NI 43-101 Technical Report

Umburanas Gold Deposits, Bahia, Brazil

Prepared for:

Companhia Baiana de Pesquisa Mineral - CBPM
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SUMMARY

Starting in the decade of 1980, Companhia Baiana de Pesquisa Mineral (CBPM) has conducted a sequential exploration program in the central-south region of the State of Bahia, aiming at the discovery of base metal deposits. Although the main objective was not achieved, a new gold prospect was found, which led CBPM to create the "Umburanas Gold Project". The project's mineral concessions are in the Municipality of Brumado, about 30 km to the east of the city of Brumado. The property encompasses an area of 6,369.05 ha.

The first exploration activities consisted of an airborne geophysical survey using the AEM-INPUT method. These works indicated several anomalies, seven of which were selected as geophysical targets with the potential for volcanogenic massive sulfide deposits. Later, the team of geologists at CBPM implemented a detailed exploration of previously defined geophysical targets. These studies were comprised of ground geophysics (electromagnetic, magnetic, and induced polarization/resistivity methods), soil geochemistry (Au, Ag, As, Cu, Pb, Zn, Ni, Al, Ca, Fe, K, Mg, Na, S, Ti), geological mapping and trenching. Results of these works confirmed the occurrence of gold mineralization and intensification of exploration was recommended for five targets named Caldeirão, Relíquia, Sucuruiú, Floresta, and Morro Umburanas.

An exploration drilling program has been completed in the Umburanas project, totaling 38 holes and 4,021.75 linear meters. Results of the drilling program confirmed that the gold mineralization belongs to the orogenic mesothermal class, hosted by a series of auriferous quartz veins and stockworks of quartz-sulfide veinlets, hosted in narrow hydrothermal alteration zones.

Gold mineralization shows strong structural/hydrothermal control, where shear zones concentrate sulfides and gold in association with folded sectors. Intense silicification occurs in targets essentially related to conductive zones, which are almost perfectly marked by the electromagnetic survey.

Geochemical results indicate that gold is related to sulfidation zones containing copper and bismuth. The mineralized bodies cut through normally sheared and/or brecciated metadacite, metabasalt, quartzite, and metaconglomerate. Hydrothermal halos occur, marked by carbonates, quartz, and sulfides, these being mainly represented by pyrite and pyrrhotite. The mineralization aspect, observed in thin sections, is marked by very fine grain size, on a micrometer scale, with rare occurrences of visible gold particles.

. A sampling of drill cores with a one-meter interval was conducted on-site. Sample preparation, followed by fire assay and AAS analyses have been performed by SGS GEOSOL in Vespasiano, Minas Gerais. Quality control procedures were implemented on-site and at the chemical laboratory.

The estimated gold resources are classified as Indicated and Inferred. In the verification of the available data, it was observed that the techniques of sample collection and preparation, are reliable. The density-related data achieved a good level of reliability, and the integrated information in the job justifies the category of resources adopted here. As a result, for the Umburanas project, total indicated resources of 1,184,097 t @ 0.56 gAu/t, with a cutoff of 0.2 g/t, including 512,547 t @ 0.953 gAu/t, with a cutoff of 0.4 g/t.

Conclusions of mineral processing and metallurgical tests indicate that direct leaching was superior to the other analyzed routes. i.e., flotation of the milling product, GRG + intensive leaching + CIL leaching, as well as for the GRG + intensive leaching + flotation tailings. Au extraction for the direct leaching step with free cyanide was 84.3% effective, indicating this method is the most suitable for gold recovery in this type of deposit

Although the actual information from the drill holes was used to detect and characterize the gold mineralization of Umburanas, the sampling of only 1/4 of the NQ drill core diameter was not adequate for this type of deposit. Consequently, the author recognizes that the gold content in the drill core analysis was underestimated.

In conclusion, the Umburanas project justifies a larger exploration and budget, most of which should be invested in ground geophysics (IP and electro-resistivity), soil geochemistry, trench excavation, and expansion of the diamond drilling program. A degree of priority must be granted to the mineralized belt defined by the Caldeirão-Relíquia targets, which must be investigated at depths much greater than the shallow level of the current investigation (about 100 meters). All attention should be provided to the problem of representativeness of drill core samples, since in this type of low-grade deposit, the distribution of gold is erratic and the “nugget effect” is certainly significant

The Author believes that, depending on the new exploration achievements, the project may move to a feasibility study and, potentially, into production, given the excellent infrastructure in this newly discovered gold district.

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1. INTRODUCTION

Dr. João Batista Guimarães Teixeira, P.Geo., a Consulting Geoscientist from Salvador, Bahia, Brazil (the "Author"), was retained by GE21-Consultoria Mineral, from Belo Horizonte, Minas Gerais, Brazil to prepare an Independent Technical Report on the Umburanas Gold Property, located in the Brumado Municipality, State of Bahia, Brazil. This property is owned by Companhia Baiana de Pesquisa Mineral (CBPM) and includes five targets containing post-collisional gold deposits of the Paleoproterozoic age.

This report contains a detailed examination of the CBPM's exploration of the deposits, including resource calculation. The recommendations included herein rely on geological interpretation and a field trip and site visit on July 12-18, 2021. The CBPM's geologists Luiz Fernando Cavalcante de Souza, Judiron Santos Santiago, Williame Medeiros Cocentino, and Bruno Pinto Ribeiro accompanied the Author on his visit.

2. UNITS

The Metric System (SI) is the primary system of measure and length used in this report and is expressed in kilometers (km), meters (m), and centimeters (cm); volume appears as cubic meters (m^3); mass is expressed as metric tons (t); area as hectares (ha). Universal Transverse Mercator ("UTM") coordinates are provided in the SIRGAS2000 System/UTM Zone 24S.

3. QUALIFICATION

The Qualified Person for this report is João Batista Guimarães Teixeira, Ph.D., Independent Consulting Geoscientist, a geologist in good standing with the Professional Geoscientists Ontario (PGO #1540). He graduated from the University of São Paulo, Brazil in 1968 with a BSc degree in Geology. He also graduated from the Federal University of Bahia, Salvador, Brazil in 1984, with an MSc degree in Economic Geology. Finally, he earned his Ph.D. degree in Geosciences at the Pennsylvania State University, University Park, PA, USA, in 1994. Dr. Teixeira is a specialist in Precambrian metallogeny, with an emphasis on gold, iron, and base-metal deposits. He has published several papers in international journals, including *Mineralium Deposita*, *Economic Geology*, *Precambrian Research*, *Ore Geology Reviews*, *Chemical Geology*, *Gondwana Research*, *Journal of South American Earth Sciences,* and *Brazilian Journal of Geology*, all of them related to mineral exploration, geotectonic evolution, and metallogeny. Dr. Teixeira has more than 40 years of experience in the mineral exploration industry. Specifically, he has been involved for more than 20 years in evaluating data quality and preparing resource estimates, scoping, pre-feasibility, and feasibility studies for nickel, copper, gold, and iron projects in Brazil.

4. RELIANCE ON OTHER EXPERTS

The comments, conclusions, and recommendations are based mostly on a review of digital and hard-copy data and information supplied to the Author by CBPM and other published geological reports. Besides, discussions took place with the CBPM's staff regarding their field of expertise with the property. Sources of information are documented within the text and in the references.

The SGS GEOSOL laboratory performed the fundamental analysis and identification of potential applications of the gold resources, under contract with CBPM.

The Author believes the information provided by the CBPM's staff came from their work at the Umburanas deposits. The Author did not conduct a full review of mineral title and ownership. As outlined in this report, the status of claims is part of the web disclosure site of ANM, Agência Nacional de Mineração, at *http://www.anm.gov.br/assuntos/ao-minerador*.

All relevant information on the property presented in this report came from data derived from geologists' statements, whose professional status may or may not comply with the National Instrument 43-101 definition of a Qualified Person. The Author has assumed that the reports and other data listed in the "References" section of this report are accurate and reached the objective of presenting the results of the work performed without any promotional or misleading intent. In this sense, the information presented was considered reliable and may be used without any prejudice by the readers.

This report's results and opinions derive from the Author's field observations and assessment of the CBPM's technical data. The Author has reviewed all the information provided by CBPM and believes it to be reliable. The Author affirms that the work programs and recommendations presented in this report follow the Canadian Institute of Mining, Metallurgy, and Petroleum ("CIM") technical standards.

5. LOCATION AND ROAD ACCESS

Departing from Salvador, access to the area of the Umburanas project can be made using the following route: Salvador-Feira de Santana via BR-324; Feira de Santana-Milagres via BR-116; Milagres-Sussuarana village, via BA-026, passing through Maracás and Contendas do Sincorá, and finally arriving to the Umburanas village, via BA-030, in a total route of approximately 514 km (Figure 1).

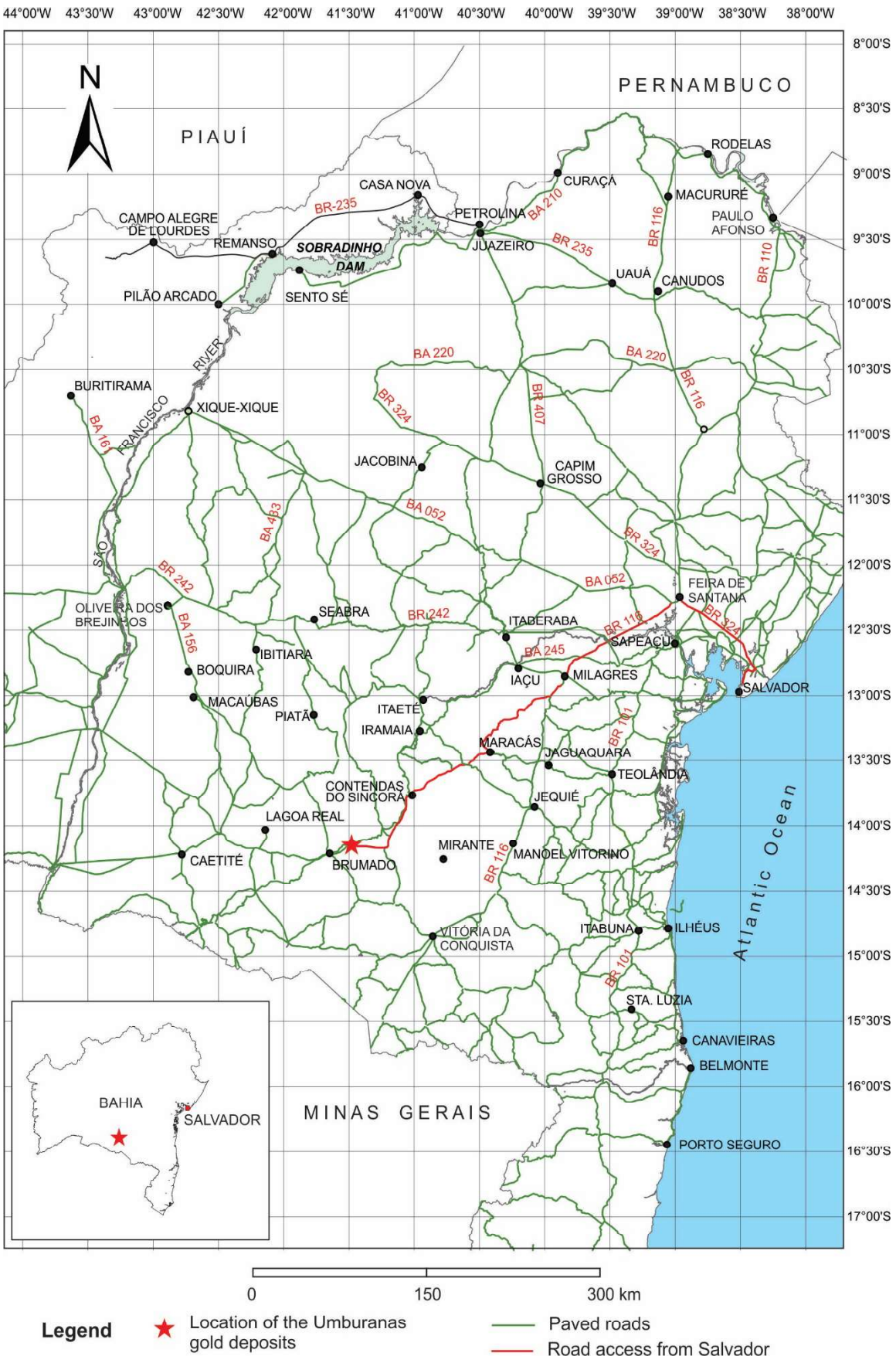


Figure 1 - Location of the Umburanas property, in the south-central part of the State of Bahia.

6. MINERAL TENURE

The CBPM's mineral concessions in the Umburanas property compose a total area of 6,369.05 ha. These areas are identified by the numerals 870,165/2013, 871,917/2012, 872,720/2013, 870,566/2017, 871,519/2018, 871,518/2018, 871,517/2018, in the files of the Agência Nacional de Mineração – ANM (Figure 2).

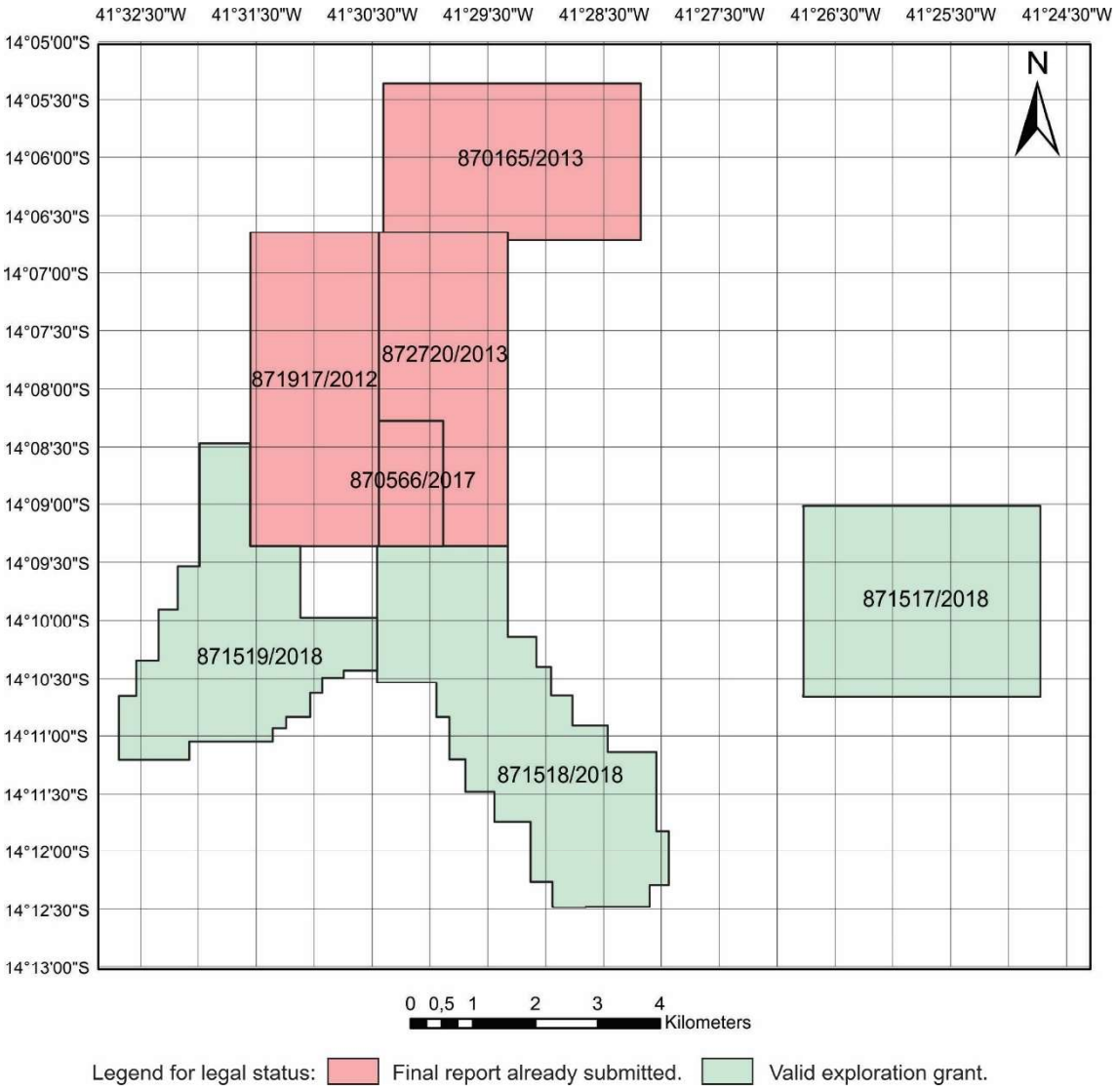


Figure 2 – Location of the CBPM's mineral concessions of the Umburanas gold project. Source: http://www.anm.gov.br/assuntos/aominerador. Mining rights study, 07/20/2022.

6.1 Legal Status

The legal status of the seven mineral concessions of the Umburanas property appears in Table 1.

Table 1 - Legal status of the gold mineral concessions at the Umburanas property. Source: http://www.anm.gov.br/assuntos/ao-minerador. Mining rights study, November/2022.

Process ANM number	Area (ha)	Legal Status
870,165/2013	975.01	Final report submitted to ANM on Sept 2022
871,917/2012	999.93	Final report submitted to ANM on Sept 2022
872,720/2013	799.72	Final report submitted to ANM on Sept 2022
870,566/2017	200.07	Final report submitted to ANM on Sept 2022
871,519/2018	981.64	The exploration grant deadline is 11/10/2023
871,518/2018	1,293.47	The exploration grant deadline is 11/10/2023
871,517/2018	1,119.21	The exploration grant deadline is 11/10/2023

7. GOVERNMENT AGENCY, PERMITS, AND OBLIGATIONS

Under the Brazilian Constitution, all mineral resources in the country belong to the Union. The "Mining Code" manages all aspects of the Brazilian mining industry. The Ministry of Mines and Energy, through its Agência Nacional de Mineração (ANM), is responsible for managing Brazil's mineral resources and enforcing the law. Exploration licenses granted by ANM are valid for three years. Renewal of the claim for 2 to 3 years occurs after the analysis and approval within one year of the date of acceptance of the Final Exploration Report. To receive the support, a foreign company needs to work in Brazil and prove that it has enough funds to develop the mining project and to have a specific environmental license approved. Mining concessions are valid for an extended period until the exhaustion of the mineral deposit. The practice for obtaining mining right in Brazil is as follows:

1. The miner (or entrepreneur) registers the Research Authorization Application at the ANM, containing the Exploration Plan for the mineral substance and the area registration.

2. After the official publication of the Exploration Permit, the entrepreneur, has up to 60 days to obtain the environmental permit for research from the Environmental Agency and inform the ANM about the beginning of the geological exploration.

3. During exploration, the entrepreneur can request a “Use Guide to ANM”, which allow him or her to mine a certain amount of material to perform industrial or market tests (an environmental permit is necessary to do this).

4. Once exploration is finished, the Final Exploration Report is sent to ANM, which analyses and issues the approval.

5. A mining company has one year from the publication of the permission of the Report to make the Application for Mining.

6. The ANM grants a Mining Permit by publication in the Official Gazette.

7. The miner has a term of six months to start mining the mineral deposit.

7.1 Permits and Environmental Liabilities

There are no environmental liabilities associated with the exploration licenses. Permits for clearing vegetation are required where exploration traverses cut through forested areas. Drilling operations require appropriate approvals for road construction and permits for pumping and utilizing nearby surface or underground water.

8. CLIMATE, LOCAL RESOURCES, AND PHYSIOGRAPHY

8.1 Climate

The predominant climate in Brumado is the tropical steppe, making a transition with the semi-arid climate, classified as BSh (hot and dry), according to Köppen and Geiger. The average temperature is 23.8°C. The rainy season extends from November to January. December is the wettest month, with 180 mm of precipitation. Dry periods occur from May to September. August is the driest month with 6 mm of precipitation. The average amount of annual precipitation is 890 mm.

8.2 Local Resources

The estimated population of Brumado is 67,470 inhabitants. Trade is particularly developed, and the city maintains seven banking institutions and two university campi (UNEB and IFBA). At the beginning of the 20th century, the economy was based on agriculture, with large-scale cotton farming, coffee, cereals, and cattle raising. From the discovery of the mines of magnesite and talc in 1940, the city began to develop, and with that, the commerce was strengthened. The nearest airport with regular daily flights from Salvador and Belo Horizonte is Vitória da Conquista, about 115 km away.

8.3 Physiography

The municipality of Brumado is characterized by a mountainous relief, typical of the Serra do Espinhaço, which is the mountain belt that occupies much of the southwest of the State of Bahia. The topography of Brumado is denominated by elevations like the Serra das Éguas (1,100 m high). There are also undulated and flat areas that transition between the mountains and the lower plains.

The region is part of the Rio de Contas basin and the Rio do Antônio sub-basin. The water courses are intermittent, exemplified by the Brumado, São João, Santa Maria, Rio do Antônio, and Gavião rivers.

9. HISTORY

Basic geology and mineral projecting work were carried out by CBPM in partnership with SME/SUDENE, in the “Project Basic and Ultrabasic Rocks of Vitória da Conquista”. The report of this project recognized the existence of several domains that presented geochemical and geophysical anomalies, among which the current sediment anomaly for Cr, Ni, and Cu, located near the village of Umburanas, and associated with a suite of mafic-ultramafic rocks.

Geologists from the "Umburanas Project", executed through the SME/CBPM agreement, assigned the name of "Umburanas Volcanosedimentary Sequence" to the lithological set of intermediate to mafic composition, informally compartmentalizing it into two units, called inferior, formed by serpentinite and ultramafic and upper schist, composed of metabasite, intermediate to acidic metavolcanic rock, quartzite, and chemical sediments.

The potential of this volcanosedimentary sequence to contain economic mineralization was corroborated by the occurrence of copper (bornite, covellite, and chalcopyrite), in addition to geochemical anomalies of stream sediments and pan concentrates for Cr, Cu, Co, Pb, Zn, Sn, W and As. Later, the name “Umburanas Complex” was assigned to the lithologies of the volcanosedimentary sequence of Umburanas and confirmed it as a structure of the greenstone belt type.

