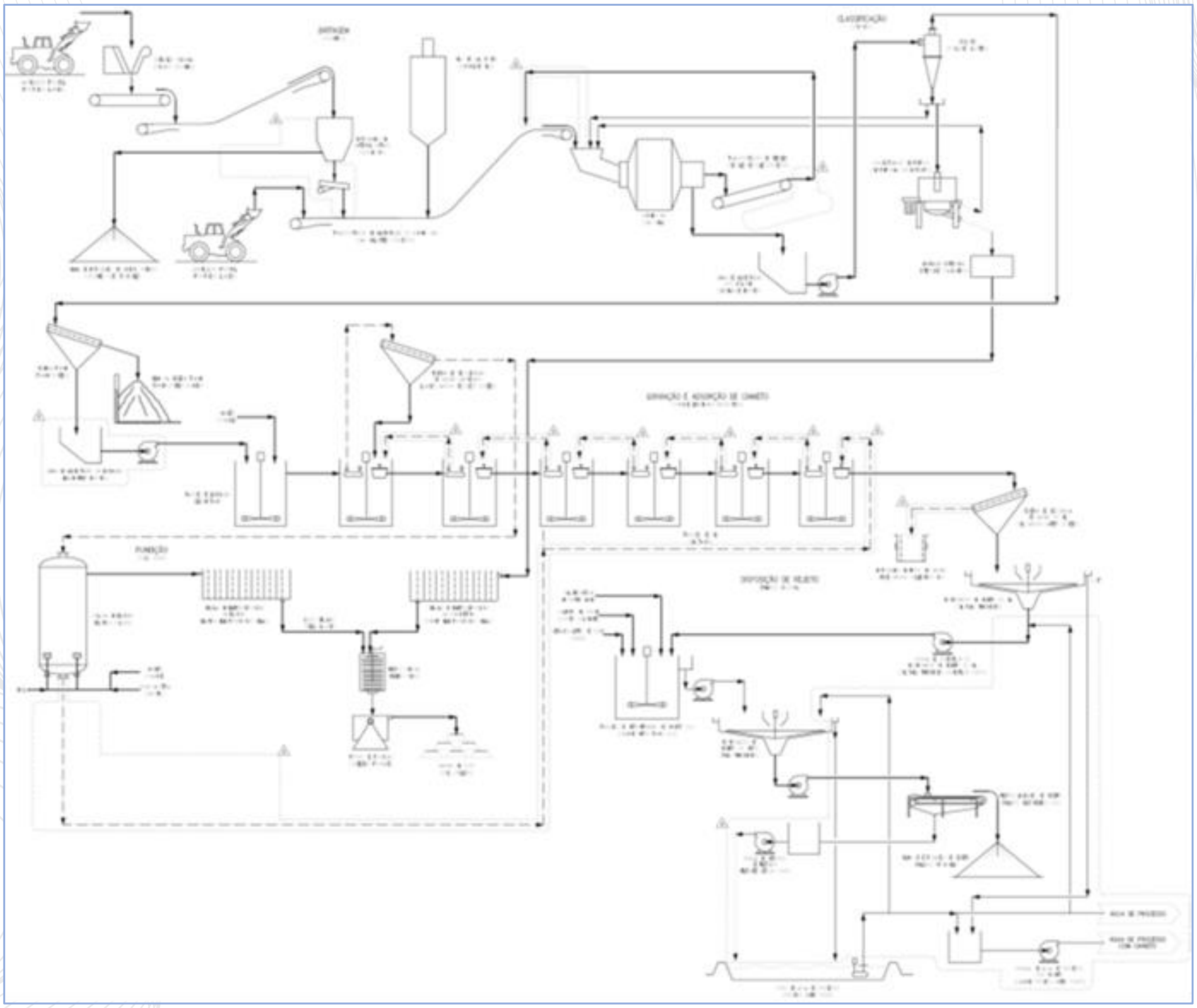


Figure 117: The simplified processing flow sheet. Source: PROMON (2023c)

The adopted flow sheet was designed to accomodate circuit capacity. Further details of the adopted flow sheet, with processes listed in sequence, are listed below.

- Primary crushing of the run-of-mine (ROM);
- Crushed ore stock in a dedicated bin to provide adequate transition between crushing and grinding circuits;
- Single-stage semi-autogenous grinding circuit (SSSAG) with trommel screen and cyclone classification to provide a grinding circuit P80 at 0.105 mm;
- Activated carbon leaching and adsorption circuit (CIL);
- Thickening the CIL tailing pulp for recovering water containing cyanide;
- Cyanide detoxification system (SMBS – Detox) for the CIL thickened pulp;
- Neutralized pulp thickening for cyanide-free water recovery;
- Filtration of the tailing slurry for process water recovery;
- Acid washing circuit and elution of activated carbon loaded by the Zadra process under pressure (ZP); and
- Gold room for electrolysis; cathode washing and casting.

17.2 PROCESS DESIGN CRITERIA

The main processing design criteria adopted for the Borborema Project are described in Table 132 and Table 133.

Subsequent sections include detailed process descriptions designed for the industrial plant.

Table 132: Ore characterization.

Criteria	Units	2 Mtpy	Source: PROMON
Mining	-	Open Pit	E.AURA003-EQ1-00007-FL-09
Lithology	-	Biotite-Garnet- Schist	E.AURA003-EQ1-00007-FLO9
Natural Moisture	%	3.0	E.AURA003-EQ1-00007-FL-12
Nominal Head Grade	g/t	1.22	E.AURA003-EQ1-00007-FLO9
Project UCS 85th	Mpy	40.2	E.AURA003-EQ1-00007-FL-09
JKTech Axb 85th	-	54	E.AURA003-EQ1-00007-FL-10
SMC-JKTech Mia 85th	kWh/t	15.4	E.AURA003-EQ1-00007-FL-10
SMC-JKTeCh Mih 85th	kWh/t	10.7	E.AURA003-EQ1-00007-FL-10
SMC-JKTech Mic 85th	kWh/t	5.5	E.AURA003-EQ1-00007-FL-10
SMC-JKTech DWi 85th	kWh/m^3	5.1	E.AURA003-EQ1-00007-FL-10
JKTech RWi 85th	kwh/t	13.3	E.AURA003-EQ1-00007-FL-10
JKTech RWi 85th	kwh/t	18.1	E.AURA003-EQ1-00007-FL-10
JKTech Ai 85th	g/t	0.123	E.AURA003-EQ1-00007-FL-11
JKTech SG 85th	t/m^3	2.8	E.AURA003-EQ1-00007-FL-11
ROM Size	mm	700	E.AURA003-EQ1-00007-FL-11

Table 133: Project design criteria.

Criteria		Units	2 Mtpy	Source: PROMON
Crushing Circuii	Annual Operating	h	6,570	E.AURA003-EQ1-00007
	Availabilty	%	75	E.AURA003-EQ1-00007
	Throughput (DB)	h	304.4	E.AURA003-EQ1-00007
Grinding Circuit	Operatin hours	h	7,884	E.AURA003-EQ1-00007
	Availabilty	%	90	E.AURA003-EQ1-00007
	Throughput (DB)	h	253.7	E.AURA003-EQ1-00007
Gravity Recovery Gold (GRG)		%	20	E.AURA003-EQ1-00007
Leach/CIL Recovery Gold		%	90.1	E.AURA003-EQ1-00007
Global Gold Recovery		%	92.1	E.AURA003-EQ1-00007
Crusher Feed Size F_{80}		mm	319.5	E.AURA003-EQ1-00007
SSSAG Mill Feed Size F_{80}		mm	122	E.AURA003-EQ1-00007
Ball Mill Feed Size F_{80}		mm	-	E.AURA003-EQ1-00007
Grinding product Size P_{80}		pm	105	E.AURA003-EQ1-00007
Mill Installed Power	SAG Mill	kW	8,000	E.AURA003-EQ1-00007
	Ball Mill	kW	-	E.AURA003-EQ1-00007
	Total Mill	kW	8,000	E.AURA003-EQ1-00007
Residence Time	Leach	h	4.3	E.AURA003-EQ1-00007
	CIL	h	25.7	E.AURA003-EQ1-00007
	Total	h	30	E.AURA003-EQ1-00007
Number of Tanks	Leach	-	1	E.AURA003-EQ1-00007
	CIL	-	6	E.AURA003-EQ1-00007
	Total	-	7	E.AURA003-EQ1-00007
Leach Feed		% Solid	35	E.AURA003-EQ1-00007
Solution Losses		g Au/t	0.10	E.AURA003-EQ1-00007
Carbon Regeneration		-	No	E.AURA003-EQ1-00007
Elution Type		-	Zadra - (ZP)	E.AURA003-EQ1-00007
Elution Size		t	6	E.AURA003-EQ1-00007
Frequency of Elution		Strips / week	5	E.AURA003-EQ1-00007
Cyanide Detox		-	Air/SO_2	E.AURA003-EQ1-00007

17.3 PROCESS PLANT DESCRIPTION

17.3.1 CRUSHING AND CRUSHED ORE STOCKPILE

Run-of-mine (ROM) will be hauled and dumped in stockpiles and reclaimed with front-end loaders into the crushing feed hopper, equipped with a static grizzly for retaining the oversize material, while a mobile rock breaker is used to break these oversize rocks. From the hopper, a vibrating grizzly feeder modulates the feeding flow rate, stipulated as 304 t/h nominal throughputs. The same vibrating grizzly separates the feed in coarse (oversize) and relatively fine (undersize) fractions. The former flows by gravity to the primary jaw crusher chamber, while the latter, together with the primary crusher discharge, is conveyed to a surge bin. Given that the crushing and milling circuits are designed according to different availabilities, an excess crushed material will result when the crushing plant is fully operational. Excess material will be piled in a dedicated stockpile and reclaimed by a front-end-loader to a reclaim bin equipped with a vibrating feeder that also feeds the milling circuit. Based on selected ROM size distribution, equipment design, and circuit simulations, the predicted crushing circuit P80 is 122 mm.

The mains equipment associated with the handling and crushing circuit are as follows:

- ROM hopper equipped with a 0.7 m aperture static grizzly;
- Vibrating grizzly feeder;
- Primary jaw crusher – Metso C150 or equivalent;
- Surge bin;
- Mill vibrating feeders equipped with variable speed device;
- Suspended conveyor magnet and magnetic detectors;
- Material handling equipment.

17.3.2 GRINDING CIRCUIT

The single stage grinding circuit will include a semi-autogenous (SAG) mill operating in a closed configuration with hydrocyclones. The grinding circuit was designed on the basis of feed and product with a P_{80} of 122 mm and 0.105 mm respectively. The fresh feed reclaimed from the crushing plant surge bin is conveyed to the SAG mill, whose discharge pulp flows to a dedicated trommel screen. The material retained in the trommel screen (pebbles) is conveyed back to the SAG mill feed, whereas the trommel undersize gravitates to an underneath sump, from which it is pumped to a single hydrocyclones nest. The relatively coarse fraction (underflow) will be split in two fractions. The first will flow through the gravity concentration stage, whose tailings will flow to the SAG mill feed. The second fraction will flow straight back to the SAG mill feed. The gravity concentration circuit will include a scalp screen, a centrifugal concentrator, and an intensive leaching reactor. The hydrocyclones nest overflow is the grinding circuit product. Water is added at the SAG mill feed and sump for adjusting the pulp dilution, respectively to 72% and 60% w/w. The hydrocyclones overflow at a solid concentration of 35% w/w will be directed to a trash screen, whose undersize will flow to the CIL circuit.

The main equipment designed to the grinding circuit is as follows:

- SAG mill - 7.9 m diameter x 7.0 m effective grinding length (EGL) equipped with an 8 MW electric motor;
- Hydrocyclones sump-pumps;
- Hydrocyclones – 5 units of 500 mm in diameter;
- Trash screen;
- Centrifugal concentrator;
- Intensive leaching reactor; and
- Material handling equipment.

17.3.3 GRAVITY CONCENTRATION

The gravity circuit comprises one centrifugal concentrator, complete with a feed scalping screen. Feed to the circuit is directed from the cyclone underflow to the scalping screen. Gravity scalping screen oversize material at +2 mm reports to the gravity tails pump box, from where the gravity tails pump directs the material back to feed the SAG mill. Scalping screen undersize material is fed to the centrifugal concentrator. Operation of the gravity concentrator is semi-batch and the gravity concentrate is collected in the concentrate storage cone and subsequently leached by the intensive cyanidation reactor circuit. The tails from the gravity concentrator also report to the gravity tails pump box.

The gravity recovery circuit includes the following key equipment:

- Gravity feed scalping screen;
- Gravity concentrator – KC QS40 ore equivalent; and
- Gravity tails sump and pump.

17.3.4 INTENSIVE LEACHING

Concentrate from the gravity circuit reports to the intensive leach reactor (ILR) to extract the contained gold by intensive cyanidation. The concentrate from the gravity concentrator is directed to the ILR gravity concentrate storage cone and is deslimed before transfer to the ILR.

ILR leach solution is prepared in the heated ILR reactor vessel feed tank. From the feed tank, the leach solution is circulated though the reaction vessel, then drained back into the feed tank. The leached residue within the reaction vessel is washed, with recovered wash water in the reaction vessel feed tank, and then the solid gravity leach tailings are pumped to the CIL circuit.

The ILR pregnant leach solution is pumped from the reaction vessel feed tank to the ILR pregnant solution tank, located in the gold room, where it is treated for gold recovery, as gold sludge, using a dedicated electrowinning cell. The sludge is combined with the sludge from the carbon elution electrowinning cells and smelted. The gold sludge, originating from the ILR pregnant solution, can also be smelted separately for metallurgical accounting purposes.

The ILR circuit includes the following key equipment:

- Gravity concentrate storage cone;
- Intensive leaching reactor - ILR;
- ILR pregnant solution tank; and
- ILR electrowinning cell.

17.3.5 LEACHING AND ADSORPTION CIRCUIT (CIL)

Trash screen undersize material feeds the CIL circuit, which will consist of leaching tanks and six carbon-in-leach (CIL) tanks. Air will be sparged to each tank for maintaining dissolved oxygen at adequate levels required for leaching. Hydrated lime will be added to adjust the operating pH to the required set point. Cyanide solution will be added to the first leach tank. Mechanical agitation installed in all tanks will maintain the suspension of solids, as well as an adequate reagent homogenization. Fresh carbon and carbon from the carbon regeneration circuit will be added to the last tank of the CIL circuit at an average concentration of 16 g/L of pulp for adequate gold adsorption. Carbon will flow counter-currently to the slurry flow by pumping slurry and carbon. Slurry from the last CIL tank will gravitate to the cyanide detoxification tanks. Once a day, the pulp from the first carbon tank will be pumped into a dedicated screen to separate the gold loaded carbon from the pulp, followed by transferring of the former to the acid washing and elution circuit. After regeneration, the carbon will return to the circuit passing through a dewatering screen. The slurry from the last tank will gravitate to the cyanide detoxification tanks. The leach and carbon adsorption circuit includes the following key equipment:

- Leach/CIL tanks and double impeller agitators;
- Loaded carbon screen;
- Intertank carbon screens;
- Carbon sizing screen;
- Carbon transfer pumps;
- Cyanide concentration and dosage control system;
- Lime dosage and pH control system; and
- Air injection system.

17.3.6 POST-LEACH TAILING THICKENING

A high-rate thickener was designed for thickening the tailings from the CIL circuit in annual production plan. Further dilution will occur in the thickener feedwell where flocculant will be added at concentration of 40 g/t. Thickener overflow will recirculate to the grinding circuit, whereas the underflow material will be pumped to the Detox circuit.

17.3.7 CYANIDE NEUTRALIZATION SYSTEM

The thickened pulp from the tailing thickener leaching will flow to the cyanide neutralization (Detox) circuit, which will consist of two tanks each with a 60-minute residence time for reducing weak acid dissociable cyanide (CNwad) from 63.4 mg/L to less than 1 mg/L by using the SO_2/air method.

The required reagents for the Detox process are as follows:

- Sodium metabisulfite (source of SO_2); and
- Copper sulphate pentahydrate (source of copper ions - reaction catalyst) hydrated lime to adjust pH and o Eh required for the reaction.
- A sufficient amount of air (O2 source) will be injected in spargers into the tanks for reaction purposes. Tanks will be equipped with agitators to ensure that the oxygen and reagents are thoroughly mixed with the tailing.
- The Detox circuit will include the following key equipment:
- Neutralization tanks equipped with double impeller agitators;
- Air injection system;

- In-line samplers for measuring the CNwad level at both circuit of at the entrance and exit of the circuit, thus establishing the dosage of reagents and the efficiency of the treatment; and
- Tailing box and pumps.

17.3.8 DETOX TAILINGS THICKENER

After detoxification, the neutralized tailings slurry will be thickened again to recover cyanide-free process water, most of which will be used as process water for operations where the presence of cyanide is incompatible. Thickening of the detoxified tailings slurry will be carried out in high-rate equipment. The second neutralization tank pulp will be pumped at solids concentration of 45% w/w. Thickener overflow will be pumped to the raw water tank, whereas the underflow at 54% solids w/w will be pumped to the filtering system tank.

17.3.9 FILTERING SYSTEM

The 54% w/w pulp at thickener underflow will be pumped to the filtering circuit. Due to different availabilities stipulated to grinding/leaching/thickening and filtering circuits, a dedicated tank will be installed to receive the thickened pulp for equalizing the daily basis operating.

The filtration circuit will include three horizontal vacuum filters for reducing the cake moisture to 20-21%. Filtering water, together with thickening resulting water will be recirculated within the processing plant, whereas the filtered product will be transferred to disposal piles. Water runoff from piles will also be recirculated in the processing plant.

17.3.10 ACID WASH, ELUTION AND ELECTROWINNING CIRCUIT

The elution circuit is designed to recover adsorbed gold from activated carbon. The elution circuit will be a ZADRA-type circuit under pressure (ZP) in batch operation. The acid wash and elution processes description are as follows:

- Transferring of loaded carbon from the carbon screen to the acid washing column;
- Injecting the 3% w/w HCl solution at the bottom of the elution columns (2.2 BV/h);
- Carbon washing and subsequent neutralization of the diluted acid with caustic soda at 10% w/w (4BV);
- Heating the eluent solution to 90°C;
- The eluent solution will be prepared at 1% Sodium Hydroxide (NaOH) and 0.1% Sodium Cyanide (NaCN), then heated up to 110°C and injected at 2 BV/h to the bottom of the elution column at a pressure of 300 kPa;
- The eluted solution will be pumped to the pregnant solution tank for feeding the electrowinning stage, whose solution will be recirculated to the eluent tank through heat exchangers and tanks.
- Carbon cooling with raw water; and
- Carbon Transfering to the last CIL tank.

The eluted solution will be pumped to the pregnant solution tank for feeding the electrowinning stage, whose solution will be recirculated to the eluent tank through heat exchangers and tanks. An electrolytic cell will be installed. At the end of each elution cycle, a third of the electrowinning will be transferred to the CIL circuit.

17.3.11 GOLD ROOM

The sludge gold-rich cathodes will be washed, filtered and dried. The dry material obtained will be mixed with smelting fluxes (borax, nitrate, carbonate, and silica) and smelted in a liquefied petroleum gas (LPG) furnace at 1,100°C to produce gold doré (bullion).

17.4 REAGENTS

17.4.1 LIME

The lime system will be a supplier package consisting of a silo, dust collector, rotary valve, and variable speed rotary valve. Lime will be delivered in 30 ton trucks and pneumatically transported to the dedicated 80-t capacity storage silo. Lime will be transported to the SAG Mill feed conveyor by a variable-speed rotary valve.

17.4.2 FLOCCULANT

Flocculant will be received in bags and stored in the warehouse. From the warehouse the reagent will be transferred to the preparation area, where it will be diluted and dosage by pumping to high-rate thickeners.

17.4.3 SODIUM HYDROXIDE

Sodium hydroxide ($NaOH$) will be used to adjust the pH in the: (a) preparation of sodium cyanide solution and (b) elution and electrowinning processes. The 50% solution of sodium hydroxide will be received in tank trucks, stored in the reagent storage tank, and pumped to the dosing area from which the solution will be directed to the consumption points.

17.4.4 HYDROCHLORIC ACID

Hydrochloric acid (HCl) will be used in carbon washing, prior to the elution process. The main purpose of acid washing is to remove Calcium (Ca) ions from carbon. The 32% solution of hydrochloric acid will be received in tank trucks and stored in the reagent storage tank. From the warehouse the reagent will be transferred to the dosing area, from which the solution will be directed to the acid washing by a centrifugal pump.

17.4.5 SODIUM CYANIDE

Sodium cyanide ($NaCN$) will be received in a 33% solution using a 22 ton capacity tank truck or as a solid briquette/powder 98% 1 t bags and stored in the warehouse following the International Cyanide Management Institute – ICM guidelines. In the case of solid received alternative, the reagent will be transferred to the preparation area, where it will be diluted in a basic solution to a 33% w/w solution in a stirred tank. The diluted solution will be transferred to the cyanide dosage tank using a transfer pump. Dedicated pumps will distribute the solution. The resulting solution will be pumped to leach/adsorption and elution circuits.

17.4.6 SODIUM METABISULPHITE

Sodium metabisulphite - NaMBT or SMBS ($Na_2S_2O_5$) is used in the cyanide detoxification (Detox) as a source of SO_2. The 97.5% solid SMBS will be supplied in 1 t bags and stored in the warehouse. The reagent will be transferred to the preparation area, where it will be diluted to a 20% w/w solution in a stirred tank. The resulting solution will be pumped to a dosing tank, from which it will be pumped to the Detox circuit.

17.4.7 COPPER SULPHATE

The 99.5% solid copper sulphate pentahydrate ($CuSO_4.5H_2O$) will be supplied in 1 t bags for using in the Detox system. From the warehouse the reagent will be transferred to the preparation area, where it will be diluted to a 20% w/w solution in a stirred tank. The resulting solution will be pumped to a dosing tank, from which it will be pumped to the Detox circuit.

17.4.8 ACTIVATED CARBON

Solid granular activated carbon will be received in 0.5 t bulk bags. The fresh carbon will be transferred directly to the final CIL tank.

17.4.9 MILK OF LIME

Hydrated lime ($Ca(OH)_2$), will be used to ensure the basic pH required for the reactions occurring in the leaching/adsorption. The granular solid reagent will be received in 1 t bags and stored in the warehouse. The solid reagent will be diluted in the mixing/storage agitated tank to a 20% w/w solution, then pumped through distributing points to the leaching/adsorption and Detox systems.

17.5 WATER AND UTILITIES

17.5.1 RAW WATER

Among the sources of water to supply the plant, the main one will be the capture of wastewater from the sewage pumping station in the city of Currais Novos, called “Caça e Pesca”. It will be pumped at a flow rate of 83 m^3/h through a pipeline to the water treatment plant (ETA). The discharge of this pumping supplies the waste water tank for a specific treatment process. The other source of supply would be the transfer of rainwater dammed in the fines dike that will be provided as a water reserve when needed. This wastewater tank is equipped with water discharge pumps that take the wastewater to the Water Treatment Plant. The Water Treatment Plant is a supplier package consisting of filtration, chlorination or UV disinfection, and reverse osmosis (RO). The RO plant produces a saline waste stream that will be discharged to a specific pond, while desalted produced water is incorporated as process water. This tank is equipped with RO water discharge pumps that supply quality water for the elution circuit and a WAD cyanide analyzer. The treated water in the ETA is sent by raw water feed pumps to the raw water pond which will be equipped with raw water discharge pumps, sealing water pumps, and diesel-powered fire-fighting water pumps. The raw water pond will supply the various raw water users, including equipment cooling systems, gravimetric concentrators, reagent composition, screen sprays, dust suppression, fire water tank composition, etc.

17.5.2 POTABLE WATER

Potable water will be supplied by tank truck at an average of 30 m^3/day to serve the administrative areas and their dependencies and will be reserved in a 100 m^3 tank. Water Tower will be supplied in the various operational areas and then distributed to buildings and places personal hygiene. Drinking water from the tank located in the administration area is supplied by a pressure pump to a main supply ring to the safety showers located around the plant. To ensure that this water is not heated by the remains of stagnant water in pipes exposed to the sun, the main ring water is continuously returned to the potable water tank.

17.5.3 PROCESS WATER

Recycled water from the CIL tailings thickener containing cyanide, recycled water from the thickener overflow after detoxification, and the filtration filtrate make up the supply flow to the process water pond. There will be two different ponds, one for raw water with a capacity of 5,300 m^3 and the other for recycled water without cyanide with a capacity of 3,000 m^3. The recycled water from the tailing's thickener overflow is directed to a passing tank and completely recycled in a closed circuit with the grinding. The raw water pond is equipped with a weir that allows any excess water to overflow into the cyanide-free process water pond. The spillway is designed to protect the water system and flow will only occur during emergency periods. The cyanide process water pumps draw water from the bypass tank to serve the SAG Mill, trash screen, loaded carbon recovery screen, and carbon safety screen. Detox thickener water and filtrate will supply acid wash, elution, reagent preparation, and services. To complement the plant's water balance, the water reserved in the fines dike in the rainy season will be taken up and incorporated as raw water.

17.5.4 AIR

High-pressure air will be produced by compressors to meet plant needs. Drying devices will be installed for supplying the instrument air demand. Industrial air blowers will generate the necessary air flow to the CIL and Detox circuit tanks. The purpose of injecting air into the tanks is to supply oxygen to the cyanide gold complexation reaction, as well as in cyanide neutralization.

17.6 CONCLUSIONS AND RECOMMENDATIONS

17.6.1 CONCLUSIONS

The Borborema Project processing plant is similar to a number of industrial operations in the gold mining industry. The exception is the wastewater processing from the city of Currais Novos which requires additional testing and further engineering work.

Risks to raising capital include:

- Additional investment for the new sewage receiving lines; and

Possible capital reductions include the simplification of the water treatment plant, provided that the accumulation of water in the rainy seasons is consistent and reliable.

17.6.2 RECOMMENDATIONS

- Further assessment on water supply alternatives;

18 PROJECT INFRASTRUCTURE

18.1 GENERAL SITE PLAN

The general site plan (Figure 118) shows the planned locations of the main Project facilities, including the gatehouse and administrative areas, primary substation, processing plant, wastewater treatment plant (“WTP”), filtration, mine support area, access roads, pits, and piles. Access to the facility is from the south side of the property from road BR-266. The main access will be through the security gate near the process plant. The site will be fenced off to prevent access by unauthorized persons. The process plant is located west of the pit. The site plan design took into account the site geography and terrain, and optimization of soil movement from cutting and for embankments.

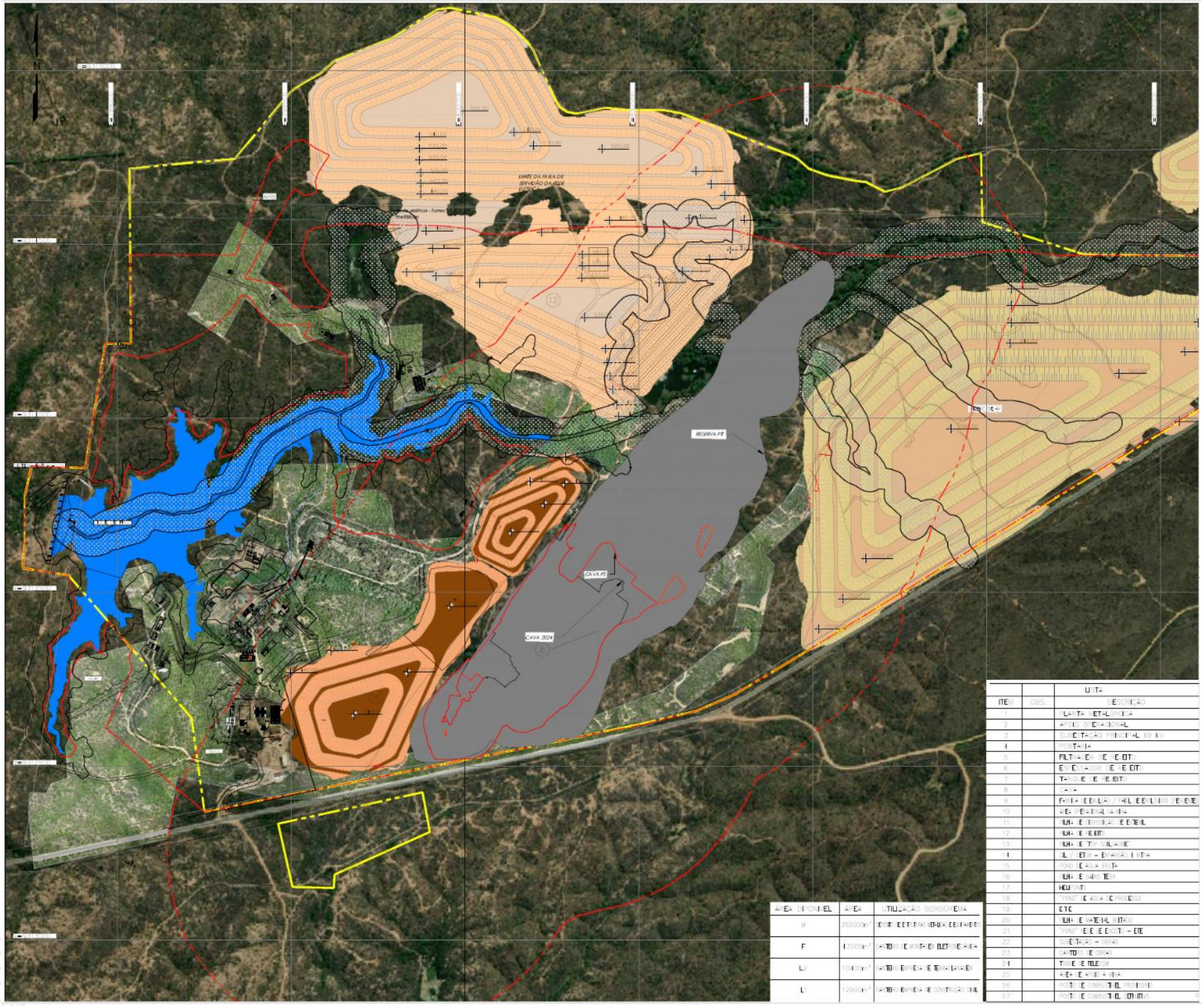


Figure 118: Overall site plan.

18.2 ROADS

18.2.1 REGIONAL SITE ACCESS

The access to Project site from the municipality of Currais Novos is via 28 km paved-road (BR-226), Figure 119.

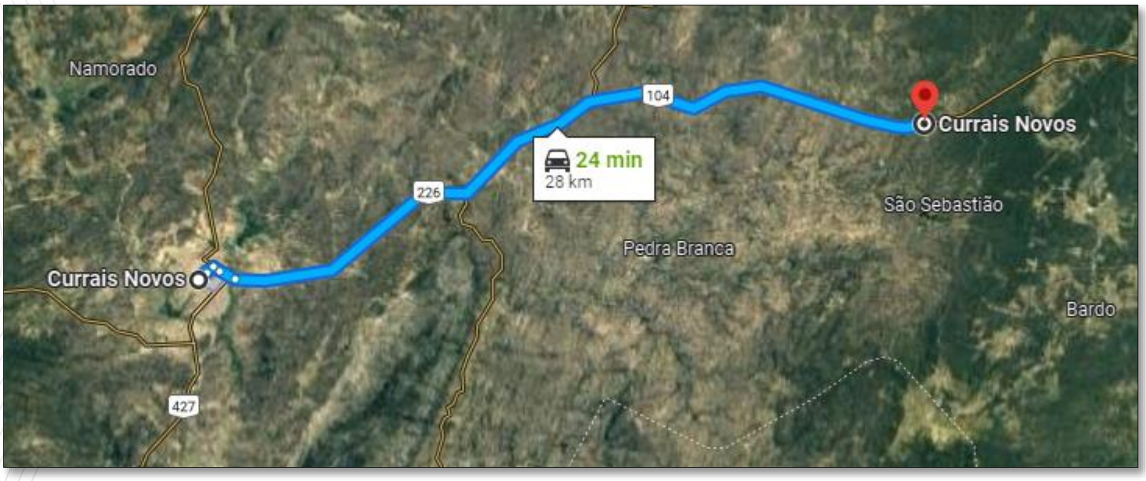


Figure 119: Site access (Source: Google Maps).

18.2.2 PROCESS PLANT SITE ACCESS

The process plant internal accesses are approximately 5 m and 10 m wide, are designed with primary covering (gravel), drainage, and appropriate signage. On the road edges, where there is risk of vehicles falling, barriers will be built with a minimum height of half the diameter of the largest vehicle tire that will use that access road. The internal roads will allow access between the administrative and operational facilities, the construction site, the processing plant, the crushing area, filtering, magazine, mining services, waste dumps and low-grade stock piles as shown in Figure 120.

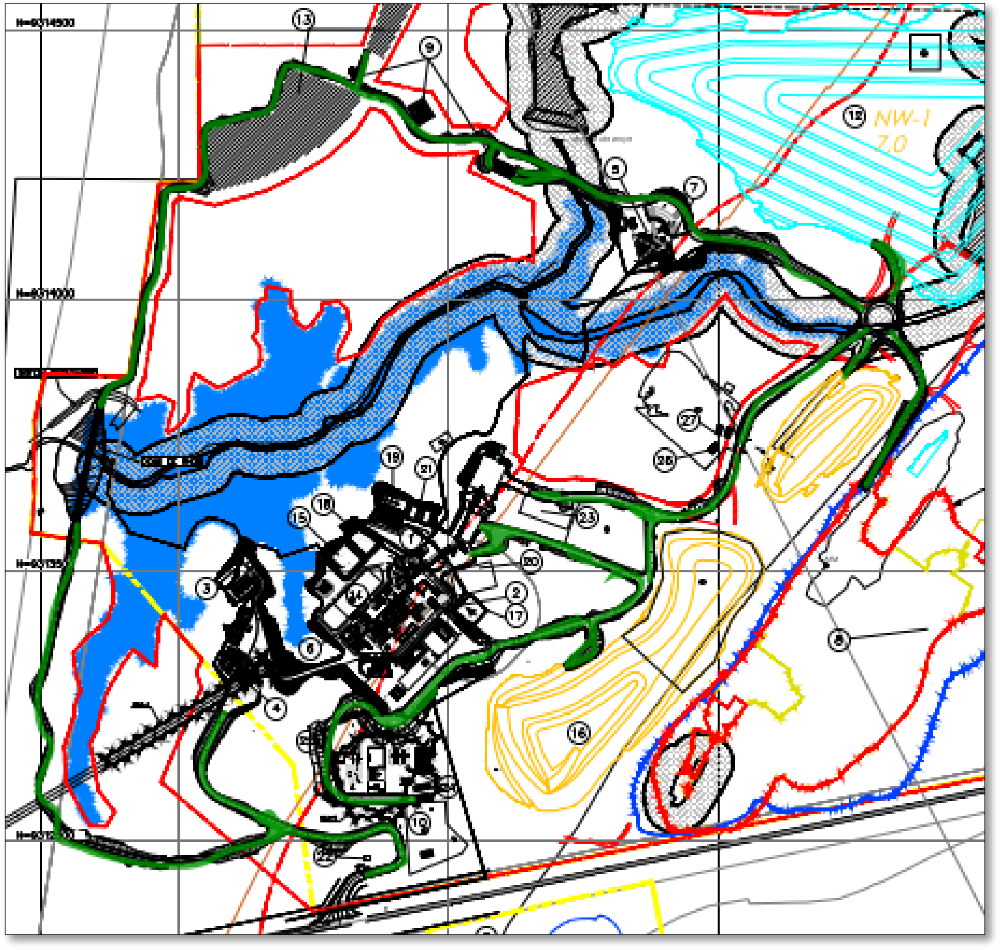


Figure 120: Internal project site accesses. Source: PROMON (2023c).

18.3 POWER SUPPLY

18.3.1 ELECTRICAL POWER SOURCE

Power will be provided from a new sub-station, which will receive a 69 kV new transmission line from the local energy distribution company COSERN. The new sub-station will be located on the west side of the process plant, close to the administrative area for transforming and will be responsible for transforming the voltage level from 69 kV to 13.8 kV.

The 69 kV transmission line will be contracted to Aura in a turn-key package, by and according to the standards of the local energy concessionaire COSERN, and later will be donated to COSERN for its maintenance and operation.

The 69/13.8 kV substation site will be provided as a package, which will include all of the necessary civil construction, and contain an incoming structure and isolation switch, main circuit breaker, provision for utility metering, bus work to deliver 69 kV power to a 30 MVA stepdown transformer complete with primary circuit breaker, and isolating switches. This transformer will feed associated secondary switchgear and is arranged to provide 13.8 kV power to the main processing plant, the filtering plant, the administration area, and other remote areas. Provision is included for automatically switched capacitor banks to assist with site power factor correction.

18.3.2 ELECTRICAL DISTRIBUTION

The primary distribution voltage will be radial, at 13.8 kV, three phase, 60 Hz, from the main substation. Feed distribution from the main substation will be via three-phase powerlines and power poles for the secondary substations. Distribution from the secondary substations to the loads and panels in the field will be via cable rack or conduits, as required. The conventional three-phase powerlines and power poles network will be supplied as a turn-key, including pole-mounted transformers.

18.3.3 MAIN SUBSTATION

The main substation will include an electrical room and the associated high-voltage equipment. The substation will have a 30 MVA ONAN transformer from 69 to 13.8 kV. The main substation will be provided as a Hybrid solution (GIS + AIS) on SKID.

18.3.4 SECONDARY SUBSTATIONS

Site electrical power supply was selected and designed around the major load centers summarized in Table 134.

Table 134: Plant substations.

TAG NUMBER	TYPE	CHARACTERISTICS	POWER DISTRIBUTION FROM MAIN SE
3015-SE-0001 (Metallurgy)	E-room	Feed: 13.8 kV-25 kA Process loads: 480 V-50 kA Lighting: 380/220 V-50 kA	Conventional aerial network - 700 m
3060-SE-0001 (Filtering)	E-room	Feed: 13.8 kV-25 kA Process loads: 480 V-50 kA Lighting: 380/220 V-50 kA	Conventional aerial network – 1,500 m

The substations will feed the following areas:

- 3015-SE-0001: Grinding, thickening, gravity, leach, detox, elution and electrowinning, reagents, compressed air system, primary crushing, stockpile/surge bin, and water distribution systems.
- 3060-SE-0001: Waste filtering system and Magazine area.

18.3.5 EMERGENCY POWER

Three diesel generators group will be provided to feed critical process loads, administrative buildings and security systems. Each diesel generator group will be located near the designated electrical room, or administrative building and will be connected to the motor control centre or automatic transfer panel.

18.4 SUPPORT BUILDINGS

18.4.1 PRIMARY CRUSHING AREA

The primary crushing area will be located to the east of the process plant. The crushing stage will comprise a stationary crushing unit, which includes a linear feeder, vibrating screen, primary jaw crusher, chutes, and a discharge conveyor. Process equipment maintenance will be handled by mobile cranes as required, while a monorail crane will be used specifically for jaw crusher and vibrating screen maintenance.

18.4.2 GRINDING AREA

The grinding area has been designed for a SAG mill, cyclone feed sump, pumps, waste screen, and gravity circuit equipment, including a liner manipulator. The grinding building will be 19.9 m long by 13 m wide and 25-m tall, steel frame building. The main structure comprises five floors beyond the ground floor, and will contain the following equipment: cyclone, sieves, and gravimetric concentrator as shown in Figure 121 and Figure 122. The ground floor will have a raised concrete floor and several platforms for access to equipment. The process equipment will be serviced by a dedicated winch. Any heavier loads will require use of the mobile crane.