Gold mineralization and anomalous halos for Au, Cu, Pb, Zn, Ni, Co, W, B, and As were identified in the Serra do Eixo and Morro do Sucuruiú regions, with those for gold standing out as the most consistent, associated with shear zones and lithological contacts, with contours defined by anomalous soil values, from 40 ppb. These anomalies were partially investigated, with one of them south of Morro do Sucuruiú extending 2.6 km and an average width of one hundred meters, with an interval of 16 m with an average content of 0.5 gAu/t, including a 0.6 m wide quartz vein with 7.45 gAu/t content; another strip, southeast of Morro do Sucuruiú, with an extension of 3.8 km and a width of 200 m, presented a mafic shale interval 24 meters wide with an average content of 0.56 gAu/t; a third strip, 1.8 km long and with an average width of 200 m, was located in Serra do Eixo, in the southwestern portion of the greenstone belt.

The report of the “Ibitira-Brumado Project” refers to expressive anomalies for gold in pan concentrates, with values above 7 ppm (maximum of 151 ppm), in the domain of that volcano-sedimentary sequence, in the regions of Serra do Eixo and of Morro do Sucuruiú, where there are exposures of komatiite, quartzite, and metachert, cut by shear zones containing quartz veins.

Aero geophysical surveys (HEM, Magnetometry, and Gammaspectrometry) identified several conductive and magnetic bodies, in addition to expressive magnetic bands and regions

with high potassium, corroborating the entire metallogenic potential of the Umburanas volcanosedimentary sequence.

This evidence led CBPM to develop a projecting program in the Umburanas greenstone belt. In this context, the company selected areas for projecting, based on the airborne geophysical surveys carried out (targets 1A, B2-A, B2-B, B2-C, B3-A, B3-B/C, and B4-A/B/C), geochemical surveys (North Anomaly and Southern Anomaly targets) and geological surveys (Morro do Sucuruiú Farm and Pedra Grande Farm targets) to characterize and block Au, Cu, Pb, Zn, Ni, and mineralization elements. platinum group (PGE) in the greenstone belt domains.

Activities in CBPM's "Umburanas Project" remained paralyzed from 2002 to 2017. After work resumed, exploratory activities consisted of the excavation of trenches and drilling. After tsequentialcial exploration, five gold deposits were identified and characterized, the description of which can be found in this report.

10. GEOLOGICAL SETTING

10.1 Regional Geology

The Umburanas project includes a segment of the Archean greenstone belt containing hydrothermal gold mineralization. The mineralized bodies are hosted by Archean and Paleoproterozoic metaigneous and metasedimentary rocks, with strong influence from the 750-550 Ma Brasiliano tectonic event (Figure 3).

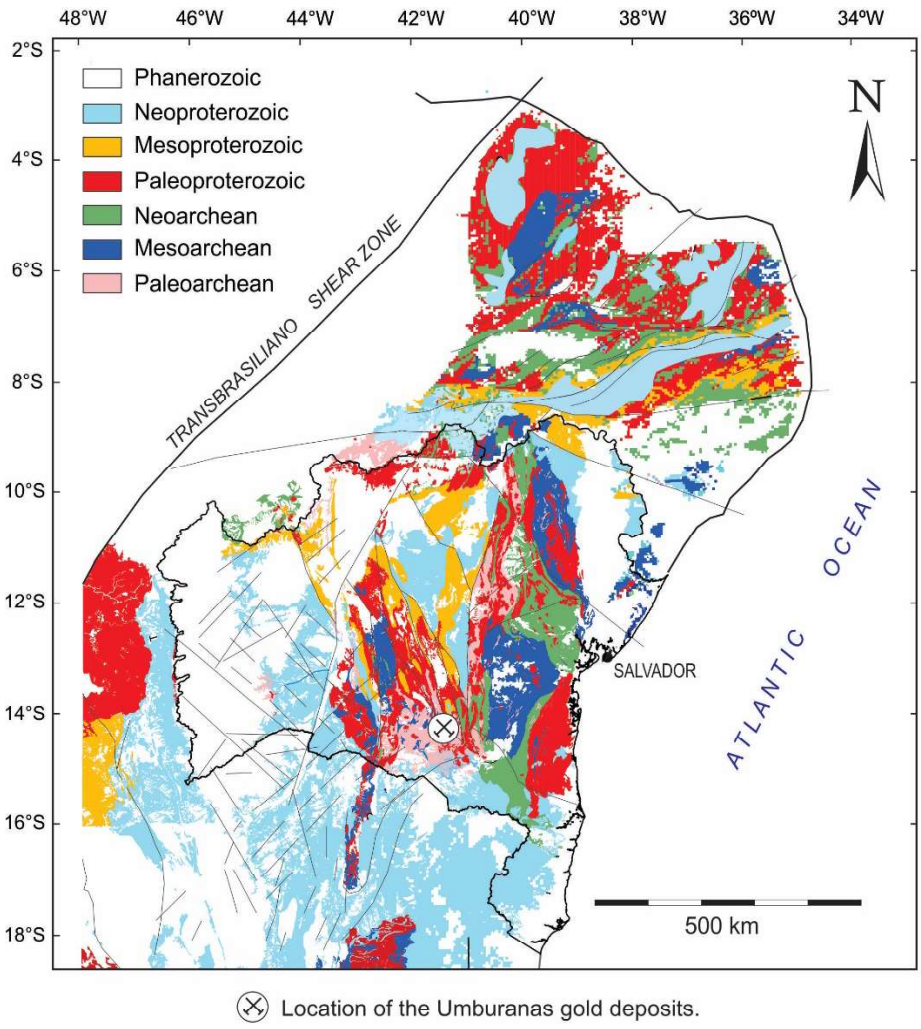


Figure 3 - Geological map of the northeastern sector of Brazil, showing the location of the Umburanas gold deposit. Source: Teixeira et al. (2019).

10.2 Umburanas Greenstone Belt

The Umburanas greenstone belt (UGB), of Archean age, consists of an association of lithotypes that vary from mafic to ultramafic rocks to intermediate and basaltic volcanic rocks. The sequence is metamorphosed from greenschist to low amphibolite facies.

The UGB was first characterized after the identification of komatiitic flows with spinifex texture in its basal portion, evidencing the projective attractiveness and the potential of this sequence for the occurrence of sulfide and gold mineralization. In the eastern part of the area, there is granitic to monzogranitic plutonism of the Orosirian age, called the Caldeirãozinho Suite. This body is in tectonic contact with the rocks of the Umburanas Complex and in intrusive contact with the orthogneisses of the Gavião Complex (Figure 4).

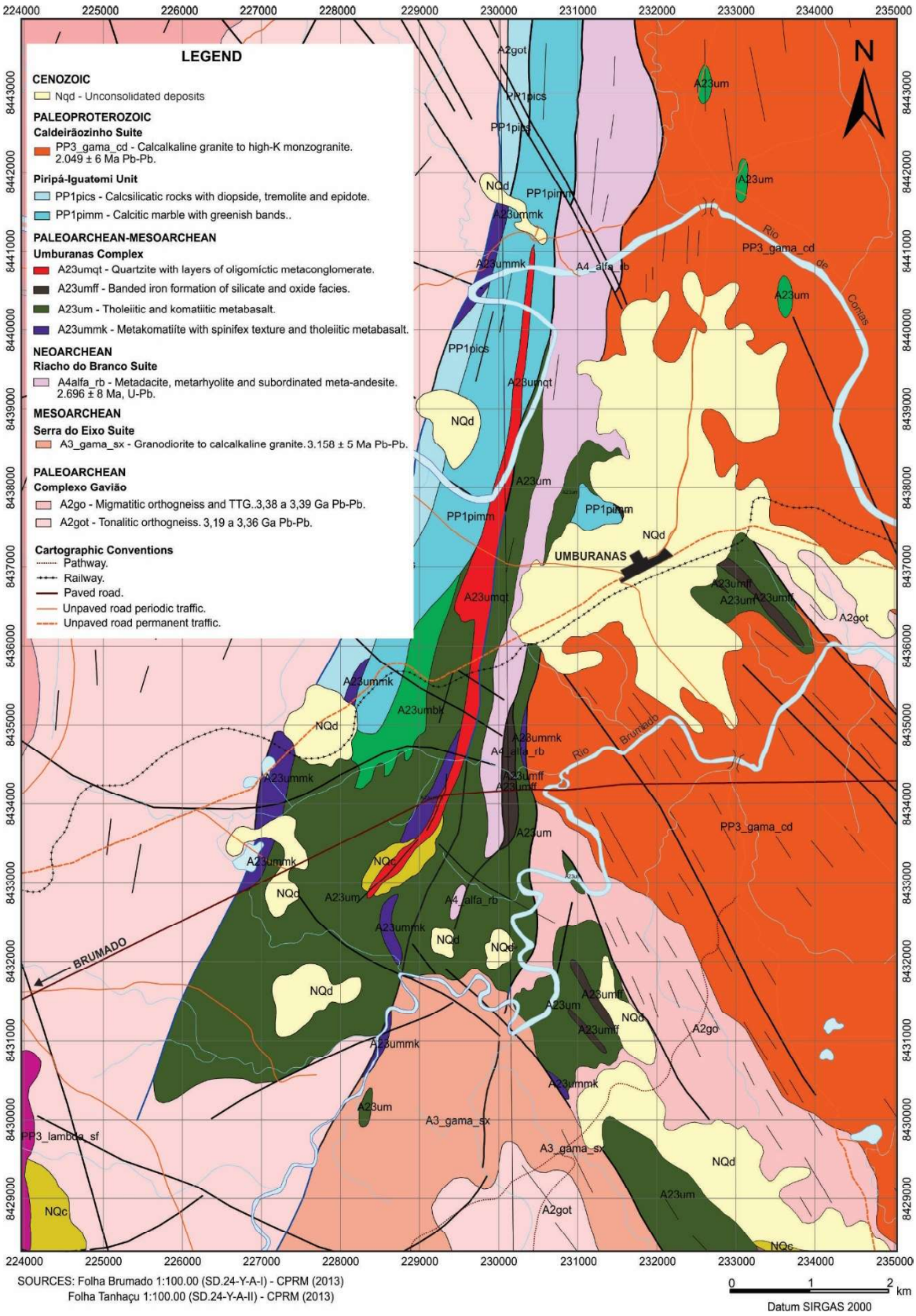


Figure 4 – Geologic map of the northern part of the Umburanas greenstone belt. Source: CBPM (2020).

10.3 Geotectonic Evolution

The structural analyses of the area of the Umburanas greenstone belt confirmed three main phases of tectonic deformation (Santos, 2020).

D_1 Phase (Archean): low-angle compressional tectonic regime, generating tight recumbent folds with flat foliation and local thrust. Granitoid rocks of the tonalite-trondhjemite-granodiorite (TTG) group intruded on the supracrustal sequences during this phase.

D_2 Phase (Paleoproterozoic): compressional tectonic regime, with tight to isoclinal folds, sub-vertical foliation, high rake stretching lineation, and medium to high angle shear zones. This phase defines the currently observed structural orientation. This was the phase of intrusion of high potassium calc-alkaline granites and consequent mobilization of mineralizing fluids to generate the hydrothermal gold deposits.

D_3 Phase (Cambrian): transcurrent-transpressive tectonic regime, with sub-vertical shear zones and generation of asymmetric folds of strong angle and localized crenulation cleavage. During this phase, reactivation and reorientation of previous structures occurred, characterized by important boron metasomatism that resulted in the generalized formation of black tourmaline (schorlite) along the shear zones. This phase contributed both positively, to the concentration of gold-tourmaline mineralization, and negatively, to mobilizing gold from some Paleoproterozoic mineralized bodies.

11. DEPOSIT TYPE

The auriferous deposits of Umburanas can be considered as post-collisional, nevertheless, formed and/or transformed in two distinct metallogenic phases: (i) during the continental collision in the Paleoproterozoic, with formation of mesothermal orogenic deposits of the "gold only" type and (ii)) during the Cambrian tectonothermal event, which affected the upper crust, causing remobilization of previous mineralization and incorporating other chemical elements in the neo-mineralized zones, including boron, copper, bismuth, and tellurium, which appear in some of the hydrothermal alteration halos.

12. EXPLORATION

The exploration program developed for gold, base metal, and elements of the platinum group in the geotectonic context of the UGB contemplated target areas selected from (i) airborne geophysical survey, with individualization of resistive and conductive zones, magnetic bands, in addition to zones with high/low thorium and potassium; (ii) geochemical surveys, with the definition of soil anomalies and stream sediments, (iii) geological mapping; (iv) trenching, and (v) diamond drilling.

12.1 Airborne Geophysics

These studies aimed at identifying and delimiting domains and/or contexts with geophysical signatures and their meanings. Thus, the interpreted magnetic domains contribute to the definition of the compositional variations existing in the area, regarding the mapping of the shear zones and in the definition of anomalous contexts, when paired with the geological and geochemical data. These contexts represent more conducive areas, and potential for mineral research, in which, complimentary exploration should be performed. In these circumstances, interpretations of data from aeromagnetic surveys allowed the identification of magnetic field domains with their characteristics, which express the lithological changes that occur in this context. Figures 5 and 6 show the map of the total magnetic field and the map of the first vertical derivative of the total magnetic field of the studied region.

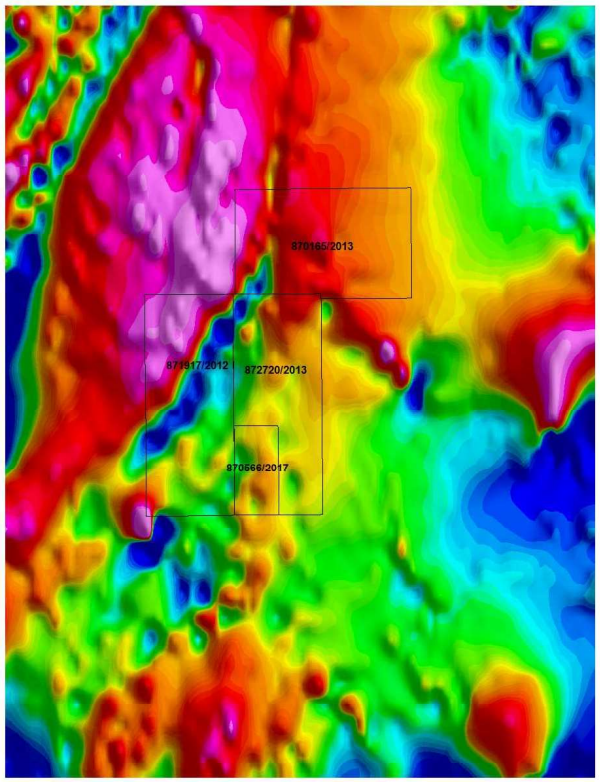


Figure 5 - Map of the total magnetic field of the explored region around the Umburanas project. Source: CBPM (2022).

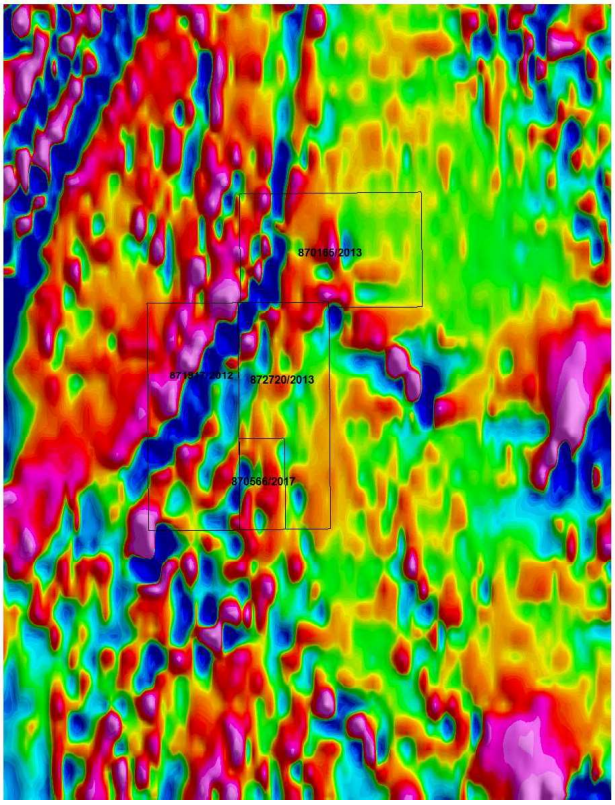


Figure 6 - Map of the first vertical derivative of the total magnetic field of the region around the Umburanas project. Source: CBPM (2022).

From the data of the performed aero electromagnetic survey, a qualitative interpretation of the apparent resistivity maps, with an average frequency of 4600 Hz: and apparent conductivity maps. As shown in Figure 7, through the integrated MAG/GAMA/EM map, selected two target areas for detail studies, representing samplings, along conductive and parallel trends, composed of anomalies with values of apparent resistivities less than 20 ohms.m. The strong linearity of some tracks of this electromagnetic domain may reflect shear corridors, indicating highly favorable environments for the occurrence of gold mineralization in the region, such as we are identifying in the work carried out so far.

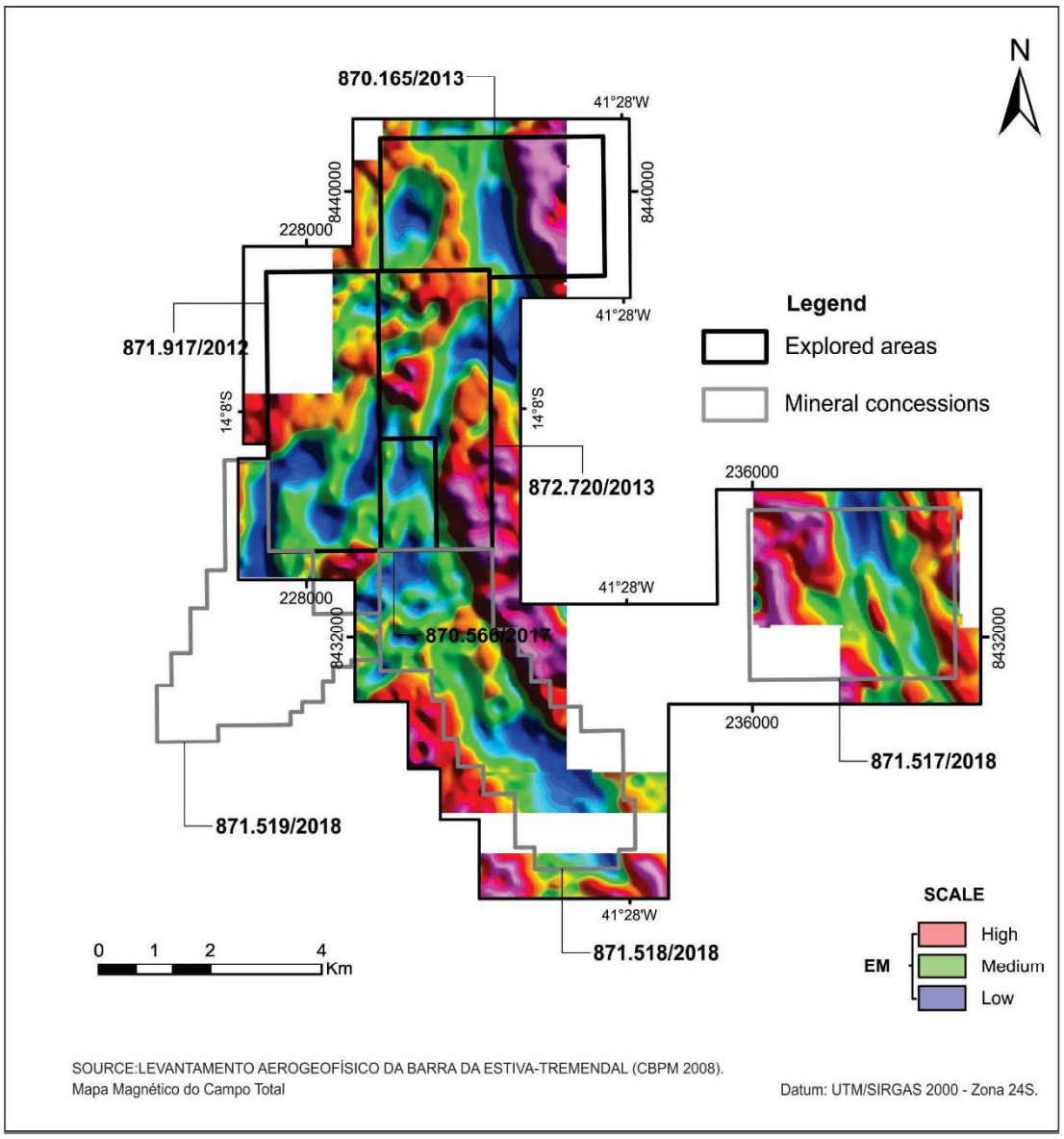


Figure 7 – Aero electromagnetic map (conductivity), related to the exploration areas of the Umburanas project. Source: CBPM (2022).

On the other hand, the analysis and interpretation of the products of the gamma spectrometric survey of the Umburanas region, translated by the thematic maps of U, Th, and K, made possible the individualization and delimitation of radiometric domains (lithogeophysical units), from the visual interpretation of the images of these channels, characterized by different concentrations of these radioelements. The definition of these domains greatly contributes not only to geological mapping, pointing out the existing lithological diversity, but also characterizing contexts that may reflect hydrothermal events.

Figures 8, 9, and 10 show the maps of Th, K, and U concentrations, where regional behaviors are observed distinct showing alternating bands that configure different radiometric domains in the region.

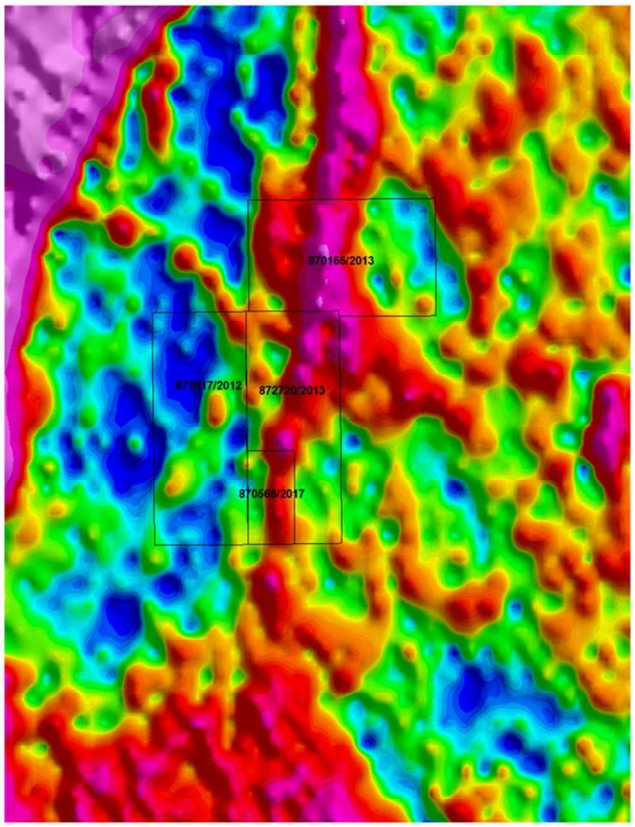


Figure 8 - Map of thorium (Th) concentration in the region around the Umburanas project. Source: CBPM (2022).

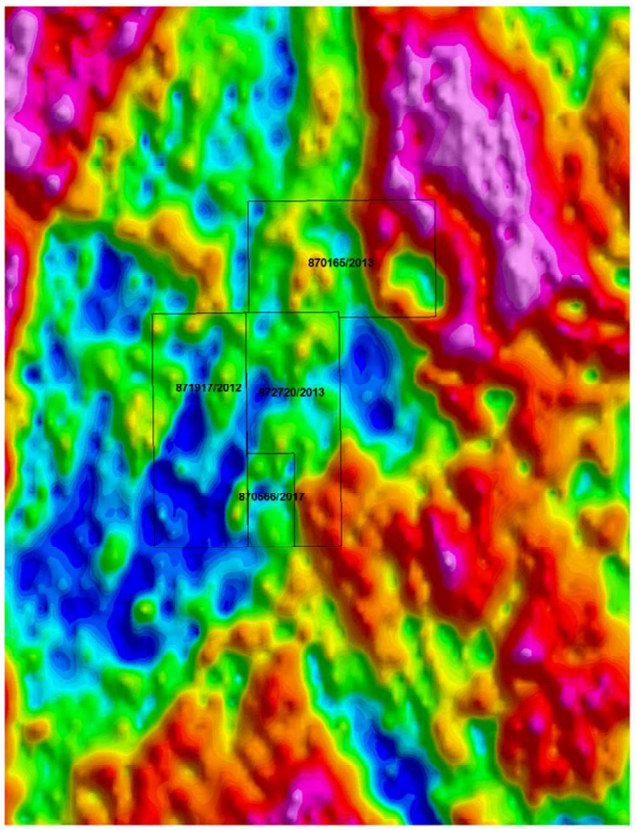


Figure 9 - Map of potassium (K) concentration in the region around the Umburanas project. Source: CBPM

(2022).

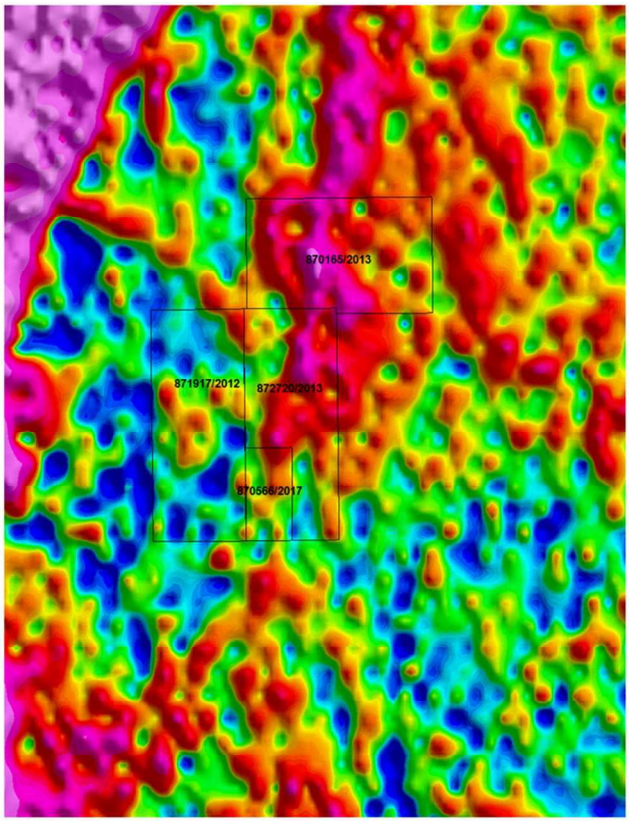


Figure 10 - Map of uranium (U) concentration in the region around the Umburanas project. Source: CBPM (2022).

Based on variations in potassium, thorium, and uranium concentrations, it was possible to the identification of distinct gamma spectrometric domains, which express lithological changes, in the context of the areas object of this report.

12.2 Geochemical Survey

CBPM carried out a soil geochemical survey covering the entire length of the Umburanas project, which circumscribes the seven mining rights. The survey aimed to delimit new areas of projective interest, from the generation of grade isolines, indicating the zones with greater favorability to contain gold mineralization. Soil sampling was conducted maintaining 50 meters along the cut trails, preferably on the B horizon (30-50 cm deep), and with a volume of approximately 2 liters. In total, 3,722 samples were collected, with the results of 3,262 samples (87.6%) being included in the statistical calculations.

All soil samples were bagged and identified with the project cost center, sampler acronym, material type, project acronym, and the sequential number of the sample. The samples were sent to the SGS GEOSOL laboratory for analysis by the ICP method/aqua-regia (50 elements), and by Atomic Absorption/aqua-regia for gold. The elements Al, Ca, Fe, K, Mg, Na, S,

and Ti were analyzed at the percentage level, while the trace elements were analyzed at the ppm level, except for Au, analyzed in ppb. Field observations on the physical characteristics of the samples, the regional environment, geographic coordinates, cartographic base, central meridian, and work scale were recorded in appropriate notebooks, according to the Company's protocol. This information, together with the analytical data from the geochemical database. The evaluation and interpretation of geochemical data were performed through statistical summaries, calculated through spreadsheets in Microsoft Excel software, and presented in contour map shape (isolines) for Au, Cu, and Bi (elements with the highest degree of correlation), in a GIS environment, using the software Oasis Montaj (Geosoft) as a tool.

The statistical treatment of the results of soil analyses had as its objective to understand the spatial behavior of gold and other associated metals, through the spatial distribution of the zones of interest, and, therefore, compose information for target selection. Only the elements that presented a degree of detection greater than 50% were considered for these treatments, that is, samples whose ratio between samples is below the limit of detection and the total number of samples was greater than 0.5, except for gold. The ordering of analytical data was performed using Microsoft software Excel 2013, Oasis Montaj 2022.1, and Past 4.11, through a simple treatment, comprising the calculation of population estimators and univariate statistics.

In general, the elements present a distribution close to the log-normal, with slightly positive asymmetry for most variables. For most elements, it is clear the existence of more than one population, as shown by the results of Fe, Cr, Cu, Pb, Sc, and Ni. Au has a strong negative asymmetry, due to a large number of samples below the detection limit.

To analyze the interaction between the elements, a correlation matrix was made on the data analytical, aiming to identify the degree of relationship between the analyzed variables, especially with the element gold. Data were processed on a logarithmic scale, using Pearson's coefficient, with a significance level of 95% (Figure 11).

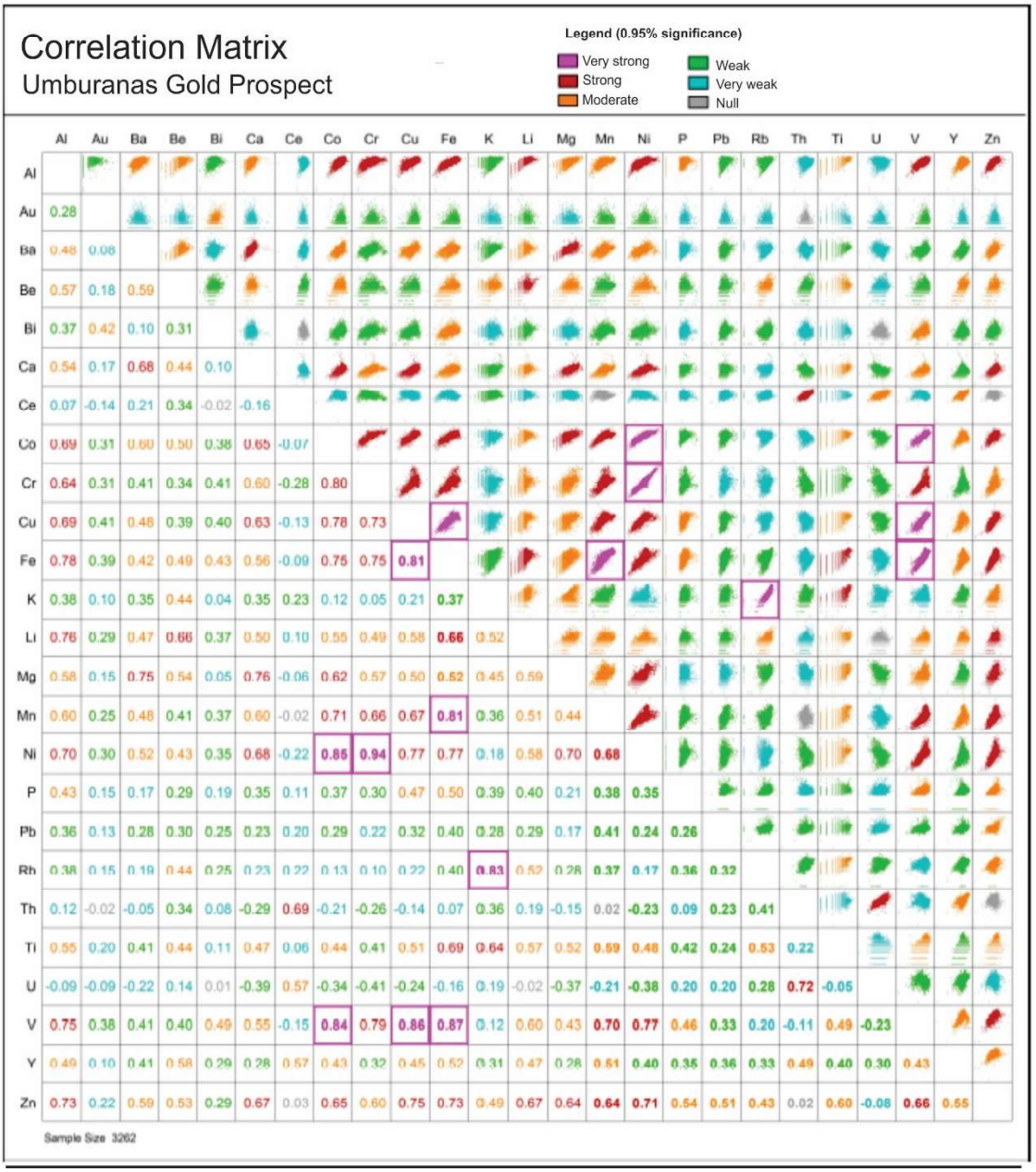


Figure 11 - Correlation matrix of the results obtained in the soil geochemical survey carried out in the Umburanas project. Source: CBPM (2022).

Concerning gold, a weak to very weak correlation can be seen, with almost all elements, except for a moderate correlation with bismuth, which may represent the hydrothermal nature of gold mineralization. It is worth noting that copper presented a correlation of 0.41, slightly lower than that found with bismuth, and this value can be characterized by the context of the geological environment, marked by mafic rocks and ultramafic in a greenstone belt environment. Also noteworthy are the very strong correlations strong between nickel, cobalt, chromium, and vanadium with cobalt, copper, and iron; and iron with copper, corroborating the mafic-ultramafic nature of this context.

The isovalue curves for gold concentration in the soil were calculated in the Oasis

software Montaj 2022.1, using the least curvature algorithm, with a cell size of 50 meters and a blanking distance of 400 meters. It is notable the widespread presence of gold throughout the Umburanas greenstone belt (Figure 12).

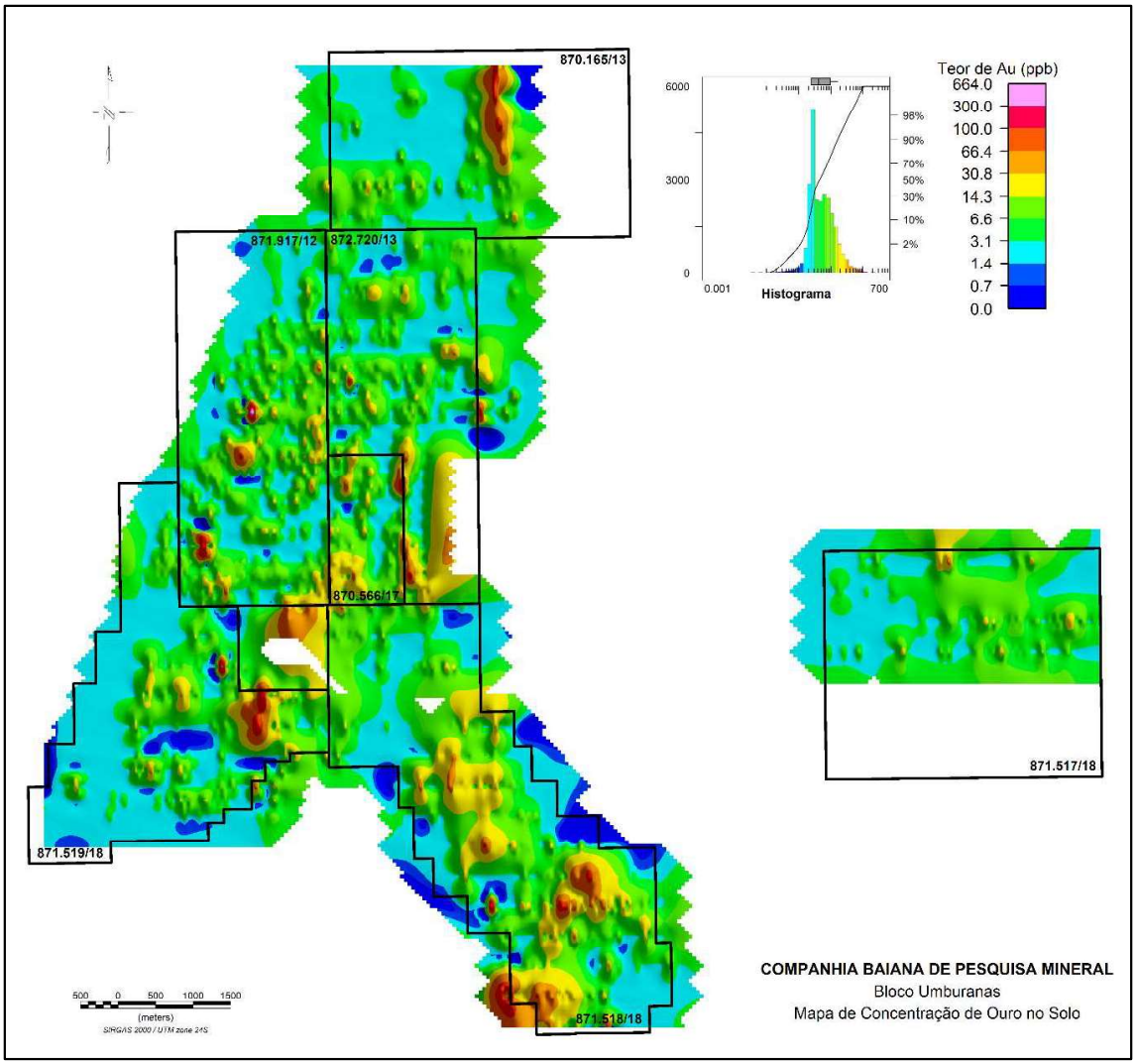


Figure 12 - Map with the distribution of gold (Au) in the soil, related to the Umburanas project. Source: CBPM (2022).

It is notable the widespread presence of gold throughout the Umburanas context, even though only 40% of the samples showed values above the detection limit. Thus, the value of 100 ppb Au in the soil was arbitrated for the selection of the most important anomalous zones.

The distribution of bismuth values in the soil showed higher values related to the extreme north region (Figure 13).

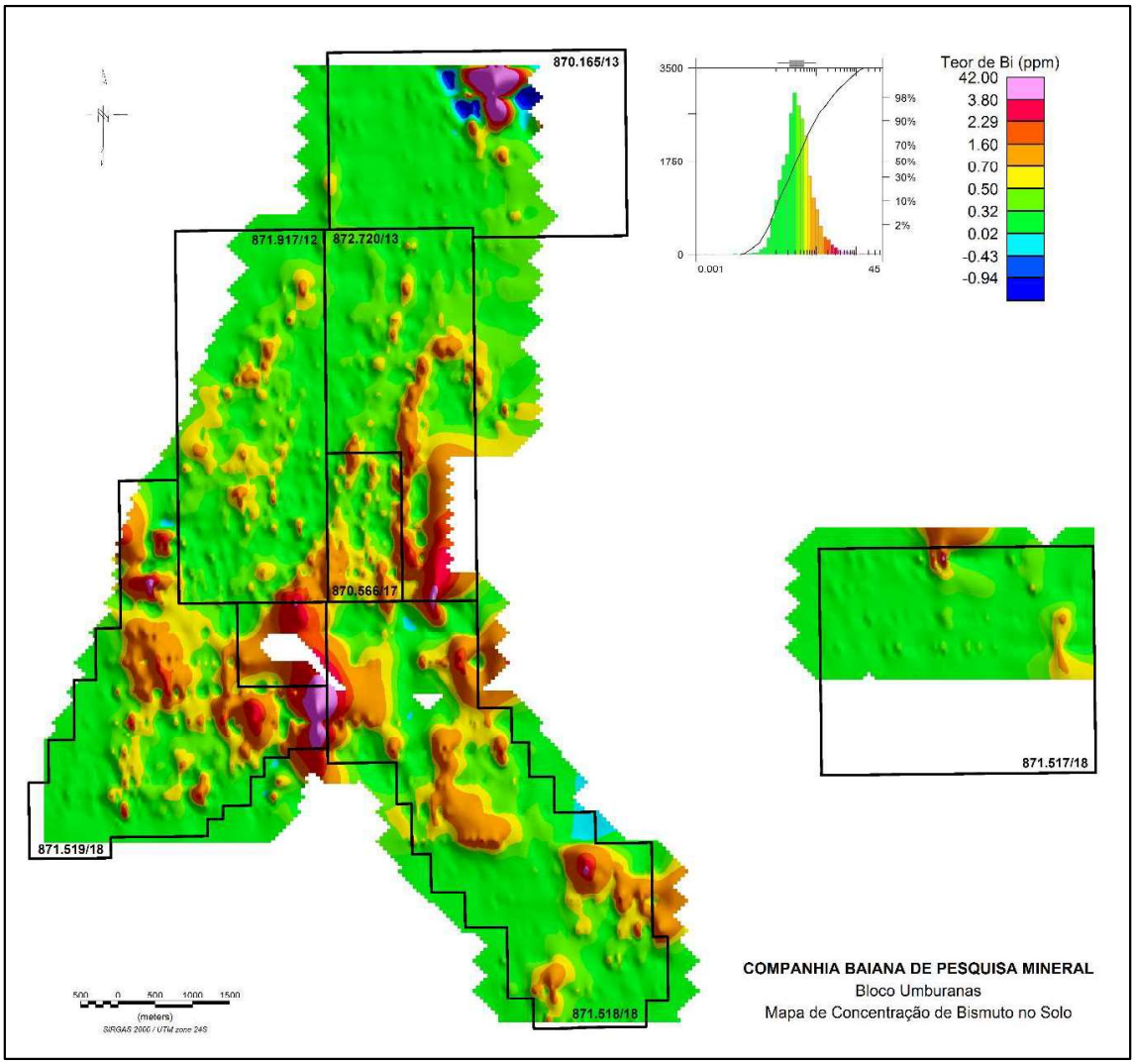


Figure 13 - Map with the distribution of bismuth (Bi) in the soil, related to the Umburanas project. Source: CBPM (2022).

The copper grid map reveals the mafic-ultramafic nature of part of the Umburanas greenstone belt, where the highest values found are associated with the central portion of the area of exploration (Figure 14).

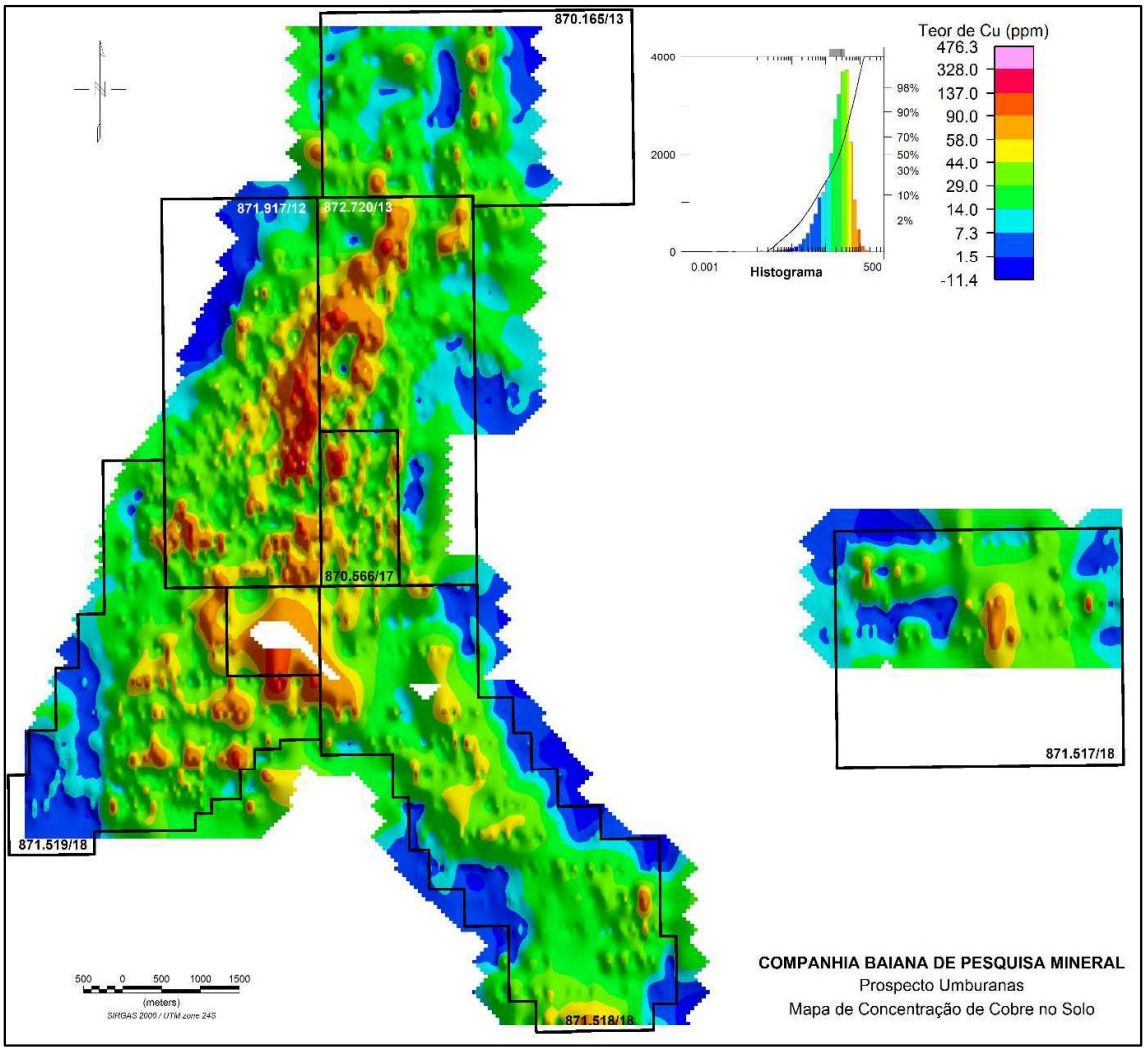


Figure 14 - Map with the distribution of copper (Cu) in the soil, related to the Umburanas project. Source: CBPM (2022).