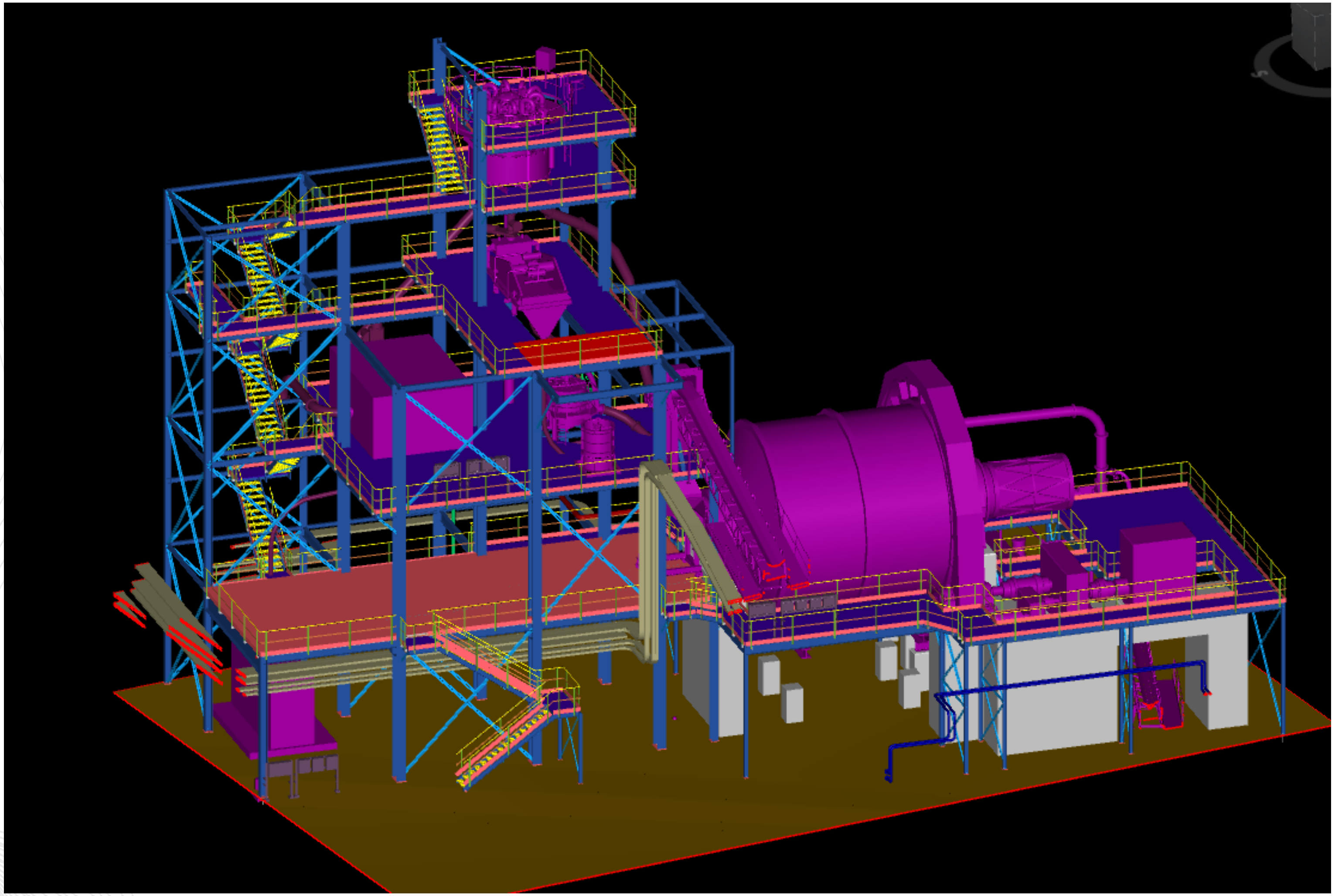


Figure 121: Grinding area schematic view.

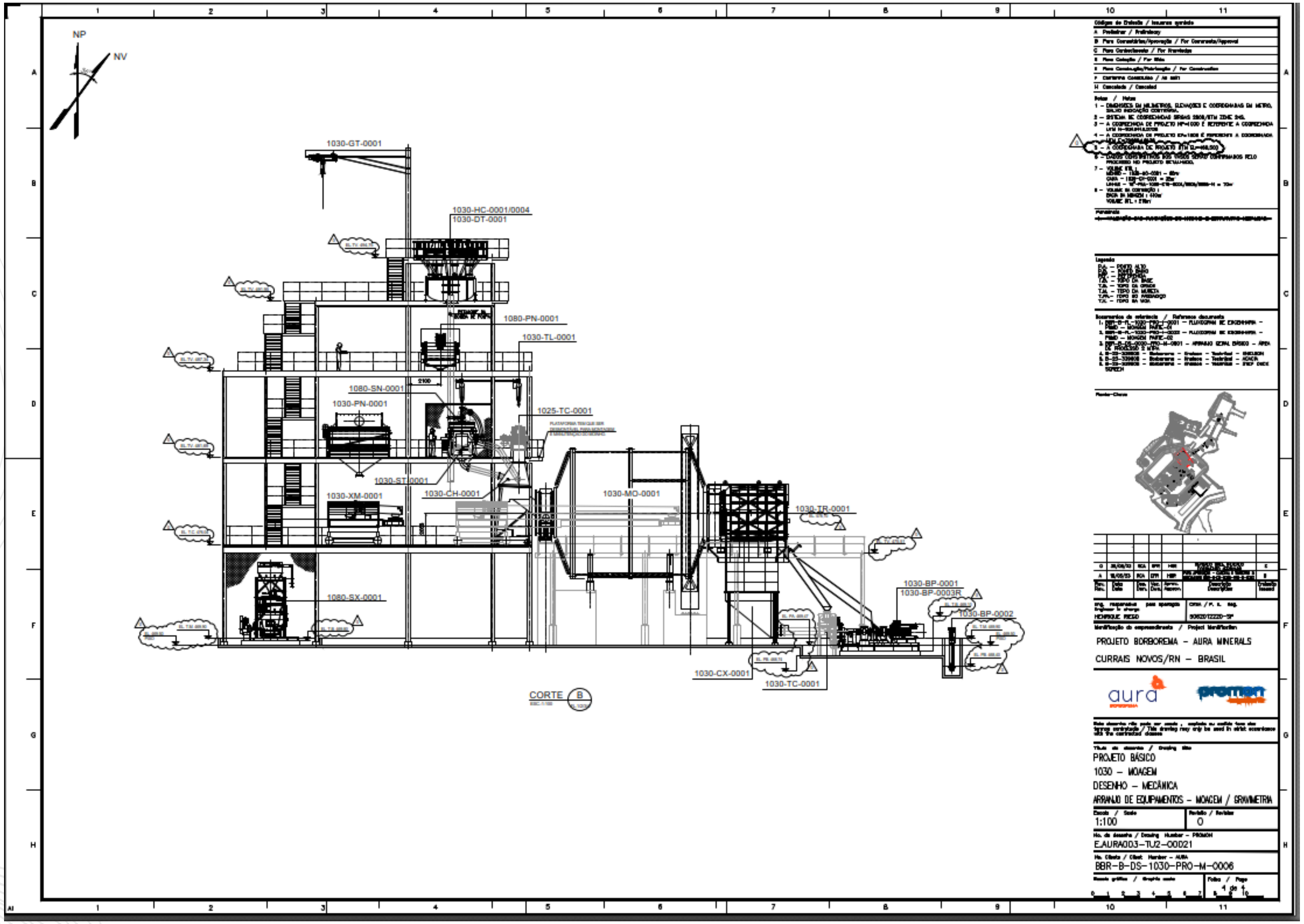


Figure 122: Grinding area section view.

18.4.3 LEACH AND DETOX AREAS

The carbon-in-leach (“CIL”) area will be 80 m long by 37 m wide, include a leach tank with dimensions 14.5 m in diameter by 16.3 m high, and six carbon-in-leach (“CIL”) tanks with the same dimensions, including tank platforms. The area will be limited by a containment compartment with a volumetric capacity equivalent to 102% of the largest contained tank. The maintenance and cleaning of sieves, which is a separate operation, will occur in a separate structure inside the containment compartment/area. The area will be serviced by a 15-ton winch on a monorail to access the tank, pumps, and screens. A mobile crane will be required for maintenance of the agitator. Figure 123 shows a schematic view of the leaching area.

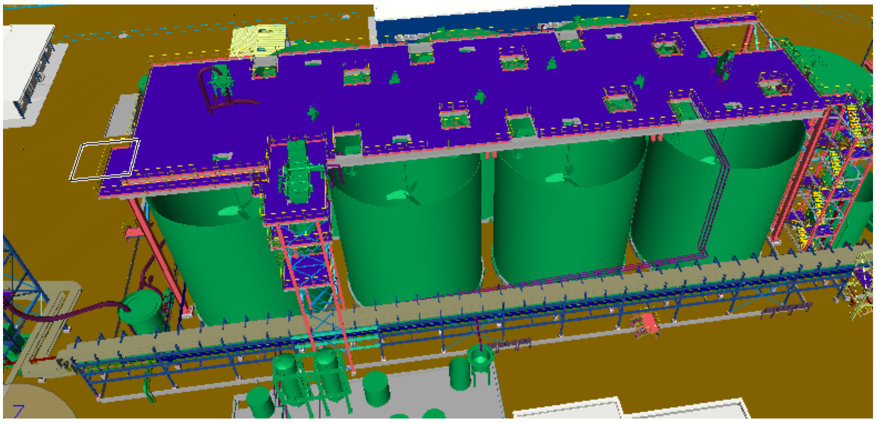


Figure 123: Leaching area schematic view.

The Detox Area will be 31 m long by 40 m wide and will include two detoxification tanks measuring 9 m in diameter and 9.45 m in height. An 18 m diameter thickener, cyanide water tank, sieve, and transfer box are also part of the Detox area. Figure 124 shows a schematic view of the Detox area.

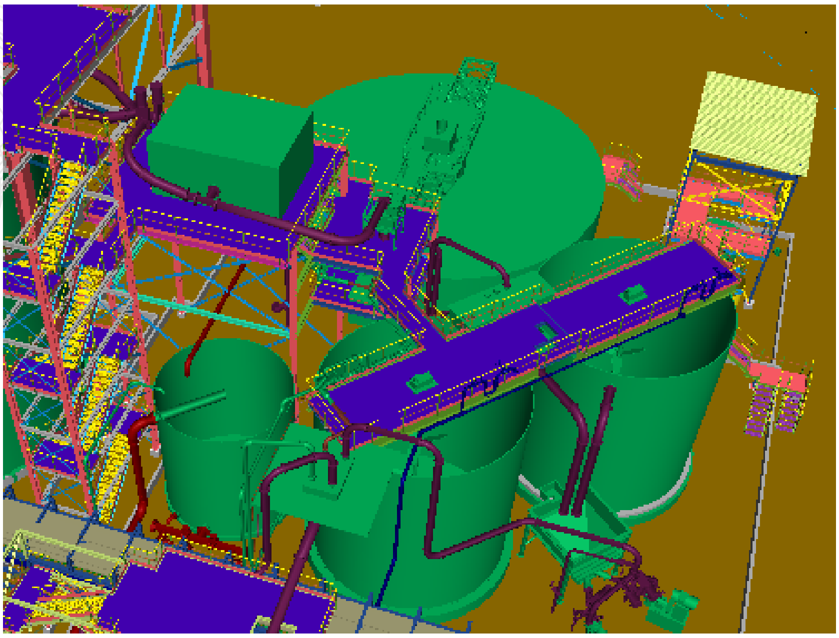


Figure 124: DETOX area schematic view.

18.4.4 GOLD ROOM

The gold room building is designed as a rectangular area of 286 m^2 in two integrated blocks: the production area, the higher block, and the support area, the smaller block. The building will be constructed from concrete with concrete block walls to enclosure the different work areas, except for the technical room, chamber and safe room that will have structural concrete walls for security purposes. The roof will be structural steel supported by a concrete slab, and finished with lightweight galvanized roof panels.

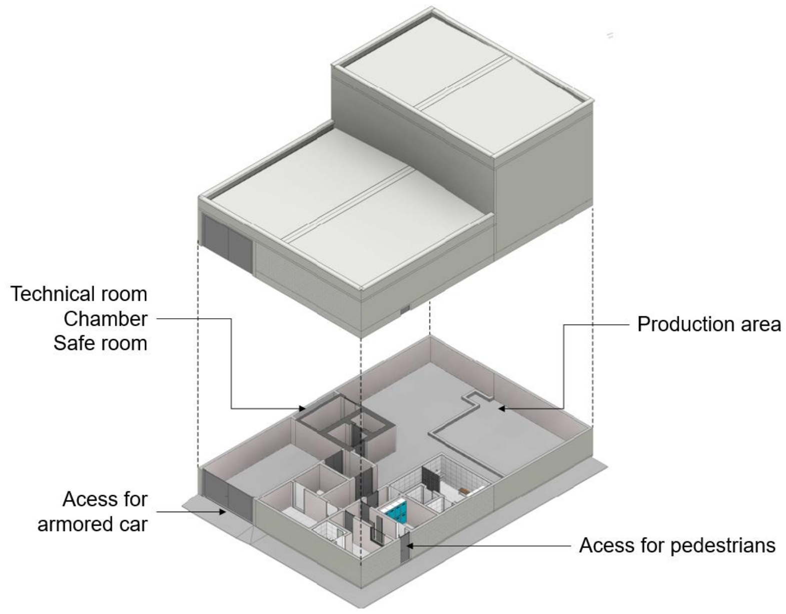


Figure 125: Gold room layout.

18.4.5 HYDRAULIC CIRCUIT

The hydraulic circuit building was designed to accommodate the hydraulic units for the milling process, and has a simple structure composed of concrete block walls, structural steel for the roof structure, and lightweight galvanized roof panels. The building will be equipped with double aluminum louver doors and louver windows to facilitate air circulation and ventilation within the premises.

18.4.6 REAGENT AREAS

The reagent preparation and storage systems will be separate, located within the process plant according to the reagent dosing location, as shown in Figure 126. The area for the hydrated lime system will be 11.5 m long by 7.5 m wide, including the preparation and storage system. The sodium cyanide storage area will include a 4.1 m diameter by 4.5 m high tank and will be a fenced off area with restricted access. The containment and equipment area will be 9.5 m long by 8.5 m wide. The flocculant area will also be separate from the other reagents to be closer to the thickener and minimize piping, and will be 11.5 m long by 6.5 m wide. The area allocated for sodium metabisulphite and copper sulfate reagents is southeast of the detoxification tanks and leach tanks, and the contained area will be 14.8 m long by 13.7 m wide. The area destined for the caustic soda and hydrochloric acid reagents is also located to the southeast of the tanks, the enclosed area will be 15.1m long by 7.8 m wide. Figure 189 shows a schematic view of the reagent area, while Figure 127 and Figure 128 include respectively the views of cyanide and flocculant areas.

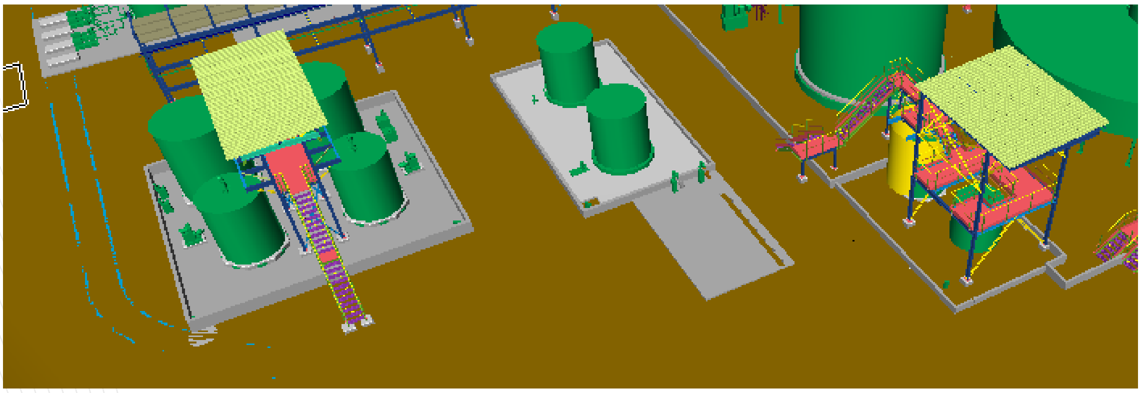


Figure 126: View of the reagent area - From right to left: hydrated lime, hydrochloric acid, caustic soda, sodium metabisulfite, and copper sulphate.

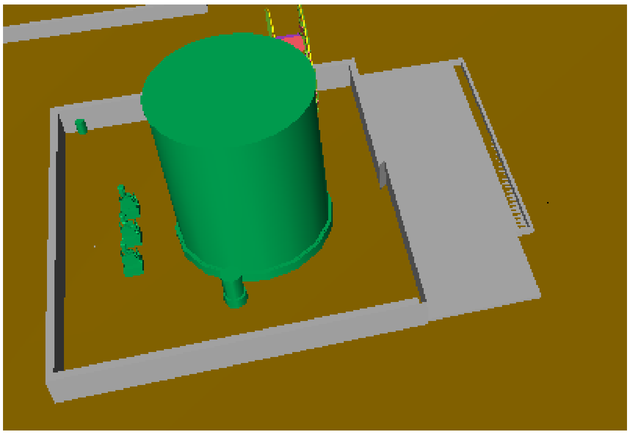


Figure 127: View of the cyanide area.

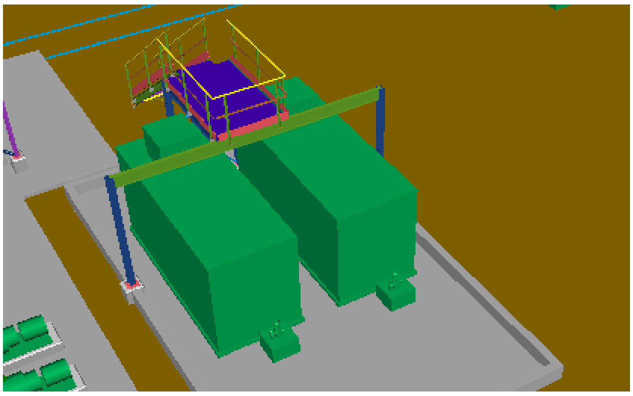


Figure 128: View of the flocculant area.

18.4.7 MINE SUPPORT AREA / TRUCK SHOP / TRUCK WASH

The operation of the mine will be outsourced, so the Project's engineering team does not foresee the construction of a support structure for the mine by Aura. In the mine operation outsourcing contract, it will be stipulated that the contractor will build its own required support structure, in addition to using the existing area to be made available by Aura. This will allow the contracted company to adapt the installations according to the size of the equipment in its fleet. Aura will supply water and electricity to the contracted company's premises at the mine site.

18.4.8 WASTE MATERIAL WAREHOUSE

The Waste Material warehouse is designed with a built area of 237 m^2, as shown in Figure 129. The building is composed of structural steel with concrete blocks, and lightweight galvanized roof panels. This building will be equipped with louver windows to provide air circulation and ventilation inside the building.

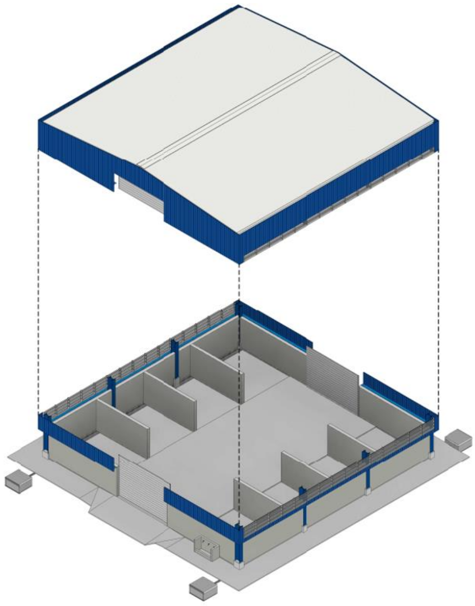


Figure 129: Waste material warehouse.

18.4.9 WAREHOUSE

The warehouse building is designed with a built area of 469 m^2, in two integrated blocks: the storage area with the administrative office area as an attachment, as shown in Figure 130. The storage area of the warehouse building is composed of structural steel, with concrete blocks, and lightweight galvanized roof panels. This building will be equipped with louver windows and a roof vent to provide air circulation and ventilation inside the building. The administrative office will be built from structural steel, with thermoacoustic panels as part of the walls and internal partitions, the roof will be finished with galvanized thermoacoustic roof panels.

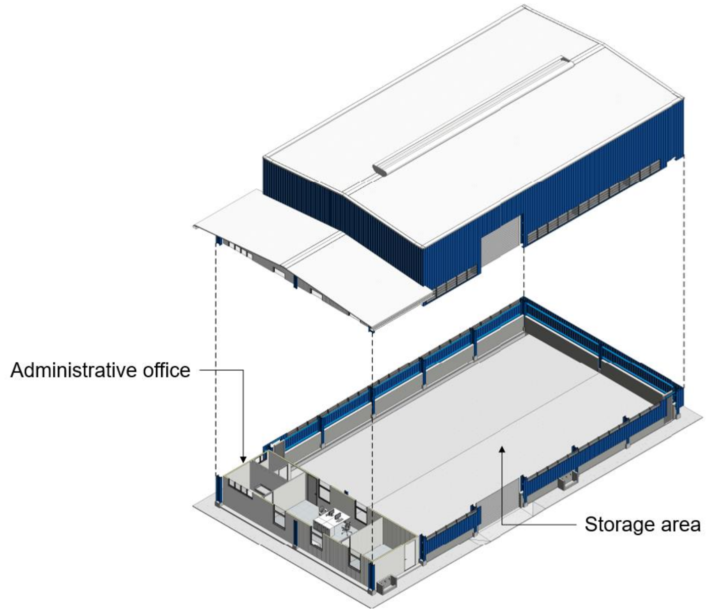


Figure 130: Warehouse.

18.4.10 MAINTENANCE SHOPS AND CHANGEROOM

The maintenance shops building was designed with a built area of 586 m^2 as three integrated blocks: the maintenance area, the administrative office area, and equipment area; these last two will be attachments to the main block maintenance area, as shown in Figure 131.

The construction of the main block, the maintenance area, will be from structural steel with concrete blocks, and lightweight galvanized roof panels. This building will be equipped with louver windows and a roof vent to provide air circulation and ventilation inside the building. The administrative office will also be composed of structural steel, with thermoacoustic panels for walls and internal partitions, while the roof will be built from galvanized thermoacoustic roof panels.

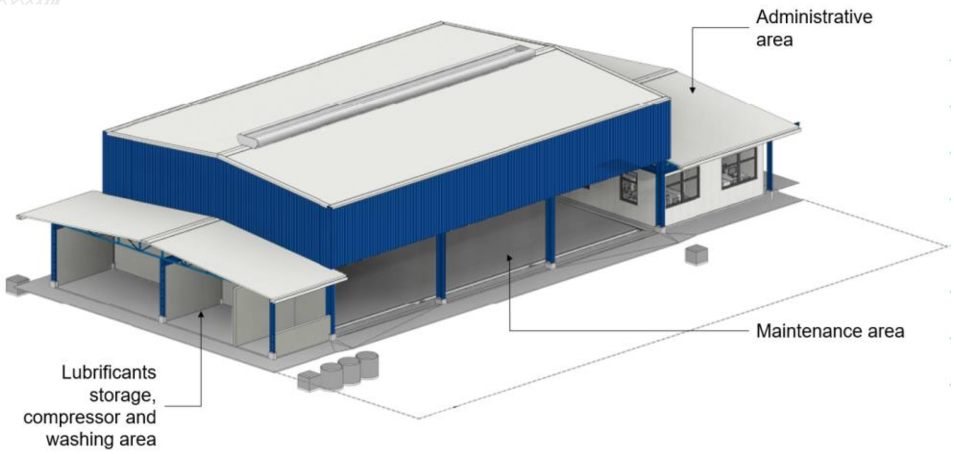


Figure 131: Maintenance shops.

The changeroom building was designed with a built area of 210 m^2, as an attachment to the maintenance shops building to be close to the operational area, as shown in Figure 132. The structure for this building is structural steel, with thermoacoustic panels for walls and internal partitions, and the roof is finished with galvanized thermoacoustic roof panels.

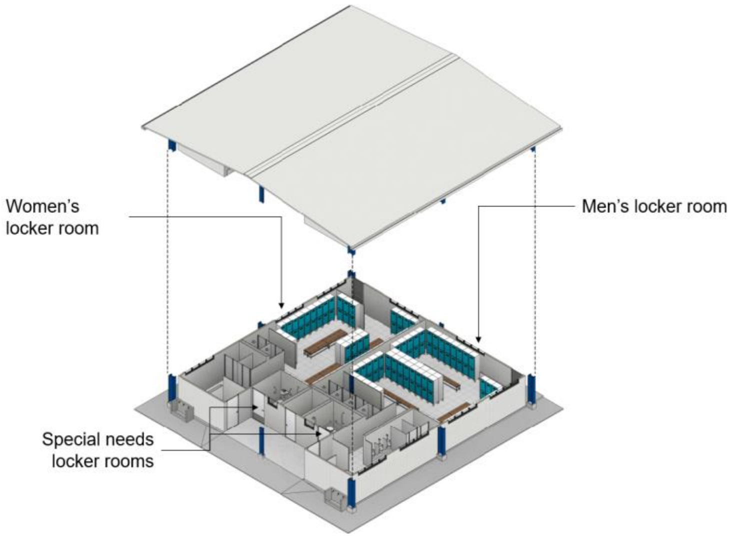


Figure 132: Changerooms.

18.4.11 STORAGE SHED FOR REAGENTS

The storage shed for reagents was designed with a built area of 384 m^2, as shown in Figure 133. The structure will be built from structural steel with concrete blocks, and lightweight galvanized roof panels. This building will be equipped with louver windows and a roof vent to provide air circulation and ventilation inside the building.

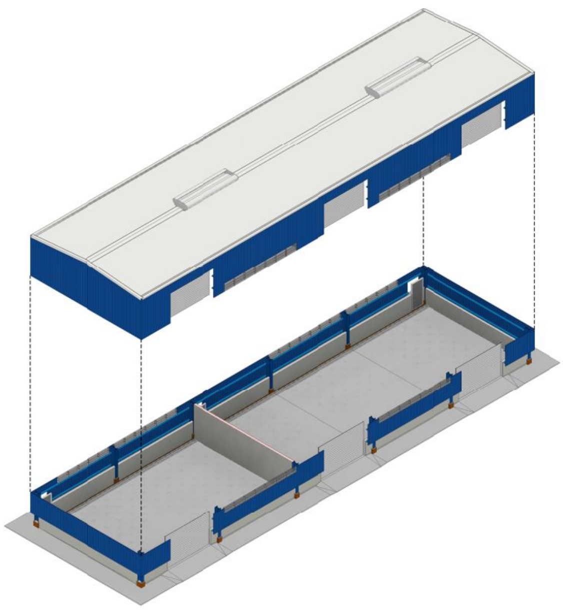


Figure 133: Storage shed for reagents.

18.4.12 EXPLOSIVES STORAGE AND HANDLING

The construction of the explosives warehouse was designed with a built area of 155 m^2, with a storage capacity of 32,000 kg of explosives, equivalent to approximately 1,600 boxes of explosive materials, as shown in Figure 134. Due to the risk associated with the stored materials in the building, as well as the compliance with minimum requirements demanded by specific regulations, its structure has been designed using cast-in-place concrete elements with double masonry walls made of concrete blocks. The roof will use metal and 8 mm thick corrugated asbestos-cement sheets. To provide natural ventilation, the building is equipped with openings near the floor on the internal walls and with concrete louver windows.

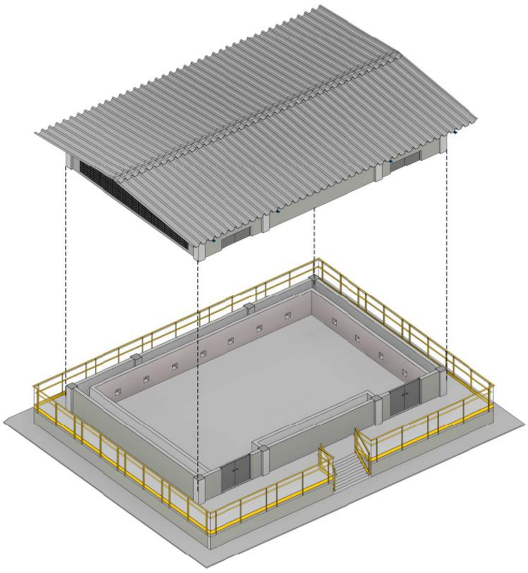


Figure 134: Explosives warehouse.

The construction of the explosive accessories warehouse follows the same concept as the explosives warehouse, and was designed with a built area of 108 m^2, and a storage capacity of 70 kg of explosive accessories, which corresponds to approximately 628 accessory boxes, as shown in Figure 135.

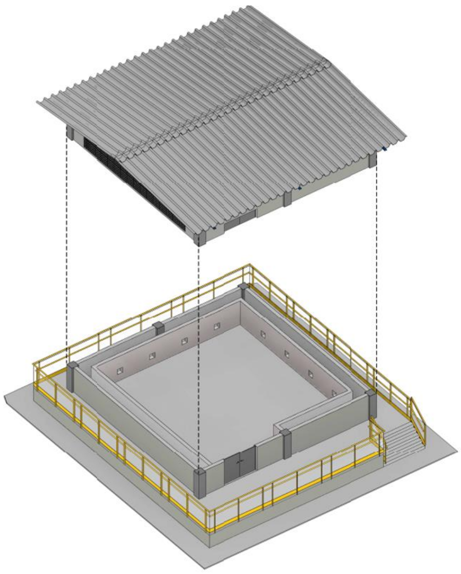


Figure 135: Explosives accessories warehouse.

The Emulsion Yard was designed with a built area of 214 m^2 of concrete flooring and space for the placement of emulsion tanks. However, the area also includes a small Sodium Nitrite storage facility, which has been designed with a built area of 29 m^2, at the right hand end in Figure 136.

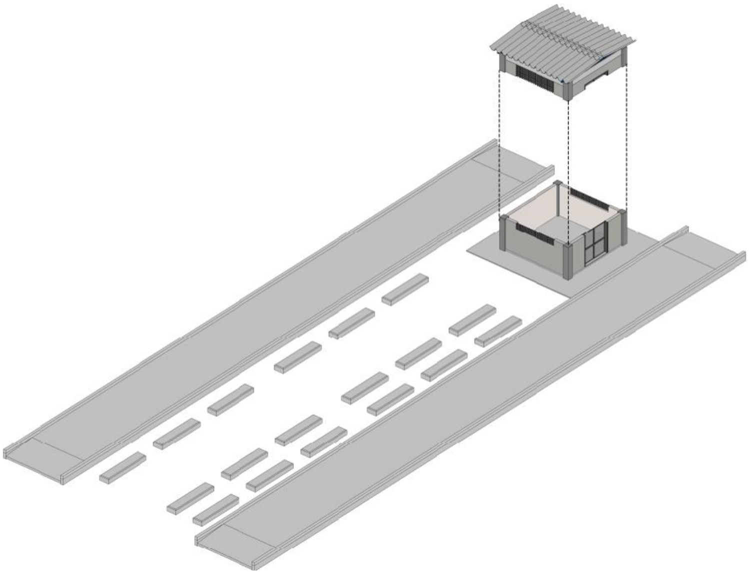


Figure 136: Emulsion yard and sodium nitrite storage.

18.4.13 FUEL STATION

The fuel supply systems will be in two stages, the temporary fuel station and definitive station. For the provisional fuel station, Aura will provide a storage and containment tank with a capacity of 15 m^3, which will be used in the implementation phase of the work. For the definitive fuel station, Aura will hire a specialized company for the implementation of the station. Figure 137 provides the site locations for the fuel stations: location no. 27 is the provisional station, and location n° 26 is the definitive station.

Figure 137: Temporay and definitive fuel station location.

18.4.14 PLANT ADMINISTRATION BUILDING

The plant administration building was developed and sized, with a built area of 151 m^2, to allocate the workers who will have direct contact with the operational areas. The building structure will be structural steel, with thermoacoustic panels for walls and internal partitions, and the roof will be finished with galvanized thermoacoustic roof panels, as shown in Figure 138.

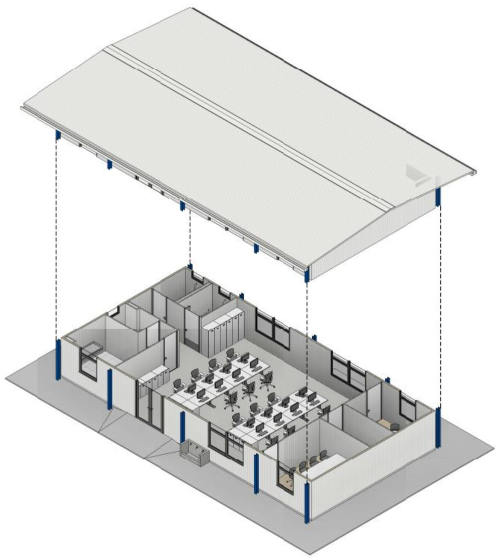


Figure 138: Plant administration building.

18.4.15 MAIN GATEHOUSE

The main gatehouse building controls site access and was designed with a built area of 66 m^2 in two parts: vehicle control access area, and the gate control access areas for pedestrians, as shown in Figure 139. The building structure will be structural steel, with thermoacoustic panels for walls and internal partitions, and the roof will be finished with galvanized thermoacoustic roof panels.

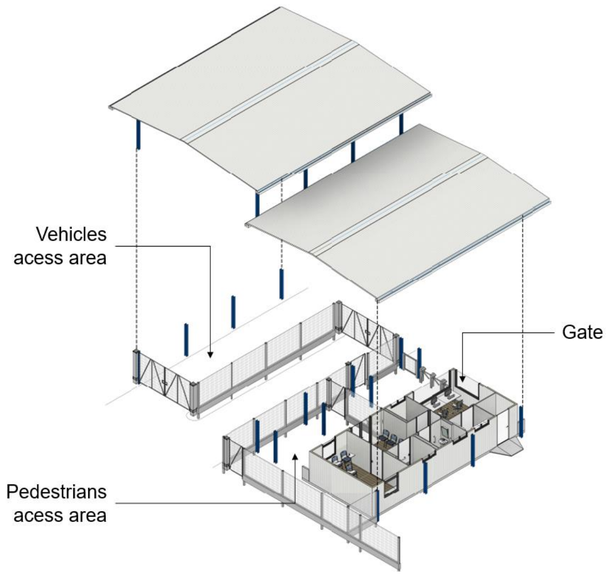


Figure 139: Main gatehouse.

18.4.16 ADMINISTRATIVE BUILDING

The administrative building was developed with a built area of 537 m^2 and sized to allocate the workers that have no contact with the operational areas, as shown in Figure 140. The building structure will be structural steel, with thermoacoustic panels for walls and internal partitions, and the roof will be finished with galvanized thermoacoustic roof panels.

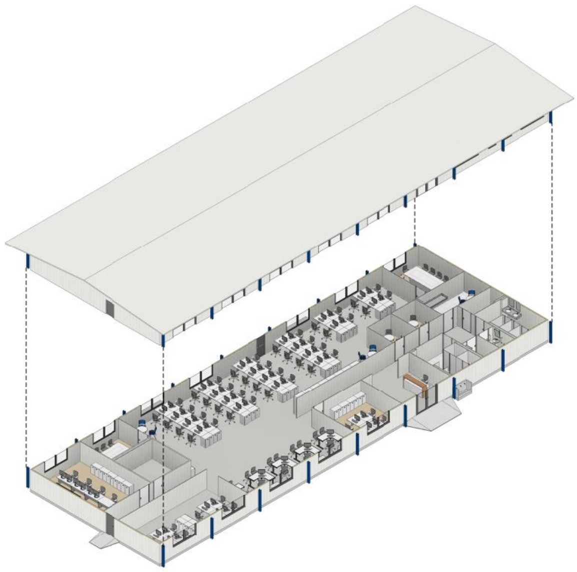


Figure 140: Administrative building.

18.4.17 MESS HALL

The mess hall was designed with a built area of 283 m^2 to accommodate 76 workers per shift for a total of 149 people, and is located close to the administrative, medical care clinic, and fire brigade buildings. The building structure will be structural steel, with thermoacoustic panels for walls and internal partitions, and the roof will be finished with galvanized thermoacoustic roof panels, as shown in Figure 141.

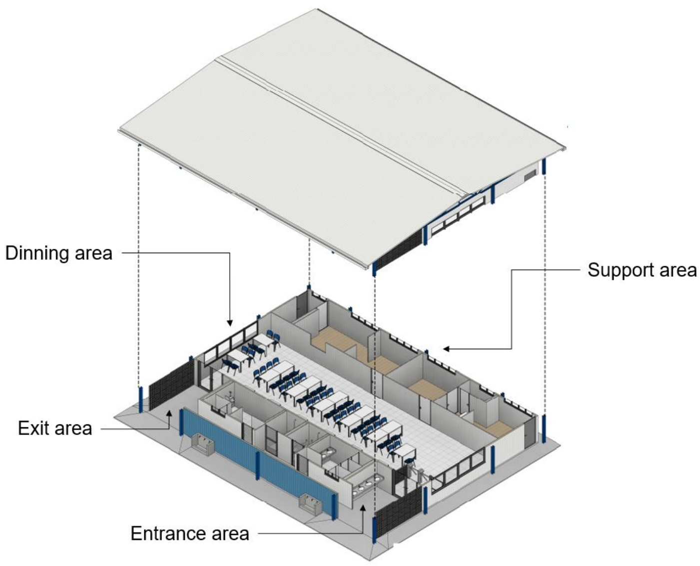


Figure 141: Mess Hall.

18.4.18 LABORATORY

The laboratory building was designed with a built area of 643 m^2, and two integrated blocks: the laboratory area and support area, the latter being an attachment similar to the warehouse. The structure for the laboratory is composed of structural steel with concrete blocks, and lightweight galvanized roof panels. This building will be equipped with louver windows to provide air circulation and ventilation inside the building. The administrative office will also be built from structural steel with thermoacoustic panels for walls and internal partitions, and the roof will be finished with galvanized thermoacoustic roof panels, as shown in Figure 142.

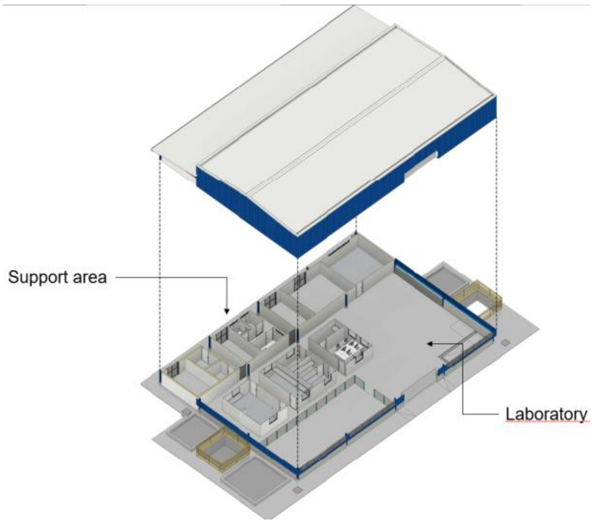


Figure 142: Laboratory and support area.

18.4.19 MEDICAL CLINIC AND FIRE BRIGATE

The medical clinic and fire brigade building was designed with a built area of 256 m^2 and will have three sections: medical clinic building, fire brigade building and, in between will be the emergency vehicle parking, as shown in Figure 143. The building structure will be composed of structural steel, with thermoacoustic panels for walls and internal partitions, and the roof will be finished with galvanized thermoacoustic roof panels.

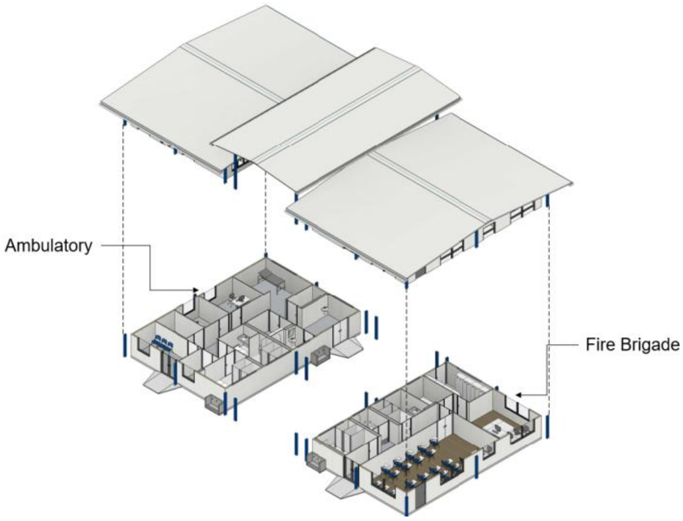


Figure 143: Ambulatory and fire brigade.

18.5 SITE GEOTECHNICAL

Geotechnical investigations were carried out in two stages on the Project property in the proposed site area. The first stage was to provide information for earthmoving services consisting of 21 mixed drill holes and 21 test pits. The second stage focused on the proposed building foundation areas, consisting of nine more mixed drill holes. The drilling program showed a soil with high support capacity, allowing direct foundations to be built.

18.6 WATER MANAGEMENT

18.6.1 PROJECT WATER BALANCE

The Borborema Project plant will demand water at the following flows:83.0 m³/h of raw water, 811.51 m³/h of process water, and 278.45 m³/h of process water with cyanide.

The raw water to supply the process plant will come from treated sewage coming from the Currais Novos ETE, with a flow of 55.0 m³/h, and from the pumping of the Dique de Finos (Fines Dike), at a flow of 28.0 m³/h.

The Figure 144 shows the raw water supply diagram, for more information consult the PROMON (2023b) report.

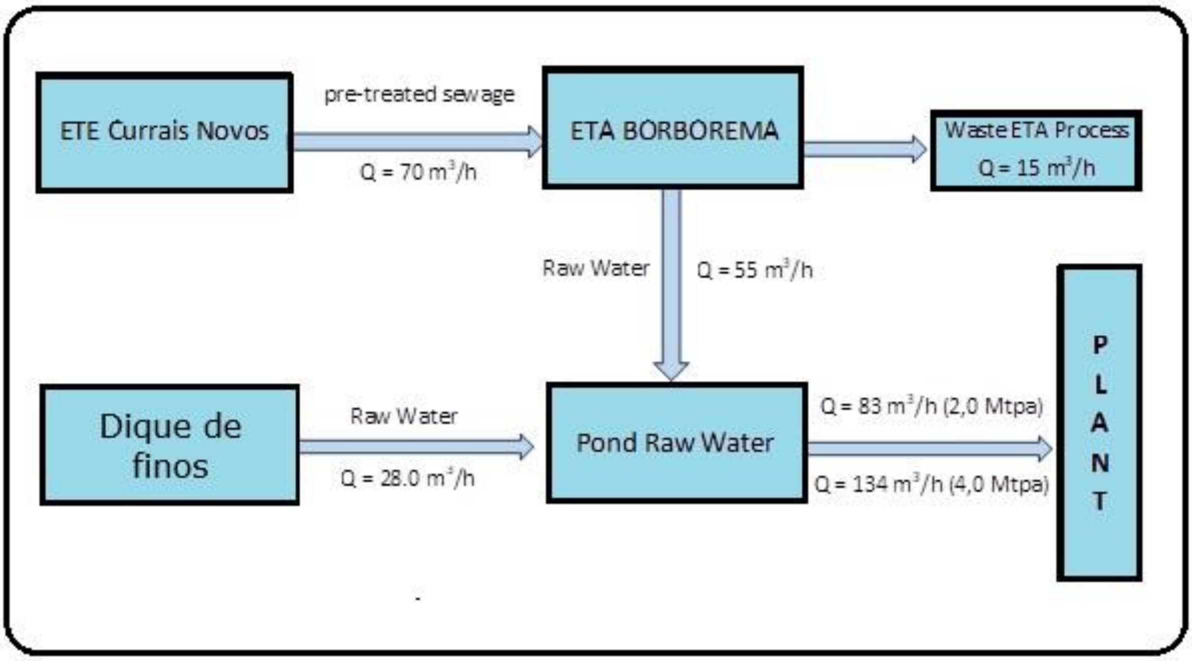


Figure 144: Diagram of the raw water supply. Source: PROMON (2023b).

18.7 MINE WASTE, LOW-GRADE ORE AND TAILINGS STORAGE FACILITIES

18.7.1 LOW-GRADE STOCKPILES

Two low-grade stockpiles are envisaged for the Project to improve grades for the initial years and control the rate of oxide ore on the plant feed. Low grade ore will be stocked during the operation of both pits and reclaimed at the end of the LOM or when required. The oxide stockpile is also planned to control the maximum rate of oxide material that can be fed to the plant. Both stockpiles are located close to the Main Pit exit and the ROM pad.

The sulfide stockpile will have a total capacity of 4.44 Mm^3 and the oxide stockpile a total capacity of 0.81 Mm^3.

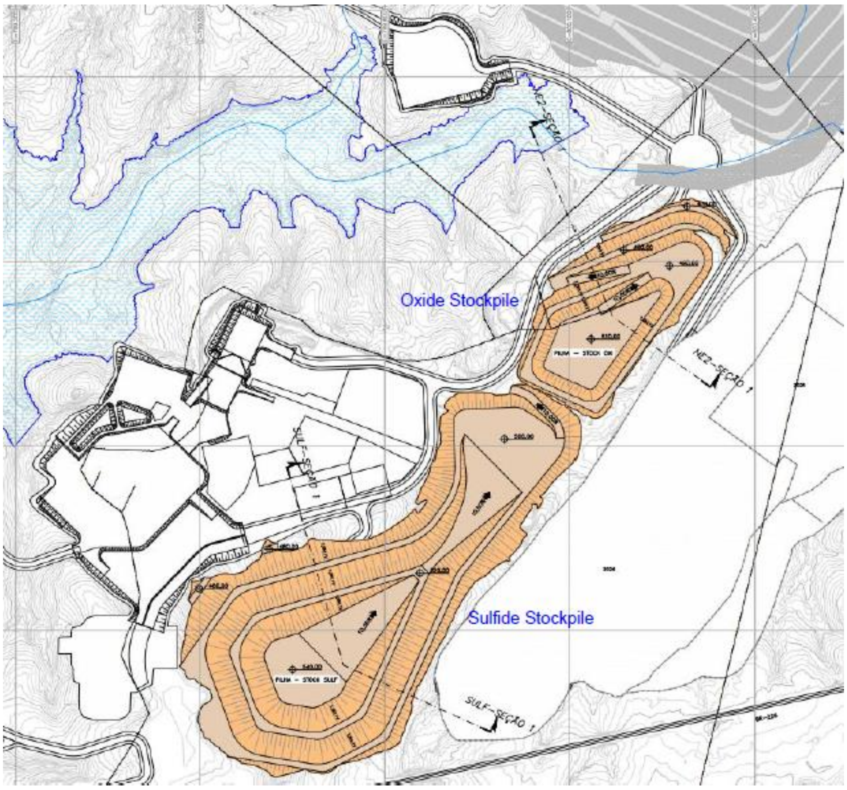


Figure 145: Low-grade Stockpiles.

18.7.2 WASTE ROCK STORAGE FACILITIES (WRSF) AND TAILINGS STOREGE FACILITIES (TSF)

The rock that is sterile or below cut-off grade and will not be processed will either be stored or used on site (within the mine or on surface). Waste rock will mainly be deposited on the WRSFs.

A concept that considers the TSF1 and TSF2 piles as dry stack structures was chosen, since the tailings filtration plant is located on the edge of TSF1 in the master plan and the volume of other tailings added to the waste rock would exceed the volumetric capacity of theses structures.

For pile WRSF1, therefore, a waste rock concept was chosen with the earth waste being surrounded by rock waste in such a way that the pile of earth material develops with the geometry of 1V:2.5H and the pile of rocky material covers the first with final external geometry of 1V:1.5H. In this way, the internal pile will be able to receive the volume of the first five years of earthen material, while in the year 2028 the rocky waste will have to back up the internal pile.

In the proposed concept, the TSF2 and WRSF2 pile should receive the excess volumes of tailings and sterile, respectively. Given the uncertainty surrounding waste rock quality, the WRSF2 Pile was designed considering sterile waste geometry.

The low-grade piles were designed as waste rock piles with the largest volume accumulated along the LOM of each (generation plan available) as a volumetric assumption.

The designed structures, their respective concepts and the volume obtained in each are presented in Table 135 and illustrated in Figure 146.

Table 135: Structures and concepts developed.

Structure Name	Description	Geometric Characteristics
TSF1	Dry Stack to serve the first 5 years	Slope: 1V:2.5H; Width: 7.5 m; Height: 10.0 m
TSF2	Dry Stack to serve the rest of the LOM	Slope: 1V:2.5H; Width: 7.5 m; Height: 10.0 m
WRSF1	Waste Rock to cover the first 5 years	Internal Pile Slope: 1V:2.5H; Width: 7.5 m; Height: 10.0 m External Pile Slope: 1V:1.5H; Width: 10.0 m; Height: 20.0 m
WRSF2	Waste Rock to meet the remainder of the LOM	Slope: 1V:2.5H; Width: 7.5 m; Height: 10.0 m
Stock Oxi	Low Grade Stockpiles	Slope: 1V:1.5H; Width: 10.0 m; Height: 20.0 m
Stock Sulf	Low Grade Stockpiles	Slope: 1V:1.5H; Width: 10.0 m; Height: 20.0 m

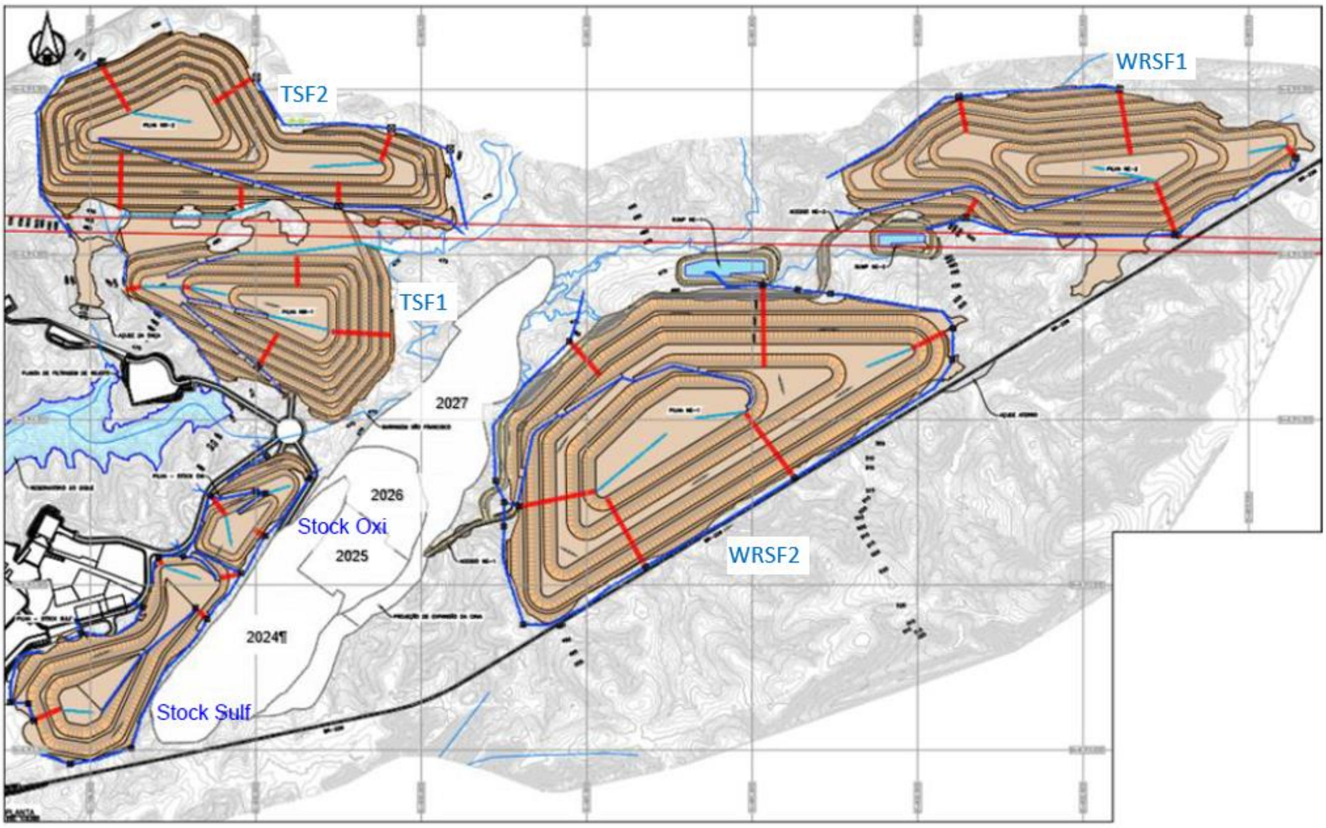


Figure 146: General Layout

Stability analyzes were carried out using Slide2 software, from Rocscience, using the limit equilibrium method. The assumptions considered in the stability analisys are described below.

• Isotropic and homogeneous materials;

• Assessment of safety factors using the GLE/Morgenstern-Price method;

• Assessment of safety factors for circular and non-circular surfaces;

• Drained resistance of materials characterized by the Mohr-Coulomb rupture criteria, with the effective resistance envelope parameters c’ and φ’.

• Seismic acceleration coefficients: kv: 0.08 g and kh 0.053 g (item 9.4.2);

• Minimum permissible safety factors as per Table 136;

• For the partially saturated stability condition, using RU (0.29), FS > ANALYSIS SECTIONS was adopted as the criteria.

Table 136: Summary of analysis results

Request	Type of Analysis	Admissible Safety Factor	Pile																			
			NE-1				NE-2				NW-1				NW-2				Stock Oxi		Stock Sulf	
			Section 1		Section 2		Section 1		Section 2		Section 1		Section 2		Section 1		Section 2		Section 1		Section 1	
			Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left
SFN	Drained globally	1.5	2.32	2.18	2.14	2.5	1.93	1.92	1.92	1.93	2.15	2.12	2.12	-	2.09	2.13	2.12	2.17	2.85	2.85	2.17	2.11
	Drained between berms	1.5	2.25	2.15	2.32	2.26	1.81	1.81	1.81	1.81	2	2	2	-	2	2	2	2	2.42	2.42	2.09	1.96
	Not Drained (Peak)	1.3	-	-	-	-	1.33	1.33	1.31	1.32	1.45	1.45	1.45	-	1.45	1.46	1.46	1.46	-	-	-	-
	Seismic	1.1	1.61	1.58	1.53	1.8	1.18	1.18	1.18	1.17	1.33	1.32	1.31	-	1.31	1.32	1.33	1.35	2	1.89	1.47	1.45
SFC	Drained globally	1.3	2.01	2.02	2.3	1.93	1.81	1.81	1.81	1.81	2	2	2	-	2	2	2.01	1	2.41	2.42	1.79	1.8

18.8 WATER SYSTEMS

18.8.1 RAW WATER SUPPLY SYSTEM

The primary water source for the Borborema Project will be the raw sewage pumped from a nearby town Currais Novos (EEE Caça e Pesca) to Borborema site. The raw sewage will be received via a 27 km pipeline, treated at Borborema sewage treatment station, and directed to the raw water pond and raw water tank from which it will be distributed to the required points in the plant, for example, gland water, reagent preparation, dust suppression, fire water, and make-up water for the process water system. The raw water pond will serve as a water reserve for the mine site in the event of water shortage for the water pumping system.

The design also considers an alternative source of raw water from a nearby rainwater reservoir named dam of fines (fines dike, Dique de Finos, which will be used as much as possible to reduce the requirement of pumping sewage from EEE Caça e Pesca.

18.8.2 POTABLE WATER SUPPLY

The potable water quality requirements for the potable water treatment plant match the local drinking water guidelines. The potable water will be sourced by the local water treatment company (Companhia de Água e Esgotos do Rio Grande do Norte – CAERN) via truck from Macaiba, approximately 130 km from the Borborema site. This water will feed all safety showers and administrative buildings.

18.8.3 FIRE SUPPRESSION SYSTEM

The fire suppression systems planned for the process plant site will be supplied from the raw water storage tanks which have a volume dedicated to fire suppression water. The fire water system will consist of electric water pumps that will be supported by the jockey fire water pump to maintain pressure in the fire water main. In the event of a power outage, a diesel fire water pump will start to ensure continued fire water availability. All facilities will have a fire suppression system in accordance with the structure's function. Fire water will be distributed throughout the plant via dedicated pipework to supply hydrants and hose reels strategically located throughout the site. All buildings will have hose cabinets and handheld fire extinguishers. Electrical and control rooms will be equipped with dry-chemical fire extinguishers. Ancillary buildings will be provided with automatic sprinkler systems. For the reagents areas, appropriate fire suppression systems will be included according to the reagent material safety datasheets.

18.8.4 SEWAGE COLLECTION

The office and domestic waste collected at the site will be treated in the local sewage treatment station, which is dedicated to the raw water production from Currais Novos sewage. The collection network will be underground. Depending on the type of chemical waste from the laboratory, it will be either recycled to the plant or stored for off-site disposal.

19 MARKET STUDIES AND CONTRACTS

19.1 MARKETS

The principal commodity at Borborema is gold, which is freely traded at widely known prices, thus, prospects for sale of any production are virtually assured. The terms contained within any future sales contracts are expected to be typical and consistent with standard industry practice and similar to contracts for the supply of doré elsewhere in the world.

A gold price of US$1,500 /oz was used for the Mineral Reserve Estimates. This gold price is lower than the long-term gold price of the June 2023 market Consensus Report of $1,697/oz gold and is higher than Aura's selected price by 13%.

Gold prices in the model use Aura's internal price outlook, which is determined based on consensus market price forecasts. It should be noted that metal prices can be volatile and that there is the potential for deviation from the LOM forecasts.

19.2 CONTRACTS

There are no material contracts or agreements in place as of the effective date of this Technical Report. Refining contracts are typically put in place with well-organized international refineries and sales are made based on spot gold prices.

20 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT

20.1 INTRODUCTION

This section presents the studies and impact assessment conducted to support both the environmental licensing and to produce a baseline to support the environmental and social issues of the Borborema Project, which is in the initial installation phase of the IDEMA guidelines, State of Rio Grande do Norte Institute for Sustainable Development and Environment and the requirements of Installation License No. 2022-188699/TEC/LI-0181.

20.2 GENERAL OVERVIEW

The Project is located in the city of Currais Novos, in the interior of the Rio Grande do Norte state. The Borborema Project is located in a semi-arid region with an average annual rainfall of 695 mm and an annual evaporation rate of around 2,600 mm, resulting in a high seasonal water deficit. The project is located about 172 km from Natal via Brazilian Federal Road BR-226, 30 km from Currais Novos, and about 1-4 km from the local communities of São Luiz, São Rafael, São Sebastião, and Maxixe.

The Project area is not located within Conservation Units or Indigenous Lands. There is a Quilombola Community called Negros do Riacho situated 25 km from the site, and do not be affected by the direct influence of the Project.

The São Francisco Farm and the Pedra Branca property were acquired due to their large areas that will house all the structures of the 2 Mtpy Project. The Jesus Maria farm was used as a legal reserve for the São Francisco farm and will be the reforestation source for the deforested areas of the Borborema Project, as required in the Vegetation Clearing Authorization.

The Environmental Impact Study ("EIA") and Environmental Impact Report ("RIMA") were prepared in 2011, in which the main impacts of the Borborema Project were identified and evaluated, and mitigation measures, plans, and environmental programs were proposed. The Project's areas of influence were defined, and field studies were carried out on the terrestrial and aquatic fauna, flora, water resources, historical and archaeological heritage, socioeconomic diagnosis of the region, and traditional populations.

The presentation of the Project and the environmental impact study was held at a Public Hearing in the city of Currais Novos on 05/12/2013 and was well received by the local population. After the public hearing and analysis of the study by the responsible authority, IDEMA (Institute for Sustainable and Environmental Development of Rio Grande do Norte), the Preliminary License, LP No. 2011-047788/TEC/LP-0136, was issued in April 2017. On April 15, 2019, Installation License No. 2018-129191/TEC/0083 was issued for the implementation of the Borborema Project facilities in an area of 490 ha and is valid for four years.

Currently, the Borborema Project has Installation License, LI nº 2022-188699/TEC/LI-0181, that authorizes the construction of the Project and other accessory Licenses/Authorizations that are detailed in item 20.4.2 – Status of the Environmental Licensing of the present document. The Borborema Project headquarters are located at latitude 6°12' S and longitude 36°17' W, at São Francisco farm.

20.3 ENVIRONEMENTAL PERMITTING

20.3.1 BRAZILIAN REGULATORY SCENARIO

Mining activities require preliminary Environmental Permitting, regardless of the necessary procedures with ANM (National Mining Agency), as defined by Brazilian Federal Law No. 6,938/81 (BRAZIL, 1981), which established the National Environmental Policy.

Annex I of CONAMA Resolution (National Environmental Council) No. 237/97 (CONAMA, 1997) lists the activities and undertakings that use environmental resources, effectively or potentially polluting, that are subject to Environmental Permitting. The Federal Law No. 6,938 / 81 and CONAMA Resolution No. 237/97 define three (3) types of environmental license, namely:

- Preliminary License (Licença Prévia-LP) - Issued in the preliminary stage of the project planning. It validates the location and design, attesting to the environmental feasibility and establishing the basic requirements and conditions to be met in the next phases of its implementation.
- Installation License (Licença de Instalação – LI) - Authorizes the installation of the enterprise in accordance with the specifications of the approved plans, programs, and projects, including environmental control measures and other conditions.
- Operation License (Licença de Operação – LO) - Authorizes the operation of the enterprise, after verifying the effective fulfillment of previous licenses, environmental control measures, and conditions determined for the operation.

The Brazilian Federal Law No. 6,938/81 also assigned to the States the power to license activities located within their regional limits. If the undertaking develops activities in more than one state, or if the environmental impacts exceed the territorial limits, IBAMA (Brazilian Institute for the Environment and Renewable Natural Resources) is the body responsible for granting permits.

In the case of the Borborema Project, which is located entirely in the state of Rio Grande do Norte and does not exceed state boundaries, the authority responsible for environmental licensing, issuing licenses and inspection is the Institute for Sustainable Development and the Environment of Rio Grande do Norte – IDEMA, that acts based on the State Complementary Law no. 272/2004 and its subsequent amendments such as Complementary Law no. 723/2022.

In addition to the main Licenses highlighted above, other accessory permits or authorizations are required to complete the licensing process, such as: Vegetation Clearing Permit, Special Wildlife Permit, and Special Permit for Construction Site, Water Resources Use Grant, Archaeological Heritage Permit, amongst others.

As requested by IDEMA, other government agencies participate in licensing by issuing accessory licenses or as interveners, issuing technical opinions to support licensing, such as:

- IGARN (Institute of Water Management of Rio Grande do Norte) - Responsible for issuing permits for the use of state waters.
- ANA (National Water Agency) - Responsible for issuing permits for the use of federal waters.
- IPHAN (National Historical and Artistic Heritage Institute) - Responsible for issuing permits for field studies, rescue of archaeological heritage and Technical Opinions that are added to the environmental licensing process.
- FUNAI (National Indian Foundation) - Responsible for issuing permits for anthropological studies in case the project is in Indigenous lands or in their Area of Influence.
- INCRA (National Institute of Colonization and Agrarian Reform) - Responsible for issuing permits for anthropological studies if the project is located on land belonging to traditional communities or in the Area of Influence.
- DNIT (National Department of Infrastructure and Transport) – Responsible for issuing Technical Opinions regarding interference on federal highways, amongst others.

20.3.2 ENVIRONMENTAL LICENSING STATUS

Before Installation License No. 2018-129191/TEC/0083 expired on 04/15/2023, a new Installation License was required from IDEMA, issued on 03/02/2023 with a validity of five years.

The new Installation License, LI nº 2022-188699/TEC/LI-0181, authorizes the construction of the Borborema Project in an area of 490 ha, linked to mining rights 805.049/1977, 840.149/1980 and 840.152/1980 of the National Mining Agency (ANM), and other accessory Licenses/ Authorizations that are presented in Table 137.

Table 137: Borborema Project Licenses and Permits Held by Aura.

LICENSES	DESCRIPTION	ISSUED DATE	VALID TO DATE	STATUS
LI nº 2022-188699/TEC/LI-0181	Installation License (LI) for extraction and processing of gold in a total area of 490 ha.	03/02/2023	03/02/2028	Valid License.
LP nº 2020-148887/TEC/LP-0016	Preliminary License for a Liquid Effluent Treatment Station with a treatment capacity of up to 1,680 m^3/day (ETE).	07/14/2021	07/14/2023	Application for Installation License (LI) done on 06/04/23. LI issuance is expected for 90-120 days.

LP nº 2020-149012/TEC/LP-0017	Preliminary License for wastewater pipeline with extension of about 27 km a long of BR-226 highway.	01/26/2022	01/26/2024	Valid License.
RLO nº 2020-149610/TEC/RLO-0243	Operating license - LO for the extraction and processing of gold in an area of 8.00 ha (former leach piles) and a volume of 1,200 m³/month.	07/06/2020	07/06/2026	Valid License - It will be added to the LO of the Borborema Project.
LP nº2021-165404/TEC/LP-0130	Preliminary License for a Power Distribution Line of 69 kV and 35 km.	09/13/2021	09/13/2023	Application for Installation License (LI) done. Prepare and submit all requirements made by IDEMA around October/2023. LI issuance is expected within 90-120 days after IDEMA´s review
LP nº 2023-197884/TEC/LP-0079	Preliminary License - LP for the Electric Power Substation (69 kV/13.8 kV), Power 37 MW, which will connect the 69 kV Power Distribution Line (SE).			Application for Preliminary License on June/26/2023. It is expected to be issued within 90-120 days.
RLS nº 2021-174272/TEC/RLS-0459	Simplified License for access to the Aura Borborema Project with an extension of 653.87 meters.	10/07/2022	10/07/2028	Valid License
ACMB nº 2022-188611/TEC/ACMB-0228	Special Permit for capturing, collecting and transporting biological material from fauna (ACMB)	02/13/2023	02/13/2024	Valid License
ASVeg 2024.5.2023.01620	Vegetation Clearing Permit for 175 ha	02/27/2023	02/27/2024	Valid License
	Special Permit for capturing, collecting and transporting biological material from fauna (ACMB)			Application for the ACMB on 05/15/2023. It expected to be issued in about of 45 days
ASVeg 2024.5.2023.14096	Vegetation Clearing Permit for 162 ha	07/12/2023	07/12/2024	Valid License
	Special Permit for Construction Site.			Application in June 2023. Authorization is expected to be issued within 45 to 90 days.
ORH nº 20388110	Grant to capture 183,15 m³/day of water from the existing Open Pit for earthmoving, civil works and wetting roads.	05/28/2023	05/28/2024	Valid License.
ORH nº 20372268	Grant to capture 183,15 m³/day of water from the São Francisco Dam for earthmoving, civil works and wetting roads	05/28/2023	05/28/2024	Valid License
	*Environmental License (LP, LI and LO)** for Definitive Fuel Station.			Application in February 2024. All licenses are expected to be issued around November 2024.
	Operating License (LO) for 2 Mtpy.			Application in October 2024. LO is expected to be issued within 90-120 days.

** Durante a Obra será usado um tanque de óleo diesel de 15m3 que é dispensado de licenciamento ambiental pelo IDEMA*

** LP, LI and LO - Preliminary License, Installation License and Operating License

The application for an Operation License with IDEMA will be made around October 2024 and, by the instructions of the said environmental agency, all changes and expansions carried out in the executive project and implemented during construction must be informed shortly after the issuance of the Operation License (LO) and an Operation Alteration License-LAO must be required for the changes to be added later to the Operation License. Complementary studies can be requested by IDEMA for the issuance of the LAO. However, they should not interfere with the start-up of operations. It is estimated that, after applying, the Operating License will be issued in about 90 to 100 days.

20.4 ENVIRONMENTAL AND SOCIAL STUDIES

Comprehensive environmental studies were conducted to support the EIA/RIMA and create a baseline in the Project area. The main themes and issues studied in the environmental impact study are presented in this section.

20.4.1 CLIMATE

The climate in the Borborema Project region is characterized as semi-arid with little or no excess water, with hot summers extending from October to March and warm and generally dry winters. The average annual precipitation is 695 mm, with a predominantly rainy season from January to April, but generally irregular.

Evapotranspiration rates within the project area are higher, reaching more than 2,000 mm/year, which causes a significant water deficit and is the main factor to be considered in the operation of the Borborema Project.

The average annual temperature is 27.5°C, with a minimum average of 18°C and a maximum average of 33°C. The variation between the warmest months (October to March) and the coldest month (July) is approximately 8°C. The predominant wind direction is from the southeast with an average speed of 1.4 m/s.

20.4.2 WATER RESOURCES

20.4.2.1 Regional Context

According to the EIA/RIMA, the area of the Borborema Project is in the Piranhas-Açu River basin, which covers a territory of 42,900 km^2 distributed between the states of Paraíba and Rio Grande do Norte, where approximately 1,552,000 people live. The basin is fully inserted in the semi-arid territory, with average annual rainfall between 400 and 800 mm concentrated between February and May. This condition, combined with the occurrence of shallow soils formed on crystalline bedrock, with low storage capacity, is responsible for the intermittent character of rivers in the region. In addition, the precipitation pattern tends to show high variability between years, with alternating regular rainfall and severe water scarcity, leading to water droughts in the Project region.

The Piranhas-Açu River rises in the Serra de Piancó, situated in Paraíba state, and flows out near Macau city, in Rio Grande do Norte state. Under natural conditions, it is an intermittent river. However, its continuity is ensured by two regularization reservoirs built by DNOCS, the Coremas-Mãe d´Água, in Paraíba (capacity of 1.36 billion m^3 and regulated flow of 9.5 m^3/ s, Q95%) and the Armando Ribeiro Gonçalves Dam (ARG), in Rio Grande do Norte (capacity of 2.4 billion m^3 and regulated flow of 17.8 m^3/s, Q 90%). Along the water system formed by the river channel and its regularization reservoirs, referred as the Coremas-Açu System, various water has developed, such as diffuse irrigation, irrigation in public perimeters, human supply, animal watering, leisure, energy production, and aquaculture.

The geological formation of most of the basin is crystalline rock, which is characterized by impermeable rocks with low water storage capacity, which is often of low quality. The sedimentary formations, with greater porosity and, therefore, greater water storage capacity, are present only in two points of the basin: a smaller one, in the sub-basin of the "do Peixe" river, close to Sousa

(Paraiba state) and another, part of the Jandaíra Formation, covering the Baixo-Açu. Another important source of groundwater are the alluvial aquifers, which in most cases provide good quality water for human and animal consumption, and irrigation.

Due to the intermittent nature of the rivers in this region, surface water is contained in dams, which is the Brazilian government's strategy to deal with the recurrent drought. In addition to the aforementioned “Coremas- Mãe d’água” and "Armando Ribeiro Gonçalves" reservoirs, there are 46 reservoirs considered strategic as they have a storage capacity of over 10 million m^3.

In the Project area, several dams were identified in the Project's area of influence, most of them located close to rural communities and two in the area directly affected by the Project, close to the former pit area, are the Onça Dam and the São Francisco Dam, as per photographs shown in Figure 147 and Figure 148.

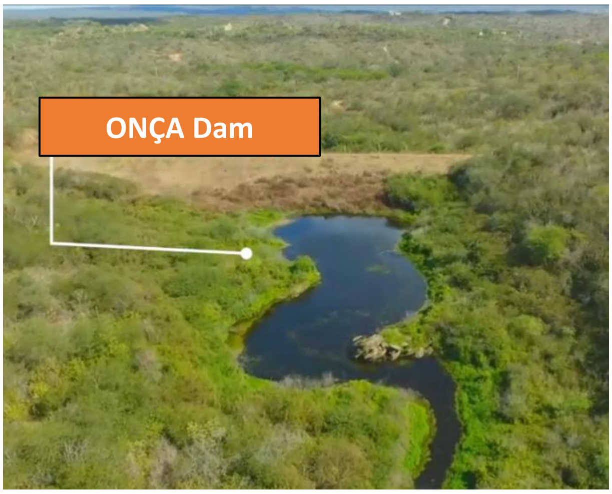


Figure 147: Onça Dam Photograph.

Figure 148: São Francisco Dam Photograph.

In addition to the above mentioned reservoirs the PROMON (2013) report includes other sources that can supply water for the Borborema Project for 2 Mtpy as described in Table 138.

Table 138: Description of Surface Water Sources.

Structure	Property	Distance to the Borborema Project (km)	Water Permits
Onça Dam	Aura Borborema	Located on the Aura property	State Water Use Permit/ Exclusive use of Aura
São Francisco Dam	Aura Borborema	Located on the Aura property	State Water Use Permit/ Exclusive use of Aura
Aterro Dam	Aura Borborema	Located on the Aura property	State Water Use Permit/ Exclusive use of Aura
Fines Dyke	Aura Borborema	Located on the Aura property	Requires Water Use Permit to be request to the State Water Body Agency (IGARN) – Exclusive use of Aura
ARG Dam	Federal Government	42 km[1]	Requires a Federal Permit (ANA) multiple users
Gargalheiras Dam	Federal Government	87 km[1]	Requires a Federal Permit (ANA) multiple users

[1]Distance to the Dam to the Borborema Project
[2]CAERN – Companhia de Água e Esgoto do Rio Grande do Norte – Water and Waste Water Company of Rio Grande do Norte

20.4.2.2 Water Demand

The studies carried out by Aura for the Borborema Project - 2 Mtpy identified the need for 75.6 m^3/h of raw water that will be used in specific processing demands, as well as to replace losses and/or create a reserve to guarantee the continuity of the operation.

The alternatives for capturing water from the Armando Ribeiro Gonçalves (ARG) and Gargalheiras dams were discarded both due to the distance and the difficulty in obtaining the Water Use Permit since they are designated primarily for public supply by the ANA (Brazilian Water Agency), leaving the collection options in the São Francisco and Onça dams and the planned future fines dike, a large sedimentation basin and reservoir water catchment providing water for the mainly to the plant operation, which do not meet the demands of the operation.

Thus, the solution chosen by the company was to develop a project focused on saving water, prioritizing the maximum recirculation of process water, and minimizing the collection of raw water. For this purpose, the possibility of using reuse water (sewage) from the city of Currais Novos, about 30 km away from the Project, was identified, to be complemented by the accumulation of rainwater in the fines dike, and Onça and São Francisco dams, all located within São Francisco farm, owned by Aura.

For the use of reuse water, a contract was signed between Aura and CAERN ("Companhia de Águas e Esgotos do Rio Grande do Norte") for the supply of up to 70 m^3/h of untreated reuse water. This water will be pumped from CAERN's Sewage Pumping Station (EEE) "Caça e Pesca" in Currais Novos, covering about 27 km, to the Sewage Treatment Station (ETE) at the Borborema Project, which is designed to treat 70 m^3/h of reuse water based on CONAMA Resolution 357/2005 – Class II.

The standard of Class II waters, according to Resolution CONAMA-357/2005, can be used for:

- Supply for human use, after conventional treatment.
- The protection of aquatic communities.
- Primary contact recreation, such as swimming, water skiing, and diving, by CONAMA Resolution No. 274 of 2000.
- Irrigation of vegetables, fruit plants, parks, gardens, sports, and leisure fields, with which the public may come into direct contact.
- Aquaculture and fishing activity.

The Reuse Water Pipeline and the Sewage Treatment Station - ETE of the Borborema Project are in the initial licensing phase with IDEMA and have received the Preliminary License, as described in Table 137.

Figure 149 shows the route of the reuse water pipeline from Currais Novos to the Borborema Project.

Figure 149: Route of the Wastewater Pipeline.

Potable water will be purchased and supplied by tank trucks coming from the municipalities of Parnamirim and Macaíba, both located within the metropolitan region of Natal city.

20.4.2.3 Water Balance

The project was designed for maximum process water recirculation and minimization of raw water (section 18.6.1). According to the PROMON (2023) report, a nominal flow of 1,282.1 m³/h of water will be required in the production process; the total recycled water will be 1,199.1 m³/h. The three solid-liquid separation operations will recycle the water to the beneficiation plant as follows: CIL tailings thickener (278.45 m³/h), DETOX thickener (533.05 m³/h), and waste filtrate (387.16 m³/h). Table 139 presents the water balance summary for the beneficiation plant.

Table 139: Summary of the Water Balance for the Process Plant.

Water Type	Water Process	Water Volume	Units
Total consumption of process water	Total flow of circulated water	1,282.1	m³/h
	Raw water Flow	83,0	m³/h
	Process Water Flow	1,199.1	m³/h
Total water recirculated in the process	Tailings thickener OL	278.45	m³/h
	Thickener DETOX	533.05	m³/h
	filtered from the Tailings	387.16	m³/h
Inlet and outlet of water in the process	Wacer intake by ETE	55.0	m³/h
	Water intake by fine dike	28.0	m³/h
	Final filter cake moisture	65.4	m³/h

In steady state operation, the plant will require 65.4 m³/h of raw water, operating at approximately 90% of capacity, corresponding on average to 21.6 hours per day. This flow corresponds to water contained in the cake generated by the filtering system. However, for the operational safety of the plant, raw water will be supplied from the treatment of reuse water at the Caça e Pesca Sewage Pumping Station in Currais Novos.

To find out the average flow that the Caça e Pesca Pumping Station could provide, systematic flow measurements were carried out between January-December 2021 and January-August 2022, which showed averages of 46 m³/h and 56 m³/h, respectively. Therefore, the water balance availability considered for treatment in the ETE of the Borborema Project is 55 m³/h, with a deficit of 28.0 m³/h that will be supplied by the accumulation of rainwater from the Dique de finos.

20.4.2.4 Water Management

As there is a significant water deficit in the region of the Borborema Project, since implementation, water management is focused on minimizing losses and which is fundamental for the operation. Based on this premise, the Borborema Project foresees that rainwater collected from waste rock and overburden co-disposal piles, pit, and accesses will be directed through drainage channels to the fines dike, which is used as a large sedimentation basin and reservoir providing water to the plant operations.

20.4.2.5 Surface Water Quality

During the field studies for the preparation of the EIA/RIMA, surface water samples were collected at 10 different locations in the Project's area of influence, including the Onça and São Francisco dams located within the Borborema Project area. The parameters analyzed are listed in Table 140, whose limits are described by the former Ordinance No. 518/2004 related to the control and surveillance of water quality for human consumption and potability standards.

Table 140: Surface Water Parameters.

Physical-Chemical and Microbiological Parameters	
Taste	Total Ammonia Nitrogen
Odor	Magnesium
Color	Chlorine
Turbidity	Biological Oxygen Demand
pH	Dissolved Oxygen
Electrical Conductivity	Mercury
Alkalinity	Thermotolerant Coliforms
Hardness	Total Coliforms

The analysis results indicated a low water quality for human consumption, with great potential for parasites, skin diseases, worms, etc. Only one sample of the 10 samples taken was below the maximum limit for total coliforms and thermotolerant. For the results relate to the Dissolved Oxygen parameter, only two samples were within the allowed limits, meaning unsatisfactory conditions for the development of aquatic life. According to the results of the physical-chemical analyses, the water samples were classified as brackish.

Water monitoring will follow the provisions of the Liquid Effluents and Surface Water Monitoring Plan presented and approved by IDEMA for obtaining the Installation License. Surface water collections will start in July 2023 and will be sent to a Certified Laboratory for analysis of the parameters established in the Water Monitoring Plan and concerning CONAMA Resolution 357/2005 (CONAMA, 2005), which provides for the classification of water, and the current Ordinance of the Ministry of Health nº 888/2021 (BRAZIL, 2021), which defines standards of potability of water for human use.

20.4.2.6 Hydrogeology

According to GE21 (2019) two distinct aquifer systems exist in the Borborema Project area, which are hydraulically connected. The first one is the upper porous free aquifer, characterized by alluvial deposits that exist on the edges of riverbeds and local drainage systems, as well as by the soil cover and alteration mantle of Neoproterozoic schist rocks, where water flow and storage occur underground. The second is the fissured or fractured aquifer that fills at discontinuities (fractures, faults, diaclases, joints, etc.) in the underlying crystalline rock.

The alluvial aquifer within the project area shows small dimensions and the storage capacity is conditioned to the rainfall regime. The schist rocks present in the area present a certain degree of alteration up to an average depth of 30 meters, where the presence of small fractures with millimeter thicknesses, sub-verticals with angles of 75° to 85° and preferred directions northeast and northwest can be observed. Such an aquifer controls small local drainages such as Bugi Creek, Pedra Branca Creek, and other tributaries.