12.3 Geological Mapping

As of 2017, the integration and evaluation of historical data and additional exploratory activities have outlined a geological model for the control of gold mineralization in the Umburanas project. This advance allowed for the improvement of geological mapping and the location of diamond drill holes. This new knowledge led to the definition of four priority targets called Caldeirão, Relíquia, Sucuruiú, Morro Umburanas, and Floresta (Figure 15).

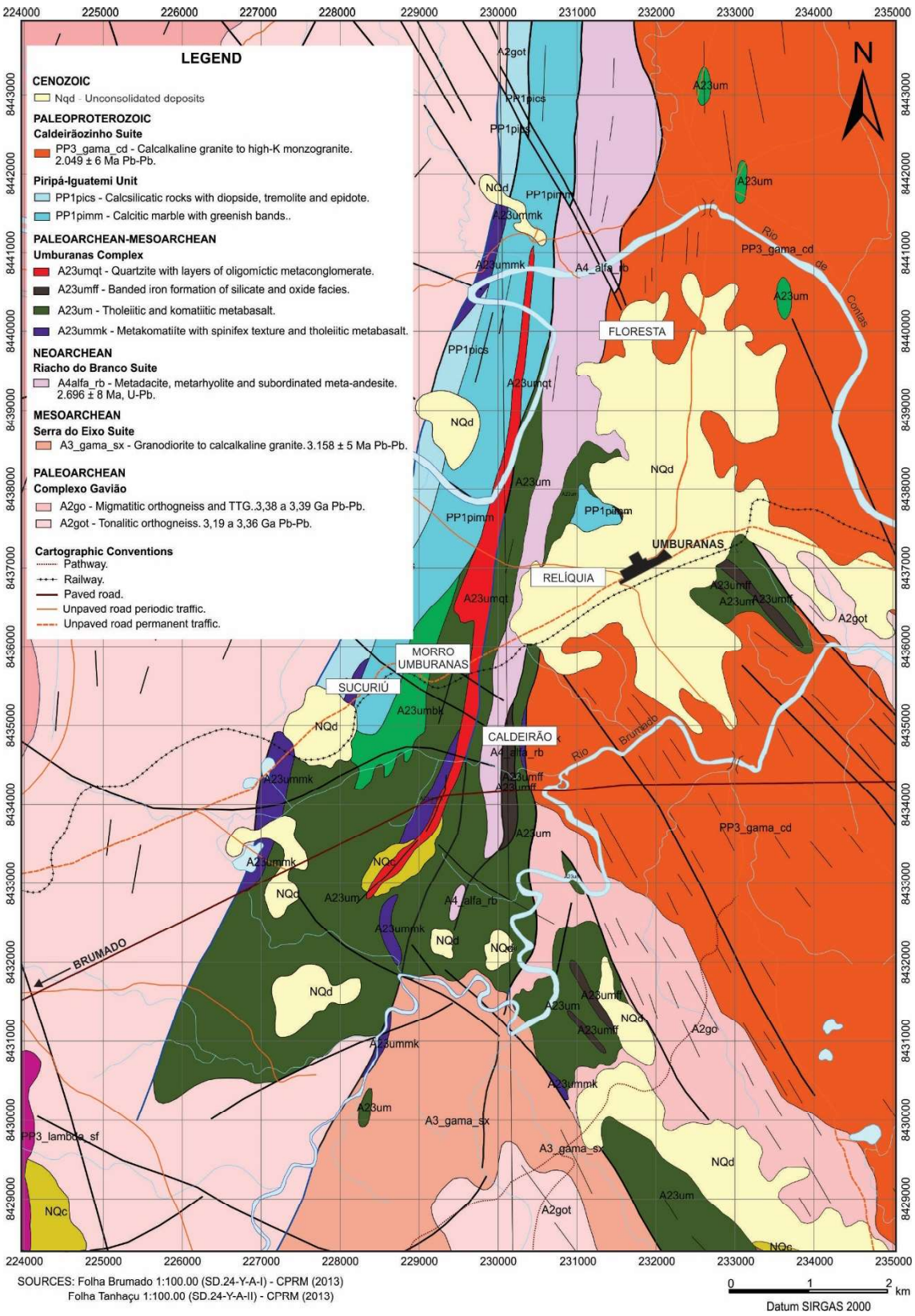


Figure 15 - Geological map with the location of targets with gold mineralization in the Umburanas project. Source: CBPM (2020).

13. TRENCHING

The trench opening program was carried out with two distinct objectives and in different

periods, but with the same digging and description system. The first set was carried out in the semi-detail exploration phase, aiming to identify the lithotype responsible for the signature of the aero geophysical and soil geochemical anomalies, as well as qualify and quantify the intercepted mineralized zones. The second set was carried out systematically in the delimited targets, aiming to define the surface envelope of the mineralized zone and, therefore, support the additional investigation to define the mineral resources available in each target. The trenches were mapped through geological sections, aiming at the detailed characterization of the lithological units, their structural relationships, as well as the characterization of hydrothermal alteration zones when found. For the definition of gold mineralization, samples were collected every meter, respecting the limits defined by lithological, structural, and hydrothermal contacts, and sent to the laboratory for chemical analysis in two analytical packages: ICP-OES 37 elements and Au by fire assay.

14. DRILLING

The diamond drilling program carried out at the Umburanas Norte Prospect was carried out in three distinct stages, in objectives and in time, totaling 38 holes and 4,021.75 linear meters. The first stage of an exploratory nature was carried out to evaluate the continuity of the mineralization detected in the trenches. The second aimed to characterize the continuity of mineralization along the strike and dip, as well as to test mineralization models at the Sucuruiú and Morro Umburanas targets, and finally the third stage, aimed at developing the drilling program to define the gold resources. The opening of squares and accesses was carried out by the company GEOSOL - Geologia e Sondagem S.A., through a contract signed with CBPM for the implementation of the drilling program, totaling 38 squares, to allow the installation of the hydraulic rigs.

14.1 Exploration Drilling Program

The list of the exploration holes drilled in the Umburanas project is shown in Table 2.

Table 2 - Collar of the diamond drill holes completed in the Umburanas project. Source: CBPM (2022).

Alvo	Furo	X	Y	Z	Azimuth (°)	Dip (°)	Profundidade (m)
Caldeirão - CD	FD-PIAP-CD-001	230223,658	8435146,923	384,598	90	-45	123,25
Caldeirão - CD	FD-PIAP-CD-002	230236,280	8435332,788	400,257	90	-45	120,50
Caldeirão - CD	FD-PASAS-CD-003	230204,220	8434991,760	378,400	90	-45	95,65
Caldeirão - CD	FD-PASAS-CD-004	230272,040	8435564,570	417,140	90	-45	100,00
Caldeirão - CD	FD-PASAS-CD-005	230177,330	8435147,370	383,820	90	-45	130,05
Caldeirão - CD	FD-PASAS-CD-006	230199,400	8435331,530	399,240	90	-45	126,50
Sucuriu -SU	FD-PIAP-SU-001	228059,726	8435542,247	413,403	90	-50	135,45
Sucuriu -SU	FD-PIAP-SU-002	228216,919	8435669,329	410,877	90	-50	132,20
Sucuriu -SU	FD-PASAS-SU-003	228134,980	8435553,470	412,580	90	-80	106,55
Sucuriu -SU	FD-PASAS-SU-004	228135,020	8435498,440	413,270	90	-80	60,95
Sucuriu -SU	FD-PASAS-SU-005	228135,910	8435602,470	412,330	90	-80	106,50
Sucuriu -SU	FD-PASAS-SU-006	228187,090	8435551,820	412,890	270	-50	41,65
Sucuriu -SU	FD-PASAS-SU-007	228094,160	8435552,040	413,130	90	-50	41,00
Sucuriu -SU	FD-PASAS-SU-008	228138,993	8435450,046	415,159	0	-90	56,45
Sucuriu -SU	FD-PASAS-SU-009	228186,707	8435496,271	413,858	270	-80	40,40
Sucuriu -SU	FD-PASAS-SU-010	228094,893	8435494,881	414,148	90	-45	45,00
Relíquia - RE	FD-PIAP-RE-001	230746,791	8436946,109	426,106	90	-45	155,70
Relíquia - RE	FD-PIAP-RE-002	230903,752	8437064,881	422,390	135	-45	177,40
Relíquia - RE	FD-PASAS-RE-003	231177,080	8437004,030	415,970	220	-45	225,10
Relíquia - RE	FD-PASAS-RE-004	231057,060	8436912,540	418,470	315	-45	161,45
Relíquia - RE	FD-PASAS-RE-005	231050,890	8436884,420	417,870	0	-45	202,15
Relíquia - RE	FD-PASAS-RE-006	231144,050	8436816,710	401,960	45	-45	161,80
Relíquia - RE	FD-PASAS-RE-007	230601,204	8436742,816	431,079	90	-45	125,55
Morro Umburanas - UM	FD-PIAP-MU-001	229662,233	8435759,810	433,511	90	-45	12,20
Morro Umburanas - UM	FD-PIAP-MU-002	229617,727	8435744,824	431,317	90	-45	122,65
Morro Umburanas - UM	FD-PIAP-MU-003	229537,245	8436025,909	461,972	135	-45	169,15
Morro Umburanas - UM	FD-PASAS-MU-004	229688,950	8435766,510	434,350	90	-80	72,00
Morro Umburanas - UM	FD-PASAS-MU-005	229646,240	8435757,930	432,680	90	-45	70,10
Morro Umburanas - UM	FD-PASAS-MU-006	229671,380	8435710,000	426,090	90	-70	101,05
Morro Umburanas - UM	FD-PASAS-MU-007	229693,100	8435837,860	442,100	90	-60	70,45
Morro Umburanas - UM	FD-PASAS-MU-008	229583,240	8435547,610	415,840	90	-45	106,55
Morro Umburanas - UM	FD-PASAS-MU-009	229708,914	8435908,322	436,845	90	-45	70,10
Caldeirão Sul - CS	FD-PASAS-CS-001	230248,580	8434348,807	352,860	90	-45	122,05
Floresta - FT	FD-PASAS-FT-001	231546,582	8439907,451	405,354	90	-45	102,20
Floresta - FT	FD-PASAS-FT-002	231506,596	84399997,51	397,44	90	-45	69,20
Floresta - FT	FD-PASAS-FT-003	231486,975	8440748,405	355,836	90	-45	32,85
Floresta - FT	FD-PASAS-FT-004	231466,278	8440354,38	385,652	90	-45	71,70
Pe de Serra - PS	FD-PIAP-PS-001	230318,073	8436209,739	429,617	90	-45	158,25

The 38 diamond drill holes were performed by hydraulic rig, through the contracting of company GEOSOL - Geologia e Sondagem S.A., in HQ diameter, totaling 4,021.75 linear meters (Photo 1).

Photo 1 – Installation of the FD-PIAP-CD-002 diamond drill rig at the Caldeirão target. Source: CBPM (2022).

The core boxes were transported and stored permanently in the central core shack of CBPM in Salvador (Photo 2).

Photo 2 – Partial view of CBPM's core shack in Salvador, Bahia. Photo: J.B.G. Teixeira (2021).

14.2 Drill Core Description and Sampling

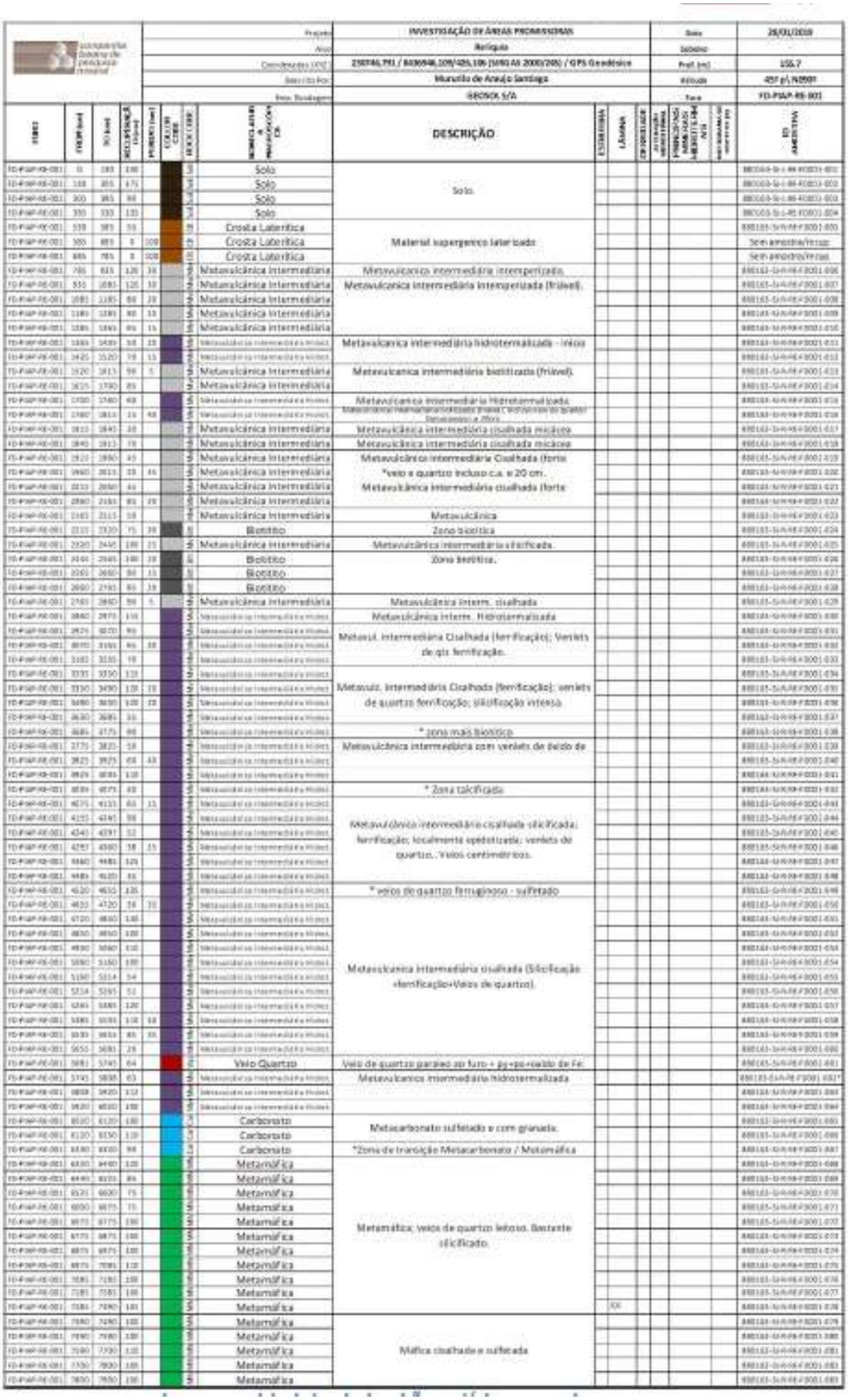
A total of 4,041 drill core samples were collected in the 38 drill holes carried out in the Umburanas project. The sampling complied with the following criteria: separation of macro

geological contacts; standard sampling with intervals varying from 20 at 300 cm, following the defined macro contacts; sample gain and loss adjustment of cores, marked by the control of drilling progress; separation of 1/4 of drill cores using a diamond sawmill; and packaging of samples for shipment to the laboratory, following the CBPM sampling protocol. In addition, the drill cores were photographed, both dry and wet. The petrophysical survey was carried out, with the measurement of the susceptibility with KT10 (Photo 3), aiming to evaluate the relationship between gold and the presence of magnetic minerals; and, also, a chemical survey was carried out with portable XRF (Photo 4), aiming to evaluate the relationship of gold mineralization with pathfinder elements, and the chemical stratigraphy, with macro elements.

Photo 3 - Sample marking and petrophysical survey, with KT10, in drill cores. Source: CBPM (2022).

Photo 4 - Survey with portable XRF of the diamond drill hole FD-PIAP-CD-002. Source: CBPM (2022).

The drill holes were geologically described in detail, noting especially the lithological, mineralogical, and textural variation, and the definition of hydrothermal alteration halos, evidenced by the presence or absence of sulfidation. The description was performed in logs of drilling logs containing all the pertinent data to the drilled holes, as well as the special location (Figure 16).



| | | |

15. SAMPLE PREPARATION, ANALYSIS, AND SECURITY

Core samples were collected by CBPM geologists and technicians with data, including UTM coordinates, lithology, and mineralization recorded in field books. Before sampling, a systematic verification was carried out by comparing the recorded drilling progressions and the lengths of recovered cores. Red and green crayon marks were drawn, respectively to the left and the right side of the cores, with arrows indicating the directions from the top to the base along the drilling axis. The cores were cut in half longitudinally with a metal-cutting diamond saw and one half was divided into two quarters. Individual samples were collected from one quarter, along every one meter of true advance.

Core samples were placed in standard plastic bags and tagged and the locations were recorded in a master database. The plastic bags were sealed using plastic pull ties. The samples were prepared and analyzed at the SGS GEOSOL Laboratories in Vespasiano, Minas Gerais. SGS GEOSOL held a quality management system according to the standard ABNT NBR ISO 9001:2008 for chemical and geochemical analyses of soil, rocks, and ores.

The preparation of rock samples consisted of comminution and quartering of 500 g, then grinding at minus 200 mesh, following a new quartering until obtaining an aliquot of 50 g. The process consisted of two methodologies: (i) aqua regia digestion and ICP analysis of 37 elements; (ii) fire assay for determination of Au, Pt Nd Pd, with fusion and X-ray fluorescence for determination of metallic content above the detection limit of the ICP method

15.1 Security

The verification carried out by the Author ensures that the staff of CBPM held strict monitoring of all activities to ensure attendance during all phases of gathering samples, handling, and data analysis. Besides, there was continuous monitoring of the daily drilling bulletin completed by the drilling team. The phase of drill core description was developed with the arrangement of core boxes on stands, with one drill hole open each time, paying attention to unnecessary movements of drill cores and covers, avoiding possible contamination. Likewise, sampling was done by keeping only one box open where the drill core was being sampled. The material used for sample collection had been constantly cleaned with water to avoid possible traces of previous samples that could promote contamination. Analytical submission sheets, as provided by GEOSOL were completed, taking precaution that the sample type, preparation requirements, analyses required, a description of special instructions, sample disposal instructions, and the name of the person to whom the analytical results had to be forwarded, where indicated on the sheet.

15.2 Quality Control Measures

A chain of custody was managed by CBPM, which freighted the samples directly to GEOSOL with appropriate analytical submission sheets. There is no evidence of any tampering with the samples during collection and shipping. GEOSOL conduct all sample preparation. Quality control procedures were implemented at the laboratory, involving the regular insertion of blanks and standards, and repeat analyses of samples.

16. DATA VERIFICATION

The geochemical data for the Umburanas exploration program is available for inspection from the original analytical certificates. The CBPM professionals managed the sampling procedures in a fully acceptable manner. Because of the preliminary nature of the exploration program, standard quality assurance and quality control (Qa/Qc) protocols were not implemented. Nonetheless, GEOSOL, a reliable laboratory, processed and analyzed the samples, and in the Author's opinion, there is no indication from the analytical determinations that any counterfeit results were produced.

17. GEODETIC SURVEY

The geodetic survey was carried out in the Umburanas project, aiming to define topographic control of diamond drill holes (DDH) and the trenches, with the greater objective of spatially qualifying the information, focusing on obtaining three-dimensional models of the mineralized bodies and, therefore, of the mineral resources related to the delimited targets. Furthermore, to obtain the imaging of the selected targets, the aerial survey was carried out with the use of a Drone associated with the use of geodetic GPS, according to the methodology described below.

17.1 Equipment and Software

For the spatial definition of the perimeters of the exploration targets, the Google Earth software was used, aiming at the planning of the flights, and, with the possession of the perimeters of the selected targets for the survey, the DroneDeploy application was used to perform the flight plan, looking for: height definition, image overlay, camera tilt, and drone speed, aiming to define the number of images that should be recorded and the flight time; and, also, the execution of the flights in the different targets. To carry out the surveys, it was necessary to implement and register points of control, on the surfaces of the surveyed targets, aiming to obtain the raw data that is processed in Topcon Tools software, aiming at adjustment and accuracy verification. With established data, adjustments and processing of images

collected, during flights, were performed using Agisoft Metashape software, to classify and densify points on the Digital Terrain Model (MTM)/Digital Model of the Elevation (DME), most,ics and contour lines.

To locate the drill holes and trenches, the MAPinr application was used, which facilitates the location in the field of each data that must be registered, with the geodetic equipment.