The GE21 report (2019) also describes years with above-average rainfall, according to which the aquifer remains saturated for longer, supplying water as verified in the Amazon well PA – 02 in 2012, which is within the Project area. On the other hand, in years with below-average rainfall, as in 2019, the aquifer cannot maintain storage, as observed in the same PA – 02, in July 2019, and was completely dry. In a few cases water was limited to 1.50 m^3/h, especially those where the water assessment was carried out either assessed by the flume flow during drilling or reported by former employees.

Most of wells drilled in the crystalline region of northeastern Brazil reach maximum depths of around 50 to 60 metres, and according to regional studies below this depth, discontinuities in the rocks are not detected.

In addition to the points examined by GE21 (2019), another study, Hydrogeological Assessment for Mining Activities, Currais Novos (RN), Brazil, carried out in 2022 by FMD Geologia Aplicada (FMD, 2022), identified two types of risks associated with protected waters in the Borborema Project: quantity and quality. The results of this study demonstrate that the recharge of the local aquifer can supply the water demand of the Project. However, the location of producing wells is complex and fissure aquifers behave very heterogeneously. The study suggests that a detailed analysis should be performed to mitigate risks related to water quantity and quality.

Regarding the design studies for dewatering the pit and based on the hydrogeological characteristics of the area where the Borborema Project is located, the GE21 (2019) report states that neither water percolated from the surroundings into the pit, nor from effluent flows to adjacent areas is foreseen.

Starting in June 2023, an additional hydrogeological survey will focus on the entire project area to assess the potential use of groundwater and the possible impacts that may arise from the deepening of the pit.

20.4.3 CYANIDE MANAGEMENT

The Borborema Project will require approximately 66.5 t/month of sodium cyanide, which will be transported by road from the state of Bahia. Cyanide use and control will be in strict compliance with all national and international regulations, notably FEEMA, CONAMA, and the International Cyanide Management Code. This Code is a voluntary program to help producers and shippers improve cyanide management practices and publicly demonstrate compliance with the Code and corporate transparency.

Sodium cyanide briquettes will be stored in secure, dark, dry, well-ventilated areas in their original shipping containers in crates on impermeable floors in a fully confined environment. Empty containers will be cleaned, and the rinse water will be recycled to the plant’s process water.

Industrial hygienists and company safety officers will conduct special training programs for all employees who handle or work with cyanide following the Cyanide Code and material data safety sheets. Procedures and safety plans will be developed that will govern how cyanide is used on-site.

The tailings from the beneficiation process will undergo a cyanide abatement process called DETOX. This process reduces the weak acid dissociable cyanide (WAD) level to less than 1.0 mg/l, free cyanide to less than 0.6 mg/l, and total cyanide to less than 1.75 mgl/l.

Cyanide management following international cyanide management standards (ICMC), good environmental and occupational health and safety practices, as well as the implementation of the DETOX process, will jointly prevent environmental accidents that may affect water bodies, terrestrial fauna, and aquatic life and the health of workers.

20.4.4 ACID ROCK DRAINAGE (ARD)

As of 2012, the Geochemical Characterization Program for the Borborema Project started with the assessment of the acid mine drainage potential through the hiring of Global Resource Engineering (GRE, 2013) who report the geochemical tests results.

The geochemical tests for predicting and confirming acid mine drainage are static and kinetic. Static tests assess the acid drainage potential through the balance between acid consumption and acid production from the mineral components of certain samples. Kinetic tests, performed on columns and moisture cells, provide estimates of acidity generation concentrations or reaction rates. These estimates indicate the severity and duration of acid mine drainage and metal leaching.

A total of 33 waste rock samples were collected and sent for static tests (Acid-Base Accounting – Modified-Sobek Method, SOBEK, 1978), whole rock and metal analysis, and SLPC (Synthetic Precipitation Leaching Procedure) testing. The results indicated that 91% of the samples (30) had a low potential for acid drainage. Among all 33 samples, 24 were tested to assess the respective kinetics for 45 weeks. The results indicated that 22 samples had low generating potential and 2 samples with possible acid generation (low pH and high sulphate concentration). The results did not indicate metal leaching; however, it was detected that arsenic (As) mobilizes in low concentrations during the kinetic tests.

In 2013, a 20L sample of tailings was sent to the SGS CEMI Laboratory in Burnaby, British Colombia, Canada, for static tests (acid base accounting – ABA), analysis of whole rock and metals, SPLP (synthetic precipitation leaching procedure), as well as supernatant solution testing. The results indicated low potential for generation of acid drainage and no significant risk of metal leaching. The only point of concern is the high concentration of sulphates and total dissolved solids in the supernatant solution. No easily soluble metals were detected in the waste rock sample.

In general, it can be concluded that the results of the tests carried out so far do not suggest the generation of acid or alkaline drainage associated with waste materials and waste rock from the Borborema Project. Leaching of metals is not a significant concern.

Despite the good results, Aura contracted the company GEONVIRON, from Belo Horizonte, Brazil, to continue the geochemical studies and deepen the investigation of the potential for generation of acid mine drainage (DAM) and leaching of metals from overburden and tailings of the Borborema Project over 12 months.

Static and kinetic tests of tailings samples are already underway at the SGS/GEOSOL Laboratory in Belo Horizonte, Brazil, and new overburden and ores samples will be collected in July 2023 at the Borborema Project site. The objective is to increase the number of samples, improving the representativeness of the data obtained, in addition to improving the understanding of the water quality influenced by the mine structures, regardless of the existence or not of an acidity generation process. At this stage, samples of tailings and overburden will also be tested to evaluate the impact of the co-disposition of both materials.

20.4.5 FLORA

According to the EIA/RIMA, the Borborema project is within the Ecoregions of Depressão Sertaneja and Planalto da Borborema, located in the state of Rio Grande do Norte, dominated by the Caatinga (white forest) Biome.

The Caatinga, according to the Brazilian Institute of Forests, covers 11% of the Brazilian national territory, resulting in an area of 844,453 km². It has a semi-arid climate and has vegetation with few leaves and adapted to dry periods, in addition to great biodiversity. The Caatinga includes the entire state of Ceará and partially the states of Alagoas, Bahia, Maranhão, Minas Gerais, Paraíba, Pernambuco, Piauí, Rio Grande do Norte, and Sergipe.

The main characteristics of the Caatinga vegetation are shallow and stony soil, low trees, crooked trunks that have thorns, and leaves that fall during the dry season (except for some species, such as the Juazeiro). It is a plant formation with very simple flowering, where the jurema (Mimosa malacocentra), Aspidosperma pyrifolium, the jurema (Mimosa tenuiflora), the catingueira (Poincianella pyramidalis), the facheiro (Pilosocereus gounellei) and the mandacaru (Cereus jamacaru) are predominant species.

The directly affected area, where the Borborema Project is located, is dominated by Caatinga, but species of riparian forest such as oiticicas (Licania rigida) and 291uazeiro (Ziziphus joazeiro) are found within the Directly Affected Area (“ADA”).

In the assessed area, there is an abundance of taxa such as Prosopis juliflora (algaroba) and Euphorbia turicalli (aveloz). The algaroba is an invasive species from the northeast region that has adapted very well to the semi-arid climatic conditions of the region. Aveloz is of African origin, found throughout the north and northeast of Brazil, and has pharmacological potential.

The species Myracrodruon urundeuva and Amburana cearensis are on the endangered species list (MMA, 2008 and IUCN, 2010), and only adult specimens were found in the project area.

Other important species found in the study area as mature plants were Croton blanchetianus, Poincianella Pyramidallis, Pilosocereus Piauhiensis, and Mimosa Tenuiflora.

Figure 150 shows the vegetation cover in the directly affected area (Borborema Project area) as well as in the Project’s area of influence.

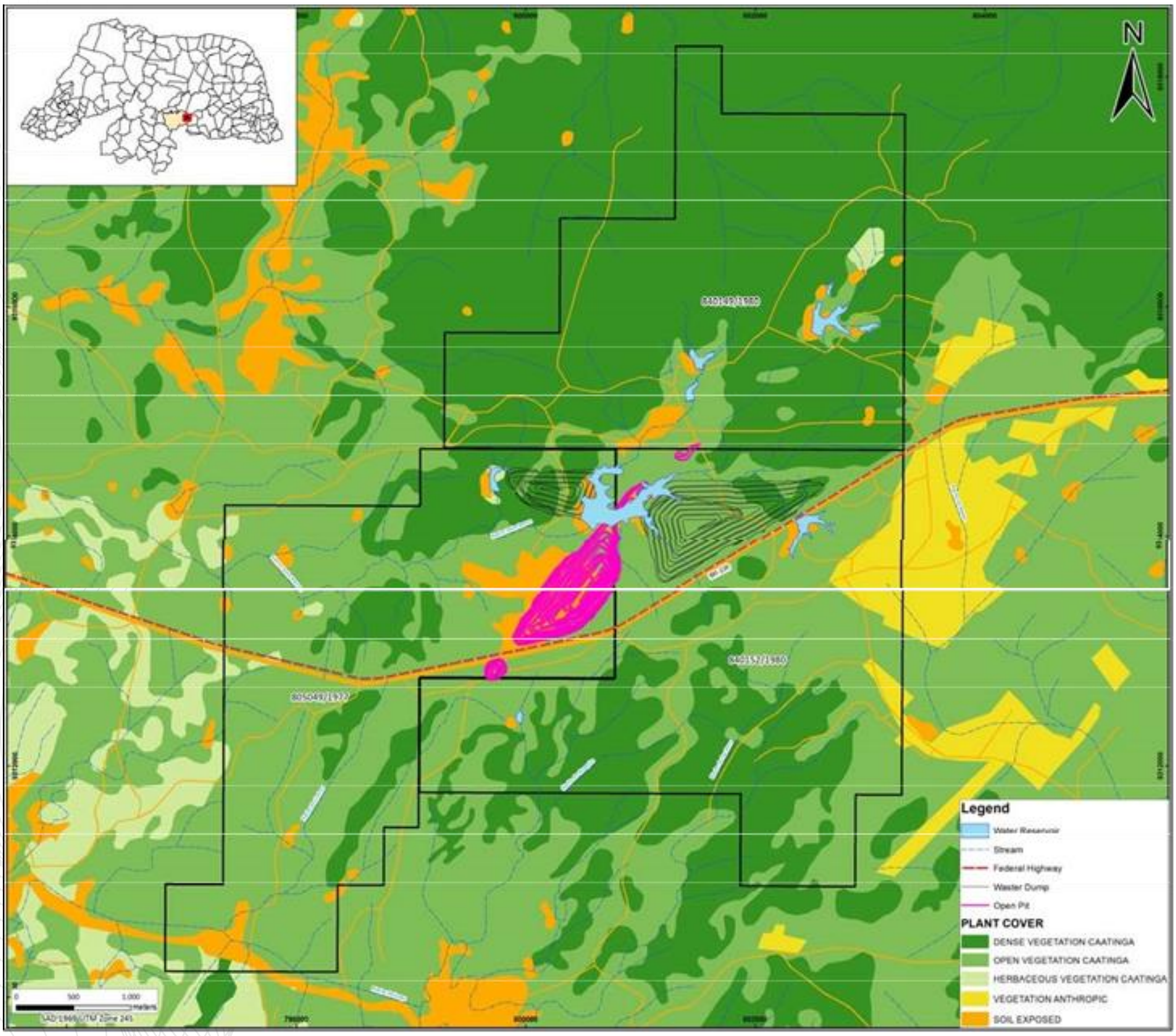


Figure 150: Vegetation Cover at the Borborema Project Site.

20.4.6 FAUNA

20.4.6.1 Terrestrial Fauna

According to the EIA/RIMA, most of the species observed in the Borborema Project area and areas of influence are reptiles and birds. Figure 151 shows the fauna field survey points.

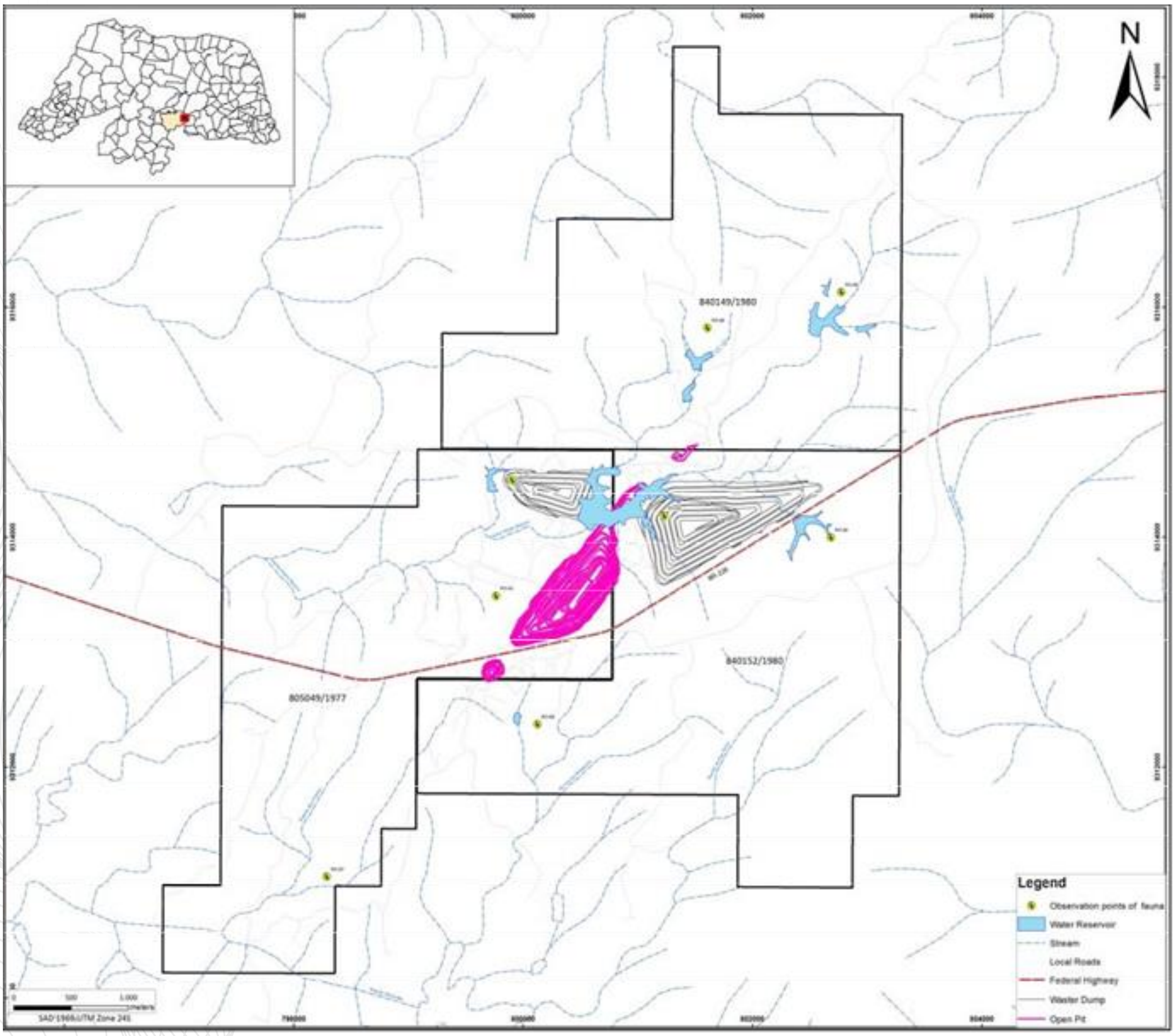


Figure 151: Points of Field Survey of Terrestrial Fauna.

In the EIA/RIMA it is highlighted that among the species observed in the field, two of them are endemic to the Caatinga biome, namely: Phyllopezus periosus (Rodrigues, 1986) (Phyllodactylidae) and Tropidurus semitaeniatus (Spix, 1825) (Tropiduridae).

Some species of reptiles such as iguanas and teiids are of interest to local communities, some of whom consider these reptiles as food. The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) lists the following Brazilian species observed in the field: Boa constrictor Linnaeus, 1758; iguana Iguana Linnaeus, 1758; and Tupinambis merriani (Duméril & Bibron, 1839). CITES comments that while these animals are not yet endangered, they could become so if not monitored.

The avifauna is diversified mainly near the watercourses. CITES lists the following bird species observed in the field: Heliomaster squamosus (Shaw, 1812); Caracara plancus (Miller, 1777); Aratinga cactorum (Kuhl, 1820); Athene cunicularia (Molina, 1782); Glaucidium brasilianum (Gmelin, 1788); and Tyto Alba (Scopoli, 1769). All these species are not currently endangered.

Mammals observed in the Project area consist of very small indigenous animals as well as introduced species such as goats, cattle and donkeys from some farms within the study area. Only one species of the mammalian fauna observed in the field is included in the Brazilian CITES list; this is the crabeater fox, Cerdocyon thous (Linnaeus, 1766), but it is not threatened with extinction.

20.4.6.2 Aquatic Flora and Fauna

Ten collection points were selected based on maps and images of the EIA/RIMA study area, prioritizing the most abundant watercourses both in the Project area (ADA) and in the Indirect Influence Area ("AID")of the enterprise. At each of these ten points, the following indicators were sampled and analyzed: cyanobacteria, phytoplankton, zooplankton, phytobenthos, zoobenthos, and aquatic macrophytes; in addition, chemical analyses and microbiological analyzes were completed on sediments. The collection points were also used as water sampling points for physical-chemical and bacteriological analyses.

The results of the analysis of the aquatic flora and fauna suggest that the aquatic environments in the EIA/RIMA study area are already under stressful environmental conditions that can be explained by the anthropic influence and the fact that some of the dams and other water bodies are under water stress due to the drought that is common in the region studied.

20.4.7 SOCIAL AND COMMUNITY

20.4.7.1 History

Historically, the Seridó region is marked by livestock activity that dates back to the 17th century. At the beginning of the 20th century, mineral resources were found in the region and the process of exploring these minerals began, mainly beryl, columbite, tantalite, crystalline rocks, and mica related to pegmatite deposits. In the 1940s, scheelite, a tungsten ore, was found and started to contribute significantly to the local economy of Currais Novos.

During the 1970s, mining activity reached its peak and employed thousands of people, mainly in the municipality of Currais Novos, with emphasis on the mines of Brejui, Barra Verde, and Boca de Laje. At that time, the region was the main source of scheelite in South America. In the 1980s, scheelite mining was negatively impacted by the increase in production costs and the reduction in the international price of tungsten.

Gold in Borborema was discovered in the 1920s by Brazilian prospectors (known locally as garimpeiros) and was successfully exploited until the 1970s when the Itaperibá Company incorporated the rights to the ore. Subsequently, the project area was owned by several companies, including Xapetuba which recovered approximately 3 tonnes of gold using Brazil's second heap leach processing operation. Other companies included Metasa Metais Seridó, Mineração Santa Elina, MGP, and currently Aura.

The fact that Currais Novos has its recent history linked to mining activity makes the population favorable towards the implementation of the Borborema Project, which is directly linked to the development of the municipality and region.

20.4.7.2 Towns and Villages

The Borborema Project is located in the rural area of the municipality of Currais Novos, approximately 172 km from the state capital, Natal; about 30 km east of Currais Novos and 12 km west of Campo Redondo.

The closest neighboring communities to the Project area are São Luiz, São Rafael, Maxixe, Pedra Branca, Santo André, and São Sebastião, which are approximately 1 to 4 km from the boundaries of the São Francisco and Sítio Pedra Branca farms. Other communities relevant to the Project are the District of Cruz and Liberdade, located about 11 and 21 km from the Project respectively.

These communities have in common an economy based on family farming and precariously raising livestock due to the scarcity of water, lack of sewage treatment and water supply, public transport, culture, education, and few job opportunities.

Among the communities located in the Project region, the most prominent is the District of Cruz. According to local representatives, the community has around 500 families and plays an important role in the region, as it functions as a regional service center with educational and health support facilities. The village has been considered locally as the most developed one with the best structure in the region.

The communities closest to the Borborema Project are smaller in terms of population: São Luiz – 15 families; São Rafael – 10 families; Pedra Branca – 2 families; Santo André – 50 families; São Sebastião – 56 families; Maxixe – 20 families.

In the field survey carried out by the consulting firm INTEGRATIO in October 2019, a high expectation was found in these communities for the Borborema Project on topics such as job and income generation, hiring local labour, and water supply.

20.4.7.3 Traditional Communities

Quilombolas are the descendants and remnants of communities formed by fugitive enslaved people, who formed the “Quilombos” between the 16th century and 1888 (when slavery was abolished in Brazil) and, according to Brazilian legislation, are now considered traditional and protected.

There is a Quilombola community called “Negros do Riacho” which is located approximately 25 km away from the Project area. According to the situational assessment carried out in 2019 by the consulting firm INTEGRATIO, the community is extremely poor and consists of 90 families and about 350 inhabitants, mostly children, due to the high birth rate.

This community lost part of its culture after the death of its leader who encouraged handicrafts among the population, producing ceramic vases for local sale. Craft production has ceased and the community subsists on small agricultural activities, financial aid from the federal government (“Bolsa Familia” system), and charity. As a result, the incidence of alcoholism among men in the community has increased.

Due to the distance of the community from the Borborema Project, and because it is located beyond the 8 km radius of the ADA(Directly Affected Area) established by Interministerial Ordinance No. 60 of 2015, there is no legal obligation for specific studies and plans with this community. However, as it is located in the AII-Area of Indirect Influence, according to the EIA/RIMA, Aura can involve the community in its local and cultural development projects, contributing to the improvement of the well-being and cultural maintenance of this group.

20.4.7.4 Stakeholders

Between September and October 2019, an extensive data survey was carried out, which aimed to map and analyze the stakeholders in the Project area. This work indicated that stakeholders have a superficial knowledge and many concerns about how the enterprise will be developed in the territory; but, at the same time, given the scenario of shortages in the municipality, there is also a positive expectation and acceptance in relation to the company’s performance, based mainly on the perception that the Project will bring benefits to the region. This mapping exercise included mainly local community leaders and representatives of the municipal government (executive and legislative).

In order to update/validate the conclusions of the 2019 assessment, a new data survey was undertaken with strategic stakeholders in the territory between April 18 and 23, 2022, which also included local community leaders and government representatives municipal (executive and legislative). The results of the work corroborated the conclusions shown in the 2019 mapping, reinforcing them, both from the point of view of the low level of knowledge of the stakeholders about the Project, as well as the positive expectation in relation to it. This study also reassured the population of Currais Novos in the belief that the Borborema Project development will happen, which was being doubted due to the long period of project development and licensing process, and the non-completion installation of the enterprise since this possibility started to be discussed in the municipality.

With the acquisition of the Borborema Project by Aura, the initial perception of the population and local leaders was that another company was arriving and the level of disbelief in the Project development increased. However, with Aura approaching the main stakeholders (state, municipal and legislative governments, and local leaders) and scheduling the Project's Fundamental Stone for May 31, 2023, this perception of disbelief was reverted into belief in the implementation of the Project.

The continuous updating of communication and relationship processes is based on the parameters of monitoring, informing, relating, and engaging the community in Aura's dynamics. Therefore, a new survey of the socioeconomic situation of Currais Novos, neighboring municipalities, and local communities is planned for July 2023, with mapping of stakeholders and updating of the Social Communication Plan to define the new initiatives that will be implemented in 2023.

20.4.7.5 Population and Demographic Aspects of Currais Novos

According to data from the IBGE (Brazilian Institute of Geography and Statistics), the population of Currais Novos in 2010 was 42,652 inhabitants, with an estimated population for 2021 of 45,022, which represents a population growth of 5.5% per year over the last decade, while in Brazil the growth was 11.8%.

The urbanization rate of Currais Novos in 2010 was 88.57%, showing an almost complete presence of inhabitants in the urban area. The population located in the vicinity of the Project has rural characteristics.

The age distribution of the population of Currais Novos defined in 2010 showed a strong concentration of people up to 29 years old, characterizing a young population, in which the majority are female. The largest contingent of inhabitants is between 10 and 14 years old, projecting a pyramid whose base is wider than the top, which is a characteristic of places with a mainly young population.

In this regard, during the interviews carried out for the Stakeholder mapping in 2019, the need to promote actions aimed at young people, such as leisure activities, but also others such as professional training, entrepreneurship, and innovation, was pointed out.

20.4.7.6 Local Economy and Vocation of Currais Novos

Currais Novos has its origins linked to the period known as the Cattle Cycle, in the 18^{th} century. In 1808, due to agricultural development, several families of settlers occupied the region, constituting a village. Raising cattle was the city's first economic cycle, followed by the cotton and mining cycles.

Until the end of the 1980s, Currais Novos was the largest producer of scheelite, a mineral from which tungsten is obtained, which is widely used in the manufacture of aircraft, rock drill bits, ballpoint pen tips, and electric lamp filaments. Currais Novos was also once the most important mining town in the Seridó region.

In addition to the pastoral and mineral vocation, tourism, technology and services deserve special mention.

Due to its geographic location, Currais Novos has great tourist potential, mainly because the Seridó Geopark is part of the UNESCO Global Network – which comprises an area in the Potiguar Seridó, completely involving the territories of the municipalities of Acari, Carnaúba dos Dantas, Cerro Corá, Currais Novos, Lagoa Nova, and Parelhas. The municipality of Currais Novos presents a set of natural and cultural potential, such as geosites, which include: Cânions dos Apertados, Morro do Cruzeiro, Mina do Brejuí, Lagoa do Santo and Pico do Totoró.

In 2020, the Rio Grande do Norte Mineral Technology Center (IFRN research unit) was inaugurated, which aims to encourage the creation of innovative processes and products that generate value for the mineral production chain, a great potential in the municipality and which tends to gain with the implementation of the Borborema Project.

The municipality of Currais Novos has a good level of development that can be related, in part, to its long history of mining, which contributed to a positive environment of economic growth, favoring the improvement of human resources and the levels of professional training of the population. This dynamic resulted in a well-organized municipality from the point of view of service provision, being an important health support center and an education hub in the Seridó region.

20.4.7.7 Community Expectation

The main positive community expectation for the Project is the potential increase in the municipality's employment levels, as well as in the increase in income and, consequently, in the improvement of the local economy. The local population's perception of the Borborema Project is driven by Currais Novos' history with mining activity and the need currently experienced by the municipality to improve its economic condition.

It is important to emphasize that even if the scenario is favorable to the Project, as indicated by the surveys carried out by INTEGRATIO in 2019 and 2022, the public may express interest and feel the need to be informed about the next steps and the positive and negative points of the impacts that the Project will bring. It is necessary to consider that expectations regarding "employment and income generation" and "prioritization of local labor" – the main themes pointed out by the public – are very high and must be well managed since local expectations will initially exceed vacancies offered and the arrival of workers from other locations is always an aspect of tension for the corporate reputation.

Another important point is the local concern with the availability of water, which is evident in the statements of the interviewees, especially by rural communities that have a precarious supply of water, motivated by Currais Novos being in a region of climatic vulnerability. Thus, concerns about the water supply for the Project and its impact on water resources in the region are present in discussions with the public and must be clarified with local communities to build a positive relationship.

To varying degrees, the Project can be expected to have politically, environmentally, economically, and culturally impacts. Any conflicts generated by the Project related to issues such as compensation demands, environmental recovery and maintenance, public infrastructure construction and maintenance support, access to land, etc., will require careful attention from Aura. These realities will require clear policies and good communication strategies in order to promote effective mediation between the parties involved. The definition of strategies must follow Aura's policies and values and take into account local characteristics. These strategies will be of great importance in the development of the Project and in managing the expectations generated by its size and potential social impact.

20.4.7.8 Social Risks

The main social risks identified by INTEGRATIO, based on the interviews carried out in 2019 and 2022, are listed below.

- The issue of water, both for use in the beneficiation process and possible contamination, is the main concern of stakeholders.
- São Luiz community, located about 2 km from the boundary of São Francisco farm, is concerned about the contamination of water resources by the mining operation.
- Although the INTEGRATIO interviews did not identify reactions against the installation of the Borborema Project, rural communities very close to the project (1-4 km) should be a point of attention.
- "Negros do Riacho Quilombola" community, despite being located about 25 km from the Project, deserves actions for the development of a positive relationship, in view of the attention and importance that traditional communities are gaining in Brazil and in the world.

It should be noted that since the acquisition of the Borborema Project by Aura Minerals in September 2022, there has been a change in the perception of the main stakeholders regarding the use of water in the production process, since Aura will capture and treat reused water (sewage) from Currais Novos for use in the process. This innovative initiative is approved by the main government agents (Department of Development of the RN, Secretary of the Environment of the RN, IDEMA, City Hall of Currais Novos, Water and Sewage Company of Rio Grande Norte, etc.).

Aura must promote effective and transparent relationships and communication actions with local communities to create an environment of trust and engagement with the local population.

For more details on the social aspects resulting from the study carried out, see the INTEGRATIO (2019) report.

20.4.8 LEGALLY PROTECTED AREAS

According to the EIA/RIMA, there are no Conservation Units (SNUC-National System of Conservation Units), neither full protection nor sustainable use (Parks, National Forests, Environmental Protection Areas, Ecological Stations, Biological Reserves, etc.) in the ADA-Directly Affected Area of the Borborema Project. No Indigenous Lands were registered either. Table 141 shows the distance between the Conservation Units and Indigenous lands of the Borborema Project.

Table 141: Distance of Indigenous Lands and Conservation Areas of Rio Grande do Norte from the Borborema Project.

Conservation Area	Distance (km)
National Forest of Apu -	99
Mata de Pipa State Park -PEMP	133
Salobro Farm Private Natural Heritage Reserve	81
Piquiri-Una Environmental Protection Area	101
Seridó Ecological Station	110
Indigenous Land	**Distance (Km)**
Baia das Traíras Indigenous Land *	180
Sagi Indigenous Land*	200
Potiguara e Jacare Indigenous Land**	141
Monte Mor Indigenous Land	140

Source: MMA- Ministry of the Environment of Brazil and FUNAI- National Indian Foundation
*Rio Grande do Norte State
** Paraíba State

According to Law 12.651/2012 (Brazil, 2012), all rural properties in the Caatinga Biome must maintain at least 20% of their area as preservation areas for native flora and fauna. These areas are referred as Legal Reserves ("RL"). The RL for the São Francisco farm, owned by Aura and the Project headquarters, was relocated to another site, Jesus Maria farm, which acquired by the former owner of the Project, Crusader so that the entire area of São Francisco farm could be used for project infrastructure. Thus, Jesus Maria farm fulfills the role of preservation, bringing together its legal reserve and that of the São Francisco farm. The relocation of Legal Reserves is provided for by law and the entire process was carried out following IDEMA's instructions and technical assessment. Figure 152 shows the location of Jesus Maria farm, the RL designated farm.

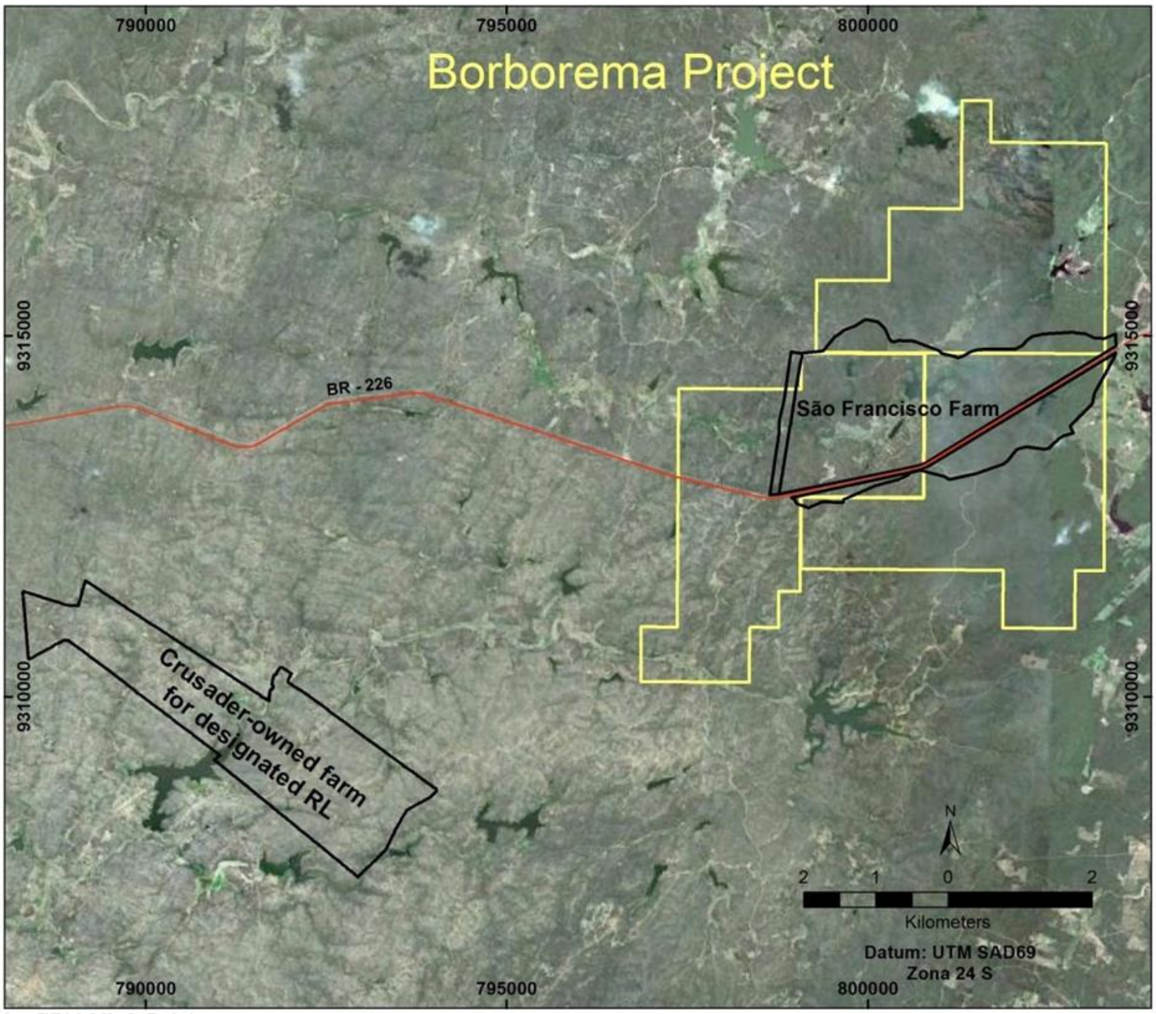


Figure 152: Location of Jesus Maria Farm, Legal Reserve of São Francisco Farm.

20.4.9 ARCHEOLOGY

As part of the analysis and environmental impact assessment (EIA/RIMA) of the Borborema Project, an archaeological study was carried out on the Project area and areas of influence. The scope of this study was defined by the "Instituto do Patrimônio Histórico e Artístico Nacional (IPHAN)" of Brazil and was carried out by Arqueologia Brasileira Consultoria LTDA resulting in the Castro (2020) report. The study was submitted to IPHAN and subsequently approved, following Official Letter No. 302/2021/IPHAN-RN/IPHAN (IPHAN, 2021), which favored the issuance of the Operating License for the Borborema Project.

The main findings and conclusions of the above-mentioned study, Castro (2020) report, can be summarized as follows:

- Most of the Directly Affected Area (ADA) of the Borborema Project has been significantly disturbed by past mining activities and associated infrastructure.
- Pre-colonial rock archaeological sites were discovered in the Project's Indirectly Affected Area (AID). The two pre-colonial sites at Pedra Branca and Pedra do Letreiro are in deep valleys cut by streams and comprise red cave paintings of anthropomorphic representations of animals (see Figure 20-7).

Sites containing figures created from granite blocks were identified along the Acauã River channel downstream of the Gargalheiras Dam in Acari and within Project AID. These sites can be related to the cave engravings commonly called Itacoatiaras, which are usually found on rocks along river channels and contain figures in the form of dotted lines, as well as geometric and dome-shaped figures. Lithic work where small rock artifacts have been formed by chipping, smoothing, and polishing is also common. Figure 153 shows an example of rock paintings at Pedra Branca.

Figure 153: Rock Paintings at Pedra Branca.

Subsurface surveys were performed to aid in the preliminary stratigraphic characterization of the Project ADA subsurface, Figure 154. The surveys were also used to delineate areas of potential archaeological interest near drainage systems in low-lying areas of the Project site. The surveys indicated some artifacts and other traces of significant past human activity within the ADA.

Figure 154: Subsurface Surveying in the ADA.

The results of the archaeological studies will not impede the progress of the Project. However, during the construction and implementation phases, continued works defined by IPHAN will be necessary, such as monitoring and monthly accountability to IPHAN and collection and registration with IPHAN of items and objects of relevance within the project's ADA.

20.5 MAIN ENVIRONMENTAL AND SOCIAL INTERFERENCES

According to the Environmental Impact Study (EIA), the positive and negative impacts listed are summarized below:

- Dynamization of the local and regional economy.
- Tax collection.
- Employment and income generation.
- Improvement of socioeconomic indices.
- Pressure/interference on urban and road infrastructure.
- Pressure on essential service infrastructure.
- Interference in the daily life of the local population.
- Interference in soil surface dynamics processes.
- Risk of water and soil contamination.
- Change in environmental quality due to the generation of noise and vibration.
- Loss and fragmentation of vegetation.
- Disturbance of wildlife.
- Loss of habitats and alteration in ecological processes.
- Landscape modification.
- Change in air quality due to dust generation and gas emission.

The positive impacts identified for the Borborema Project are those related to the socioeconomic environment, such as boosting the local and regional economy, tax collection, and generation of employment and income. As well as improvement of socioeconomic indices that will benefit not only Currais Novos, but the entire region of influence of the Project.

Among the negative impacts, those related mainly to the suppression of vegetation, disturbance of wild fauna, water and soil contamination, interference in the daily life of the local population, and alteration in air quality due to the generation of dust and gas emissions, which can be minimized with measures such as:

- Establish and implement a vegetation suppression procedure with the release of areas by Aura's Environment Department.
- Systematic surveillance of deforestation to restrict suppression only to strictly necessary and licensed areas.
- Forest replacement, for Borborema there is already a replacement project underway at Jesus Maria farm.
- Establish an ecological escape corridor for fauna in contiguous areas.
- Establish operational procedures for the proper handling of chemical reagents for both the unloading area and the preparation of solutions to avoid spills.
- Waterproof containment basins and drainage systems in areas where chemical reagents are used.
- Effective and transparent communication with the local population about the environmental and social aspects of the Project.
- Aura must increase its social interactions by initiating community programs that enhance the development and well-being of local communities.
- Use of dust-suppressing polymers in the accesses and co-disposal piles of overburden and waste rock.
- Controlled disposal of overburden and waste rock, so that the waste rock is disposed of internally and waste rock externally, avoiding the formation of dust.

20.6 ENVIRONMENTAL AND SOCIAL PROGRAMS

For each environmental impact identified in the EIA/RIMA for the Borborema Project, measures were proposed for the prevention, control, minimization, and compensation of negative impacts, as well as the enhancement of positive impacts.

These measures are organized in Environmental Plans and Programs that must be executed by Aura during the Project. It is important to note that the proposed actions correspond to the first instrument of management and environmental planning for the Borborema Project and that these actions should be detailed and expanded throughout the implementation, operation, and closing phases of the enterprise. These Plans and Programs are summarized in Table 142.

Table 142: Social and Environmental Plans and Programs.