17.2 Equipment for Surface Data Collection

To collect the control points, drill holes, and trenches, the Receiver GNSS Sokkia GRX1 was used, which uses the post-processing method to accurately obtain the data collected. On the other hand, the imaging of the targets was performed using a Remotely Piloted Aircraft System (RPA), Multi-Rotor Drone, and DJI Mavic 2 Pro, owned by CBPM.

17.3 Analysis Procedure

The aerial survey process started with the planning of flights, in the different selected targets, observing the limits of the survey, the time of flight, and the number of necessary images to cover the stipulated perimeter for each polygon. on the ground, to continue the aerial survey, control points were implemented (photo 6), to identify the images and the mosaics (Photo 5).

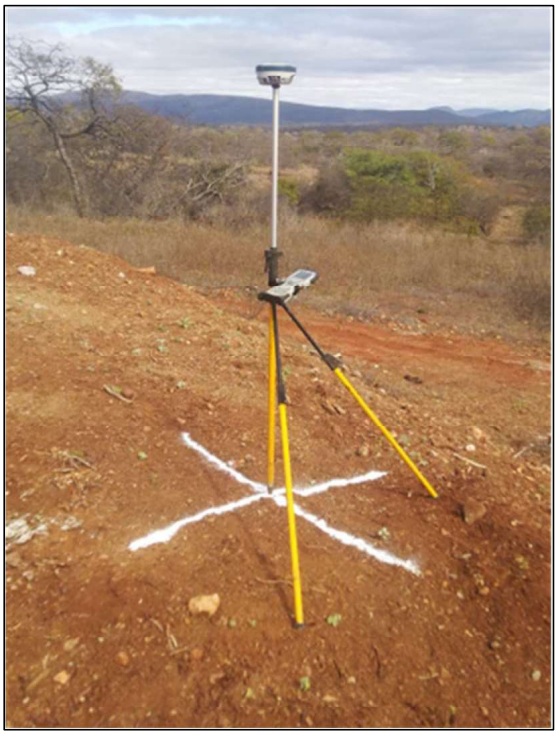
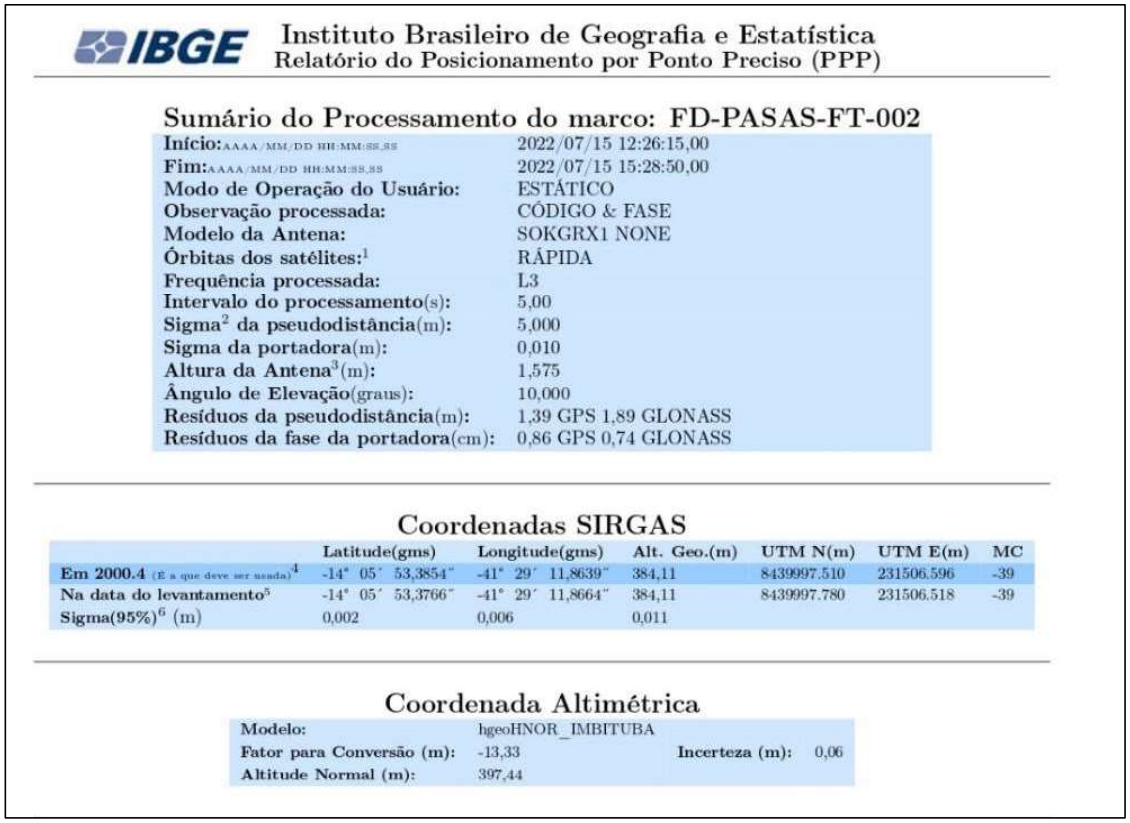


Photo 5 - One of the control points inserted in the Umburanas target. Source: CBPM (2022).

The control points were drawn in a crosshair format in a 1x1 proportion, with size obeying the equivalent of 10% of the height of the flight that was performed. sideways, drill holes and existing trench points on the targets were registered, using the GNSS Receiver in Rover mode, using the STOP and GO method, and a GNSS receiver in Base mode, installed in one of the drill holes or concrete frames, with a minimum time of 3 hours of screening.

The raw data obtained from the database were transformed into the Rinex format, using the Topcon Tools software, and inserted into the IBGE system, aiming to generate the coordinates from the Precise Point Positioning method (PPP - IBGE), as can be seen in Figure 17.



IBGE Instituto Brasileiro de Geografia e Estatística
Relatório do Posicionamento por Ponto Preciso (PPP)

Sumário do Processamento do marco: FD-PASAS-FT-002

Início: AAAA/MM/DD HH:MM:SS,SS	2022/07/15 12:26:15,00
Fim: AAAA/MM/DD HH:MM:SS,SS	2022/07/15 15:28:50,00
Modo de Operação do Usuário:	ESTÁTICO
Observação processada:	CÓDIGO & FASE
Modelo da Antena:	SOKGRX1 NONE
Órbitas dos satélites:[1]	RÁPIDA
Frequência processada:	L3
Intervalo do processamento(s):	5,00
Sigma[2] da pseudodistância(m):	5,000
Sigma da portadora(m):	0,010
Altura da Antena[3](m):	1,575
Ângulo de Elevação(graus):	10,000
Resíduos da pseudodistância(m):	1,39 GPS 1,89 GLONASS
Resíduos da fase da portadora(cm):	0,86 GPS 0,74 GLONASS

Coordenadas SIRGAS

	Latitude(gms)	Longitude(gms)	Alt. Geo.(m)	UTM N(m)	UTM E(m)	MC
Em 2000.4 (E a que deve ser usada)[4]	-14° 05′ 53,3854″	-41° 29′ 11,8639″	384,11	8439997.510	231506.596	-39
Na data do levantamento[5]	-14° 05′ 53,3766″	-41° 29′ 11,8664″	384,11	8439997.780	231506.518	-39
Sigma(95%)[6] (m)	0,002	0,006	0,011			

Coordenada Altimétrica

Modelo:	hgeoHNOR_IMBITUBA		
Fator para Conversão (m):	-13,33	Incerteza (m):	0,06
Altitude Normal (m):	397,44		

Figure 17 - Base coordinates obtained in Precise Point Positioning of diamond drill hole D-PASAS-FT-002. Source: CBPM (2022).

With the base coordinates defined, the raw data from the GNSS Receiver were processed that was used as a Rover and, after processing and due corrections, the coordinates of the control points for the processing of the images obtained and the drill hole and trench coordinates, in Universal Transverse. Mercator (UTM) format, with Sirgas2000 datum, Zone 24S.

17.4 Products

After the aerial surveys and data processing, using the Agisoft software Metashape, point clouds were generated using, as a metric, one point every 12 cm. The point density was

filtered to obtain only the ground data and to smooth the MDE, assisting in the creation of contour lines, with subsequent resizing, aiming to obtain an accuracy of 50 cm/Pixel. After treating the point clouds and obtaining the DEM, the contour lines with an equidistance of one meter, observing whether the smoothing performed in the step of generation of the MDE, was sufficient to eliminate possible irregularities in the contour lines. With the surface analysis completed, the mosaics were generated from the rectification of the images used, with the obtaining of mosaics, related to airlifted targets, with 25cm quality and or/Pixel (Figure 18).

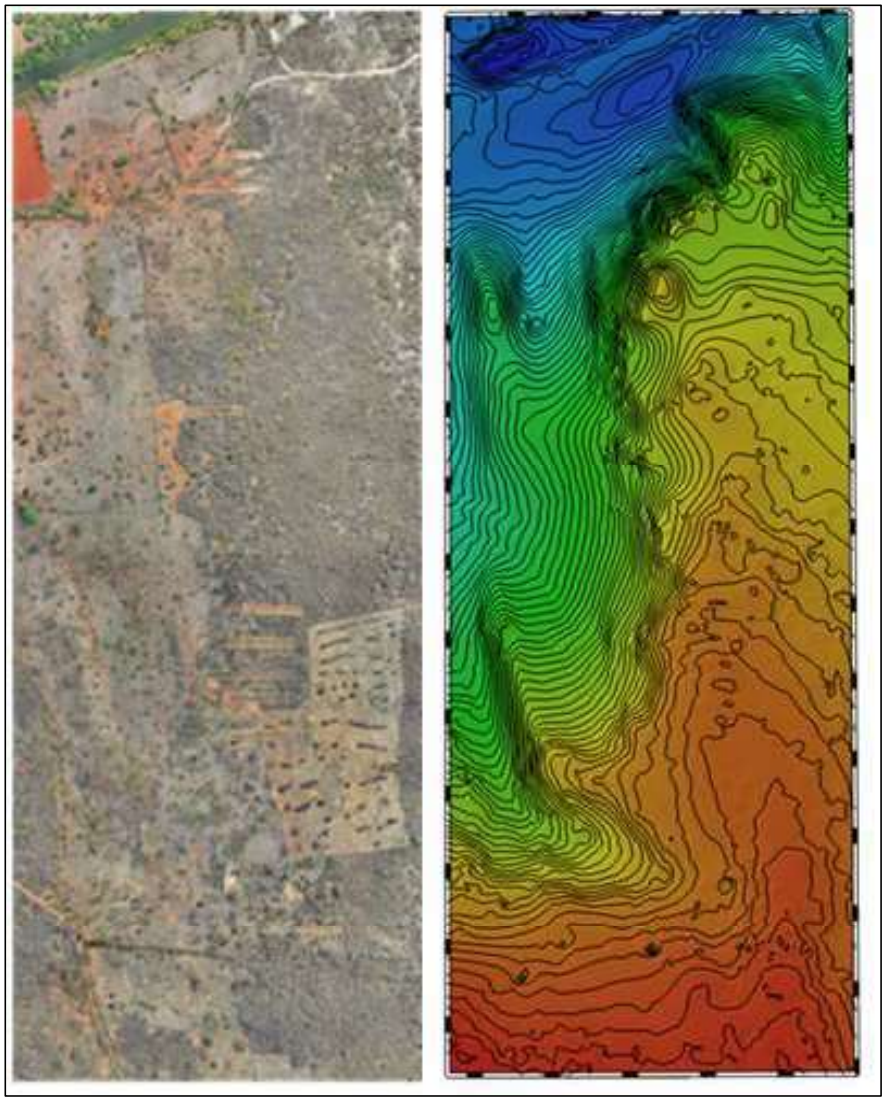


Figure 18 - Mosaic image and the Digital Elevation Model (DEM) of the Floresta target. Source: CBPM (2022).

18. GOLD MINERALIZATION

With the definition of exploration targets, especially the Caldeirão, Sucuruiú, Relíquia, Floresta, and Morro Umburanas, a detailed investigation program was carried out through geological prospecting with emphasis on subsurface work, through geological mapping,

including lithogeochemistry and petrographic analysis; excavation, description and sampling from trenches; and, finally, diamond drilling, aiming at the delimitation of the mineralized bodies in terms of mineral resources, as will be shown in detail below

Gold mineralization shows strong structural/hydrothermal control, where shear zones concentrate sulfides and gold in association with folded sectors. Intense silicification occurs in targets essentially related to conductive zones, which are perfectly marked by the electromagnetic survey (EM-INPUT). The mineralization aspect, observed in thin sections, is marked by very fine grain size, in micron scale, with rare occurrences of visible gold particles. Geochemical results indicate that gold is related to sulfidation zones containing copper and bismuth. Mineralization is mainly associated with quartz veins, which cut through normally sheared and/or brecciated metadacite, metabasalt, quartzite, and metaconglomerate. Hydrothermal halos occur, marked by carbonates, quartz, and sulfides, these being mainly represented by pyrite and pyrrhotite (Photo 6).

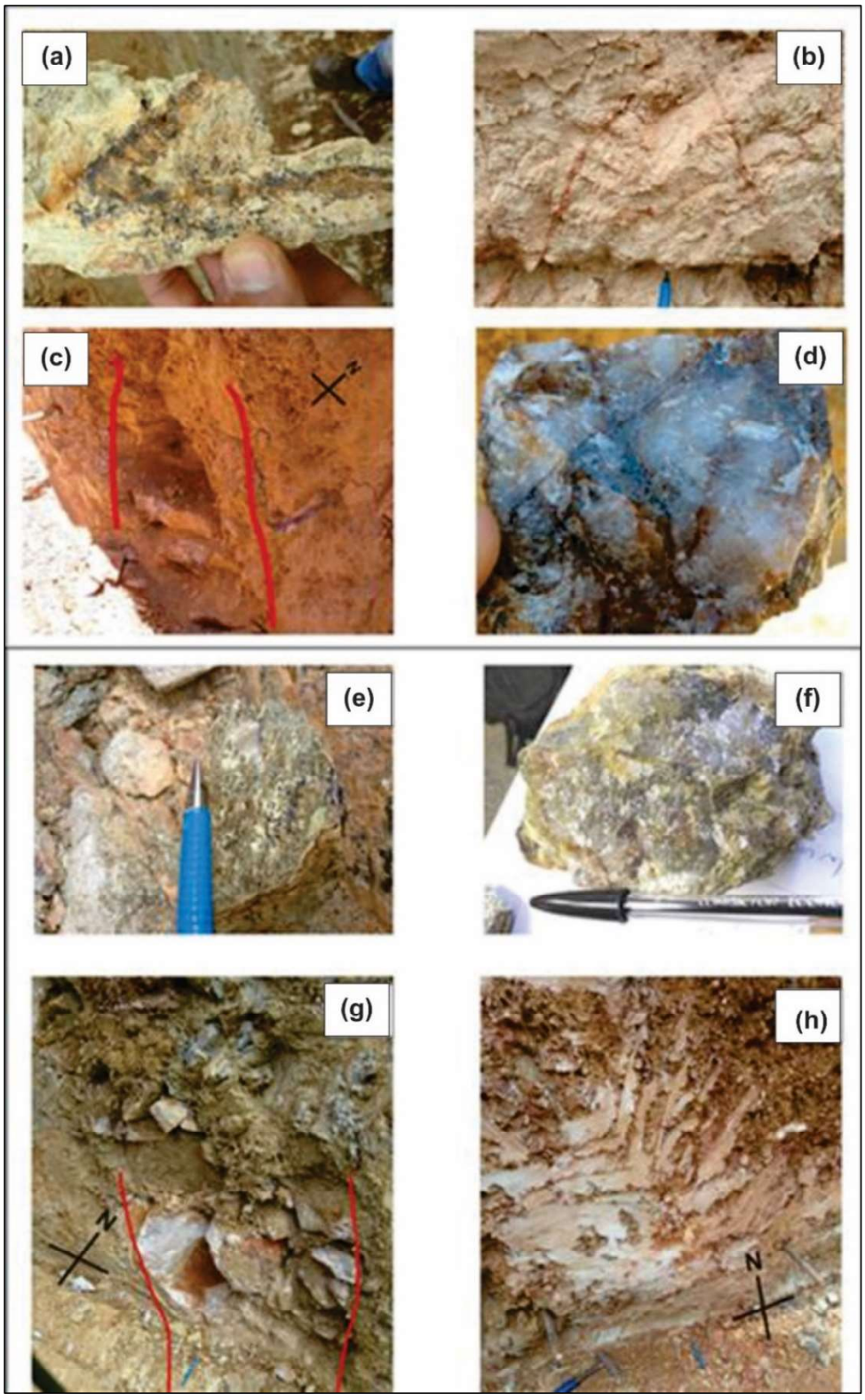


Photo 6 - (a) Epidote associated with quartz vein (Caldeirão); (b) centimeter veins of mineralized quartz associated with epidote (Caldeirão); (c) quartz vein breccia with sulfide within a clay zone (Caldeirão); (d) detail of the mineralized quartz vein with hematite associated with gold (Caldeirão); (e) epidote in tremolitized mafic rocks (Sucuruiú); (f) detail of quartz vein mineralized with sulfide and epidote. This sample yielded 6.0 ppm Au (Sucuruiú); (g) mineralized quartz within a sulfide and silicification zone (Sucuruiú); (h) mineralized zone with sulfide and silicified (Sucuruiú). Source: CBPM (2020).

18.1 Caldeirão Target

The Caldeirão target comprises a polygon, in the interface of concessions 872.720/2013 and 870,566/2017, which is in contact with the Caldeirãozinho granite with the upper portion of the Umburanas greenstone belt, along with fragments of intermediate, acidic and basic volcanic rocks. The geological mapping carried out, despite the difficulties caused by the residual soil cover, reaffirmed the lithological set exposed in the semi-detail and better characterized the changes caused in the intermediate volcanic rocks by the deformation process, often being able to classify some of these lithotypes as protomylonite and mylonite. It also indicates the presence of other more deformed lithofacies, which were subjected to hydrothermal alteration. Considering the difficulties encountered in cartographic geology, which prevented the characterization of the sources of soil geochemical anomalies (Au+Bi+Cu) and aero geophysical anomalies (EM+MAG), 19 trenches were excavated in this target (Table 3).

Table 3 – Location of the trenches excavated in the Caldeirão target. Source: CBPM (2022).

Alvo	Trech_ID	DH_East_geodesico	DH_North_geodesico	DH_RL_geodesico	Collar_Dip	Direcao_AZ	EOH
CALDEIRAO	CD-TR01	230256,555	8435146,796	372.561	0	90	95,00
CALDEIRAO	CD-TR02	230277,179	8435194,726	378.800	0	90	78,00
CALDEIRAO	CD-TR03	230252,316	8435109,48	369.920	0	90	78,00
CALDEIRAO	CD-TR04	230258,295	8434992,369	364,325	0	90	66,00
CALDEIRAO	CD-TR05	230261,21	8435046,51	367,028	0	90	71,40
CALDEIRAO	CD-TR06	230269,242	8435235,455	381,836	0	90	71,60
CALDEIRAO	CD-TR07	230271,428	8435305,521	386,659	0	90	70,20
CALDEIRAO	CD-TR08	230286,579	8435566,402	403,404	0	90	92,30
CALDEIRAO	CD-TR09	230311,457	8435771,714	398,137	0	90	98,03
CALDEIRAO	CD-TR10	230209,794	8434197,744	361,452	0	90	97,00
CALDEIRAO	CD-TR11	229986,372	8434422,263	354,401	0	90	33,30
CALDEIRAO	CD-TR11-A	230039,372	8434188,978	368,632	0	90	34,60
CALDEIRAO	CD-TR12	230301,455	8434417,899	346,78	0	90	56,70
CALDEIRAO	CD-TR13	230301,455	8434417,899	346,78	0	90	53,40
CALDEIRAO	CD-TR14	230266,245	8434943,373	363,168	0	90	39,55
CALDEIRAO	CD-TR15	230256,928	8434950,461	362,915	0	90	13,30
CALDEIRAO	CD-TR16	230280,823	8435336,038	388,902	0	90	23,00
CALDEIRAO	CD-TR17	230278,073	8435380,837	391,639	0	90	62,80
CALDEIRAO	CD-TR18	230283,816	8435508,627	400,347	0	90	61,30

Gold mineralization in this target occurs associated with hydrothermal halos, mainly in sheared intermediate volcanic rocks, represented by epidotization, hydrothermal kaolinization, silicification, sulfidation, and ferrification, with a range from 0.19 to 7.37 g/t in the gold content, observed in the results of 15 trenches (Table 4).

Table 4 – Main composites of gold mineralization, related to the Caldeirão target. Source: CBPM (2022).

ALVO	TRINCHEIRAS	COMPOSITE	INCLUIDO
Caldeirao	CD-TR-001	21,00m @ 0,65 g /t Au	6,00m @ 1,31 g/t Au 1,00 m @ 2,65 g/t Au 1,00m @ 3,01 g/t Au
Caldeirao	CD-TR-002	25,00m @ 0,51 g /t Au	5,00m @ 1,83 g/t Au 2,00m @ 3,21 g/t Au
Caldeirao	CD-TR-003	14,00m @ 0,71 g /t Au	4,00m @ 2,30 g/t Au 1,00m @ 5,92 g/t Au
Caldeirao	CD-TR-004	12,00m @ 0,71 g /t Au	3,00m @ 2,62 g/t Au 1,00m @ 7,37 g/t Au
Caldeirao	CD-TR-005	2,00m @ 0,23 g /t Au	-
Caldeirao	CD-TR-007	7,00m @ 0,22 g /t Au	-
Caldeirao	CD-TR-008	10,00m @ 0,20 g /t Au	1,00m @ 1,50 g/t Au
Caldeirao	CD-TR-015	9,04m @ 0,21 g /t Au	2,00m @ 0,87 g/t Au
Caldeirao	CD-TR-017	5,58m @ 0,19 g /t Au	-
Caldeirao	CD-TR-018	17,00m @ 0,20 g /t Au	3,00m @ 0,69 g/t Au

The high-grade horizons, in turn, occur associated with quartz veins with hematite (Photos 7, 8, and 9), within a zone of hydrothermal alteration where silicification predominates, associated with ferrification. Normally, these veins are structured in the NW direction, discordant to the predominant and penetrative foliation with NNE control, associated with the shear pair.

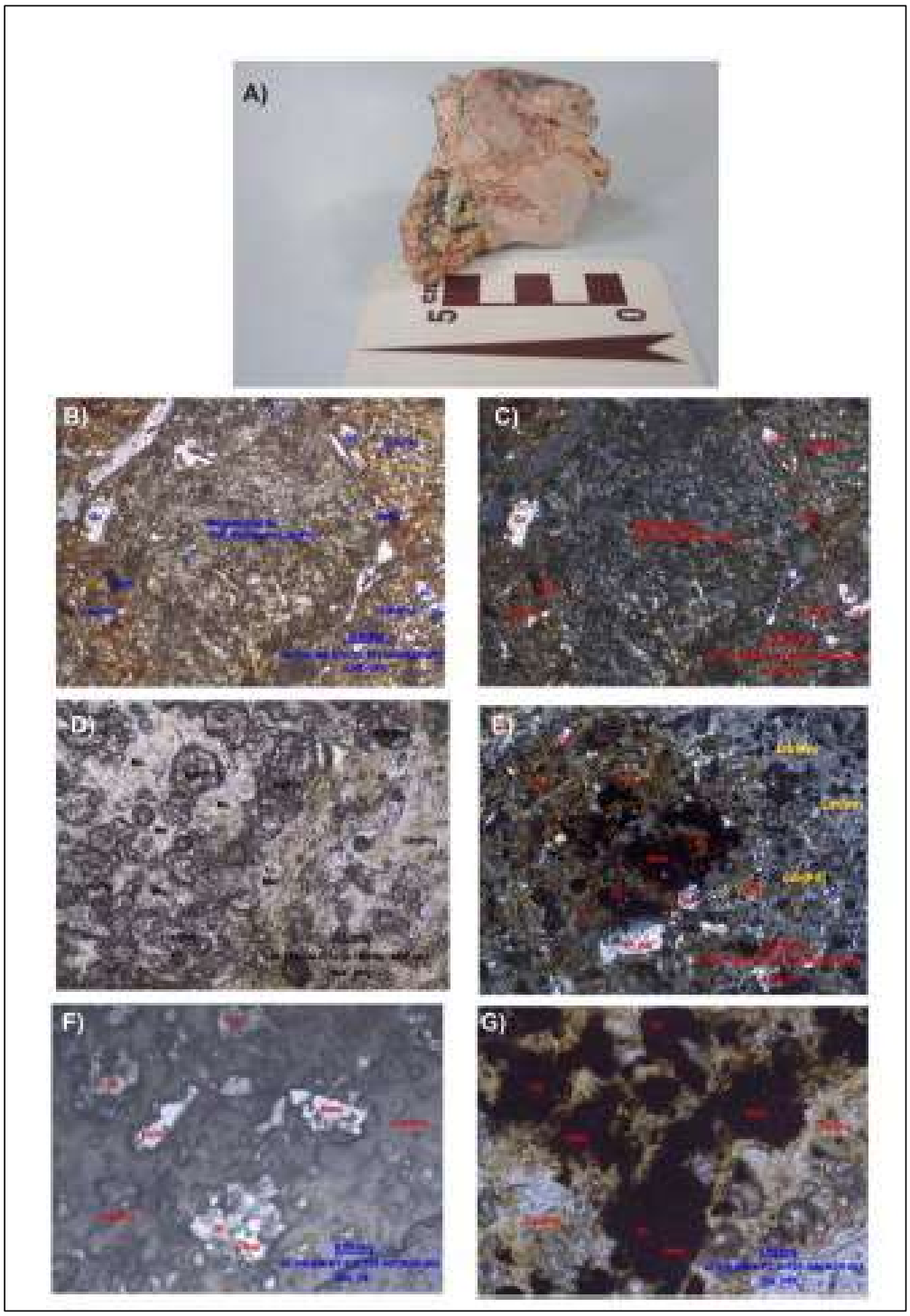


Photo 7 - Petrographic study of a mineralized sample from the Caldeirão target (A), displaying the hydrothermal minerals, represented by (B) cordierite, quartz, and hematite, in-plane light and, (C) in reflected light (D) muscovite and cordierite; (E) Hematite/goethite, quartz, cordierite; (F) association in the reflected light of cordierite with hematite; (F) association of cordierite with hematite. Source: CBPM (2022).

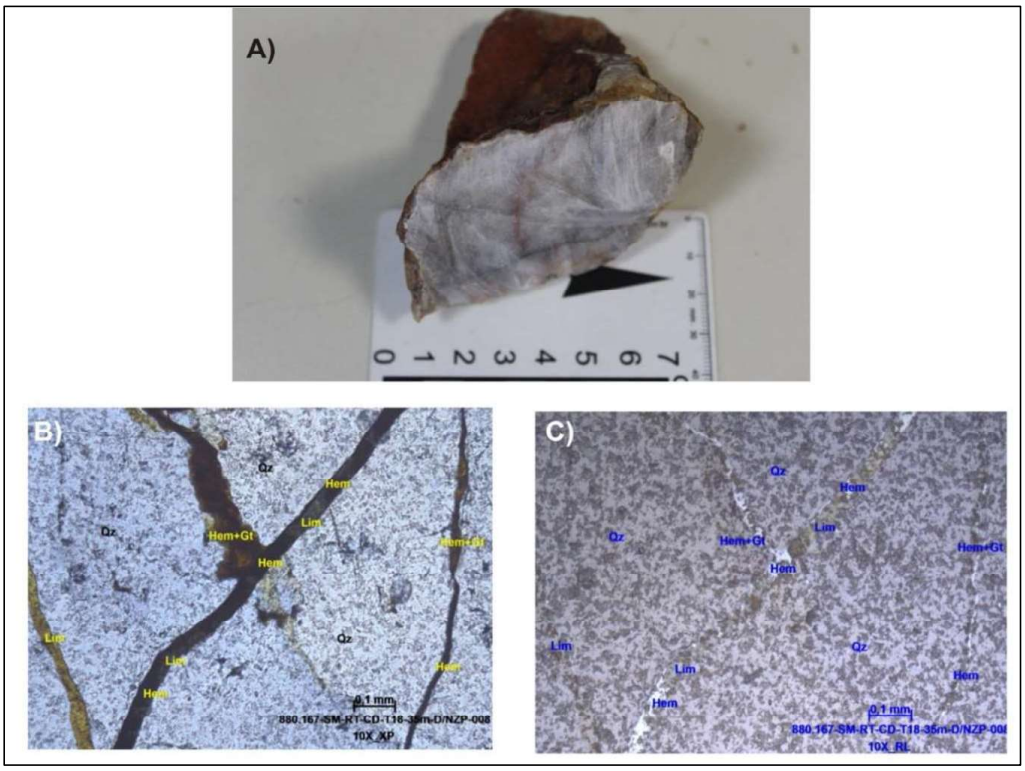


Photo 8 - Mineralized quartz vein of the Caldeirão target (A), exhibiting a strong correlation with hematite (B) that is locally limonitized and transformed into goethite (C). Source: CBPM (2022).

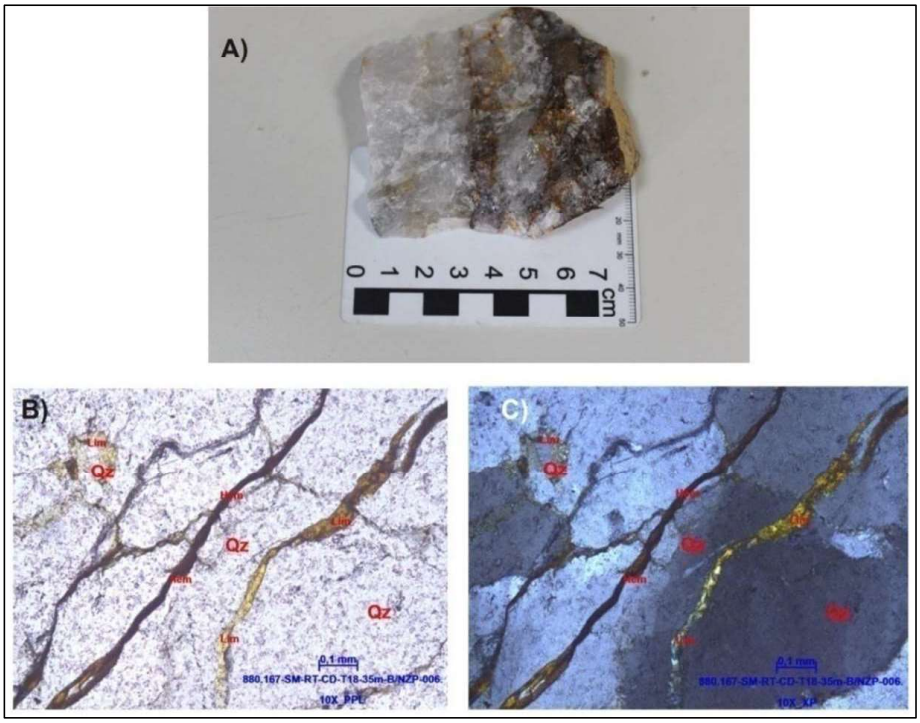


Photo 9 - Mineralized quartz vein of the Caldeirão target (A) exhibiting strong correlation with hematite (B), sometimes limonitated and transformed to goethite (C). Source: CBPM (2022).

A little west of the mineralized shear corridor, rocks predominate. mylonitic volcanic

rocks, with strong hydrothermal alteration by carbonation (footwall); while slightly to the east, the volcanic rocks meet with a higher shear deformation, forming talc-chlorite schist (hanging wall). The incisions made by trenches CD-TR01 (Figure 19), CD-TR02 (Figure 20), and CD-TR-03 intercepted a zone with a strong overprint of hydrothermal alteration and gold mineralization. In this area, it is observed strong ferrification, approximately 20 meters wide, with an incidence of millimeter-thick quartz veinlets with NW control, packaged within the shear with strong NNE/SSW control.

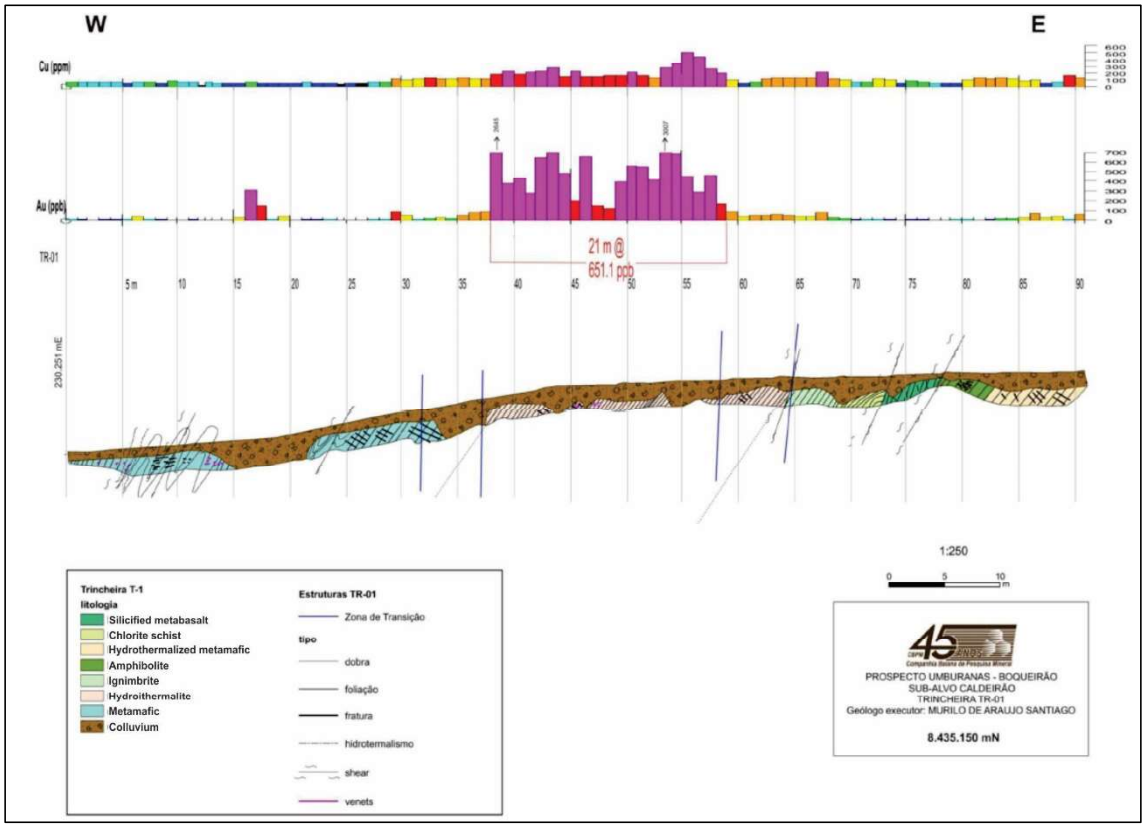


Figure 19 - Geological section of trench CD-TR-001, with histograms for gold and copper results, Caldeirão target. Source: CBPM (2022).

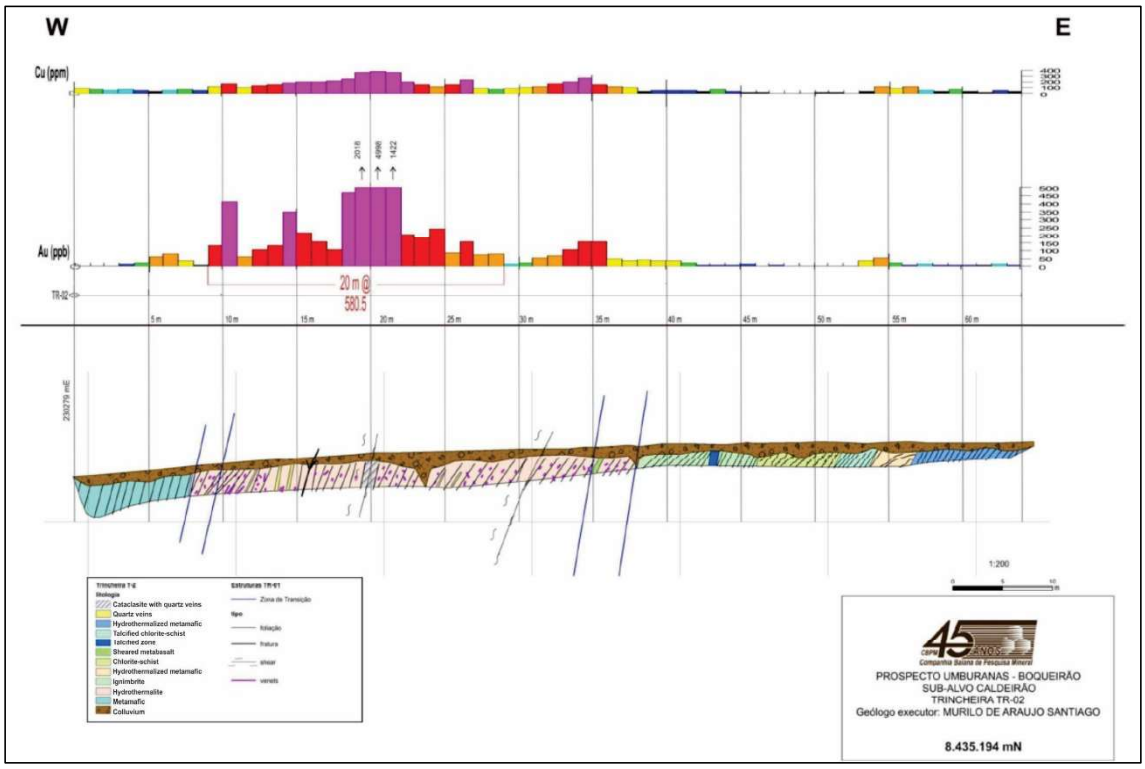


Figure 20 - Geological section of trench CD-TR-002, with histograms for gold and copper results, Caldeirão target. Source: CBPM (2022).

Similarly, it was possible to characterize the correlation of gold with some other elements, sometimes marking an association with the external halo, at other times, marking the association with hydrothermal alteration fronts of the inner halo, as exemplified by the outer halo of Ca and Cu and Bi internal in Figure 21.

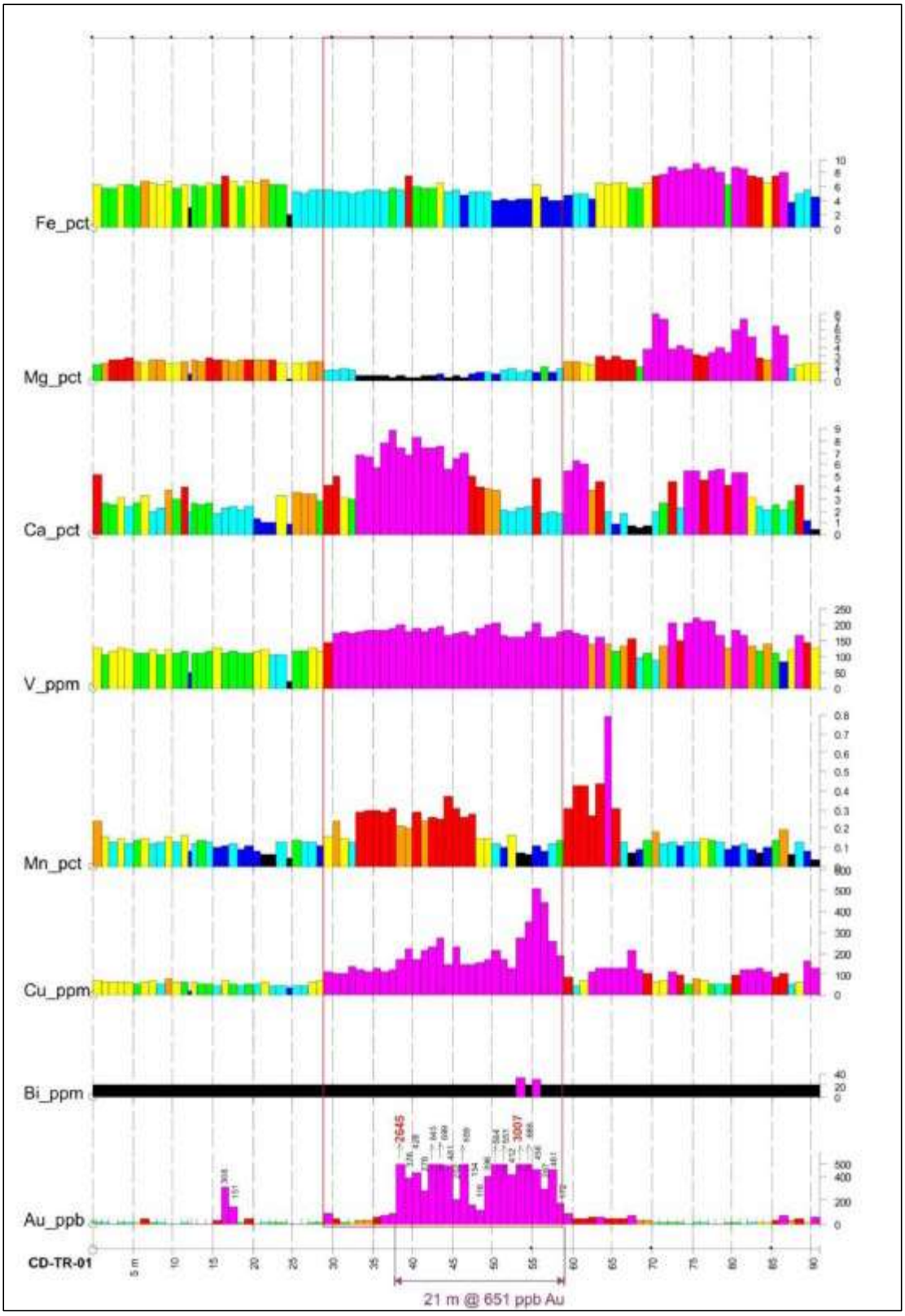


Figure 21 - Typical geochemical chart related to CD-TR-001 trench, with elements correlated with gold, Caldeirão target. Source: CBPM (2022).

With the definition of the envelope of the gold mineralization at the surface, through

the trenching program, six diamond drill holes were completed (Table 5) in the Caldeirão target, aiming to verify the continuity of the subsurface mineralization, and subsequently to block economic gold resources.

Table 5 – List of diamond drill holes completed in the Caldeirão target. Source: CBPM (2022).

Alvo	Furo	X	Y	Z	Azimuth (°)	Dip (°)	Profundidade (m)
Caldeirão - CD	FD-PIAP-CD-001	230223,658	8435146,923	384,598	90	-45	123,25
Caldeirão - CD	FD-PIAP-CD-002	230236,280	8435332,788	400,257	90	-45	120,50
Caldeirão - CD	FD-PASAS-CD-003	230204,220	8434991,760	378,400	90	-45	95,65
Caldeirão - CD	FD-PASAS-CD-004	230272,040	8435564,570	417,140	90	-45	100,00
Caldeirão - CD	FD-PASAS-CD-005	230177,330	8435147,370	383,820	90	-45	130,05
Caldeirão - CD	FD-PASAS-CD-006	230199,400	8435331,530	399,240	90	-45	126,50

The gold mineralization intercepted at this target by the drilling program confirmed the continuity of subsurface mineralization, with the same characteristics observed in the trenches, exhibiting a strong hydrothermal control during the gold deposition associated with bismuth and copper halos. Zones of quartz veinlets represent the highest-grade zones, with a range from 0.21 to 4.73 g/t of gold, as can be seen in Table 6 and figures 22 to 25.

Table 6 – Main composites of gold analyses in the holes drilled in the Caldeirão target. Source: CBPM (2022).