Programs and Plans	Installation	Operation	Closure
Environmental Management Program	X	X	X
Social Communication and Socio-Environmental Information Program	X	X	X

Environmental Educational Program	X	X	X
Reclamation Plan		X	X
Closure Plan		X	X
Geochemical Monitoring Program (ARD)	X	X	X
Water Monitoring Program	X	X	X
Solid Waste Management Program	X	X	X
Wastewater Monitoring Program	X	X	X
Emergency Program	X	X	X
Vibration Monitoring Program		X	
Air Quality (Dust) and Noise Monitoring Program	X	X	X
Erosion Prevention, Monitoring and Control Monitoring Program	X	X	X
Terrestrial Fauna Monitoring Program	X	X	X
Vegetation Clearing and Fauna Rescue Monitoring Program	X		
Forest Replacement Program	X	X	X
Labor Training and Qualification Program	X	X	
Program of Actions with the Community and Government	X	X	

20.7 RECLAMATION AND CLOSURE

The Degraded Areas Recovery Plan (PRAD) and the Closure Plan for the Borborema Project are following ANM Resolution (National Mining Agency No. 68/2021) and established guidelines for recovery and closure planning, in addition to general recovery measures to be taken during and after mining, to ensure progressive rehabilitation bringing the site close to pre-mining conditions. In addition to the revegetation efforts, other important recovery measures to be implemented include land topography regularization, drainage, and slope stabilization.

The main infrastructures, objects of recovery and closure are accesses, construction sites, open pits, piles of co-disposal of mine waste rock and tailings, piles of ore, and civil and industrial facilities, among others. The recovery of the areas will be mainly through the sowing of grasses and legumes and the planting of native species. Table 143 shows the list of areas covered by the Mine Recovery and Closure Plan.

Table 143: List of Areas to be Recovered.

Description	Area (ha)
Accesses	6.18
Mine Ancillary Facility Area	1.80
Dump Areas	5.78
Industrial Area	9.28
Construction Area	8.53
Open Pit “B”	53.71
Open Pit “C”	1.68
Dike	23.34
Parking/Entrance	0.68
Sewage treatment station Area	0.89
Filtering of tailings	1.73
Guardhouse	0.01
Civil Installations	0.51
Magazine/Emulsion tank	0.26
Tailings and Waste Rock Co-Disposal Pile PNE	76.49
Tailings and Waste Rock Co-Disposal Pile PNW	39.89
Pile of Crushed Ore	0.37

Description	Area (ha)
Pile of Ore	14.96
Electric Power Substation	0.16
Total	246.25

For the decommissioning phase, the industrial and civil facilities will be demolished, and the waste will be disposed of according to its classification, according to Brazilian legislation and standards.

In the case of fixed and mobile equipment in good condition, these items may be sold or used in other Aura Minerals' ventures.

Concerning demolition, the main methods to be employed are manual and mechanized demolition. Manual demolition uses tools such as hammers, pickaxes, crowbars, and manual pneumatic or electric breakers, among others. This method should be used in the decommissioning of concrete and masonry structures with more than one floor, but mainly for the release of different classification residues. Mechanized demolition should be carried out mainly by equipment with excavators equipped with hydraulic breakers, hydraulic shears, sprayers, and scoops.

Concerning recovery and revegetation of degraded areas, the areas of pits, piles of waste rock/tailings co-disposal, and accesses will be recovered through the sowing of grasses and legumes. The industrial areas, civil installations, construction sites, ore piles, dumps, and other areas will be recovered with the planting of tree species native to the Caatinga Biome.

It is important to point out that for the vegetation recompositing of the areas, it will be necessary to reconfigure the site to the previously topography, with the implantation of drainage systems, and soil decompression, amongst others.

For the decommissioning and closure phase, the following plans/programs are planned:

- Degraded Area Recovery Plan (PRAD).
- Water Quality Monitoring Program.
- Program for Prevention, Monitoring, and Control of Erosive Processes.
- Geotechnical Monitoring Program.
- Dust and Noise Protection and Control Program.
- Terrestrial Fauna Monitoring Program.

The estimated closure costs for the 2 Mtpy plan of production are summarized in Table 144.

Table 144: Closure Costs Summary.

Description	Cost (US$)
Administration	647,858.22
Reclamation Executive Project	242,307.69
Dismantling and Demolition	3,831,877.75

Topographic reconfiguration and drainage system	326,013.15
Revegetation	3,558,594.17
Communication Program and Monitoring	609,767.23
Contingency	645,149.42
Total	9,861,569.62

21 CAPITAL AND OPERATING COSTS

After basic project conclusion with quantities and prices, the initial CAPEX indicated values above expectations, which led us to analyze opportunities to reduce it, including reengineering to change solutions. Several reduction opportunities were evaluated and composed the final CAPEX, and them were summarized in the report BBR-B-RA-0000-PRO-V-0001-R0. Major items studied are listed below:

- Crushing: reduction of capacity from 4Mtpy to 2 Mtpy, exchange of apron feeder and vibrating screen for a vibrating grizzly feeder, and simplification of the technical solution aiming to make the set cheaper by reducing operational facilities.
- Crushed Ore Stockpile: Exchange of the bin solution for an emergency pile, including gallery for material recovery.
- Grinding Circuit/Gravity Concentration: change of concept from gravity to pumped transfers in some cases aimed to reduce structure high, which is currently very vertical, reducing pumping capacity in the hydrocyclone supply. In addition, reviewed sizings that considered 4Mtpy capacity to equipments of these areas.
- Leaching and Adsorption Circuit (CIL): change of concept on leaching/CIL operational platform at the top of the tanks, aiming to reduce its area and weight of metallic structure.
- Filtering System: reduce of filtration solution maturity at a conceptual level by replacing the vacuum belt solution to press filters.
- Pipe-rack: change of concept aiming to reduce the metallic structure of pipe-rack.
- Pebbles: removal of the peebles conveyors system as an initial part of the project.
- Changes in some tanks capacities aiming to reduce CAPEX.
- Crushed Ore Stockpile: reduction of capacity from 4Mtpy to 2 Mtpy.
- Other changes mentioned in document BBR-B-RA-0000-PRO-V-0001-R0

21.1 CAPITAL COSTS

The CAPEX estimation contains all costs related to assembly, construction, equipment, and materials necessary for the implementation of the Project, as shown in Table 145.

The variation of the CAPEX estimation is over 10% and less than 10% of the total estimated investment. This section is divided into services, supplies, mine, pile and transmission line, and indirect costs. The estimates were based on quoted, estimated, or historical values, together with values provided by Aura, based on experience in the sector, and similar projects. All tables presented throughout this section are quoted in U.S. dollars, based on an exchange rate of R$ 5.20 (Brazilian reais) for US$ 1.00 (U.S. dollar). The technical items used in this estimate were evaluated and validated by Aura. The complete list of values indicates which company was responsible for each estimated value, Table 145.

Table 145: Overall CAPEX Estimation.

Item	Total	%
Services (US$ x 1,000)	$49,878.18	25,41%
CIV01 – Administrative buildings (project, material, and construction)	$3,668.71	1,87%
CIV02 – Processing Plant (materials and construction)	$10,876.24	5,54%
CIV03A – Vegetation suppression, drainage of slopes and earthworks	$5,246.44	2,67%
CIV03B – Storage, paving, internal access.	$1,893.01	0,96%
CIV09 – Fines Dam	$1,376.57	0,70%
CIV10 – Fines Dam (Adequacy – Legislation)	$786.02	0,40%
BB226 Displacement and Site Access	$215.45	0,11%
MON-01 – Electromechanical Assembly	$25,180.80	12,83%
MON-02 – PEAD Assembly – Off Site	$482.02	0,25%
GMB-01 – Geomembrane PEAD	$152.93	0,08%
Supply (US$ x 1,000)	$67,691.61	34,49%
Electrical Equipment and Materials	$17,304.11	8,82%
Mechanics Equipment	$41,739.03	21,27%
Instrumentation	$3,796.54	1,93%
Civil – Steel Structure	$2,208.78	1,10%
Piping	$2,543.93	1,30%
Fire Detection and Alarm System	$99.21	0,05%
Mine, Pile and LT (US$ x 1,000)	$39,962.51	20,36%
CIV04 – Mine	$19,480.77	9,93%
CIV05 – Tailing Pile	$6,307.69	3,21%

Item	Total	%
CIV06 – Waste Pile		0,00%
CIV07 – Low Grade Pile		0,00%
CIV08 – Terra Armada	$59.83	0,03%
MEC-XX – Sample Laboratory	$2,084.91	1,06%
AUR-BMB-01 – Esgotamento Açude do Onça	$57.16	0,03%
AUR-ENG-08 – Adductor Capture System	$5,098.49	2,60%
ETE – Sewage treatment station	$50.70	0,03%
ETA	$0.00	0,00%
Mobilising and Vegetable removal	$1,153.85	0,59%
13.8KV Deactivation	$130.33	0,07%
Transmission line 69KV	$5,538.78	2,82%
Indirect Costs (US$ x 1,000)	$29,082.00	14,82%
IND-01 – EPCM	$10,297.49	5,25%
IND-01 – Spare Parts and Special Items	$1,790.08	0,91%
IND-01 – Owner Cost	$2,351.89	1,20%
IND-01 – Labor – Pre-operation	$6,160.11	3,14%
IND-01 – Administrative + HR	$3,303.30	1,68%
IND-01 – MACC – Environment	$1,104.93	0,56%
IND-01 – Environmental Fees	$330.77	0,17%
IND-01 – SSO	$794.84	0,40%
IND-01 – Legal	$189.22	0,10%
IND-01 – TI	$389.80	0,20%
IND-01 – Indirect Field Construction	$1,054.42	0,54%
IND-01 – Engineering Risk Insurance	$1,219.00	0,62%

Item	Total	%
IND-01 – Expediting and inspection]	$96.15	0,05%
Contingency (US$ x 1,000)	$9,648.43	4,92%
TOTAL CapEx (US$ x 1.000)	$196,262.73	100%

Table 145 indicates the source of information for each item, together with corresponding value, both in terms of US$ and percent of total CAPEX. The complete CAPEX document issued by Promon describes values per item, the selected supplier, costing method, referred NCM (Common Mercosur Nomenclature), quantities, units, description, who is responsible for the reported value, tag, along with other information.

The assembly and construction costs were budgeted with suppliers who specialized in this type of work. The costs related to the acquisition of electrical, mechanical, and instrumental equipment were budgeted by more than one supplier. In all cases, the criteria for selecting the supplier were the lowest cost, following a previous technical assessment. The same methods were used for the selection of material suppliers. The costs of mine pile and transmission lines were provided by specialized consultants, hired by Aura. Indirect costs were estimated based on the plant size, team, amount of equipment, budgeted items, amongst other specifications. In addition to these costs, the estimation included costs associated with construction management, assembly supervision, insurance, and other indirect values.

21.2 SERVICES

The items listed under services in Table 145 are associated with contracts for the execution of the administrative buildings, process plan, temporary constructions, and electromechanical assemblies. The costs of all these items included assembly/construction labour, materials and indirect costs required for the Project scope, as provided by specialized suppliers.

21.3 SUPPLIES

The electrical, mechanical, and instrument equipment were budgeted with specialized suppliers, together with respective costs for freight and fees, including values for international deliveries. In all cases, the criteria for selecting the supplier were the lowest cost, following a previous technical assessment. Part of the materials costs, fire detection and alarm systems, were estimated based on Promon's historical database.

21.4 MINE, PILE AND TRANSMISSION LINE

As costs of mining, piles, transmission lines, and laboratory supplies are specific to mining companies, such items were assessed by Aura, together with the support of specialized consultants. The costs for digging deep wells were estimated.

21.5 INDIRECT COSTS

Indirect costs include engineering, procurement, and construction management (EPCM), where the contracted company develops the project, purchases equipment and materials, as well as managing the construction process. Also included in indirect costs are assembly supervision, spare items and start-up items, enterprise ownership, freight, indirect costs of field, risk insurance engineering, expediting, and inspection. These indirect costs were calculated together with Aura, using their database related to indirect costs for existing plants like Borborema.

21.6 TAXES

All taxes included in the suppliers' proposals were considered, in accordance with current Brazilian tax laws. Taxes included in the capital estimate include:

- ISS (Imposto Sobre Serviços – Tax on Services).
- ICMS (Imposto sobre Circulação de Mercadorias e Serviços – Tax on Circulation of Merchandise and Services).
- PIS/COFINS (Programa de Integração Social/Contribuição para Financiamento da Seguridade Social – Social Integration Program/Contribution for Financing Social Security).
- DIFAL (Diferencial de alíquota do ICMS – Differential from ICMS), if applicable.
- IPI (Imposto sobre os Produtos Industrializados – Tax on Industrialized Products): as per fiscal classification of supply.
- II (Imposto de Importação – Importation Tax) and applicable fees.

21.7 OPERATING COSTS

The 12-year process plant operating period was included in the OPEX estimation. The process plant operating costs listed in Table 145 **Erro! Fonte de referência não encontrada.** Are in US dollars per tonne per year (US$ /t/yr) and per oz Produced – Run of Mine (US$ /oz/yr).

Table 146: OPEX for the Borborema Project.

	OPEX (AISC) – Borborema per t Feed		OPEX (AISC) – Borborema Per Oz Produced	
	Per Tonne/Year		Per Oz/Year	
	Total (US$)	**%**	**Total (US$)**	**%**
Unitary Costs	**$ 27.13**	**100%**	**$ 867.36**	**100%**
Labor (Fixed Costs)	$ 2.83	10%	$ 90.99	10%
G&A (Fixed Cost)	$ 1.33	5%	$ 42.69	5%
Laboratory (Fixed Cost)	$ 0.58	2%	$ 18.70	2%
Access Maintenance (Fixed Cost)	$ -	0%	$ -	0%
Equipment rental (Fixed Cost)	$ 0.11	0%	$ -	0%
Energy (Variable Costs)	$ 1.67	6%	$ 53.58	6%
Reagents and Consumables (Variable Costs)	$ 3.81	14%	$ 122.41	14%
Maintenance	$ 0.96	4%	$ 30.91	4%
Water and sewage treatment plant	$ 0.36	1%	$ 11.46	1%
Pile	$ 2.39	9%	$ 76.87	9%
Mine	$ 12.31	45%	$ 394.99	46%
Selling	$ 0.01	0%	$ 0.29	0%
Royalties	$ 0.78	3%	$ 25.13	3%
Sustaining – Informative	**$ 0.76**	**3%**	**$ 24.48**	**93%**
Mine Closure – Informative	**$ 3.67**	**14%**	**$ 117.77**	**447%**

21.8 LABOUR

Labour costs include operating costs for the mining plant teams, such as managers and management areas, plant and maintenance teams including leaders, technicians, assistants, supervisors, engineers, and managers.

The labour cost estimation also includes personnel dedicated to work health, safety, environment and communities (SSMAC), and administrative costs, which includes general administrative costs and human resources, as shown in Table 143.

Table 147: Labour Cost Estimations.

	OPEX (AISC) – Borborema per t Feed		OPEX (AISC) – Borborema Per Oz Produced	
	Per Tonne/Year		Per Oz/Year	
	Total (US$)	**%**	**Total (US$)**	**%**
General Manager	$ 0.22	8%	$ 7.18	8%
Mine in the open	$ -	0%	$ -	0%
Plant maintenance	$ 1.46	52%	$ 46.95	52%
SSMAC	$ 0.32	11%	$ 10.37	11%
Administrative	$ 0.83	29%	$ 26.49	29%
Labor (Fixed Costs)	$ 2.83	11%	$ 90.99	11%

21.9 G&A

G&A costs, shown in Table 148, include all costs relating to travel, transfers, consultants, individual safety equipment, exams, uniforms, environmental permits, property security, information technology, warehouse, supplies, controllers and other teams, as well as all employee benefits such as transportation, food, training. Also included in the G&A costs are cleaning and conservation of the building, vehicles, software licenses, IT, insurances, telecom, and other costs.

Table 148: G&A Cost Estimations.

	OPEX (AISC) – Borborema per t Feed		OPEX (AISC) – Borborema Per Oz Produced	
	Per Tonne/Year		Per Oz/Year	
	Total (US$)	**%**	**Total (US$)**	**%**
General Costs	$ -	0%	$ -	0%
Health, Safety and Environment	$ 0.43	32%	$ 13.84	32%
Human Resources	$ 0.09	6%	$ 2.77	6%
Adminstration	$ 0.66	50%	$ 21.24	50%
Controlling	$ 0.10	8%	$ 3.27	8%
Legal	$ 0.02	2%	$ 0.70	2%
Supply	$ 0.02	2%	$ 0.70	2%
Other	$ 0.01	0%	$ 0.17	0%
G&A (Fixed Cost)	$ 1.33	5%	$ 42.69	5%

21.10 LABORATORY

The laboratory costs were obtained through a proposal received from SGS Geosol and contain a fixed monthly installment payment and an estimated variable installment payment, in addition to the mobilization cost paid in a single installment.

The Fixed Price represents the fixed amount to be invoiced every month, independent of the number of samples delivered by Aura to SGS Geosol and aims to cover all expenses and costs for laboratory operation schedules. The Variable Price, in turn, is calculated in addition to the monthly fixed price, and is a factor of the number of samples processed in the month times the unit price per analysis/test.

21.11 ACCESS MAINTENANCE

The costs associated with access maintenance were included in mining costs.

21.12 EQUIPMENT RENTAL

The costs associated with equipment rental were provided by Aura and includes Munck truck, crane, platform and forklift.

21.13 ENERGY

The energy consumption was calculated according to the specific demands of the project. The unit values were obtained from the local energy distributor.

Table 149: shows the energy consumption costs for the Borborema Project.

	OPEX (AISC) – Borborema per t Feed		**OPEX (AISC) – Borborema Per Oz Produced**	
	Per Tonne/Year		Per Oz/Year	
	Total (US$)	**%**	**Total (US$)**	**%**
Metallurgy Substation	$ 1.31	79%	$ 42.15	79%
Administrative Building Substation	$ 0.10	6%	$ 3.35	6%
New Water Supply Substation	$ 0.02	1%	$ 0.71	1%
Filtering Substation	$ 0.23	14%	$ 7.37	14%
Energy (Variable Costs)	$ 1.67	6%	$ 53.58	6%

21.14 REAGENTS AND CONSUMABLES

Quantities associated with reagents and consumables required for the operation were calculated by Promon based on process information and validated by Aura. The costs related to these items were obtained by proposals received or existing in the database for each item listed. *Table 150* shows the respective calculated values.

Table 150: Reagents and Consumables Cost Estimations

	OPEX (AISC) – Borborema per t Feed		**OPEX (AISC) – Borborema Per Oz Produced**	
	Per Tonne/Year		Per Oz/Year	
	Total (US$)	**%**	**Total (US$)**	**%**
Hydrated Lime	$ 0.07	2%	$ 2.25	2%
Sodium Cyanide	$ 0.99	26%	$ 31.69	26%
Sodium Hydroxide – 50% w/w	$ 0.12	3%	$ 3.71	3%
Hydrochloric Acid – 33%	$ 0.09	2%	$ 3.02	2%

Copper Sulphate Pentahydrate	$ 0.37	10%	$ 11.80	10%
Sodium Metabisulphite	$ 0.35	9%	$ 11.39	9%
Flocculant	$ 0.58	15%	$ 18.72	15%
Activated Carbon	$ 0.08	2%	$ 2.43	2%
Leachaid – Intensive Leaching	$ 0.01	0%	$ 0.20	0%
Hydrated Lime – Treating of Effluent	$ 0.07	2%	$ 2.16	2%
Smelting Fluxes				
Borax	$ 0.00	0%	$ 0.03	0%
Silica	$ 0.00	0%	$ 0.02	0%
Sodium Nitrate	$ 0.00	0%	$ 0.01	0%
Sodium Carbonate	$ 0.00	0%	$ 0.00	0%
Crucibles	$ 0.00	0%	$ 0.12	0%
Consumables				
Grinding Media	$ 0.44	11%	$ 14.06	11%
Mill Lining	$ 0.52	14%	$ 16.81	14%
Jaw Crusher	$ -	0%	$ -	0%
Fixed Jaw – Wear Plate	$ 0.01	0%	$ 0.26	0%
Moving Jaw – Wear Plate	$ 0.01	0%	$ 0.18	0%
Upper Side Coating Left Side	$ 0.00	0%	$ 0.07	0%
Lower Side Coating Left Side	$ 0.00	0%	$ 0.04	0%
Upper Right Side Coating	$ 0.00	0%	$ 0.07	0%
Lower Side Coating Right Side	$ 0.00	0%	$ 0.04	0%
Filter Cloths	$ 0.10	3%	$ 3.32	3%
Gas LPG – Site	$ -	0%	$ -	0%
Gas LPG – Mess hall	$ -	0%	$ -	0%
Gas LPG – Laboratory	$ -	0%	$ -	0%
Reagents and Consumables (Variable Costs)	$ 3.81	14%	$ 122.41	15%

21.15 MAINTENCE

Maintenance costs are directly linked to percentages of CAPEX values for mechanical and electrical equipment, as follows: 2.0% for maintenance parts, 1.0% for consumables, and 0.8% for fuel and lubricants. Table 151 shows the maintenance cost estimations.

Table 151: Maintenance Cost Estimations.

	OPEX (AISC) – Borborema per t Feed		**OPEX (AISC) – Borborema Per Oz Produced**	
	Per Tonne/Year		Per Oz/Year	
	Total (US$)	**%**	**Total (US$)**	**%**
Parts and Maintenance Materials	$ 0.50	52%	$ 16.15	52%
Consumables	$ 0.25	26%	$ 8.07	26%
Anticorrosive Protection	$ 0.01	1%	$ 0.23	1%
Fuels and Lubricants	$ 0.20	21%	$ 6.46	21%
Maintenance	$ 0.96	4%	$ 30.91	4%

21.16 WATER AND SEWAGE TREATMENT PLANT

The costs related to the operation of the water and sewage treatment plant were provided by Aura and obtained through a specialized supplier. The BOT (Build, Operate and Transfer) contract modality was adopted for the complete Effluent Treatment System.

There was a transfer of the cost from CAPEX to OPEX, taking advantage of the know-how of the specialized company to operate this system with the complexity of the region due to the scarcity of potable water.

The final amount includes the operation of the structure, such as chemicals and maintenance, as well as the required operating staff.

21.17 PILE, MINE AND SUSTAINING

The costs related to the operation of piles were provided by a specialist advisor DF+, together with Aura´s validation.

The mining operating costs were provided by Aura, along with specialist consultants. The studies indicated the costs for each year of mine operation, gold produced and recovered.

21.18 SELLING

The selling cost involves two parts, provided by Aura, these are the refining cost and the transportation cost, which are considered over the entire useful life of the plant.

21.19 SUSTAINING CAPEX

The costs related to the sustaining CAPEX were provided by a specialist advisor DF+, together with Aura´s validation, and are shown in Table 152 below:

Table 152: CAPEX Sustaining

Sustaining	Year 1 (Ramp -Up)	Year 1 (July to December)	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Total
Sustaining – Waste Pile	-	-	716.906	716.906	716.906	716.906	716.906	1.151.097	1.151.097	1.151.097	1.151.097	-	-	8.188.918
Sustaining – Waste Pile	-	-	632.965	632.965	1.107.968	632.965	475.003	475.003	475.003	475.003	475.003	475.003	475.003	6.331.883
Sustaining – Low Grade Pile	-	-	327.521	327.521	391.451	391.451	391.451	391.451	391.451	391.451	391.451	391.451	391.451	4.178.102

Values in US$

21.20 Mine Closure

The mine closure costs were obtained through a proposal received from Mineral Engenharia e Meio Ambiente and are the main guidelines for the deactivation phase of the Borborema Project, to be implemented in the municipality of Currais Novos, in the state of Rio Grande do Norte.

The main infrastructures, object of the closure, are accesses, construction sites, open-air pits, piles for co-disposal of overburden and tailings, piles of ore, civil and industrial installations, amongst other items.

The informed closing costs were distributed over 9 years of activities, however, for the information and modeling these costs were brought to present value.

Table 153: Mine Closure - Calculation.

Mine Closure - Informative	$	Tax	VPL	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9
Mine Closure	USD	10,0%	7.496.945	264.872	3.715.273	3.715.273	765.542	528.696	330.969	303.220	225.421	225.421

22 ECONOMIC ANALYSIS

22.1 INTRODUCTION

Considering the information presented in the previous chapter (Chapter 21 - Capital and Operating costs), this chapter will present the development of the economic modeling for Borborema Gold Project, which includes information provided by Promon and Aura executed by EY.

This section describes the economic evaluation and financial metric methodologies to establish the financial model for the Borborema Gold Project feasibility study.

The economic model has been developed by EY to support the evaluation of potential options and develop an optimal path forward for the Project. The main contributors to the total economic model are presented in Table 154.

Table 154: Contributors and Their Roles in Developing the Total Economic Model.

CONTRIBUTOR	ROLE
Aura Minerals (Owner)	• Oversee the administration of the economic model and establish governing parameters such as: discount rate; tax regime; commodity rates; etc. • Develop the operating and owner expenses for the various project areas for which gaps exist. • Review the contributing inputs and their suitability for the Project. • Provide cost data for equipment operations including labour, operating cost factors, and maintenance cost factors. • Provide other cost data and factors to support the execution of the total economic model. • Develop the feasibility capital cost estimate for the mining development and infrastructure. • Provide equipment data into the overall model for the mining operations. • Provide cost-of-life data for equipment including labour, operating cost factors, and maintenance cost factors for mining operations. • Responsible for the Mine Plan and mine operating costs.
Promon	• Develop the feasibility capital cost estimates for the processing plant, support infrastructure, and civil infrastructure. • Provide equipment data into the overall model based on the feasibility equipment list developed for the Project.
EY	• Analysis of tax incentives. • Execute the economic model and provide results to the project team to establish the optimal path forward.

The economic model was developed on an Excel spreadsheet-based financial model composed of several worksheets.

All currency in this Section is provided in United States Dollars ("USD"), unless otherwise indicated. The exchange rate used is BRL 4.93 for USD 1.00 in 2023, BRL 5.00 for USD 1.00 in 2024 and BRL 5.09 for USD 1.00 in 2025 onwards. This information was provided by Aura in accordance with the *Boletim Focus* (a weekly report released by BACEN).

Table 155 presents the summary results of the financial model that will be detailed in the following topics of this chapter.

Table 155: Summary Results of the Financial Model.

		Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Total or Average
Exchange Rate	USD / BRL	5,20	4,93	5,00	5,09	5,09	5,09	5,09	5,09	5,09	5,09	5,09	5,09	5,09	5,09	5,09	5,08
Gold Procuced	Oz	-	-	-	48.924	86.730	112.803	73.613	84.048	63.362	65.594	77.195	54.999	32.493	32.280	15.663	747.704
Gold Price	USD / Oz	1.919	1.919	1.915	1.844	1.806	1.689	1.689	1.689	1.689	1.689	1.689	1.689	1.689	1.689	1.689	1.753
Net Revenue	USD x 1000	-	-	-	88.863	154.285	187.667	122.468	139.827	105.413	109.126	128.426	91.500	54.058	53.703	26.057	1.261.393
Mine Costs	USD x 1000	-	-	-	30.453	38.421	39.412	38.893	40.508	38.450	44.138	13.721	9.113	3.444	3.444	1.719	301.716
Mine Costs	USD / Oz	-	-	-	622	443	349	528	482	607	673	178	166	106	107	110	291
Plant Costs	USD x 1000	-	-	-	11.196	13.422	13.430	13.422	13.422	12.704	12.679	11.616	11.119	6.610	6.529	3.484	129.633
Plant Costs	USD / Oz	-	-	-	229	155	119	182	160	200	193	150	202	203	202	222	148
Other Costs	USD x 1000	-	-	-	18.917	23.844	24.695	22.960	25.938	23.009	23.042	23.380	22.446	19.764	19.163	12.038	259.196
Other Costs	USD / Oz	-	-	-	387	275	219	312	309	363	351	303	408	608	594	769	326
EBITDA	USD x 1000	-	-	-	28.296	78.599	110.129	47.193	59.960	31.250	29.268	79.709	48.823	24.239	24.566	8.817	570.848
EBITDA Margin	%	n/a	n/a	n/a	31,8%	50,9%	58,7%	38,5%	42,9%	29,6%	26,8%	62,1%	53,4%	44,8%	45,7%	33,8%	43,3%
Net Income	USD x 1000	-	(2.028)	(6.489)	14.066	45.215	70.009	16.465	28.129	5.892	6.023	49.946	24.498	3.493	6.494	3.418	265.132
Net Margin	%	n/a	n/a	n/a	15,8%	29,3%	37,3%	13,4%	20,1%	5,6%	5,5%	38,9%	26,8%	6,5%	12,1%	13,1%	21,0%
Capex	USD x 1000	-	57.686	113.757	18.624	-	-	-	-	-	-	-	-	-	-	-	190.067
Capex Sustaining	USD x 1000	-	-	-	-	1.677	1.677	2.216	1.741	1.583	2.018	2.018	2.018	2.018	866	8.363	26.196
Net Working Capital	USD x 1000	-	-	-	4.874	13.307	18.573	8.042	10.206	5.401	5.084	13.388	8.255	4.120	4.173	1.510	6.462
WC Need	USD x 1000	-	-	-	4.874	8.433	5.267	(10.531)	2.164	(4.806)	(317)	8.303	(5.133)	(4.135)	53	(2.662)	101
Free Cash Flow to Firm (FCFF)	USD x 1000	-	(57.686)	(113.757)	4.798	60.560	90.589	52.546	50.994	33.413	26.485	60.402	47.531	25.729	20.308	1.362	303.275
Accumulated Cash Flow (FCFF)	USD x 1000	-	(57.686)	(171.443)	(166.645)	(106.085)	(15.497)	37.049	88.044	121.457	147.942	208.344	255.875	281.605	301.913	303.275	303.275

Source: Aura and Promon

22.2 ASSUMPTIONS

The following section summarizes the main assumptions used in the Project's financial analysis, including the mine production plan, product logistics, capital and operating expenditures, revenues, taxation, depreciation and other general parameters.

22.2.1 PRODUCT

Only gold is considered for production minerals – specified in grade and Ounces (Oz).

22.2.2 PRODUCTION

The period of the construction and production plans is based on Project years. The construction period begins in year 2023, with the initial production of saleable gold planned for year 2025. The mining operation is projected to conclude in 2036, outlining a total operational span of 14 years for the plant.

The recovery for the contained gold is expected to be 92.1% (average considering 12 years), resulting in 748k ounces after the 12-year processing period.

Table 156 summarizes the annual feed to the process plant with the tonnes of Plant Feed and gold content recover.

Table 156: Summary of Production Plan.

		Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Total or Average
Plant Feed	K ton	-	-	-	1,450	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	998	22,448
Gold recovered	Oz	-	-	-	48,924	86,730	112,803	73,613	84,048	63,362	65,594	77,195	54,999	32,493	32,280	15,663	747,704

Source: Aura and Promon

22.2.3 CAPITAL INVESTMENT

New investments (CAPEX) have been projected considering the nature of Borborema's operations, with an Expansion Capex amounts to USD 206.3 Million, which includes an allowance for contingencies. These investments are aimed at bolstering the plant's operations and have been forecasted for the years 2023 to 2025. A depreciation rate of 10% was applied to future investments. Additionally, there is a Sustaining Capex which is detailed separately in this Report.

For the Expansion CAPEX the utilization of ICMS credits on Fixed Assets was considered.

Table 157 summarizes the initial capital cost expenditure by commodity and disbursement schedule considered on the model.

Table 157: Initial Capital Cost Summary and Disbursement Schedule

		Year 1	Year 2	Year 3	Total or Average
Services	USD x 1000	15,700	31,283	5,202	52,185
Supply	USD x 1000	21,358	42,359	6,995	70,712
Mine, Pile and LT	USD x 1000	12,579	25,064	4,168	41,811
Indirect Costs	USD x 1000	9,154	18,240	3,033	30,427
Contingency	USD x 1000	3,037	6,051	1,006	10,095
Tax benefits	USD x 1000	(4,903)	(9,769)	(1,624)	(16,297)
Total Capex	**USD x 1000**	**56,925**	**113,229**	**18,779**	**188,933**

Source: Aura and Promon

The working capital requirement was calculated based on the assumptions of average terms for Recoverable taxes and other credits, Inventory, Other current assets, Accounts payable, Taxes payable and Other current liabilities. The average terms considered are shown below:

- Recoverable taxes and other credits: 30 days;
- Inventory: 30 days;
- Other current assets: 30 days;
- Accounts payable: 30 days;
- Taxes payable: 30 days;
- Other current liabilities: 30 days.

According to the above premises, the project's working capital remains stable and it is not expected a large amount to spend at the operational accounts. Table 158 presents the working capital summary:

Table 158: Working Capital Summary.

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Total or Average
Uses	-	-	-	19.808	31.969	37.692	26.552	29.900	23.688	24.775	25.367	18.778	11.472	11.357	5.750	17.807
Sources	-	-	-	14.934	18.662	19.119	18.510	19.693	18.287	19.691	11.980	10.523	7.352	7.184	4.239	11.345
Net Working Capital	-	-	-	4.874	13.307	18.573	8.042	10.206	5.401	5.084	13.388	8.255	4.120	4.173	1.510	6.462
NWC Need	-	-	-	4.874	8.433	5.267	(10.531)	2.164	(4.806)	(317)	8.303	(5.133)	(4.135)	53	(2.662)	

Source: Aura and Promon

22.2.4 OPERATING COSTS

The average operational cost for on-site mining and plant costs, encompassing workforce, management and administration, laboratory, access maintenance, and equipment rental, amounts to USD 549,2/Oz, which total USD 431.4 Million considering all the operational years of the project. The other costs, which encompass energy, transportation, refining costs, dry stack tailing, reagents and consumables, ETA, ETE, maintenance and royalties, amounts to USD 408.1/Oz, which total USD 259.2 million considering all the operational years of the project. For operating costs, tax benefits were not considered in the projections.

Recoverable taxes (PIS and COFINS) for non-exempt items, although paid at the time of purchase of inputs, services and other resources, are assumed recovered in the short term and are not included.

Table 159 presents the operating cost summary.

Table 159: Operating Costs Summary.

		Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Total or Average
Mining Costs	USD x 1000	-	-	-	(30.453)	(38.421)	(39.412)	(38.893)	(40.508)	(38.450)	(44.138)	(13.721)	(9.113)	(3.444)	(3.444)	(1.719)	(301.716)
Plant Costs	USD x 1000	-	-	-	(11.196)	(13.422)	(13.430)	(13.422)	(13.422)	(12.704)	(12.679)	(11.616)	(11.119)	(6.610)	(6.529)	(3.484)	(129.633)
Workforce	USD x 1000	-	-	-	(5.754)	(6.905)	(6.905)	(6.905)	(6.905)	(6.905)	(6.905)	(6.818)	(6.818)	(3.245)	(3.174)	(2.268)	(69.505)
Management and Administration	USD x 1000	-	-	-	(4.192)	(4.861)	(4.869)	(4.861)	(4.861)	(4.143)	(4.118)	(3.141)	(2.644)	(2.385)	(2.376)	(767)	(43.217)
Laboratory	USD x 1000	-	-	-	(1.051)	(1.416)	(1.416)	(1.416)	(1.416)	(1.416)	(1.416)	(1.416)	(1.416)	(740)	(740)	(425)	(14.285)
Access Maintenance	USD x 1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Equipment Rental	USD x 1000	-	-	-	(200)	(240)	(240)	(240)	(240)	(240)	(240)	(240)	(240)	(240)	(240)	(24)	(2.626)
Other Costs	USD x 1000	-	-	-	(18.917)	(23.844)	(24.695)	(22.960)	(25.938)	(23.009)	(23.042)	(23.380)	(22.446)	(19.764)	(19.163)	(12.038)	(259.196)
Energy	USD x 1000	-	-	-	(2.644)	(3.646)	(3.646)	(3.646)	(3.646)	(3.646)	(3.646)	(3.646)	(3.646)	(3.646)	(3.646)	(1.820)	(40.926)
Transportation	USD x 1000	-	-	-	(1.218)	(1.827)	(2.193)	(1.462)	(1.827)	(1.462)	(1.462)	(1.462)	(1.096)	(731)	(731)	(731)	(16.200)
Refining costs	USD x 1000	-	-	-	(16)	(28)	(34)	(22)	(26)	(19)	(20)	(23)	(17)	(10)	(10)	(5)	(230)
Dry Stack Tailing	USD x 1000	-	-	-	(6.445)	(4.375)	(4.347)	(4.347)	(6.692)	(4.659)	(4.634)	(4.676)	(4.676)	(4.676)	(4.594)	(4.594)	(58.715)
Reagents and consumables	USD x 1000	-	-	-	(4.853)	(8.454)	(8.454)	(8.454)	(8.454)	(8.454)	(8.454)	(8.454)	(8.454)	(7.632)	(7.632)	(3.800)	(91.552)
ETA	USD x 1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ETE	USD x 1000	-	-	-	(713)	(856)	(856)	(856)	(856)	(856)	(856)	(856)	(856)	(856)	(342)	-	(8.755)
Maintenance	USD x 1000	-	-	-	(1.675)	(2.308)	(2.308)	(2.308)	(2.308)	(2.308)	(2.308)	(2.308)	(2.308)	(1.391)	(1.391)	(693)	(23.609)
Royalties	USD x 1000	-	-	-	(1.353)	(2.350)	(2.858)	(1.865)	(2.129)	(1.605)	(1.662)	(1.956)	(1.393)	(823)	(818)	(397)	(19.209)

There is an additional cost of mine closure that reaches an amount of US$ 7.7 Million, and this value was considered at the last year of projection.

22.2.5 REVENUE

The projections for net revenue are intricately tied to the anticipated gold delivery quantity of 748k Oz, set against a consistent long-term gold price of USD 1,689/Oz. The annual average net revenue is anticipated to reach USD 118.2 Million throughout the years, spanning from year 1 to year 12. This projection considers both the gold quantity and its valuation, forming a robust foundation for revenue estimations.

Annual projections are shown in Table 160.

Table 160: Annual Revenue.

		Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Total or Average
Net Revenue	USD x 1000	-	-	-	88.863	154.285	187.667	122.468	139.827	105.413	109.126	128.426	91.500	54.058	53.703	26.057	1.261.393
Gross Revenue	USD x 1000	-	-	-	90.216	156.635	190.524	124.333	141.957	107.018	110.788	130.382	92.894	54.881	54.520	26.454	1.280.602
Deductions	USD x 1000	-	-	-	(1.353)	(2.350)	(2.858)	(1.865)	(2.129)	(1.605)	(1.662)	(1.956)	(1.393)	(823)	(818)	(397)	(19.209)

Source: EY

22.2.6 TAXATION

Income taxes on local operations were projected according to Brazilian law for the taxation regime of "Real Profit". The following rates were considered:

- Income taxes: incidence of 15.0% on income before taxes and additional 10.0% on the portion of income exceeding BRL 240.0 thousands per year;
- Social contribution: 9.0% on income before taxes.

The Company had a negative tax basis balance of BRL 6.7 million at the Reference Date, which was considered to offset income taxes over the forecasted period.

PIS, COFINS and ICMS were not applied in this analysis since all production is directed for exportation. However, there is an aliquot of 1.5% of CFEM applied for all the Gross Revenue.

The tax deductions in the amount of USD 16.2 million were included in the CAPEX. These deductions were based on EY study and on Aura's previous experience in obtaining tax benefits in prior projects.

22.2.7 ALL-IN SUSTAINING COSTS

CAPEX sustaining was considered in the projections. Table 161 details the expenditures in the operations phase of the Project in accordance with the definition of All-In-Sustaining Costs ("AISC") as proposed by the World Gold Council's Guidance Note of June 27, 2013.

Table 161: All-In Sustaining Costs.

		Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Total or Average
Capex Susteining	USD x 1000	-	-	-	-	1.677	1.677	2.216	1.741	1.583	2.018	2.018	2.018	2.018	866	866	18.699

Source: Aura

22.2.8 DISCOUNT RATE

The primary calculation of NPV considered the Weighted Average Cost of Capital (WACC) of 5% based on Aura's internal analysis and public available benchmarking. However, the calculations of Borborema's free cash-flows were also made by a rate of 10.5% calculated by EY were according to the Weighted Average Cost of Capital (WACC) methodology in United States Dollars (USD) in real terms (without considering inflation effects), based upon information of selected market participants, taking into account the risk-free rate, the market risk premium, the country risk and the size premium.

22.3 FINANCIAL ANALYSIS

The financial model adopts the concept of project free cash flow, in which all the project's cash generation capacity is evaluated by countering this flow with a weighted discount rate ("WACC") which reflects the average cost of sources of funds (cost of equity and third parties). The amounts in the cash flow were expressed in thousands of United States Dollars (USD x 1,000) and on a real basis (without inflation).