ALVO	FURO	COMPOSITE	INCLUIDO
Caldeirao	FD-PIAP-CD-001	22,37m @ 0,38 g/ t Au - (inicio em 37,60m)	1,40m @ 2,30 g/t Au (inicio em 37,60m)
Caldeirao	FD-PIAP-CD-002	3,97m @ 0,50 g /t Au (inicio em 47,95m)	0,32m @ 4,73 g/t Au (inicio em 49,45m)
Caldeirao	FD-PASAS-CD-003	5,40m @ 0,22 g /t Au (inicio em 56,00m)	-
Caldeirao	FD-PASAS-CD-004	1,00m @ 0,27 g /t Au (inicio em 53,30m)	-
Caldeirao	FD-PASAS-CD-004	0,80m @ 0,26 g /t Au (inicio em 60,60m)	-
Caldeirao	FD-PASAS-CD-005	1,00m @ 0,48 g /t Au (inicio em 50,80m)	-
Caldeirao	FD-PASAS-CD-005	9,45m @ 0,27 g /t Au (inicio em 84,70m)	1,00m @ 0.88 g/t Au (inicio em 91,30m)
Caldeirao	FD-PASAS-CD-006	2,70m @ 0,21 g /t Au (inicio em 81,50m)	-

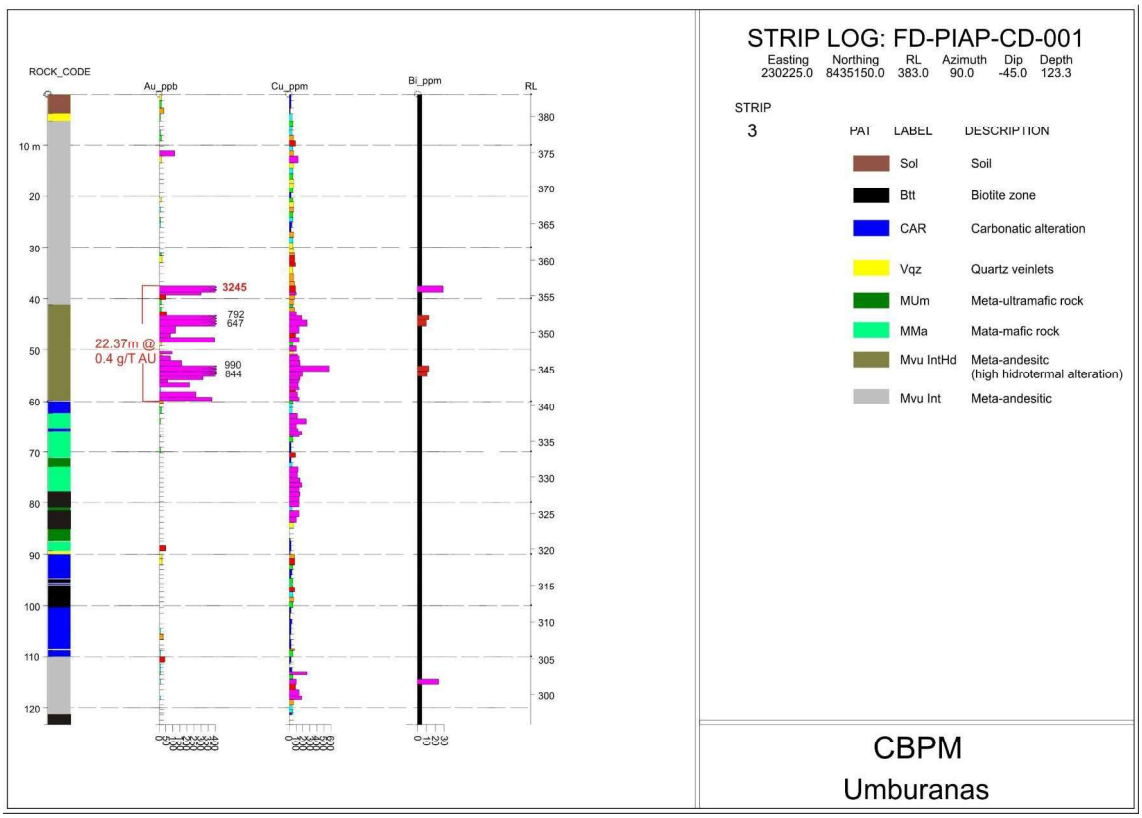


Figure 22 - Strip log of diamond drill hole FD-PIAP-CD-001, Caldeirão target. Source: CBPM (2022).

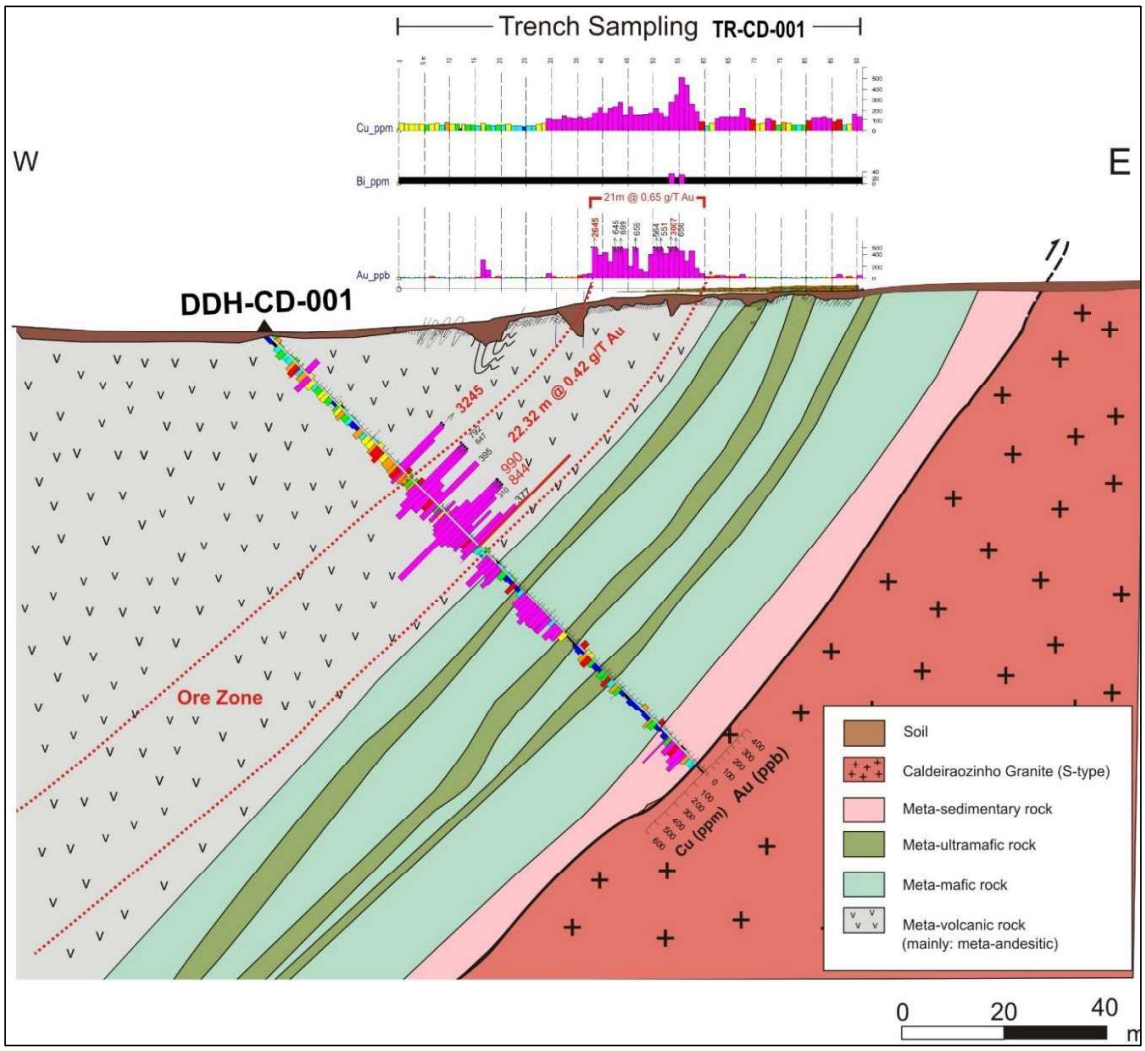


Figure 23 - Geological section built from hole FD-PIAP-CD-001 and trench TR-CD-001, Caldeirão target. Source: CBPM (2022).

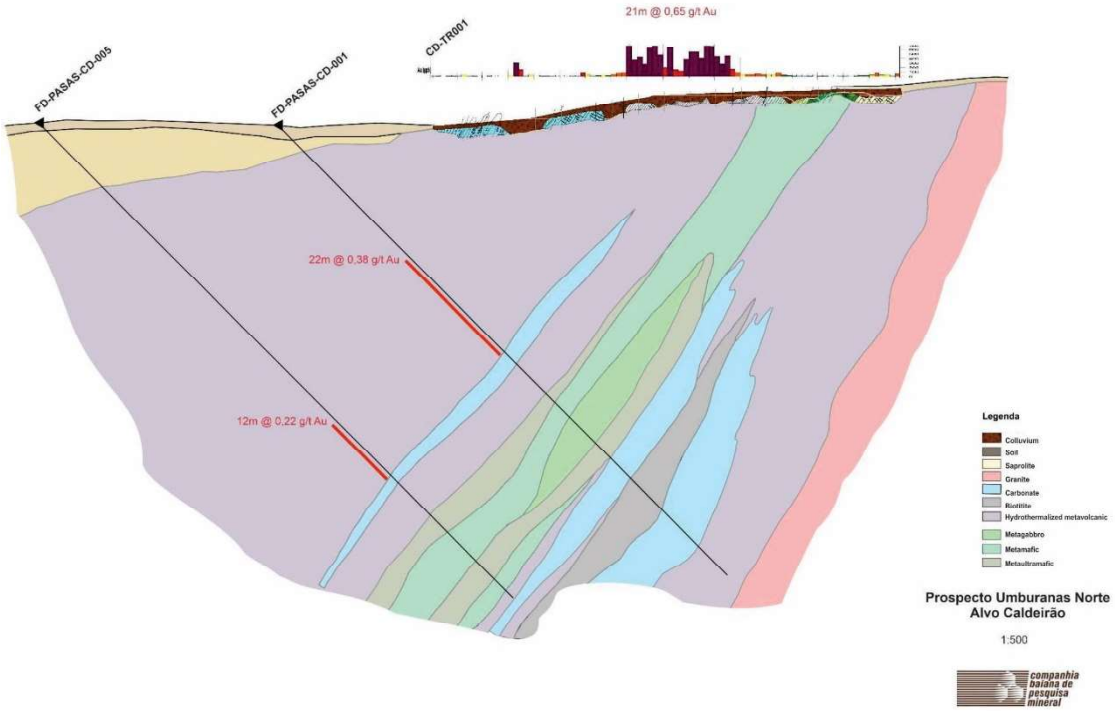


Figure 24 - Integrated section of the Caldeirão target. Source: CBPM (2022).

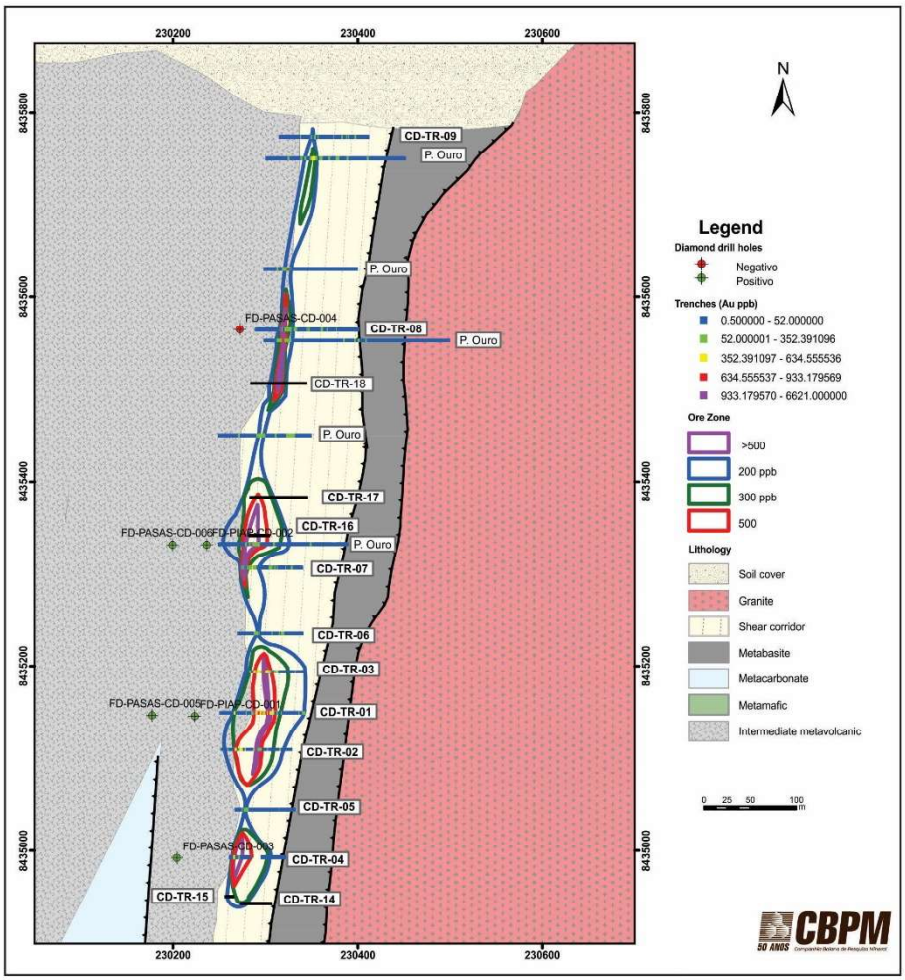


Figure 25 - Integrated surface map of the Caldeirão target. Source: CBPM (2022).

18.2 Sucuruiú Target

The Sucuruiú target is limited to concession 871.917/2012 and positioned in the basal part of the Umburanas greenstone belt, in ultramafic lithotypes. To facilitate the description, it was separated into two sub-targets, named “W” and “E”. The geological mapping faced great difficulties caused by the residual soil cover. In this sense, eleven trenches were dug in the target (Table 7).

Table 7 – Location of trenches excavated in the Sucuruiú target. Source: CBPM (2022).

Alvo	Trech_ID	DH_East_geodesico	DH_North_geodesico	DH_RL_geodesico	Collar_Dip	Direcao_AZ	EOH
SUCURIU	SU-TR01	228070,591	8435543,693	400,406	0	90	94,00
SUCURIU	SU-TR02	228059,418	8435506,381	400,796	0	90	75,20
SUCURIU	SU-TR03A	228234,822	8435595,262	399,612	0	90	81,00
SUCURIU	SU-TR03	228104,946	8435595,843	399,367	0	90	122,20
SUCURIU	SU-TR04	228072,824	8435461,016	401,737	0	90	54,35
SUCURIU	SU-TR05	228136,652	8435538,597	399,836	0	90	23,45
SUCURIU	SU-TR06	228130,416	8435557,38	399,653	0	90	22,90
SUCURIU	SU-TR07	228135,723	8435570,339	399,741	0	90	25,70
SUCURIU	SU-TR08	228066,762	8435598,414	399,485	0	90	31,07
SUCURIU	SU-TR09	228287,509	8435660,872	397,062	0	90	11,90
SUCURIU	SU-TR10	228283,56	8435701,915	396,42	0	90	42,90

In sub-target “W” mineralization occurs in an antiformal domain that plunges with a low angle to the south, associated with rocks of ultramafic nature, mafic and acid volcanic, both highly sheared/mylonitized, fractured, and with strong superposition of hydrothermal processes (Figures 26 and 27).

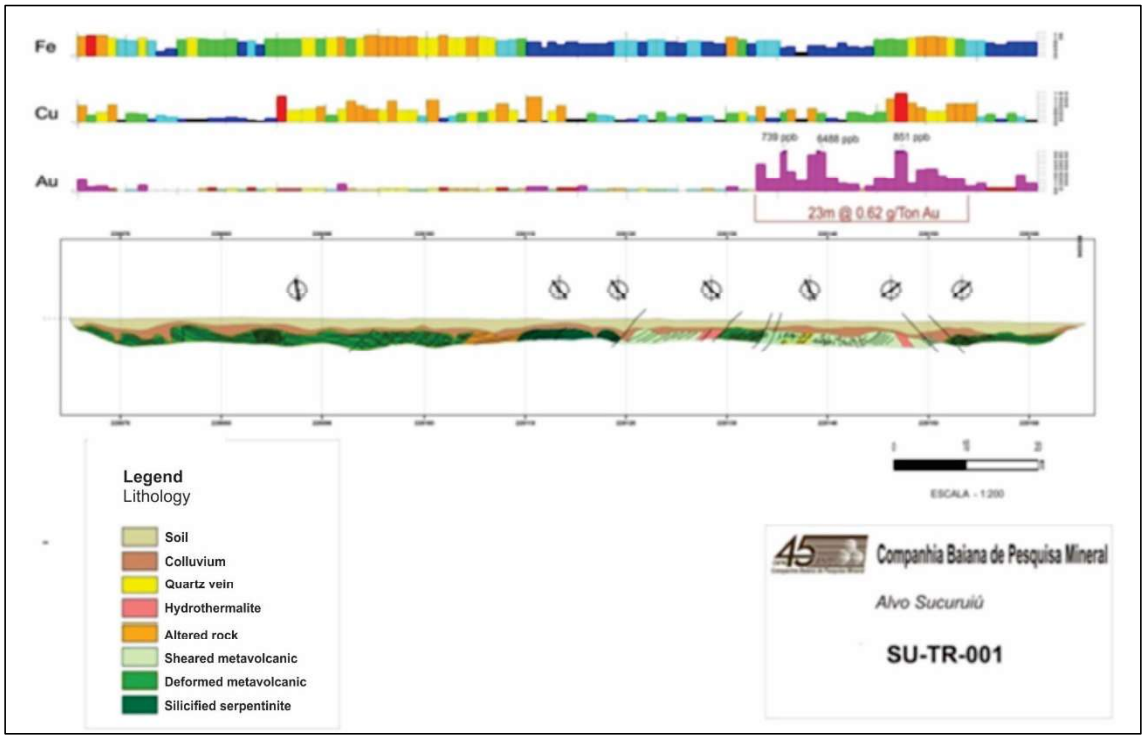


Figure 26 - Geological section of the SU-TR-001 trench, with a histogram with the results of gold, copper, and iron, Sucuruiú target. Source: CBPM (2022).

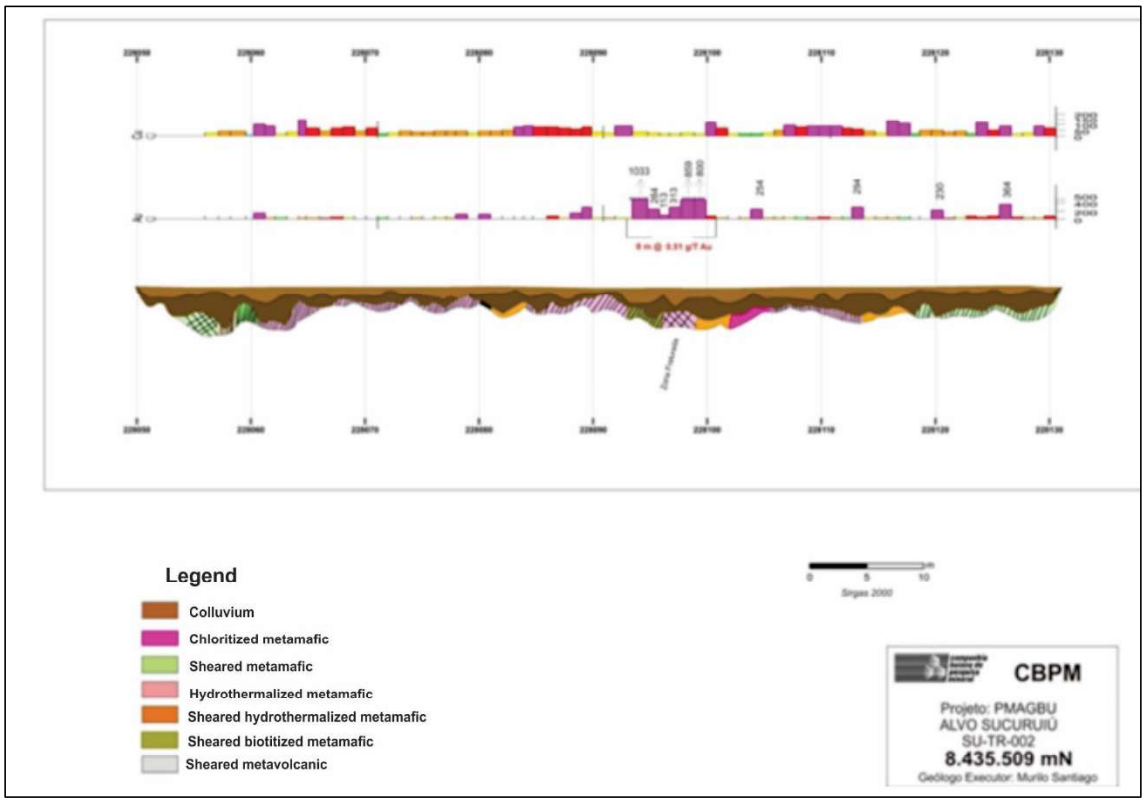


Figure 27 - Geological section of the SU-TR-002 trench, with histogram with gold and copper results. Source: CBPM (2022).