Based on a WACC of 5.0%, adopted by Aura, the net present value ("NPV") of Aura Minerals Gold Project amounts to USD 182 million.

Based on a WACC of 10.5%, technically calculated by EY, the NPV of Aura Minerals Gold Project amounts to USD 96 million.

In both scenarios, it is possible to conclude that the NPV maintains a positive value for the rates presented above.

The project's after tax internal rate of return ("IRR") stands at 21.9%, while the annual average EBITDA (from 2025 to 2036) amounts to USD 47.6 Million. The operational payback period is calculated at 3.2 years.

The results are summarized in Table 162 below.

Table 162: Project Cash Flow.

		Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
Operational Cash Flow	USD x 1000	-	-	-	23.422	62.237	92.266	54.762	52.736	34.997	28.502	62.420	49.549	27.747	21.175	9.726	1.510
(+) EBITDA	USD x 1000	-	-	-	28.296	78.599	110.129	47.193	59.960	31.250	29.268	79.709	48.823	24.239	24.566	8.817	-
(-) Income tax FCFE	USD x 1000	-	-	-	-	(7.929)	(12.596)	(2.961)	(5.060)	(1.059)	(1.082)	(8.986)	(4.407)	(627)	(3.338)	(1.754)	(0)
(+/-) Working capital variation	USD x 1000	-	-	-	(4.874)	(8.433)	(5.267)	10.531	(2.164)	4.806	317	(8.303)	5.133	4.135	(53)	2.662	1.510
Investiment Cash Flow	USD x 1000	-	(57.686)	(113.757)	(18.624)	(1.677)	(1.677)	(2.216)	(1.741)	(1.583)	(2.018)	(2.018)	(2.018)	(2.018)	(866)	(8.363)	-
Capex - Expansion	USD x 1000	-	(57.686)	(113.757)	(18.624)	-	-	-	-	-	-	-	-	-	-	-	-
Capex - Sustaining	USD x 1000	-	-	-	-	(1.677)	(1.677)	(2.216)	(1.741)	(1.583)	(2.018)	(2.018)	(2.018)	(2.018)	(866)	(8.363)	-
Free Cash Flow to Firm (FCFF)	USD x 1000	-	(57.686)	(113.757)	4.798	60.560	90.589	52.546	50.994	33.413	26.485	60.402	47.531	25.729	20.308	1.362	1.510

Source: EY

22.4 SENSITIVITY ANALYSIS

22.4.1 TORNADO ANALYSIS

The sensitivity analysis shows the impact of the variation of the gold price, exchange rates, operating costs (OPEX), capital costs (CAPEX) and WACC upon the Project NPV. The analysis encompasses the following range of variation in the key inputs:

Gold price: ±25%.

Exchange Rate: ±25%.

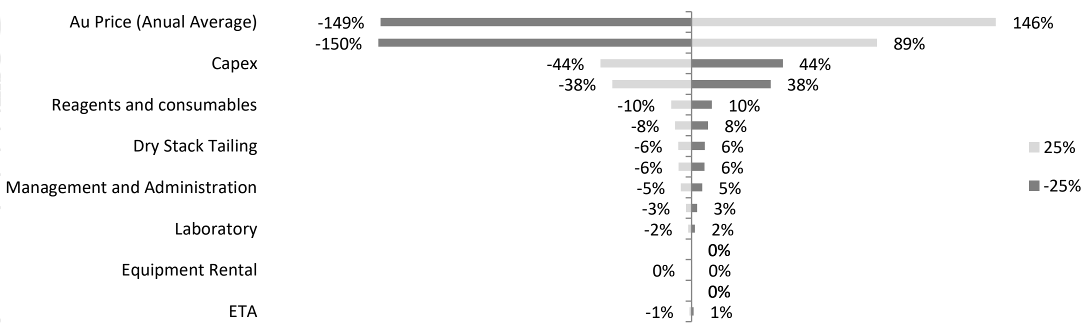
OPEX (Cost): ±25%.

CapEx: ±25%.

WACC: 5% to 11%

In assessing the sensitivity of the Project returns, each of these parameters is varied independently of the others. Scenarios combining beneficial or adverse variations simultaneously in two or more variables will have a more marked effect on the economics of the Project than will the individual variations considered. The sensitivity analysis has been conducted assuming no change to the mine plan or schedule.

Figure 155 illustrates the results of the sensitivity analysis for Project NPV and these effects for each of the critical variable.



Source: EY

Figure 155: Sensitivity Analysis Graph – NPV.

22.4.2 TWO PARAMETERS ANALYSIS

Additionally, secondary sensitivity analyses were made varying two parameters simultaneously to assess the impact on the IRR, NPV, Discounted Payback and Simple Payback (Including Start-Up):

Table 163: Gold Price x Exchange Rate (USD/BRL)

Exchange (USD/BF		Gold Price (USD/Oz)				
		-20%	-10%	0%	10%	20%
		1.232	1.541	1.712	1.883	2.259
-20%	3,66	n/a	8,9	6,4	4,2	3,5
-10%	4,58	9,4	6,0	4,1	3,3	2,9
0%	5,09	7,1	4,2	3,3	2,8	2,6
10%	5,60	4,5	3,4	2,9	2,6	2,4
20%	6,72	3,7	3,0	2,6	2,4	2,2

Source: EY

Exchange (USD/BF		Gold Price (USD/Oz)				
		-20%	-10%	0%	10%	20%
		1.232	1.541	1.712	1.883	2.259
-20%	3,66	(135.926)	(71.937)	(11.676)	45.338	101.824
-10%	4,58	(68.845)	(8.291)	48.661	105.148	161.517
0%	5,09	(17.151)	40.039	96.514	152.891	209.252
10%	5,60	22.730	79.184	135.585	191.947	248.309
20%	6,72	55.331	111.771	168.132	224.494	280.856

Exchange (USD/BF		Gold Price (USD/Oz)				
		-20%	-10%	0%	10%	20%
		1.232	1.541	1.712	1.883	2.259
-20%	3,66	-9,6%	1,7%	9,0%	14,9%	20,1%
-10%	4,58	1,0%	9,3%	15,7%	21,4%	26,5%
0%	5,09	8,0%	15,2%	21,4%	27,0%	32,1%
10%	5,60	13,4%	20,3%	26,4%	32,0%	37,2%
20%	6,72	18,0%	24,8%	30,9%	36,6%	41,9%

Table 164: Gold Price x OpEx

Total OPEX (USD)		Gold Price (USD/Oz)				
		-20%	-10%	0%	10%	20%
		1.232	1.541	1.712	1.883	2.259
-20%	497.192	4,1	3,3	2,8	2,6	2,4
-10%	621.490	4,8	3,7	3,0	2,7	2,5
0%	690.545	7,1	4,2	3,3	2,8	2,6
10%	759.599	8,4	4,9	3,7	3,0	2,7
20%	911.519	#N/A	7,3	4,2	3,3	2,8

Source: EY

Total OPEX (USD)		Gold Price (USD/Oz)				
		-20%	-10%	0%	10%	20%
		1.232	1.541	1.712	1.883	2.259
-20%	497.192	44.621	101.027	157.389	213.751	270.112
-10%	621.490	14.121	70.549	126.959	183.321	239.682
0%	690.545	(17.151)	40.039	96.514	152.891	209.252
10%	759.599	(50.259)	9.375	66.004	122.461	178.822
20%	911.519	(84.438)	(22.033)	35.440	91.979	148.392

Total OPEX (USD)		Gold Price (USD/Oz)				
		-20%	-10%	0%	10%	20%
		1.232	1.541	1.712	1.883	2.259
-20%	497.192	15,7%	21,9%	27,4%	32,5%	37,3%
-10%	621.490	12,1%	18,7%	24,5%	29,8%	34,8%
0%	690.545	8,0%	15,2%	21,4%	27,0%	32,1%
10%	759.599	3,1%	11,5%	18,2%	24,1%	29,4%
20%	911.519	-3,0%	7,3%	14,7%	20,9%	26,6%

Table 165: Gold Price x Discount Rate

Discount rate (%)		Gold Price (USD/Oz)				
		-20%	-10%	0%	10%	20%
		1.232	1.541	1.712	1.883	2.259
-20%	0,0%	7,1	4,2	3,3	2,8	2,6
-10%	0,0%	7,1	4,2	3,3	2,8	2,6
0%	0,0%	7,1	4,2	3,3	2,8	2,6
10%	0,0%	7,1	4,2	3,3	2,8	2,6
20%	0,0%	7,1	4,2	3,3	2,8	2,6

Source: EY

Discount rate (%)		Gold Price (USD/Oz)				
		-20%	-10%	0%	10%	20%
		1.232	1.541	1.712	1.883	2.259
-20%	0,0%	(1.909)	61.992	125.057	188.059	251.048
-10%	0,0%	(9.861)	50.554	110.197	169.757	229.303
0%	0,0%	(17.151)	40.039	96.514	152.891	209.252
10%	0,0%	(23.841)	30.362	83.902	137.328	190.739
20%	0,0%	(29.987)	21.445	72.261	122.951	173.624

Discount rate (%)		Gold Price (USD/Oz)				
		-20%	-10%	0%	10%	20%
		1.232	1.541	1.712	1.883	2.259
-20%	0,0%	8,0%	15,2%	21,4%	27,0%	32,1%
-10%	0,0%	8,0%	15,2%	21,4%	27,0%	32,1%
0%	0,0%	8,0%	15,2%	21,4%	27,0%	32,1%
10%	0,0%	8,0%	15,2%	21,4%	27,0%	32,1%
20%	0,0%	8,0%	15,2%	21,4%	27,0%	32,1%

Table 166: Gold Price x CAPEX.

Total CAPEX (USD		Gold Price (USD/Oz)				
		-20%	-10%	0%	10%	20%
		1.232	1.541	1.712	1.883	2.259
-20%	136.849	4,5	3,3	2,8	2,5	2,3
-10%	171.061	5,4	3,7	3,0	2,7	2,4
0%	190.067	7,1	4,2	3,3	2,8	2,6
10%	209.074	7,5	4,6	3,6	3,0	2,7
20%	250.889	8,0	5,2	4,0	3,3	2,9

Source: EY

Total CAPEX (USD		Gold Price (USD/Oz)				
		-20%	-10%	0%	10%	20%
		1.232	1.541	1.712	1.883	2.259
-20%	136.849	17.339	73.894	130.349	186.711	243.072
-10%	171.061	115	56.939	113.437	169.801	226.162
0%	190.067	(17.151)	40.039	96.514	152.891	209.252
10%	209.074	(34.500)	23.179	79.592	135.981	192.342
20%	250.889	(52.262)	6.122	62.669	119.070	175.432

Total CAPEX (USD		Gold Price (USD/Oz)				
		-20%	-10%	0%	10%	20%
		1.232	1.541	1.712	1.883	2.259
-20%	136.849	13,0%	21,0%	28,0%	34,3%	40,1%
-10%	171.061	10,3%	17,9%	24,4%	30,3%	35,8%
0%	190.067	8,0%	15,2%	21,4%	27,0%	32,1%
10%	209.074	6,0%	12,9%	18,8%	24,2%	29,0%
20%	250.889	4,2%	11,0%	16,6%	21,7%	26,3%

Table 167: OpEx x CapEx.

Total OPEX (USD)		Total CAPEX (USD)				
		-20%	-10%	0%	10%	20%
		136.849	171.061	190.067	209.074	250.889
-20%	497.192	2,5	2,6	2,8	2,9	3,3
-10%	621.490	2,7	2,8	3,0	3,3	3,7
0%	690.545	2,8	3,0	3,3	3,7	4,2
10%	759.599	3,0	3,3	3,6	4,1	4,7
20%	911.519	3,3	3,6	4,0	4,5	5,4

Source: EY

Total OPEX (USD)		Total CAPEX (USD)				
		-20%	-10%	0%	10%	20%
		136.849	171.061	190.067	209.074	250.889
-20%	497.192	191.209	160.779	130.349	99.859	69.277
-10%	621.490	174.299	143.869	113.437	82.937	52.315
0%	690.545	157.389	126.959	96.514	66.004	35.440
10%	759.599	140.479	110.049	79.592	49.083	18.571
20%	911.519	123.569	93.139	62.669	32.225	1.361

Total OPEX (USD)		Total CAPEX (USD)				
		-20%	-10%	0%	10%	20%
		136.849	171.061	190.067	209.074	250.889
-20%	497.192	34,8%	31,5%	28,0%	24,3%	20,4%
-10%	621.490	30,8%	27,7%	24,4%	21,0%	17,3%
0%	690.545	27,4%	24,5%	21,4%	18,2%	14,7%
10%	759.599	24,6%	21,8%	18,8%	15,7%	12,4%
20%	911.519	22,1%	19,4%	16,6%	13,6%	10,5%

Table 168: NPV Sensitivity

WACC	5.0%	6.0%	7.0%	8.0%	9.0%	10.0%	11.0%
NPV	182.716	164.002	146.778	130.905	116.260	102.731	90.220

22.4.3 CONCLUSION

The financial model for the Borborema Project was prepared using capital costs, operating expenditures and production schedule with inputs provided by Aura and Promon.

The financial model adopts the concept of project free cash flow, in which all the project's cash generation capacity is evaluated by countering this flow with a WACC, which reflects the average cost of sources of funds (cost of equity and third parties). As mentioned before in this chapter, this WACC was sensibilized in a range between 5.0% and 11.0% with the objective to demonstrate the NPV behavior for different perception of risks. After this sensitivity analysis, it is possible to conclude that the NPV maintains a positive value for all the rates inside this range.

The financial model considers the Real Profit tax regime.

This scenario is associated with a Project after tax IRR of 21.9% and a 3.2-years Operational Payback Time. The gold price adopted has an average value of USD 1,712/Oz considering all the operational years and the exchange rate used was BRL 4.93 for USD 1.00 in 2023, BRL 5.00 for USD 1.00 in 2024 and BRL 5.09 for USD 1.00 in 2025 onwards.

A series of analysis was performed varying Gold Price, Exchange Rate, CAPEX and OPEX to assess the impact of these variables on the NPV.

Based on the results of the Sensitivity Analysis the project profitability is most affected by the gold price and exchange rate, followed by CAPEX and Mining Costs.

Assuming that the assumptions provided by Aura and Promon are accurate and considering the range of WACC between 5.0% and 11.0% and the feasibility analysis of the project through the applied methodology, the NPV calculated for the project is positive.

The materialization of the results presented in this study are dependant upon the implementation and fruition of all operational assumptions provided by this report in its previous chapters.

23 ADJACENT PROPERTIES

Many individuals maintain land positions near Aura's Borborema Project claims (Figure 156). There are currently no active exploration activities on any of these adjacent properties.

There is a historical tungsten mine near Currais Novos which has past production. There has been and currently is no mining activity at this mine. There are two mining concessions in the name of Mineração Barra Verde and Mineração Currais Novos related to the historical tungsten mine.

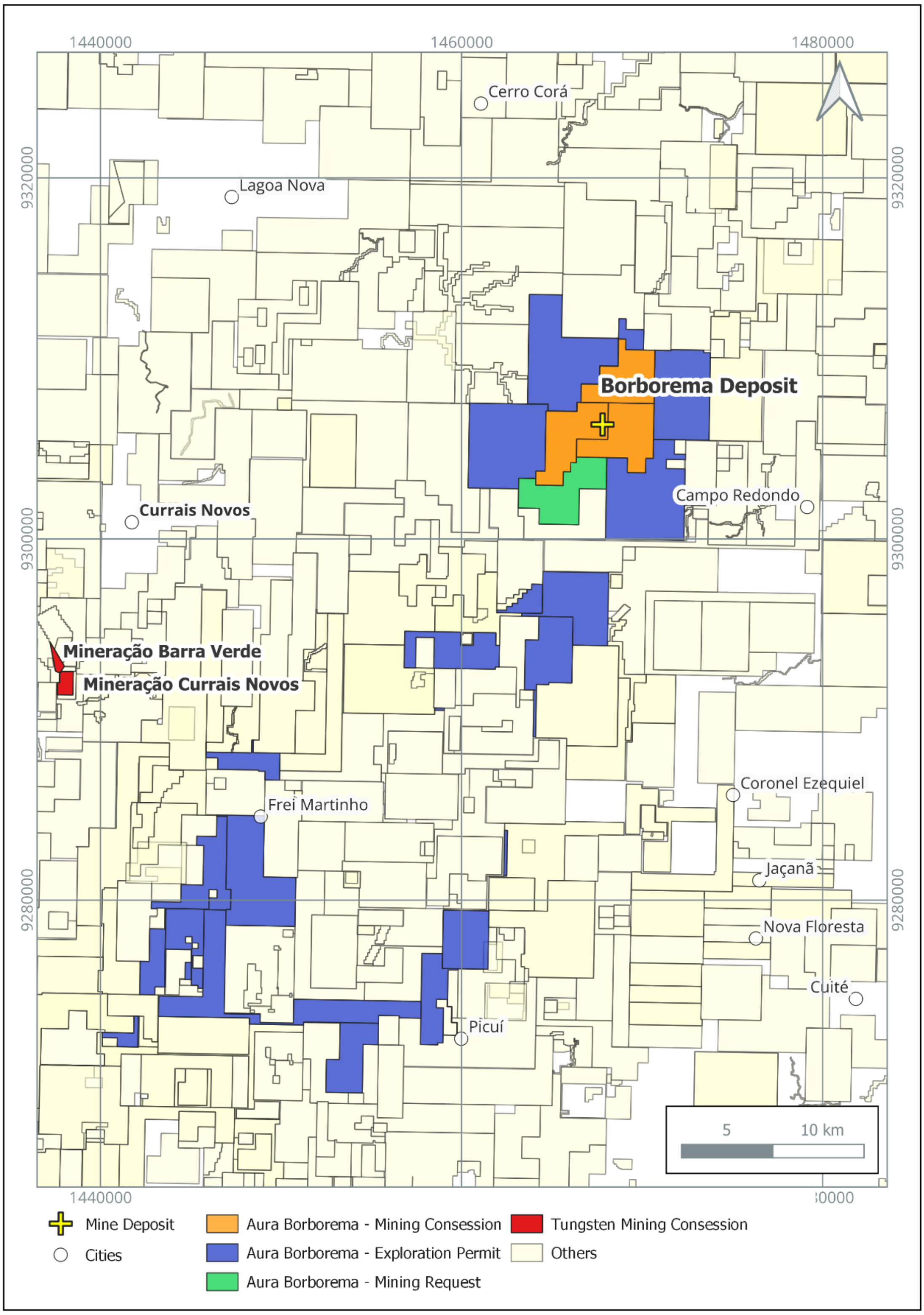


Figure 156: Adjacent properties in 25 km buffer showing the Aura's claims by status in ANM and all other claims.

24 OTHER RELEVANT DATA AND INFORMATION

24.1 OPERATIONAL PIT BY PERIODS

The operational stages of the planned open pit are shown in the following figures (Figure 157 to Figure 188). The red areas show the materials that are to be removed at each stage of operation; the pit walls and benches are shown as excavation continues.

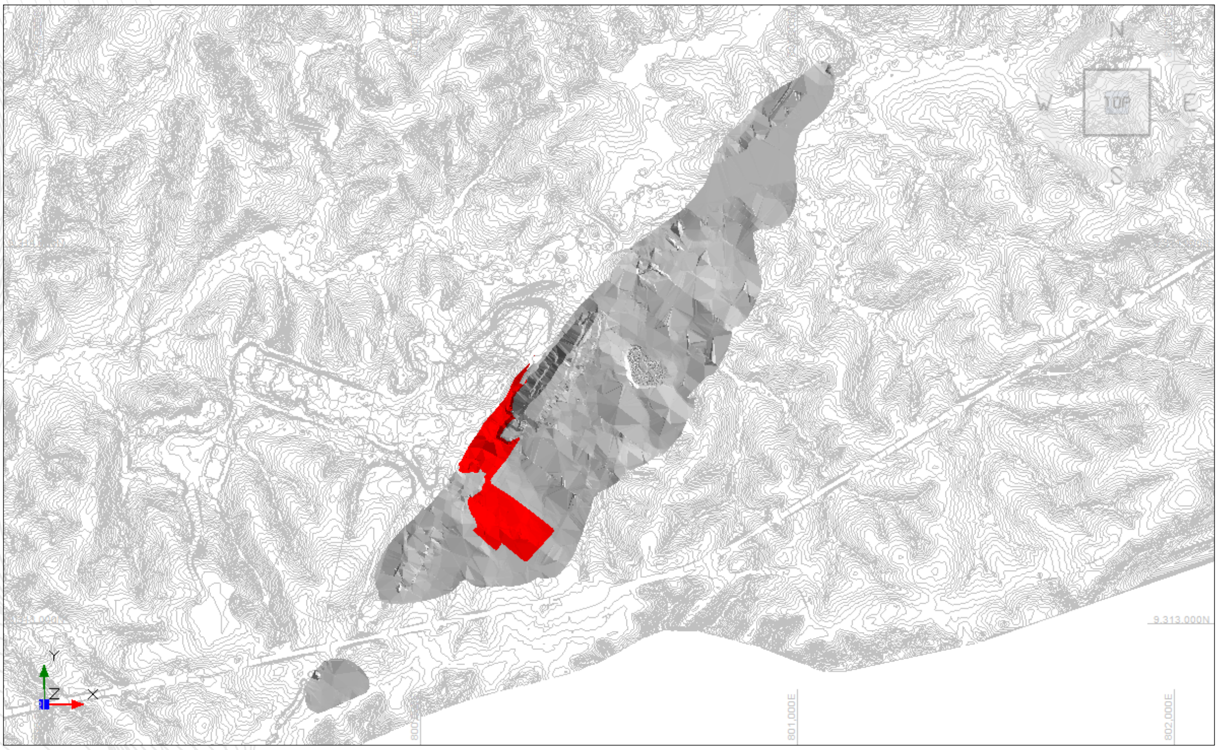


Figure 157: Year 0 – Month 1

Note: Figure prepared by Deswik, 2023

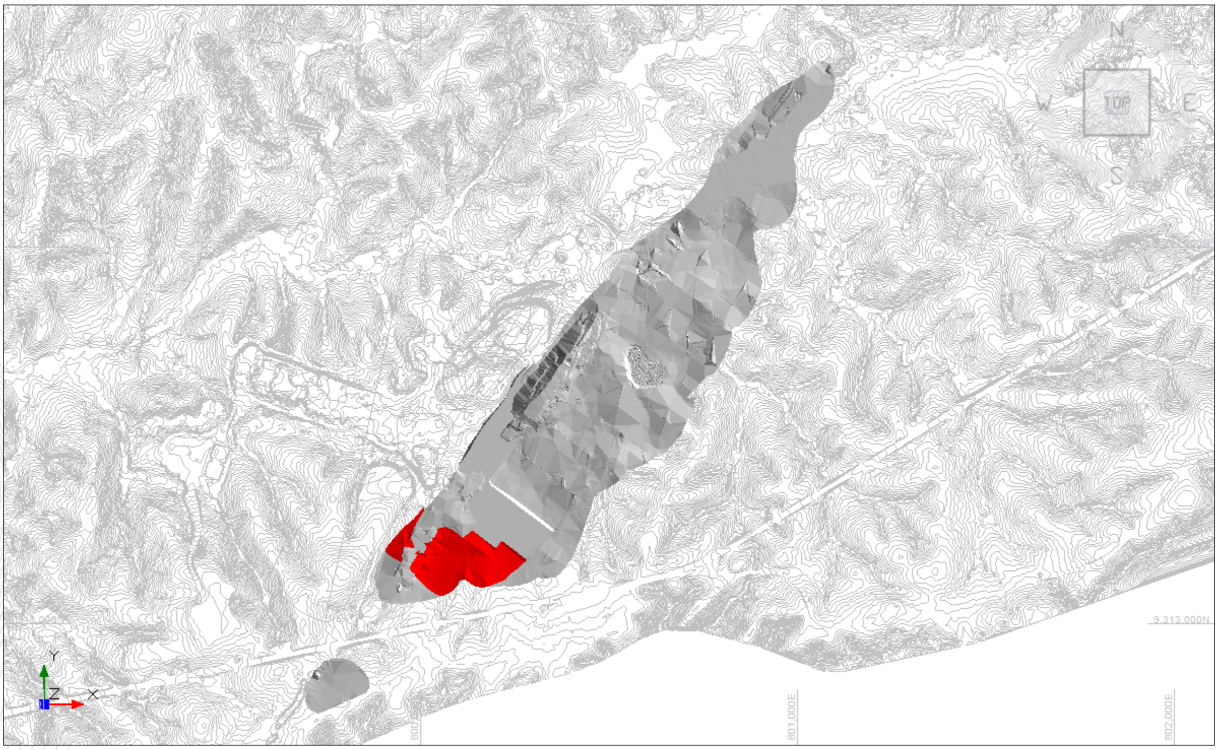


Figure 158: Year 0 – Month 2

Note: Figure prepared by Deswik, 2023

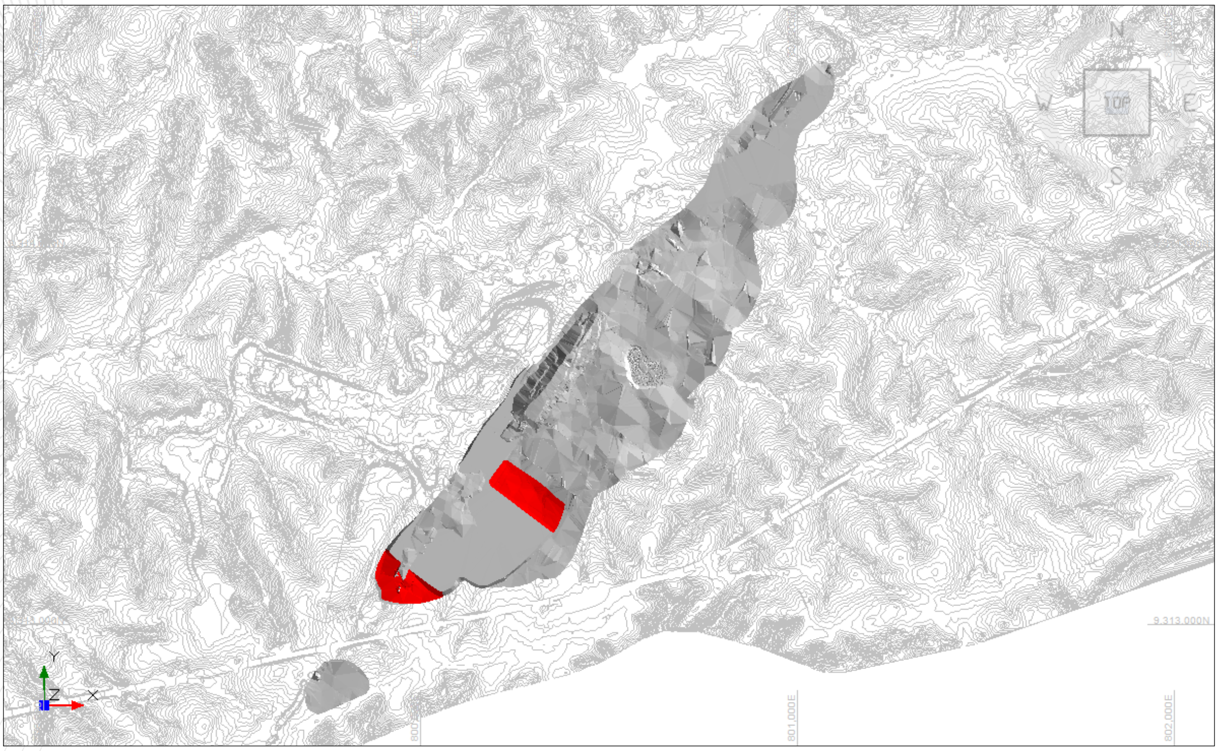


Figure 159: Year 0 – Month 3

Note: Figure prepared by Deswik, 2023

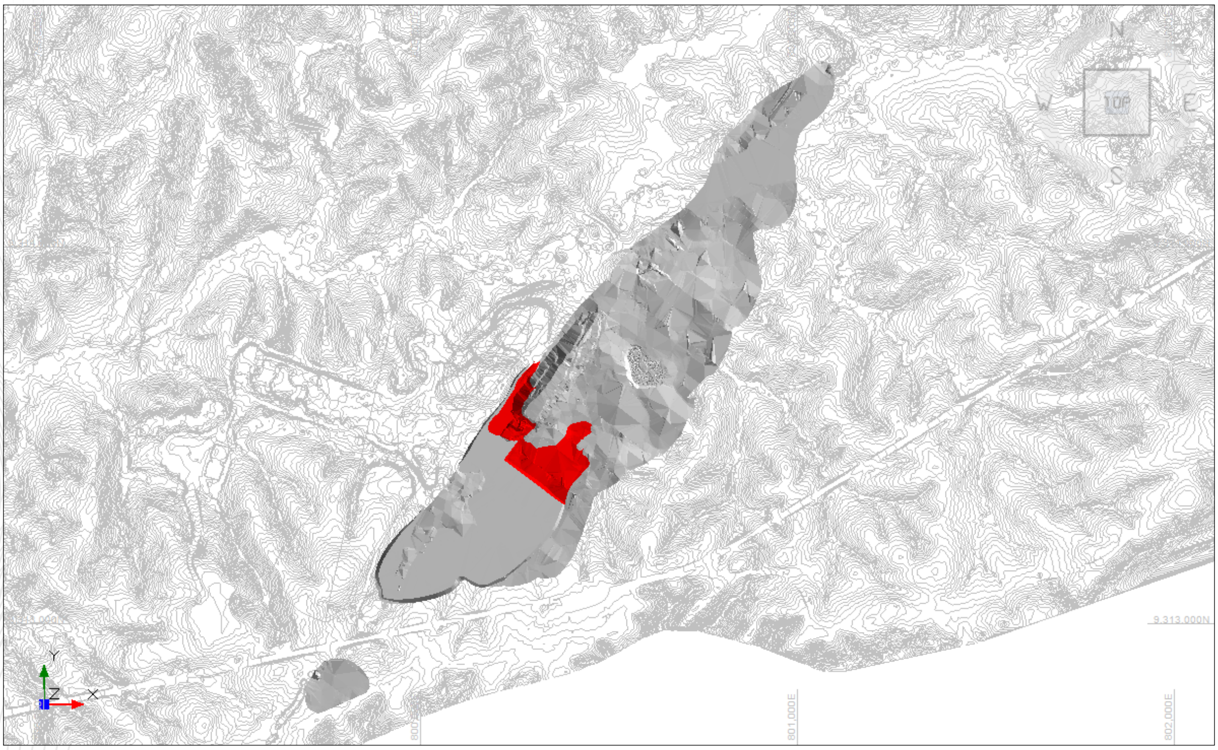


Figure 160: Year 0 – Month 4

Note: Figure prepared by Deswik, 2023

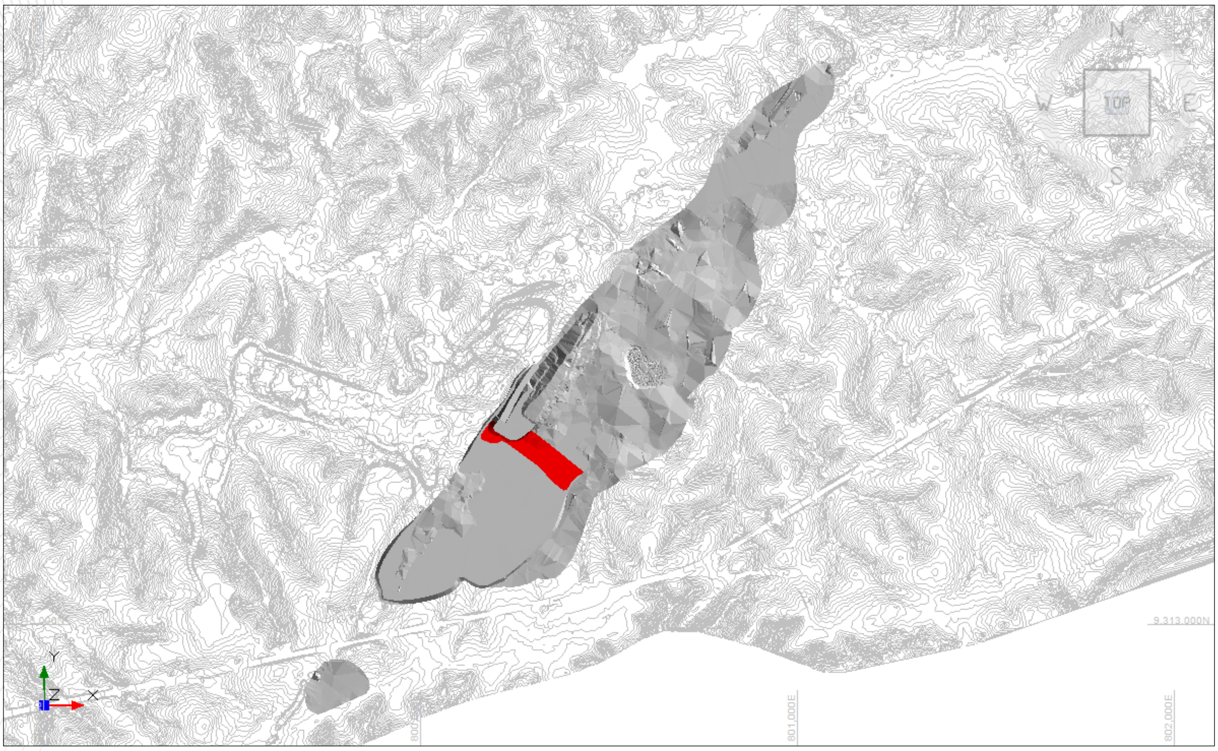


Figure 161: Year 0 – Month 5

Note: Figure prepared by Deswik, 2023

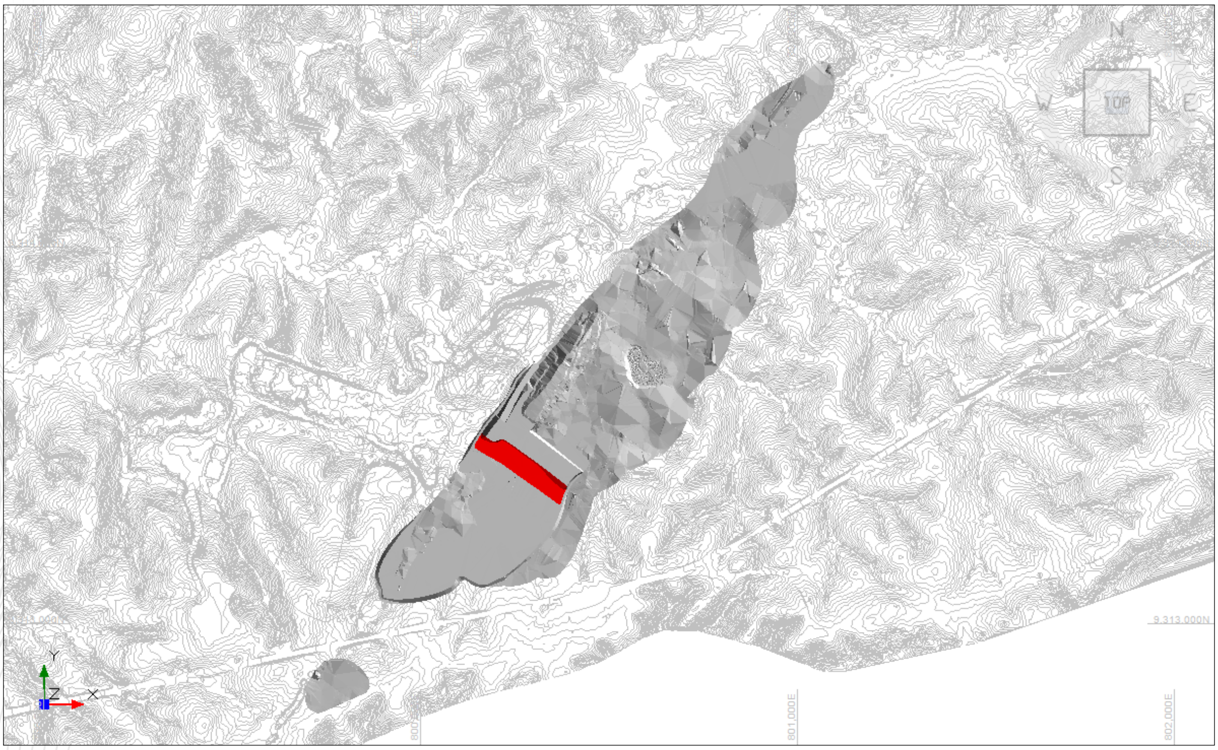


Figure 162: Year 0 – Month 6

Note: Figure prepared by Deswik, 2023

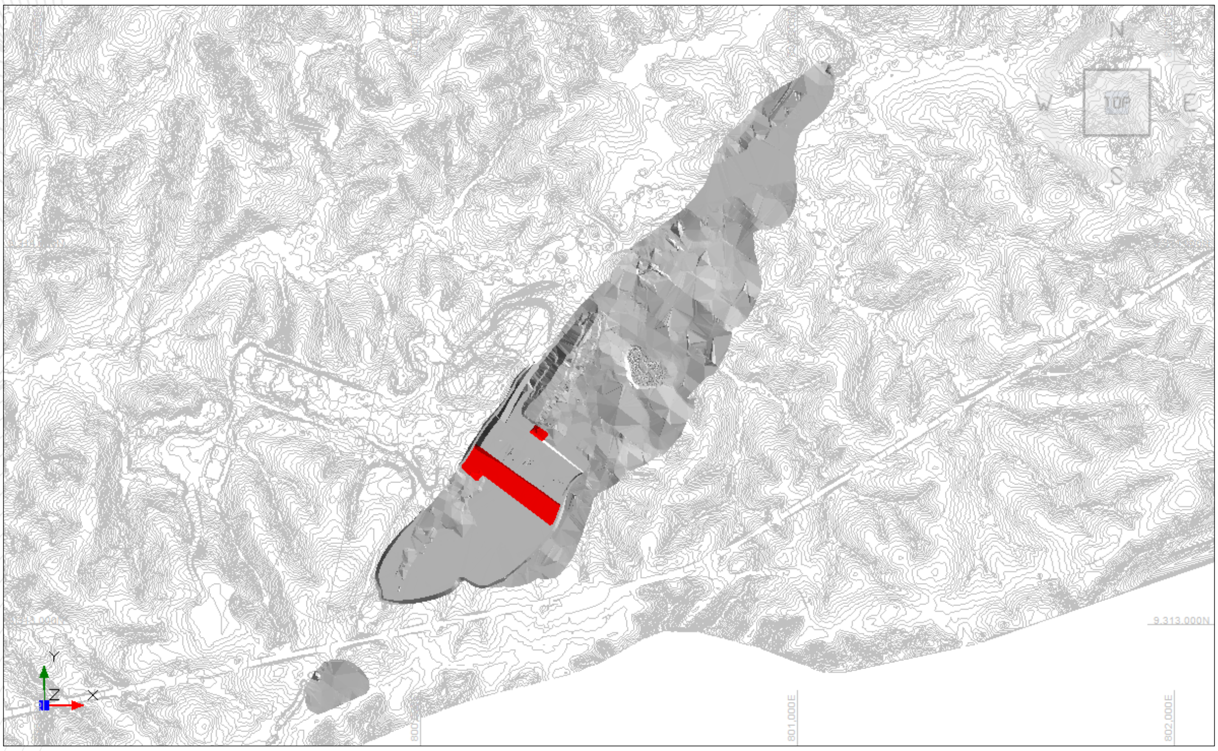


Figure 163: Year 0 – Month 7

Note: Figure prepared by Deswik, 2023

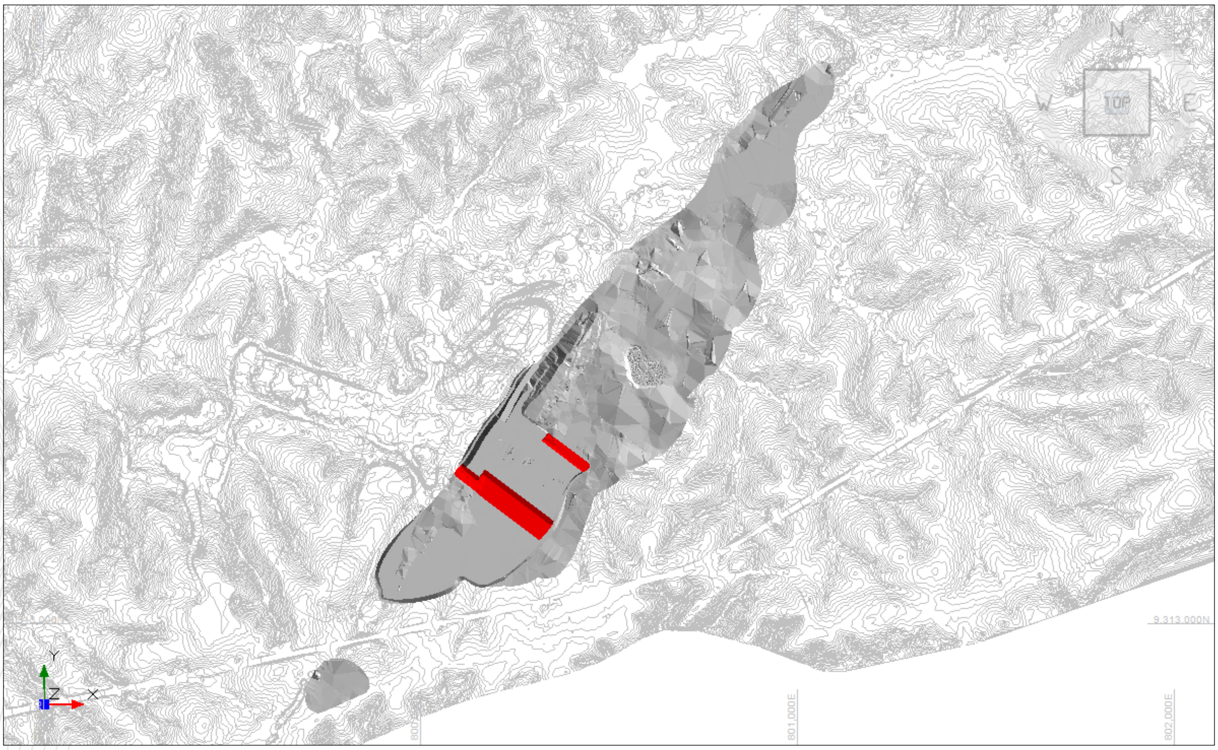


Figure 164: Year 0 – Month 8

Note: Figure prepared by Deswik, 2023

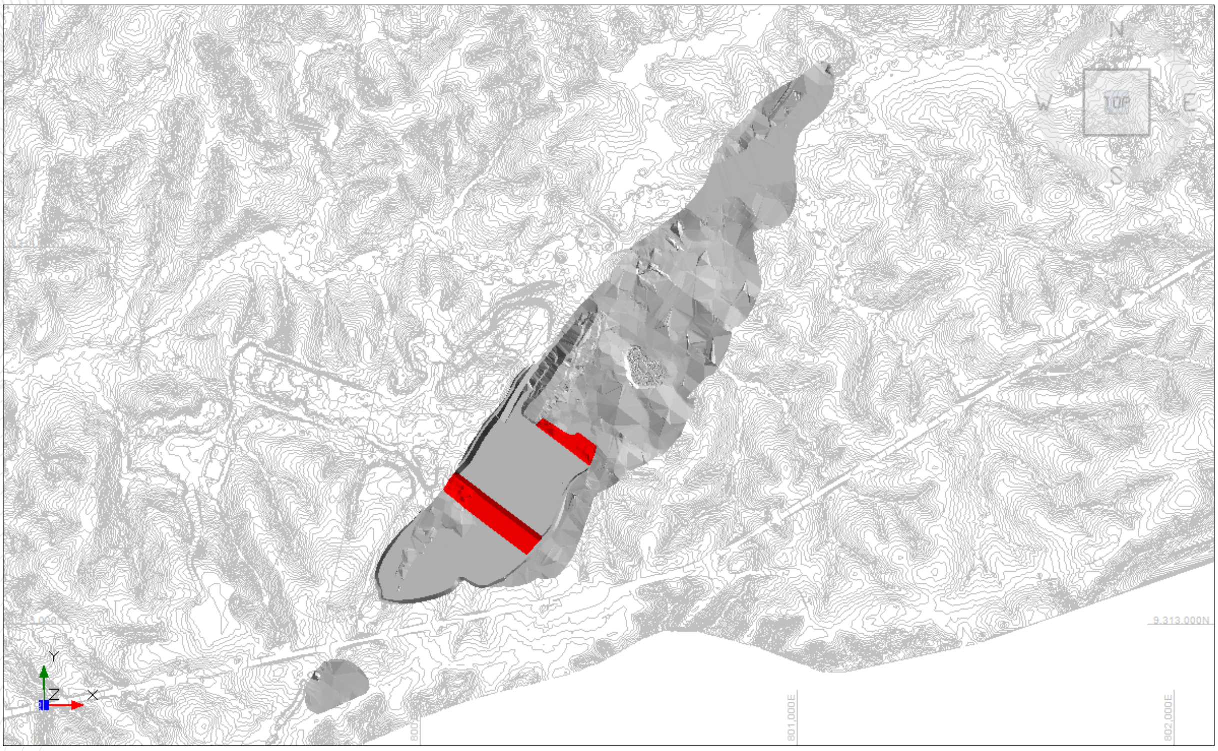


Figure 165: Year 0 – Month 9

Note: Figure prepared by Deswik, 2023

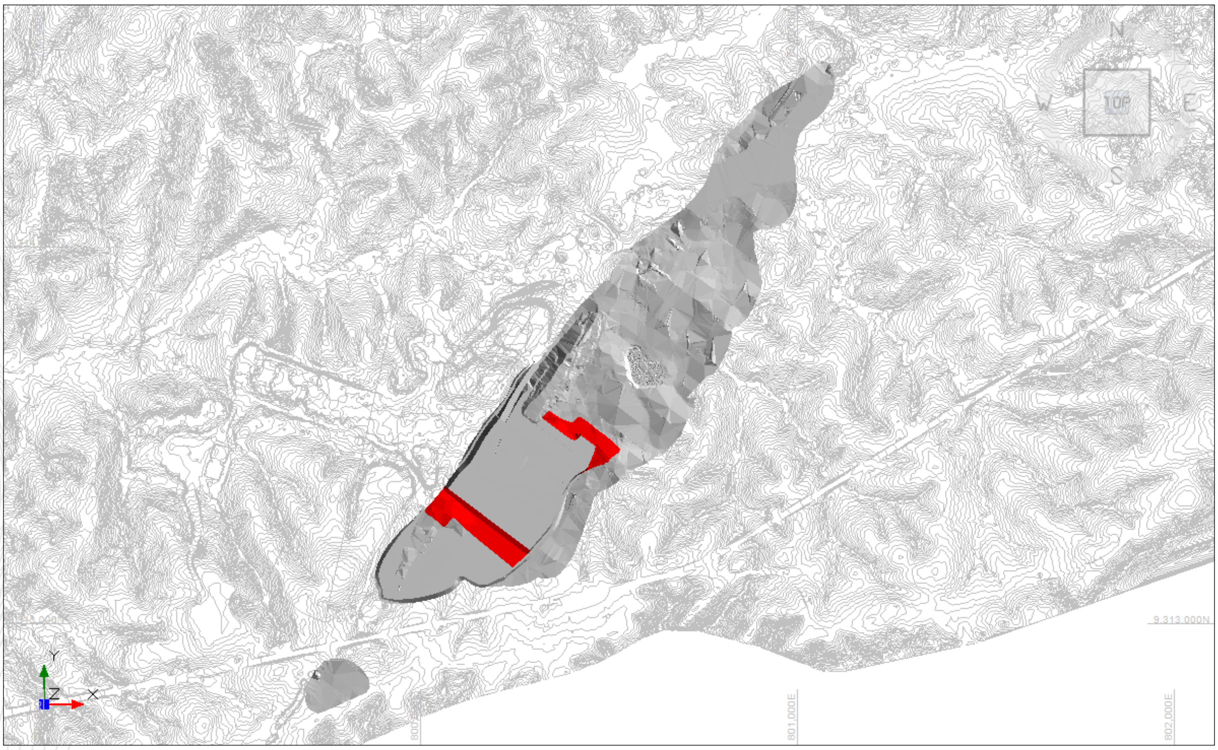


Figure 166: Year 1 – Month 1

Note: Figure prepared by Deswik, 2023

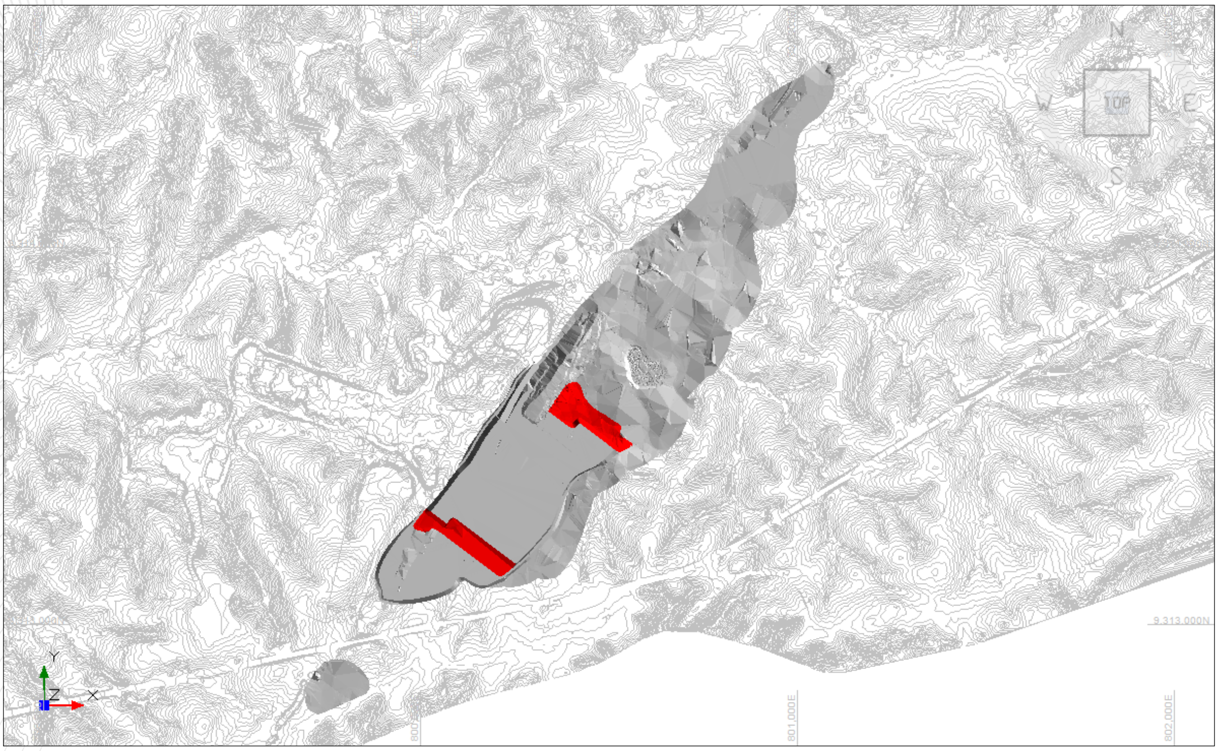


Figure 167: Year 1 – Month 2

Note: Figure prepared by Deswik, 2023

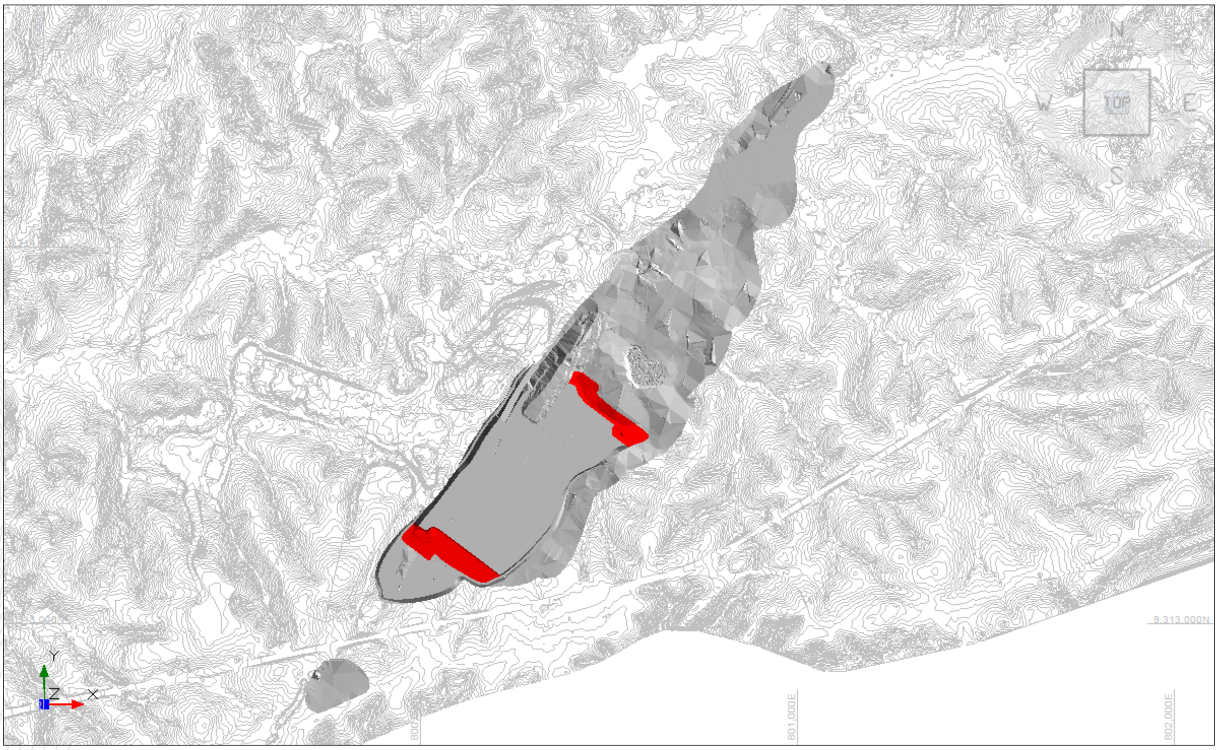


Figure 168: Year 1 – Month 3

Note: Figure prepared by Deswik, 2023

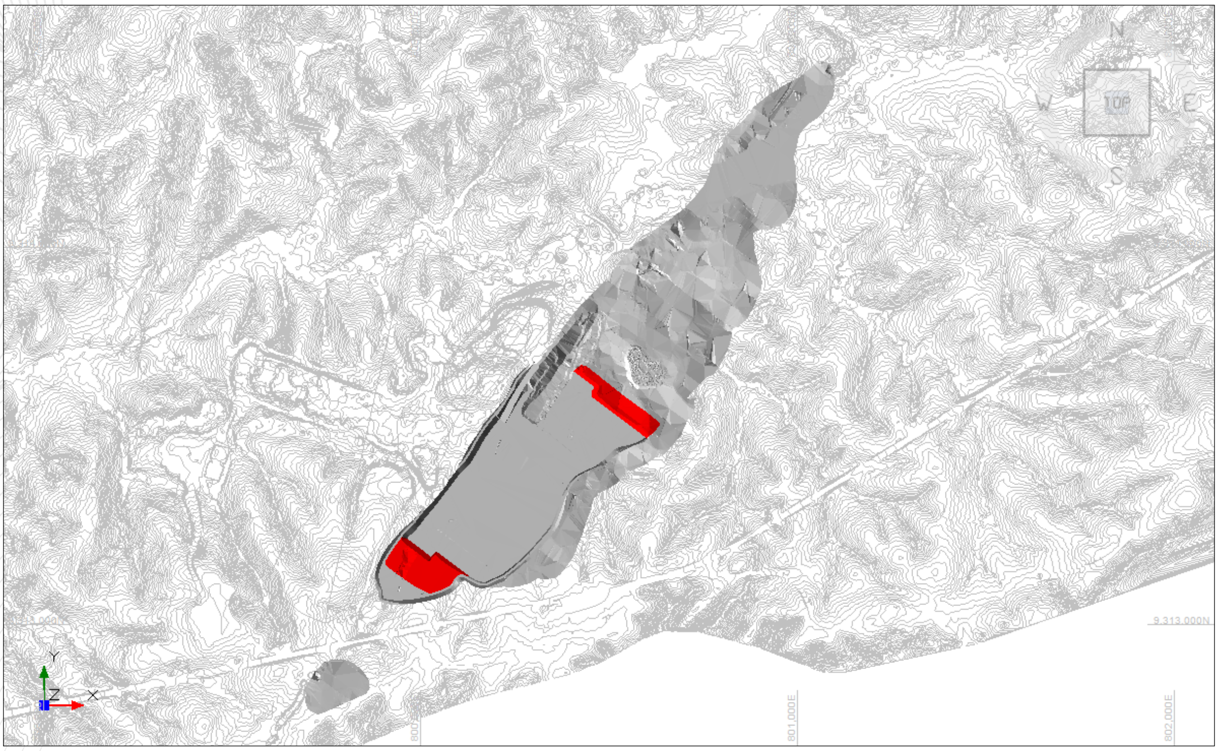


Figure 169: Year 1 – Month 4

Note: Figure prepared by Deswik, 2023

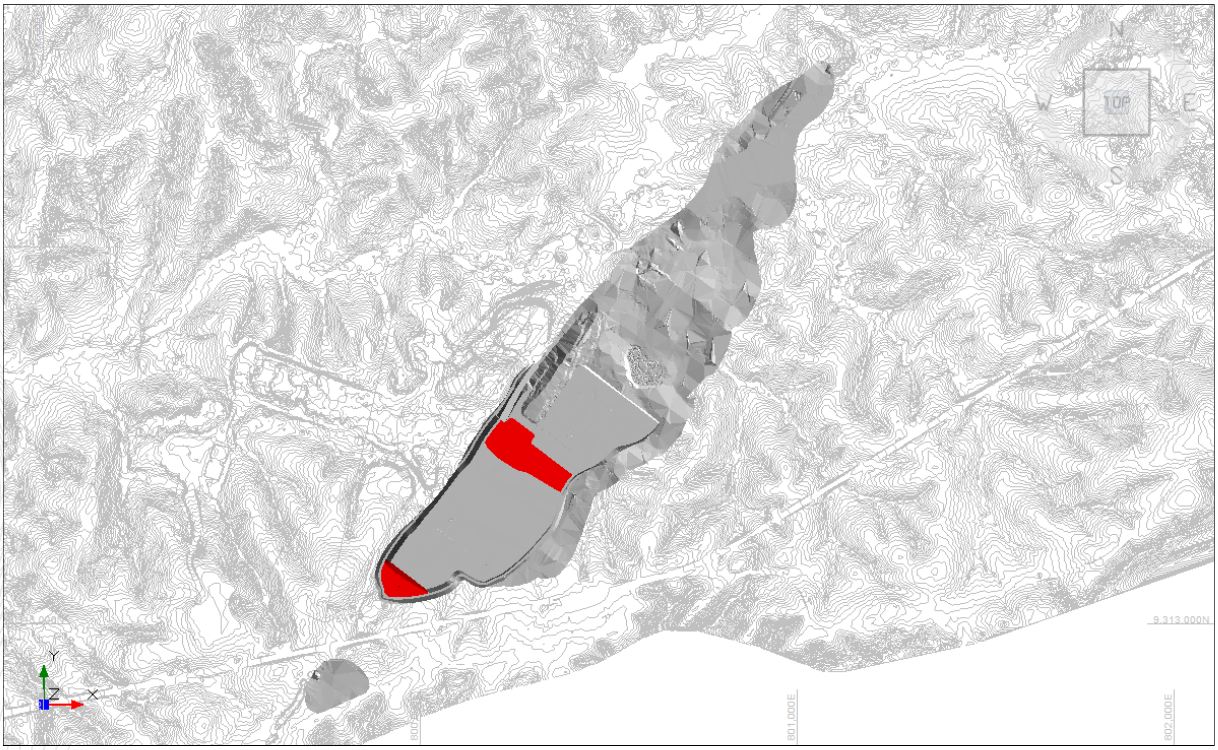


Figure 170: Year 1 – Month 5

Note: Figure prepared by Deswik, 2023

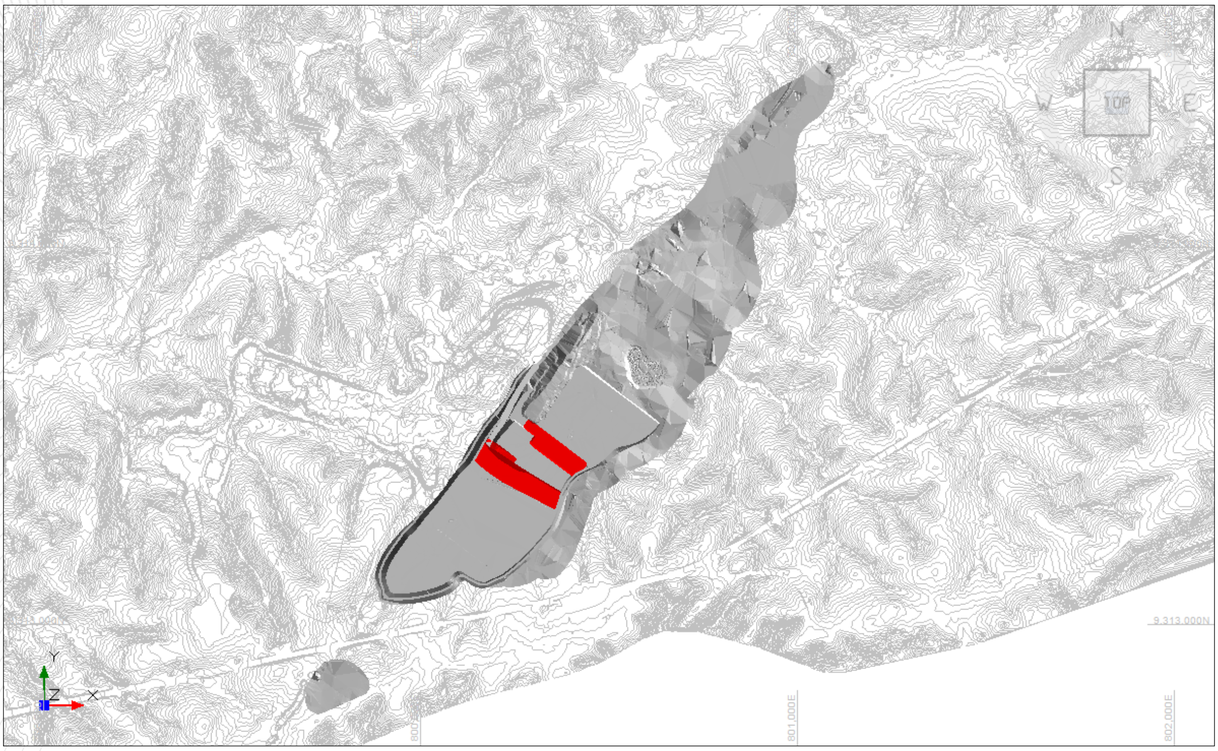


Figure 171: Year 1 – Month 6

Note: Figure prepared by Deswik, 2023

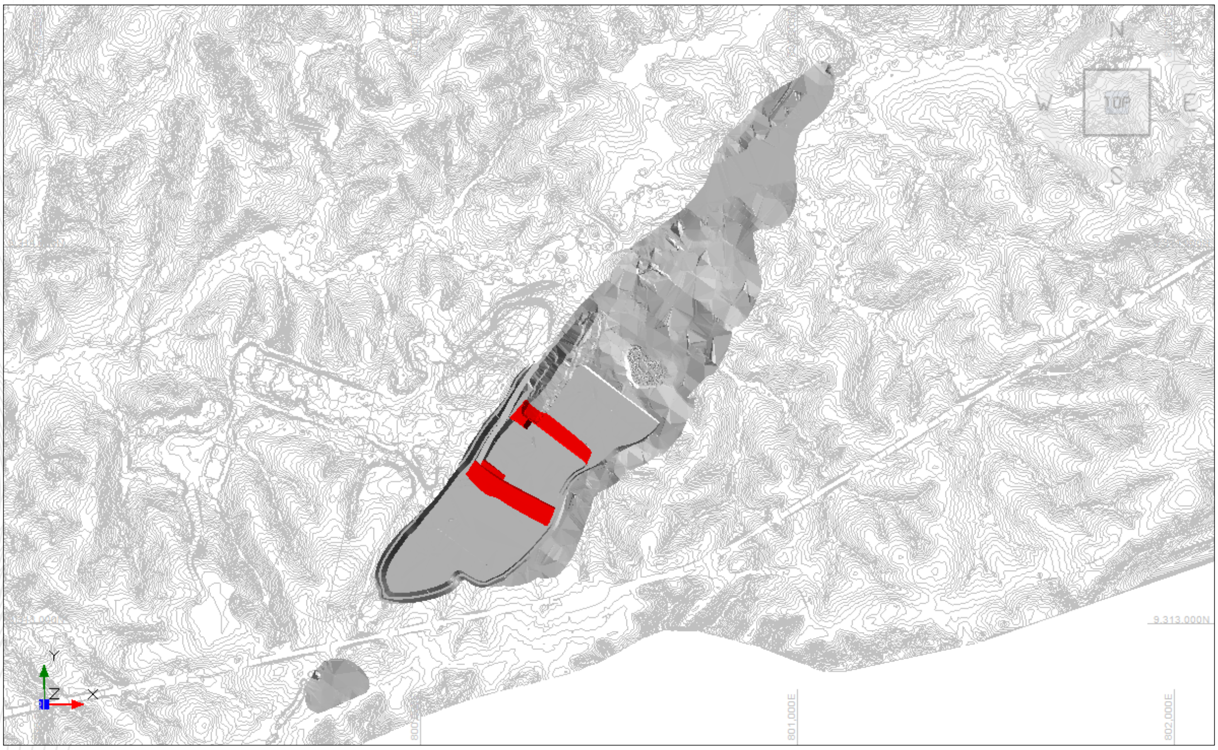


Figure 172: Year 1 – Month 7

Note: Figure prepared by Deswik, 2023

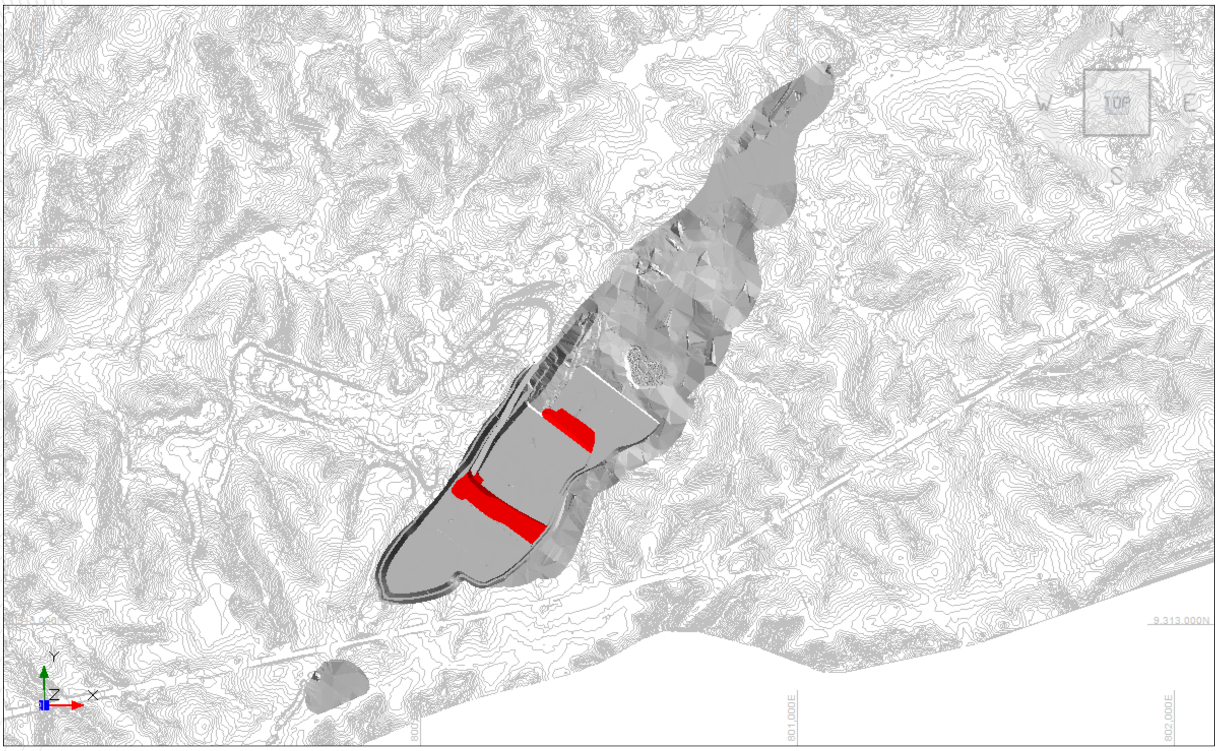


Figure 173: Year 1 – Month 8

Note: Figure prepared by Deswik, 2023

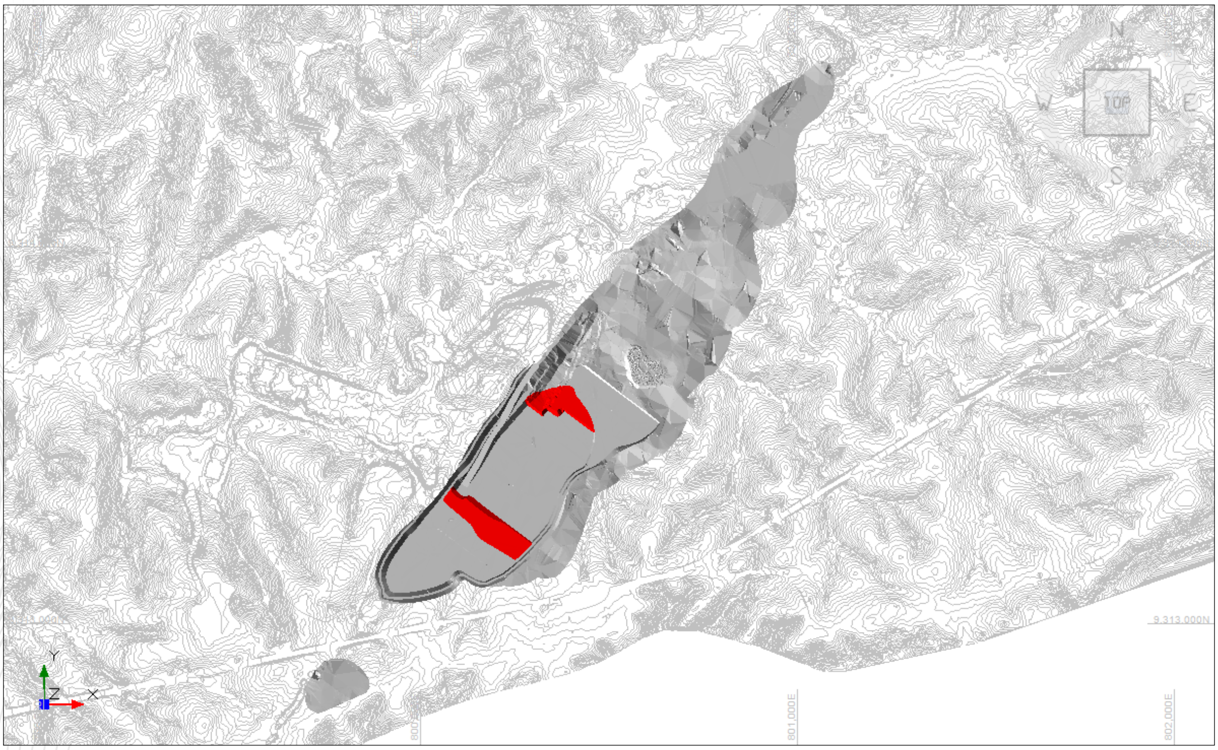


Figure 174: Year 1 – Month 9

Note: Figure prepared by Deswik, 2023

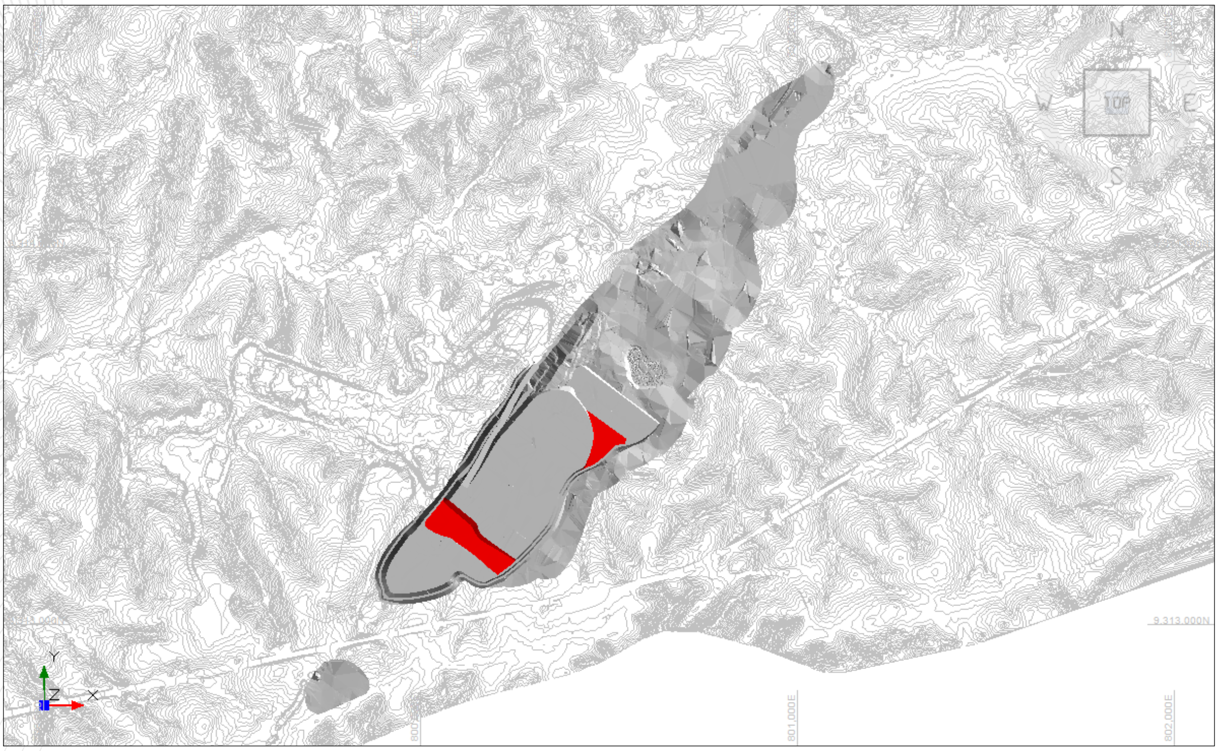


Figure 175: Year 1 – Month 10

Note: Figure prepared by Deswik, 2023

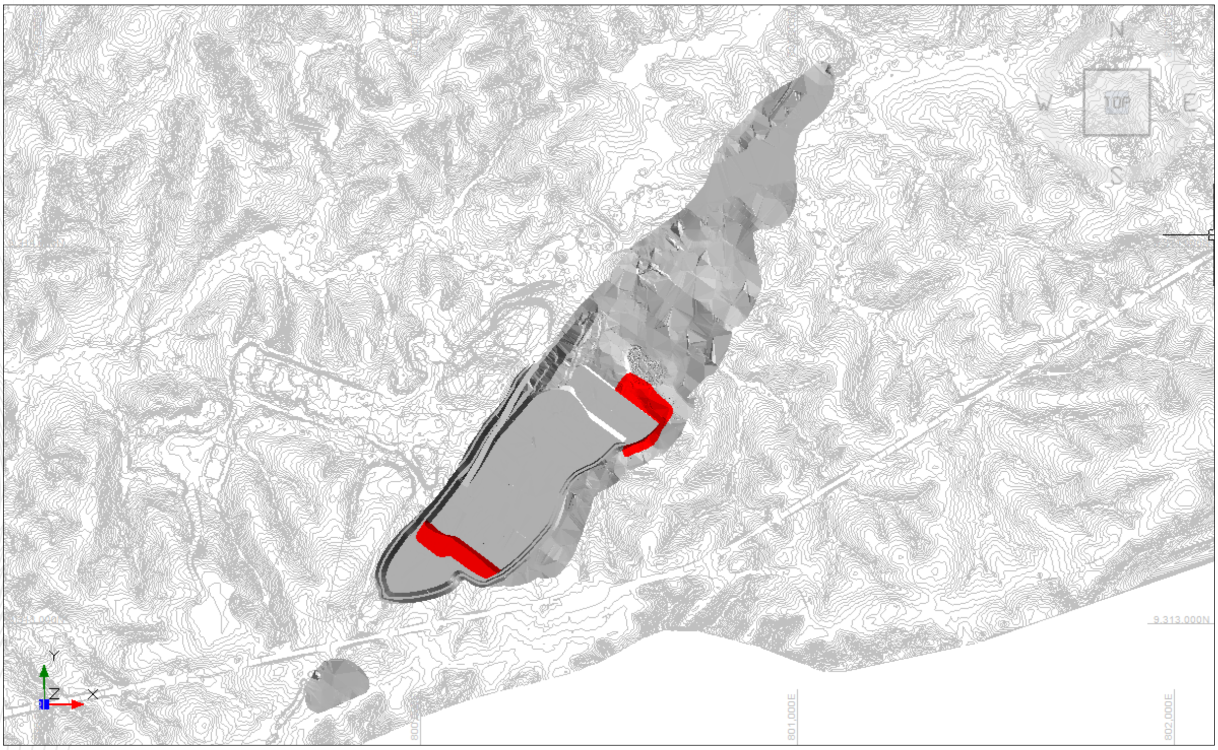


Figure 176: Year 1 – Month 11

Note: Figure prepared by Deswik, 2023

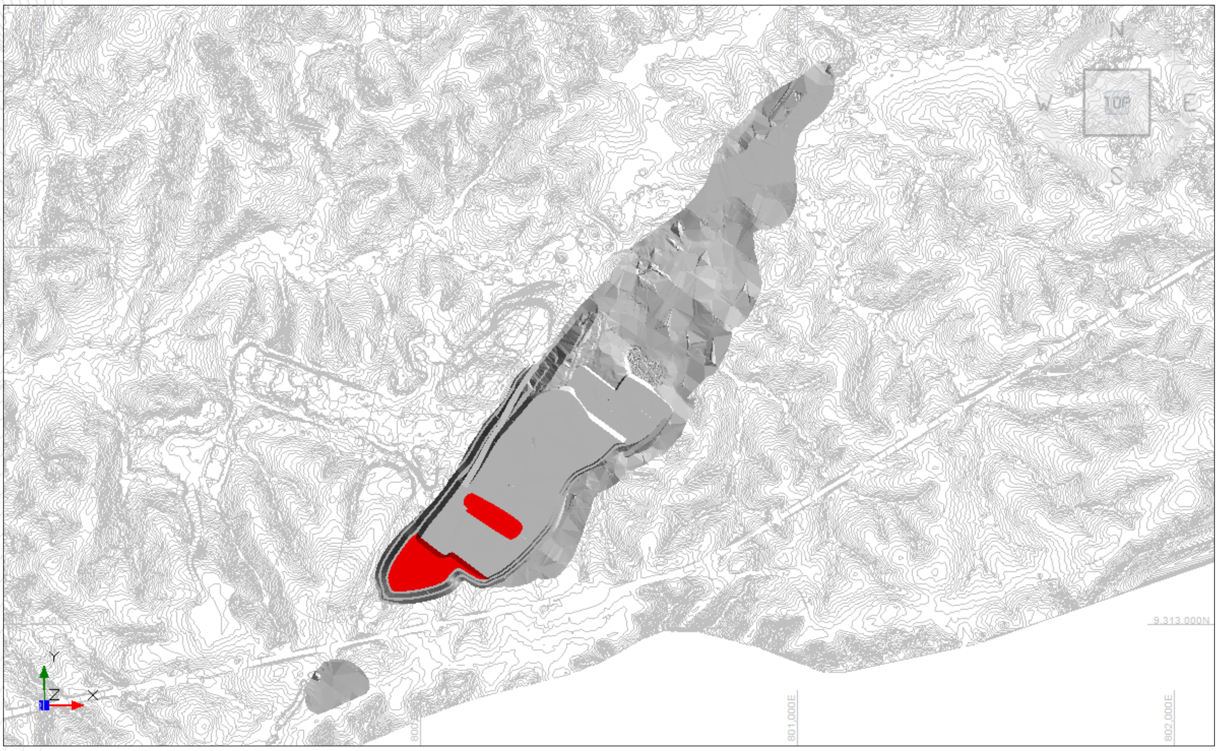


Figure 177: Year 1 – Month 12

Note: Figure prepared by Deswik, 2023

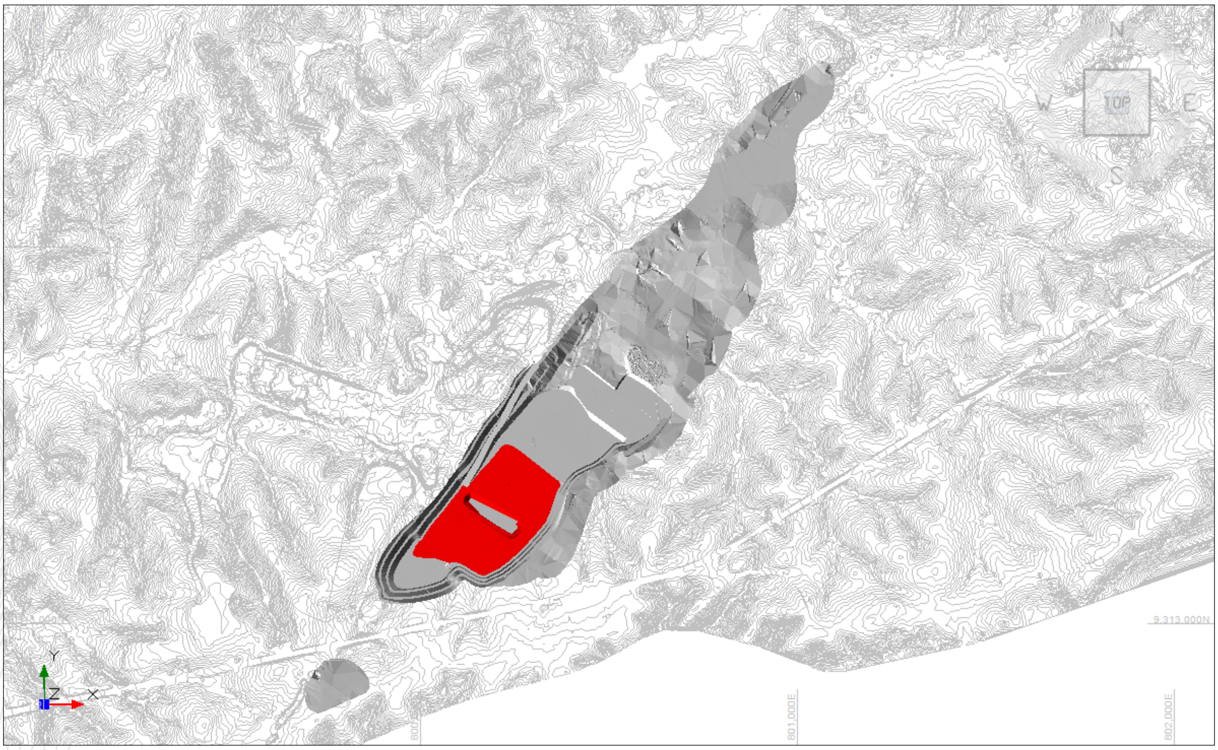


Figure 178: Year 2 – Quarter 1

Note: Figure prepared by Deswik, 2023

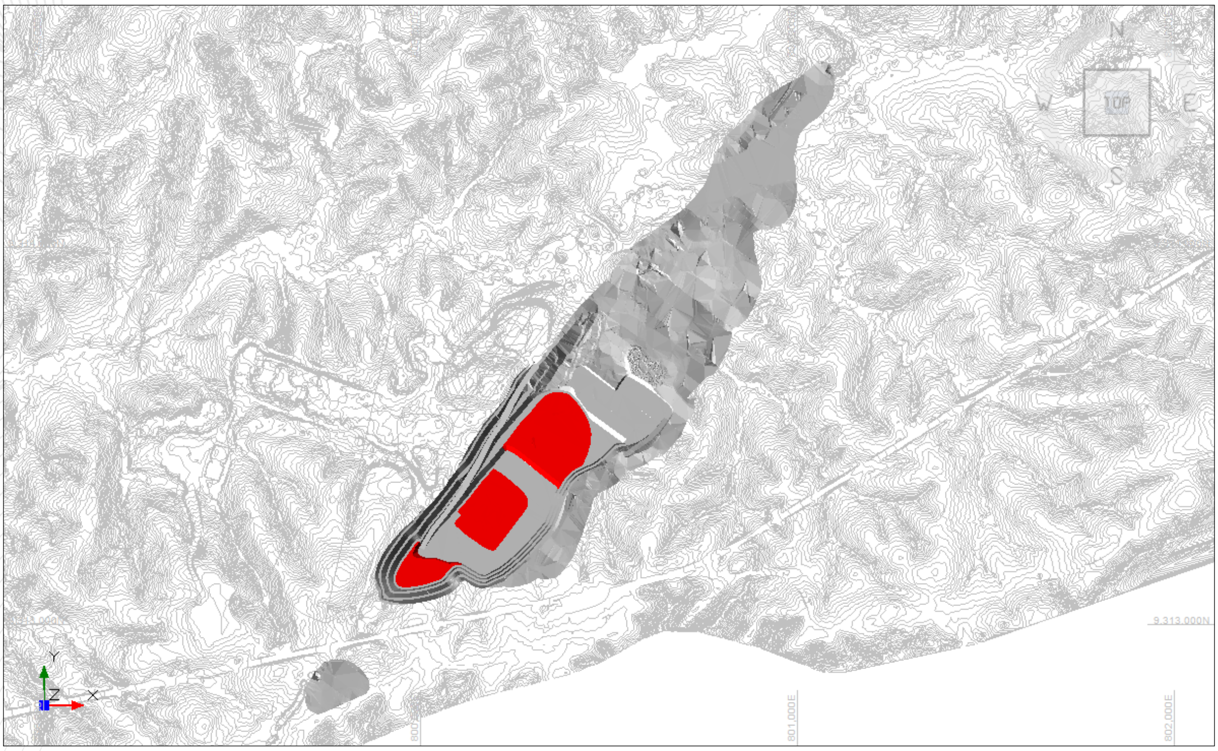


Figure 179: Year 2 – Quarter 2

Note: Figure prepared by Deswik, 2023

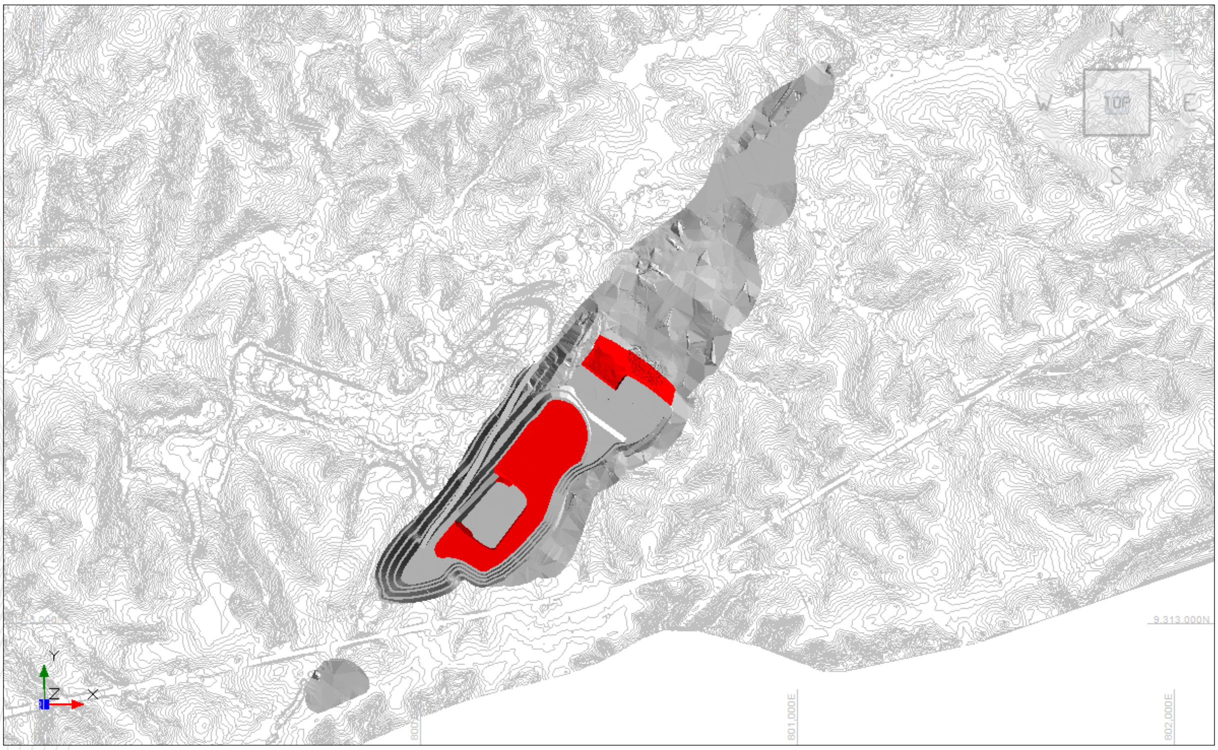


Figure 180: Year 2 – Quarter 3

Note: Figure prepared by Deswik, 2023

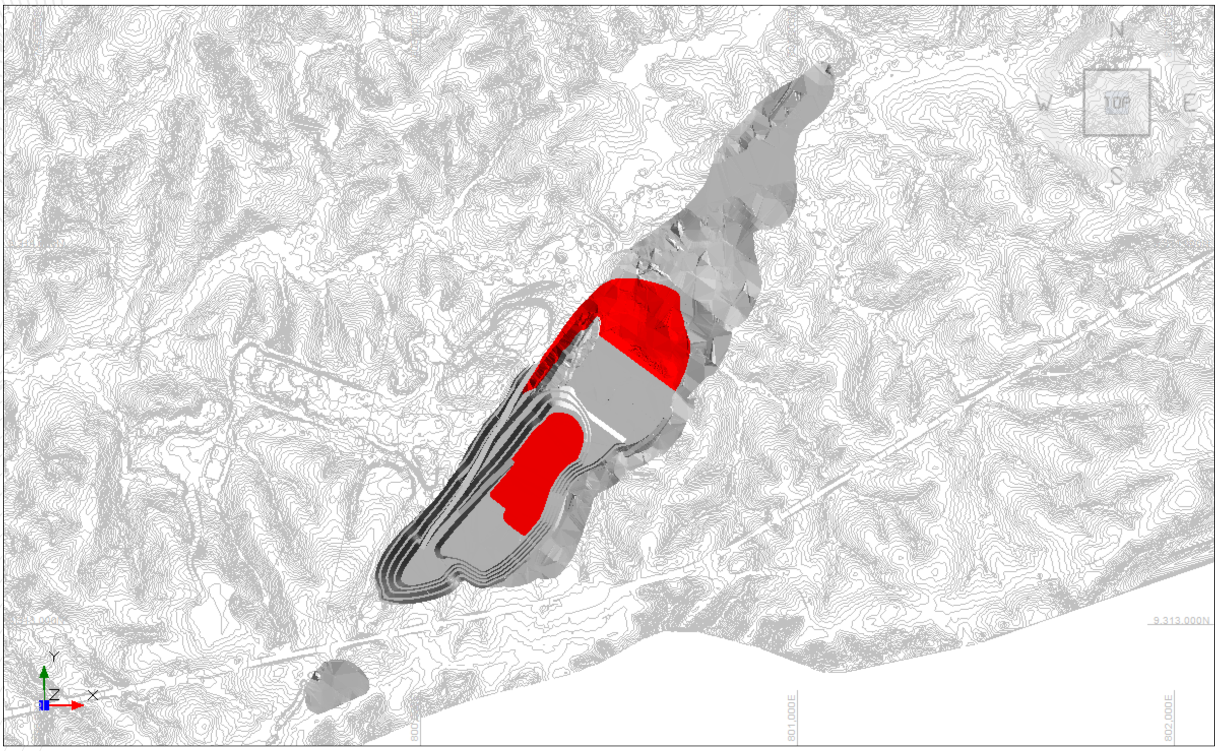


Figure 181: Year 2 – Quarter 4

Note: Figure prepared by Deswik, 2023

Figure 182: Year 3

Note: Figure prepared by Deswik, 2023

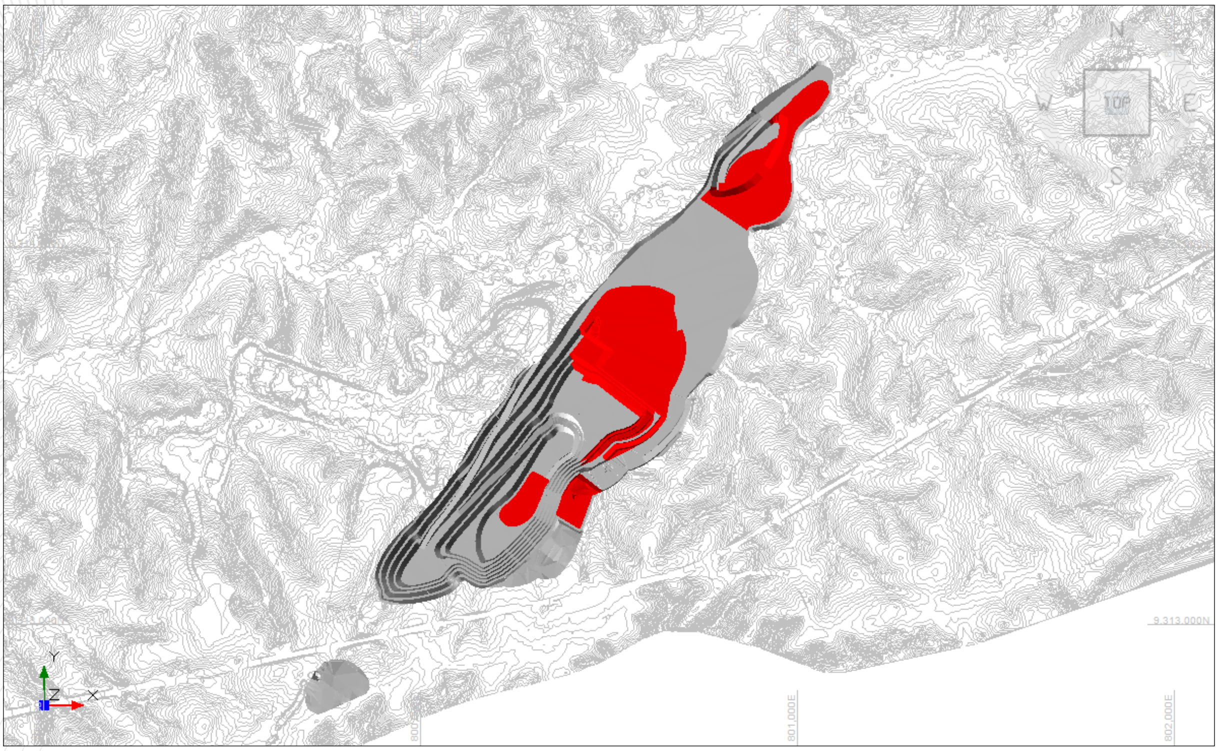


Figure 183: Year 4

Note: Figure prepared by Deswik, 2023

Figure 184: Year 5

Note: Figure prepared by Deswik, 2023

Figure 185: Year 6

Note: Figure prepared by Deswik, 2023

Figure 186: Year 7

Note: Figure prepared by Deswik, 2023

Figure 187: Year 8

Note: Figure prepared by Deswik, 2023

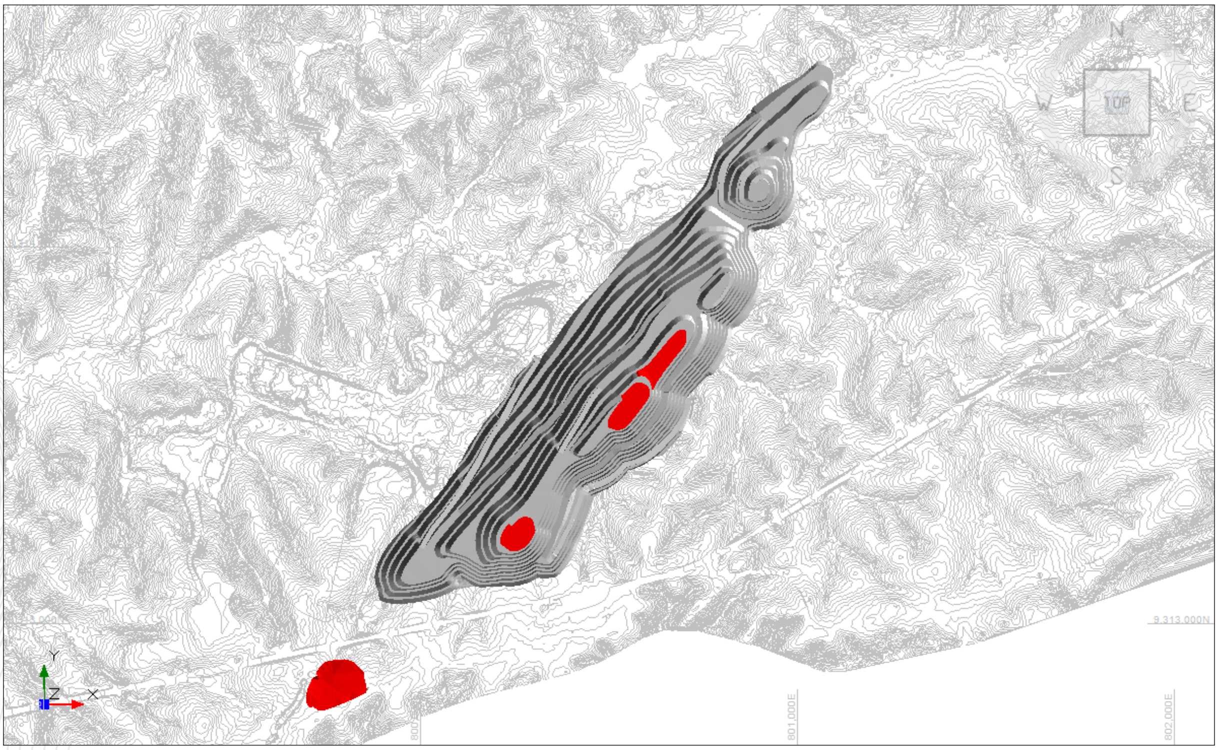


Figure 188: Year 9

Note: Figure prepared by Deswik, 2023

25 NTERPRETATION AND CONCLUSIONS

25.1 GEOLOGY AND MINERALIZATION

The Borborema deposit is considered to be a classic mesothermal/orogenic gold deposit type in a sheared and deformed Archaean to Proterozoic age greenstone belt sequence, comprised of metamorphosed volcanic-sedimentary rocks units intruded by slightly younger post-tectonic igneous bodies.

The Borborema Project area is situated in the top of the Seridó Group stratigraphy, in the Seridó Formation, within a sequence of banded arkosic metapelitic schists, subjected to upper-amphibolite facies regional metamorphism. Mineral assemblages are dominated by plagioclase, K-feldspar and quartz, with subordinate biotite, garnet, sillimanite, cordierite, muscovite and andalusite. This assemblage is indicative of high temperature (650-700°C) and relatively low pressure (3-4 kb) conditions.

The main Borborema ore body has overall dimensions of approximately 600 m in the down-dip direction, 3,500 m along strike, and averages 50 m thick in the central part that thins to 30 m thick in the southern and northern parts. The Borborema deposit is located within a northeast-southwest trending shear zone and displays a penetrative north-northeast trending fabric, dipping southeast at around 40 degrees.

The mineralisation is strongly controlled by regional structure with secondary structuring being the preferred host for gold. In addition to the main mineralised zone, several thinner sub-parallel zones with gold mineralisation were identified.

Two distinct gold mineralisation types are identified in drill cores: 1) disseminated free gold, and 2) gold in association with sulphide mineralisation represented by pyrrhotite, chalcopyrite, pyrite, sphalerite, and galena. Additionally, the sulphide mineralisation was observed in the outer contact between chert boudins and schist along with or within schist foliation.

The mineralised sequence has been subjected to a complex, multi-stage deformational history, with folded, sheared, dismembered and boudinage quartz and quartz-carbonate veins and veinlets commonly associated with the gold mineralisation.

The genesis of gold mineralization is poorly understood on a property and regional scale.

The Borborema deposit has been drilled out at nominal drill spacing of approximately 50 m x 50 m. A total of 303 diamond drill holes and 921 RC holes totalling 109,090 m were drilled between 1979 and 2022 and were used to generate the Borborema 3-D models.

The diamond drilling has been completed by the wire line technique using HQ and NQ diameter core. Each core run was approximately 3 metres and the core recovery in unweathered rock was excellent. On average the fresh rock recovery in each hole was 97.9% with an overall average recovery of 96.9%.

25.2 MINERAL RESOURCE ESTIMATE

The Mineral Resource Estimate meets the requirements for the reporting of Mineral Resources under CIM and NI 43-101 guidelines. Uncertainty and risk have been assessed through the Mineral Resource classification by the Qualified Person. No Measured Mineral Resources have been assigned to the deposit due to a general lack of geological and structural assessment, high local variability of gold grades (high nugget effect and short ranges), lack of multi-element analyses to assess the potential for deleterious elements, poor support of the oxidation model, low resolution topographic data cross the property, and historical inconsistencies with geological logging data.

Indicated Mineral Resources have been classified for the Borborema deposit and are suitable for the application of modifying factors for consideration in Mineral Reserve Estimates. Inferred Mineral Resources are deemed too speculative for consideration of modifying factors but represent an opportunity for future Mineral Resource expansion with additional work programs and evaluation.

The Qualified Person acknowledges the following potential impacts due to current geological knowledge and Mineral Resource uncertainties:

- High local-variability of gold grades within the Borborema deposit may result in inconsistent short-range mining grade which cannot be assessed on the scale of Mineral Resource drill hole spacing.
- General low-grade nature of the deposit with select zones of high grade defined by diamond drilling. Improved identification of higher-grade zones will require tighter preproduction drilling. Otherwise, blasthole and ore control practices during mine operations will define these areas.
- Variability of recovery in the oxidation and transition zone of the deposit which is currently loosely defined based on historical work.
- Ability to expand the Mineral Resources at depth may be limited by the economics of large open pit mining at depth with high strip ratios.
- The Mineral Resources have not considered the availability of water, permits, regulations, community engagement, waste storage, or other potentially modifying factors key for Mineral Reserve determination.

25.3 MINING AND MINERAL RESERVES

The proposed mining operations for the Borborema Project involve using hydraulic excavators and a haul truck fleet for conventional open pit mining techniques. Deswik believes that the Project's estimates were prepared diligently by qualified professionals and comply with CIM (2014) definitions. The Proven and Probable Mineral Reserves are estimated at 22.5 million tonnes with a grade of 1.12 g/t Au, containing around 812 thousand ounces of gold. These reserves support a mine life of eleven years and four months.

The mine layout features two distinct open-pit zones, Main Pit and South Pit

, each with its independent access to the run-of-mine (ROM)/crushing pad. Additionally, the layout incorporates two, separate, waste rock storage facilities (WRSF) and two stockpiles specifically designated for low-grade or oxide ore. These stockpiles serve a dual purpose: optimizing head grades during the initial years and regulating the maximum oxide material content within the plant.

The overall material movement, amounting to approximately 14 million tonnes per year (Mtpy), is well-suited for transportation using on-highway trucks. Notably, the execution of open pit mining operations is envisioned to be primarily carried out by a contractor-operated fleet.

25.4 MINERAL PROCESSING AND METALLURGICAL TESTING

The various tests carried out and described in this study provided support for the development and expansion of the definitive process plant flow sheet to achieve the objectives of the Borborema Project. The summarized flow sheet will be comminution to reduce the feed to a P80 of 0.106 mm, leaching in the presence of active carbon for 30 hours, carbon elution, electrolysis, and smelting. The thickened, neutralized, and filtered tailings are deposited together with mining waste. The test work demonstrated that the carbon loading characteristics remain within the typical range for the gold industry. Test work also demonstrated that SO_2/Air detoxification is appropriate to use for cyanide detoxification, using reagent doses and residence times, again, typical of the gold industry. To reduce the operating cost with reagents, the option of introducing a thickener after the CIL to recover water containing cyanide was adopted. Filtration testing at a nominal pulp density of 50% and 55% solids resulted in cakes that can be generated at a moisture content that will allow handling and dry disposal with mine waste. The samples used in the test work were selected from a large number of drill cores of varying depths. The work carried out initially by TestWork/Br, in the CRMET program, used master composite samples and individual samples for variability study, showed extractions in leaching, with or without the presence of activated carbon, greater than 92% with low consumption of reagents. Further characterization work involving different lithotypes for composite and variability samples was carried out by ALS Ammet/WA (ALS, 2018a and 2018b), resulted in high extraction rates and low reagent consumption by including gravity concentration in the grinding circuit. As the resulting gold extraction rates were considered high, no significant reductions were detected in samples containing mica. No deleterious elements were detected in the ore.

25.5 RECOVERY METHODS

The Project's beneficiation plant will have a capacity of 2.0 Mtpy. The process plant includes crushing, grinding, classification, gravimetry, leaching and adsorption (CIL), acid washing and desorption and smelting. The process plant also includes cyanide detoxification and tailings filtration. Filtered tailings are transported and disposed of in a shared manner with the mine waste. The proposed process flow sheet for the Borborema Project involves technologies proven in the gold/silver processing industry and therefore no significant risks are anticipated. The results of several test campaigns showed that it is possible to achieve metallurgical recovery of around 92.1%, including gravimetric and electrolytic recovery. It is foreseen the elution of 6 t of carbon every two days, with an annual production of 72,240 oz Au, being 20% in gravimetry and 90.1% in electrowinning cells. This annual gold production was calculated by applying the following formula: (2000000t*1.2g/t*92.5%)/31.103oz).

25.6 ENVIRONMENTAL STUDIES, PERMITTING, AND SOCIAL OR COMMUNITY IMPACT

The Borborema Project is in an advanced stage of licensing and has the Installation License - LI nº 2022-188699/TEC/LI-0181 that allows the construction of the enterprise in a social scenario favorable to the Project. Some ancillary licenses have already been obtained and others are in the application process and no problems are anticipated in obtaining them during the construction of the Project.

The Conditions of the Installation License as well as the Environmental Control and Monitoring Programs do not present compliance difficulties and are already in progress.

Results of acid drainage and metal leaching tests performed to date do not suggest a potential for acid or alkaline generation and metal leaching is not a significant concern.

So far, no problems with local communities are anticipated.

25.7 INFRASTRUCTURE

The designed infrastructure for the Borborema Project meets operational requirements. Water supply will be provided from treated sewage coming from the Currais Novos ETE, from the pumping of the dam of fines and from the Oiticicas Weir water. The Borborema Gold Project infrastructure includes the required access, power supply, water supply, tailings storage, and support facilities to support ore production.

26 RECOMMENDATION

26.1 MINERAL RESOUCES

Recommendations related to the mineral resources on the Borborema property include:

- Re-assay of historical drilling data to obtain multi-elemental data for use in characterization of rock types, potential for deleterious materials, and opportunities for co-product production such as Ag.

- Detailed worked to generate a 3D lithostructural model. This model will provide value to aid in geological domaining and structural inputs to the mineral resource block model.

- Re-logging in association with re-assay of historical drill core to improve the oxide-sulphide boundary and improve understanding of any transition zone which may impact metal recovery. Upon completion of data collection, to incorporate this boundary into the mineral resource block model.

- Improved topographic data using LiDAR in the historically mined pit area.

- Scanning and mapping of geology and structure in the historically mined pit area.

- Tight spaced drill study with the aims of improving understanding of Au spatial continuity as it relates to the two observed mineralization styles. This may include use of blast hole data in additional to diamond drill core.

- Upon production start up, implementation of a robust ore control, blasthole sampling, logging, and reconciliation program to improve understanding of Au grade distribution and ability to estimate Au grades at the SMU and block size.

26.2 MINING AND MINERAL RESERVES

Engineering work related to open pit slope design should be focused on improving the confidence level of the design criteria, designing interim pit slopes, and developing an optimized final pit design. Additional review of work completed by BVP Engenharia (2012) and GE21 Consultoria Mineral (2019) should be undertaken to determine the scope of any site specific geotechnical requirements.

Modeling of surface and groundwater flows that will report to the open pits is recommended for future studies. These flows should be predicted throughout the proposed life of the pit. A pit dewatering should be developed and incorporated into the overall water management plan. The infrastructure and power requirements associated with this plan will need to be estimated.

The estimated cost for completing this work is summarized in Table 169.

Table 169: Borborema Project program cost estimate.

Program Component	Cost Estimate (US$ MM)
Detailed Engineering	**2.0**
Geotechnical	1.0
Hydrogeology	0.5
Mine Planning Detailed Plans and Costing	0.5
Mine Planning	0.5
TOTAL	**2.5**

26.3 MINERAL PROCESSING AND METALLURGICAL TESTING

It is recommended to carry out additional metallurgical tests, as follows:

- Gravity/CIL testing on composite samples representative of the mine plan using selected design parameters to optimize leaching performance and produce samples for further cyanide detoxification tests;
- Carbon adsorption kinetic tests using water treated by the local Project ETA;
- Performing pressure filtration tests and optimized vacuum filtration tests for a water recovery compensation study;
- Frequent updating of targeted UCS tests is recommended to provide data for a blasting plan that enables the generation of fragments to confirm the likely ROM ore-size distribution that results in improved semi-autogenous grinding performance; and

26.4 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITIES IMPACTS

The recommendations in the area of licensing, environmental and social management for the Borborema Project are presented below:

- Establish and implement a vegetation suppression procedure with the release of areas by the company's Environment Department;
- Systematic surveillance of deforestation to restrict suppression only to strictly necessary and licensed areas;
- Establish an ecological escape corridor for fauna in contiguous areas;
- Establish operational procedures for the proper handling of chemical reagents for both the unloading area and the preparation of solutions to avoid spills;
- Waterproof containment basins and drainage systems in areas where chemical reagents are used;
- Effective and transparent communication with the local population about the environmental and social aspects of the Project, in particular the issue of water use, to create an environment of trust and engagement of the people;
- Aura must increase its social interactions by initiating community programs that enhance the development and well-being of local communities.
- Use dust-suppressing polymers in the accesses and co-disposal piles of overburden and waste;
- Controlled disposal of overburden and waste from the mine, so that the waste is disposed of internally and sterile externally, avoiding dust formation.

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28 CERTIFICATES OF QUALIFIED PERSON

Farshid Ghazanfari, P.GEO.

As an author of this report titled “Feasibility Study Report (NI 43-101) for the Borborema Gold Project, Municipality, Rio Grande Norte, Brazil” with effective date of July 12, 2023, I, Farshid Ghazanfari, P.Geo., do hereby certify that:

1. I am Director of Geology and Mineral Resources for Aura Minerals residing at 2135 Heidi Ave., Burlington, Ontario, L7M 3P4, Tel.: (905) 483-6272 and carried out this assignment on behalf of Aura Minerals.
2. I am a graduate of the Tehran University (Iran) having been awarded a M.Sc. (Hons.) Degree in Geology in 1992.
3. I have worked as geologist in mineral industry for 30 years. My work experience include five years for Geological Survey of Iran as geologist and mineralogist, six years as exploration geologist with major mining companies for gold and base metals including two years of underground experience in Northwest Ontario, Canada, six years as resource geologist consultant for junior mining sector estimating range of mineral deposits from base and precious metals to industrial minerals. I also practiced 3 years as an independent consultant in mining industry. I was involved as a consultant with Aura Minerals in my current role since 2015.
4. I am a Professional Geologist in good standing with the Association of Professional Geologists of Ontario, License #1702.
5. I am the QP responsible for sections 3, 4, 6, 7, 8 , 9, 10, 11, and 23, and summaries there from in sections 1, 25 and 26 of the technical report entitled “Updated feasibility Study Report(NI 43-101) for the Borborema Gold Project, Municipality, Rio Grande Norte, Brazil”
6. I visited the Borborema Gold Project in Rio Grande De Sul State, Brazil and Aura’s core logging facility between November 8 to 12, 2022.
7. I have had prior involvement with the properties that are subject to the Technical Report.
8. I have read NI 43-101 and Form 43-101F1 and the Report and the portion of the report for which I am responsible has been prepared in compliance therewith.
9. I am a “qualified person” for the purposes of NI 43-101 due to my experience and current affiliation with a professional organization (Professional Geologists of Ontario) as defined in NI 43-101.
10. As of the date of this certificate, 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.

Signing Date: October 05, 2023
Effective Date: July 12, 2023

“Farshid Ghazanfari” {signed and sealed}
Farshid Ghazanfari, P.Geo.

Bruno Yoshida Tomaselli, B.Sc., FAusIMM

I, Bruno Yoshida Tomaselli, FAusIMM, certify that I am employed as a Consulting Manager with Deswik Brazil ("Deswik"), with an office address of Rua Antonio de Albuquerque, 330, Belo Horizonte-MG, Brazil, 30112-010.

1. This certificate applies to the technical report titled, "Feasibility Study Technical Report (NI 43-101) for the Borborema Gold Project, Currais Novos Municipality, Rio Grande do Norte, Brazil" (the "Technical Report") prepared for Aura Minerals Corporation (the "Company"), with an effective dated July 12, 2023 (the "Effective Date").
2. I graduated from the University of São Paulo, São Paulo, Brazil, in 2004 with a Bachelor of Science degree in Mining Engineering.
3. I am a Fellow Member of the Australasian Institute of Mining and Metallurgy (FAusIMM).
4. I have practiced my profession for a total of 19 years since graduation. I have been directly involved in:
   - Mine planning for several mines in Brazil and Latin America;
   - Review and report as a consultant on many mining operations and projects around the world for due diligence;
   - Feasibility study project work on many mining projects including site infrastructure. My projects include Nexa Aripuanã, Minesa Soto Norte, Andina Minerals Volcan and Sigma Xuxa; and
   - Work as a mining engineer consultant on various projects around the world.
5. I have read the definition of "Qualified Person" set out in the National Instrument 43-101 Standards of Disclosure for Mineral Projects ("NI 43-101") and certify that by virtue of my education, affiliation to a professional association and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for those sections of the Technical Report that I am responsible for preparing.
6. I visited the Borborema Project on February 13, 2022 for a visit duration of two days.
7. I am responsible for sections 15, 16 and 24, as well as providing summaries for Sections 1, 2, 25, 26, 27 and 28 of the Technical Report.
8. I am independent of the Company as independence is defined in Section 1.5 of NI 43-101.
9. I have had no previous involvement with the Borborema Project.
10. I have read NI 43-101 and the sections of the Technical Report for which I am responsible have been prepared in compliance with that Instrument. As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the sections of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make those sections of the Technical Report not misleading.

Signing Date: October 05, 2023
Effective Date: July 12, 2023

"Bruno Tomaselli" {signed and sealed}
Bruno Yoshida Tomaselli, FAusIMM

Homero Delboni Jr, Ph.D., MAusIMM CP (Metallurgy)

As an author of this report titled "Feasibility Study Technical Report for the Borborema Gold Project, Currais Novos Municipality, Rio Grande do Norte, Brazil", with an effective date of July 12, 2023 (the "Technical Report"), I, Homero Delboni Jr, Ph.D., MAusIMM CP (Metallurgy), do hereby certify that:

1. I am a Senior Consultant of HDA Serviços S/S LTDA., residing at Alameda Casa Branca, 755 cj. 161 São Paulo, SP 01408-001 Brazil, Tel +55 11 98383-4678.

2. I graduated with a Bachelor of Engineering Degree in Mining and Mineral Processing from The University of Sao Paulo (Brazil) in 1983, concluded a Masters in Engineering in Minerals Processing in The University of Sao Paulo (Brazil) in 1989 and obtained a Ph.D. in Minerals Processing Engineering at The University of Queensland – Julius Kruttschnitt Mineral Research Centre, Brisbane (Australia) in 1999. I am a Member (#112813) and Chartered Professional in Metallurgy of the Australasian Institute of Mining and Metallurgy – MAusIMM – CP (Metallurgy) I have worked as a Minerals Processing engineer for a total of 38 years since my graduation from university.

3. I have read the definition of Qualified Person set out in the National Instrument 43-101 (Instrument) and certify that by reason of my education, affiliation with a professional association and past relevant work experiences, I fulfil the requirement to be an independent qualified person for the purposes of NI 43-101.

4. I have read NI 43-101 and Form 43-101F1 and the Report and the portion of the report for which I am responsible has been prepared in compliance therewith.

5. I am the "Qualified Person" responsible for sections 5, 13, 17, 18, 19, 20, 21 and 22, and a co-author Sections 3 and 24, as well as providing summaries for Sections 1, 2, 25, 26, 27 and 28 of the technical report entitled "Feasibility Study Technical Report for the Borborema Gold Project, Currais Novos Municipality, Rio Grande do Norte, Brazil".

6. I am independent of Aura Minerals as defined by Section 1.5 of the Instrument. I do not have prior involvement with the properties that are the subject of the technical report.

7. As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the sections of 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.

Signing Date: October 05, 2023
Effective Date: July 12, 2023

____" signed"_______
Homero Delboni Jr, Ph.D., MAusIMM CP (Metallurgy)

Erik Ronald, P.GEO (PGO#3050)

I, Erik C. Ronald, P.Geo as a co-author of this Technical Report, do hereby certify that:

1. I am employed as a Principal Consultant (Geology) with SRK Consulting (U.S.), Inc., 999 Seventeenth Street, Suite 400, Denver, CO, USA, 80202.

2. This certificate applies to the technical report titled "Feasibility Study Technical Report (NI 43-101) for the Borborema Gold Project, Currais Novos Municipality, Rio Grande do Norte, Brazil" with an Effective Date of July 12, 2023 (the "Technical Report").

3. I am a graduate of the University of California, Santa Barbara with a Bachelor of Science degree in Geological Sciences in 1997, a graduate of the Colorado School of Mines with a Master of Engineering in Geological Engineering in 2001, and a graduate of the Edith Cowan University with a Graduate Certificate in Geostatistics in 2015. I am a member in good standing of the Professional Geoscientists Ontario (#3050) and a Registered Member of the Society of Mining, Metallurgy, and Exploration (#4129819). My relevant experience includes work as a geologist for 25 years since my graduation from university in 1997. I have worked in exploration, mine geology, and resource geology at various companies and mines. This includes 12 years with Rio Tinto and six years with SRK Consulting. During my 25 years of experience as a professional geologist, I have performed a variety of exploration, resource geology, auditing, and due diligence projects on gold and specifically orogenic-type gold deposits in Canada, Brazil, Guyana, and Australia.

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 Borborema property on 19th November 2021 for 2 days. Activities performed during the site visit included review of drill core, review of pit geology, site layout, core shed facilities and long-term sample storage, sampling procedures, and interviews with site technical staff.

6. I am responsible for Data Verification and Mineral Resource estimation Sections 1.4, 1.6, 12, 14, 25.2 and 26.1.

7. I am independent of the issuer applying all of the tests in section 1.5 of NI 43-101.

8. I have had prior involvement with the property that is the subject of the Technical Report. I was hired by Aura Minerals to assist with a due diligence review of the Borborema Gold Project during 2021.

9. I have read NI 43-101 and Form 43-101F1 and the sections of the Technical Report I am responsible for have been prepared in compliance with that instrument and form.

10. As of the aforementioned Effective Date, to the best of my knowledge, information and belief, the sections of the Technical Report I am responsible for contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated this 5 Day of October 2023.

____" signed"_______
Erik C. Ronald, P.Geo