In contrast, in the trench SU-TR-002, gold is associated with potassium, and, subordinately, vanadium, bordered by a restricted copper halo in the Sucuruiú target (Figure 28),

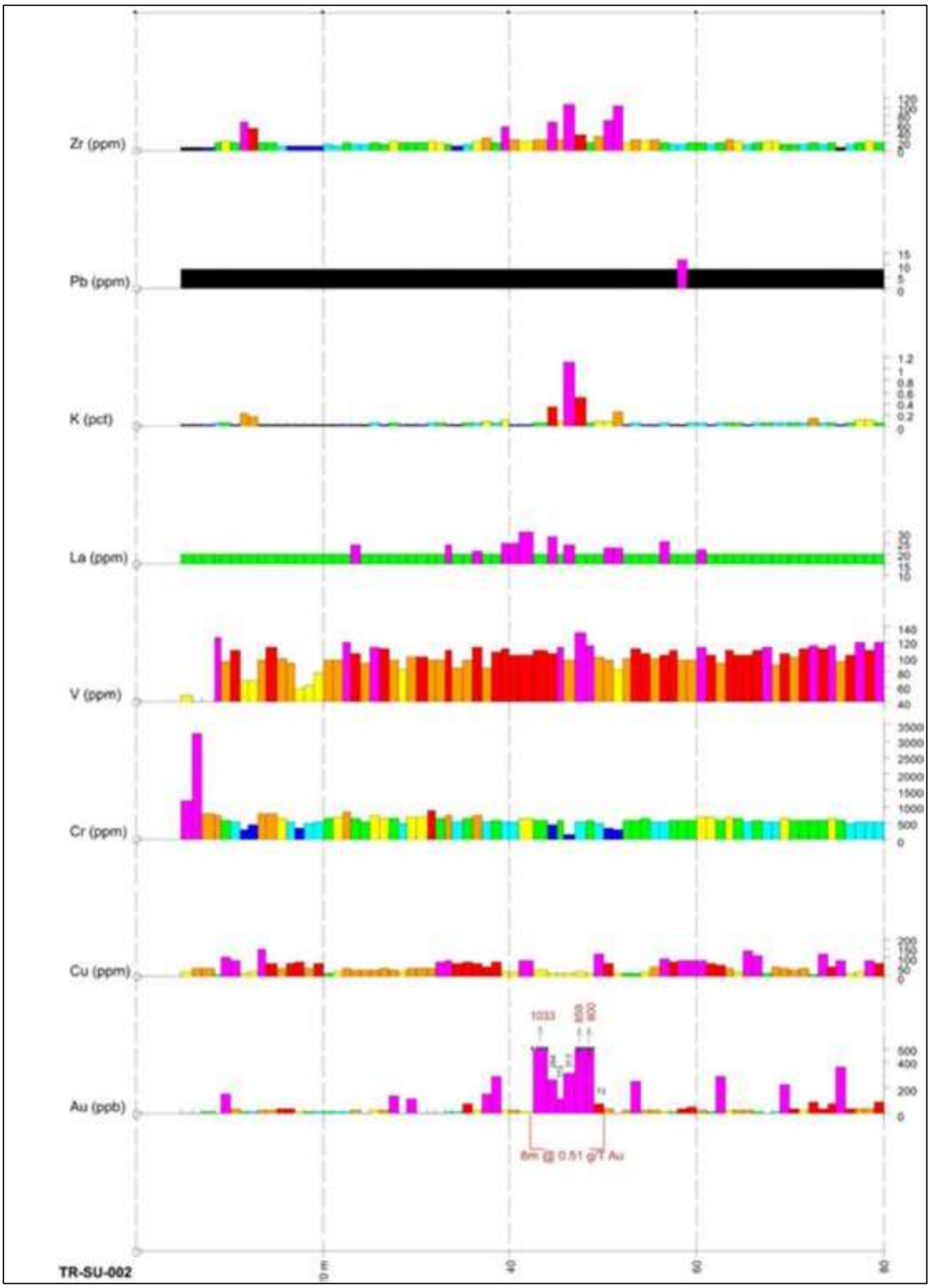


Figure 28 - Geochemical chart of the trench SU-TR-002, with the elements correlated with gold, Sucuruiú target. Source: CBPM (2022).

The host rocks are tremolitized ultramafic and metavolcanic andesitic in nature. The low-grade mineralized zone is associated with rocks with a mineralogical arrangement based on tremolite, epidote, talc, and, subordinately, quartz (Photo 10).

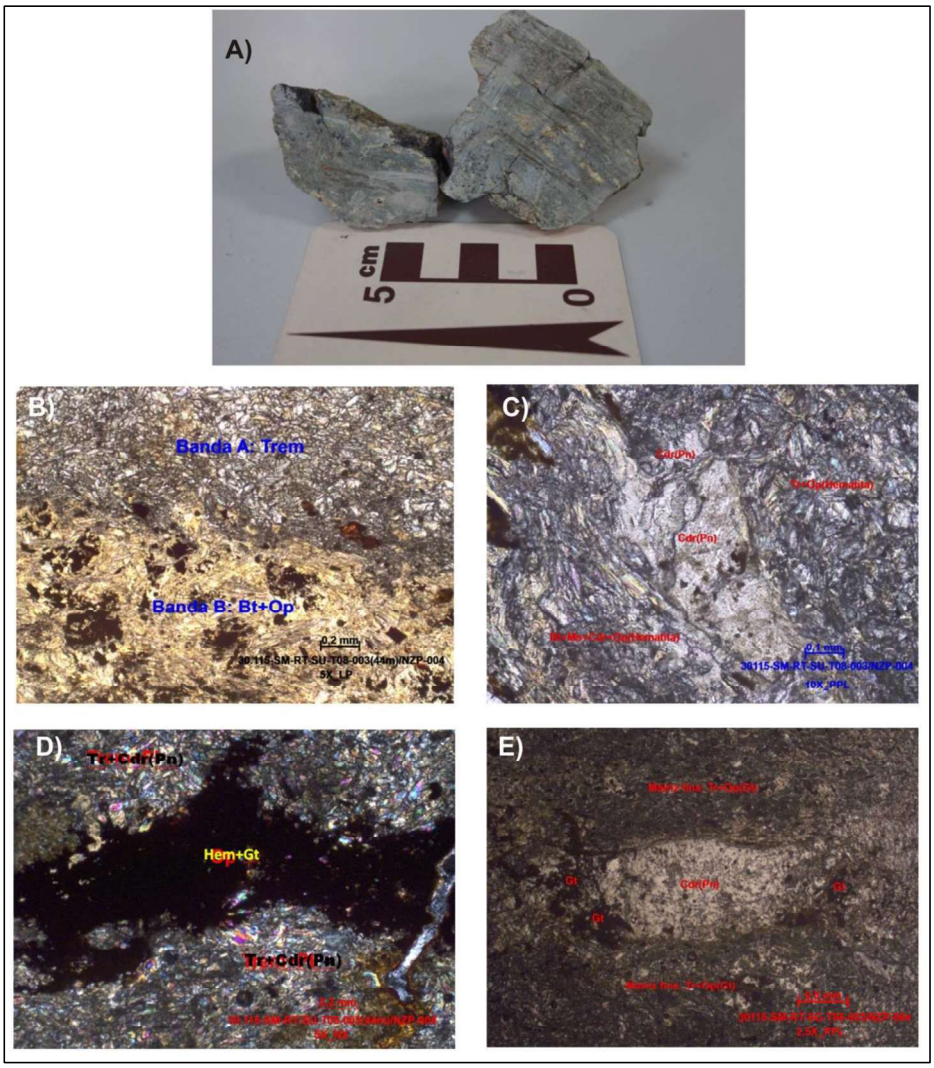


Photo 10 – (A) Sample from the mineralized zone of the Sucuruiú target; (B) hydrothermal alteration zone showing tremolitization, biotitization, and ferrification; (C) tremolitized zone with cordierite and. hematite; (D) zone of ferrification represented by hematite; (E) hydrothermal alteration zone exhibiting strong association of cordierite and hematite. Source: CBPM (2022).

The higher-grade mineralized zones are associated with quartz veins, with very expressive epidotization and ferrification. In addition, there is an external halo of potassification especially represented by biotite.

Sub-target E is represented by a shear zone trending NE-SW, which is associated with heavily silicified ultramylonites. The host rock of this mineralization is also represented by ultramafic and volcanic rocks in general. The low-grade halo consists of a very expressive carbonation zone with strong fracturing, while the high-grade zone is represented by a silicification and ferrification zone. It is also observed the formation of an amorphous material that is related to the alteration of the host rock with a fluid with high silica content, in addition, the ferruginous material is composed of oxidized hematite.

In both sub-targets, interconnected in the arrangement for resource calculation, it is possible to notice, from the channel sampling carried out in nine of the eleven trenches, that mineralization occurs pervasively, with intervals of up to 28 meters, and with composite grades in a range of 0.21 to 3.83 g/t of gold (Table 8).

Table 8 – Main gold composites related to the trenches of the Sucuruiú target. Source: CBPM (2022).

ALVO	TRINCHEIRAS	COMPOSITE	INCLUIDO
Sucuruiu	SU-TR-001	28,00m @ 0,42 g /t Au	7,00m @ 1,20 g/t Au 2,79m @ 3,83 g/t Au
Sucuruiu	SU-TR-002	26,00m @ 0,21 g /t Au	6,50m @ 0,62 g/t Au 1,50m @ 1,03 g/t Au
Sucuruiu	SU-TR-003	10,03m @ 0,21 g /t Au	-
Sucuruiu	SU-TR-005	19,03m @ 0,32 g /t Au	5,00m @ 0,70 g/t Au
Sucuruiu	SU-TR-006	19,00m @ 0,25 g /t Au	-
Sucuruiu	SU-TR-007	6,00m @ 0,63 g /t Au	3,00m @ 1,12 g/t Au 1,00m @ 2,50 g/t Au

After the definition of the envelope of gold mineralization in the trenching program, ten holes were drilled (Table 9) in the Sucuruiú target, aiming, to verify the continuity of subsurface mineralization, and subsequently, block the gold economic resources.

Table 9 – List of diamond drill holes completed in the Sucuruiú target. Source: CBPM (2022)

Alvo	Furo	X	Y	Z	Azimuth (^{0})	Dip (^{0})	Profundidade (m)
Sucuriu -SU	FD-PIAP-SU-001	228059,726	8435542,247	413,403	90	-50	135,45
Sucuriu -SU	FD-PIAP-SU-002	228216,919	8435669,329	410,877	90	-50	132,20
Sucuriu -SU	FD-PASAS-SU-003	228134,980	8435553,470	412,580	90	-80	106,55
Sucuriu -SU	FD-PASAS-SU-004	228135,020	8435498,440	413,270	90	-80	60,95
Sucuriu -SU	FD-PASAS-SU-005	228135,910	8435602,470	412,330	90	-80	106,50
Sucuriu -SU	FD-PASAS-SU-006	228187,090	8435551,820	412,890	270	-50	41,65
Sucuriu -SU	FD-PASAS-SU-007	228094,160	8435552,040	413,130	90	-50	41,00
Sucuriu -SU	FD-PASAS-SU-008	228138,993	8435450,046	415,159	0	-90	56,45
Sucuriu -SU	FD-PASAS-SU-009	228186,707	8435496,271	413,858	270	-80	40,40
Sucuriu -SU	FD-PASAS-SU-010	228094,893	8435494,881	414,148	90	-45	45,00

The mineralized zones intercepted in the drilling program confirmed the continuity of subsurface mineralization, with the same characteristics observed in the trenches, exhibiting strong hydrothermal control associated with halos of copper, bismuth, tellurium, and tungsten, amid quartz veinlets, representing the pervasive zones up to 19.55 meters at 1.42 g/t gold, including high-grade zones, with a range from 3.65 to 22.77 g/t of gold, as can be seen in Table 10 and figures 29 and 30.

Table 10 - Main gold composites of diamond drill holes of the Sucuruiú target. Source: CBPM (2022).

ALVO	FURO	COMPOSITE	INCLUIDO
Sucuruiu	FD-PASAS-SU-003	17,00m @ 0,27 g/t Au (início em 00,00m)	-
Sucuruiu			14,85 m @ 3,65 g/ t Au (início em 4,70m
Sucuruiu	FD-PASAS-SU-004	19,55m @ 1,42 g/t Au (início em 00,00m)	4,65m @ 5,08 g/ t Au (início em 9,15m)
Sucuruiu			0,80m @ 22,77 g/ t Au (início em 9,15m)
Sucuruiu	FD-PASAS-SU-005	1,55m @ 0,21 g/t Au (início em 56,45m)	-
Sucuruiu	FD-PASAS-SU-006	7,05m @ 0,25 g/t Au (início em 9,15m)	-
Sucuruiu	FD-PASAS-SU-007	2,50m @ 0,24 g/t Au (início em 11,50m)	-

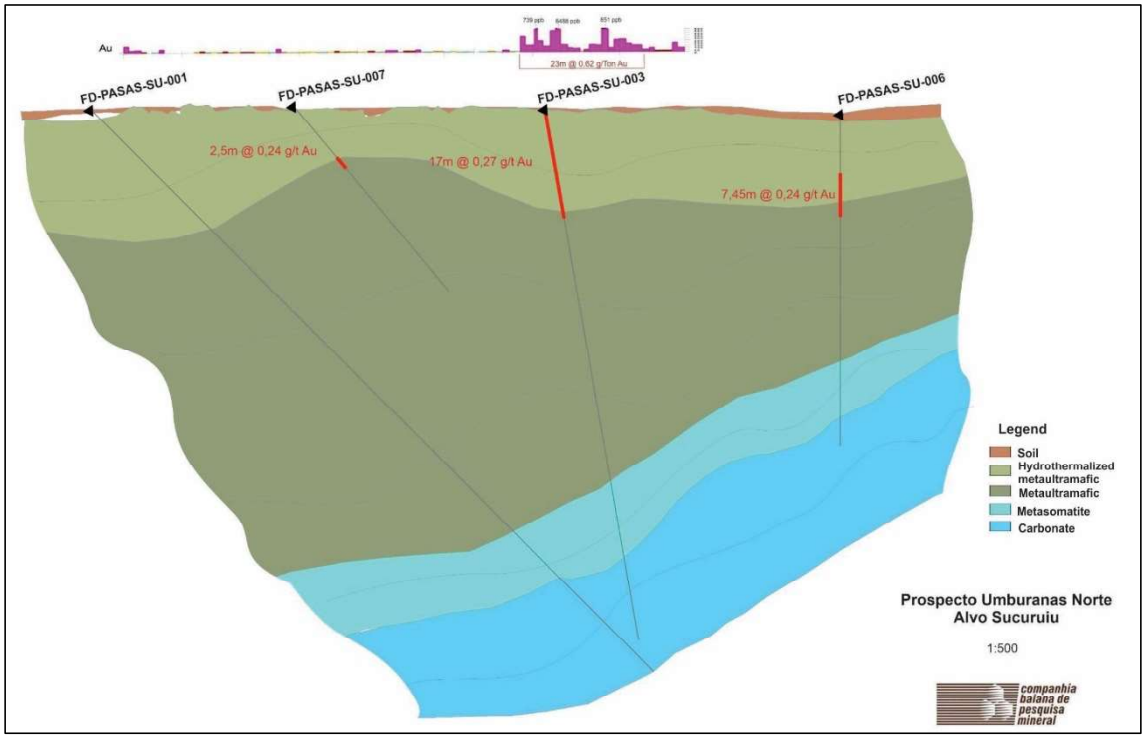


Figure 29 - Integrated section related to the Sucuruiú target. Source: CBPM (2022).

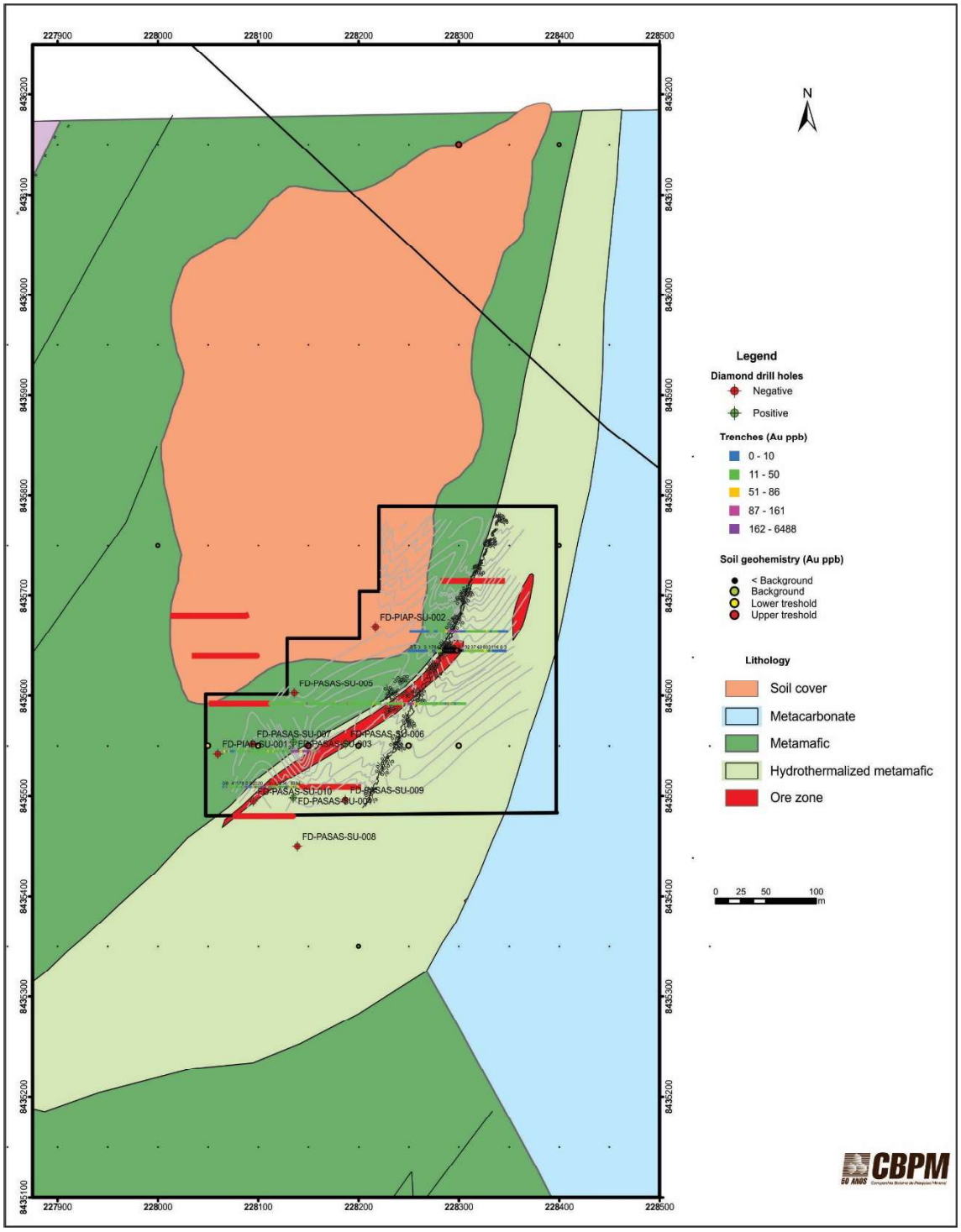


Figure 30 - Integrated surface map of the Sucuruiú target. Source: CBPM (2022).

18.3 Relíquia Target

The Relíquia target is at the interface of the Caldeirãozinho granite with the rocks of the Umburanas greenstone belt, amid a few outcrops of intermediate volcanic rocks and rare mafic rock fragments, marking a folding zone, visualized on the conductivity map (EM) and in several grids related to trenching and soil geochemistry (Figure 31).

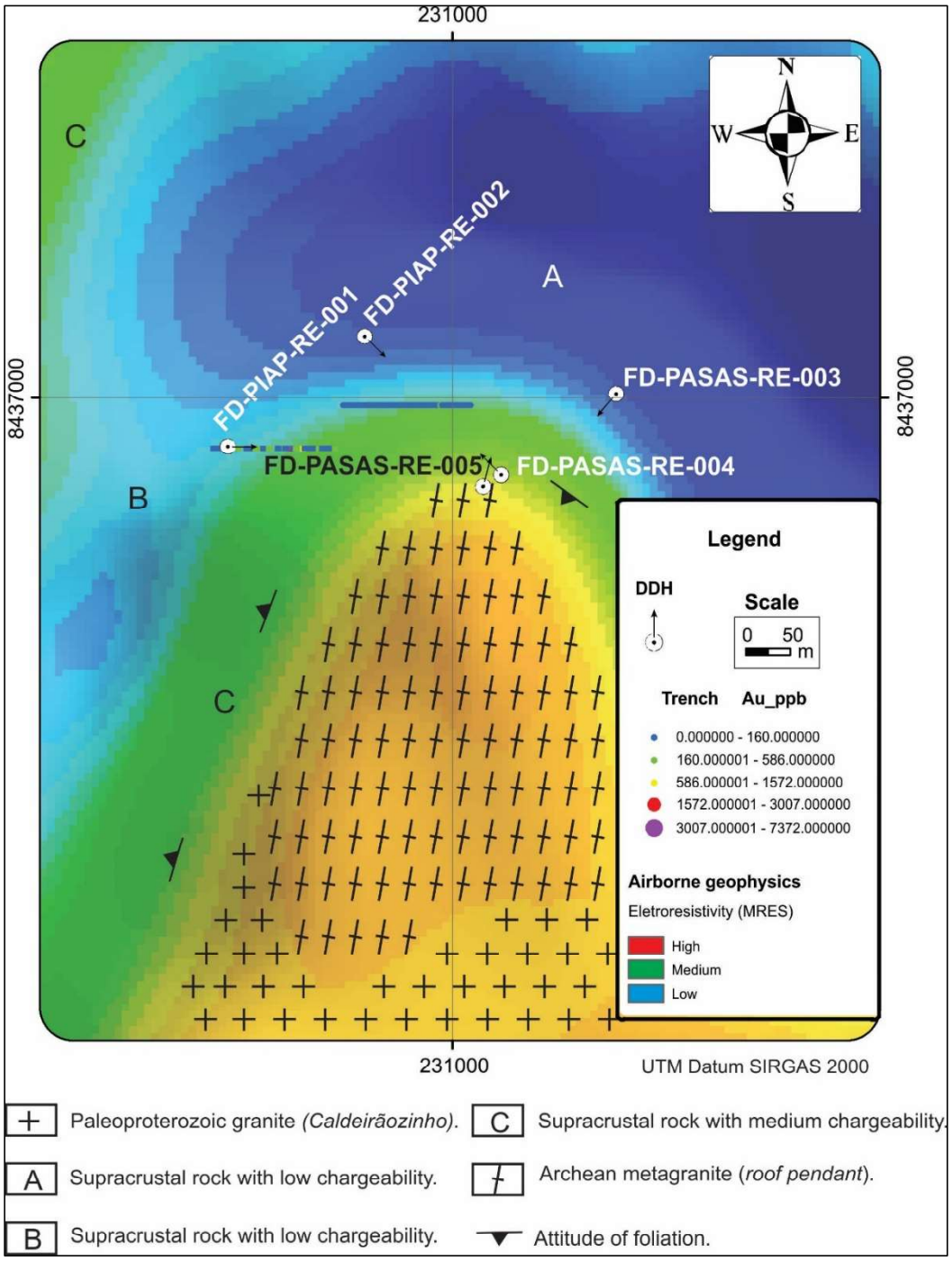


Figure 31 – Geophysical outline of the Relíquia target, based on airborne survey data. Source: CBPM (2020).

Geological cartography was greatly quite hampered because of the presence of wide coverage of a detritus-sandy nature, with a thickness often greater than 8 meters, with few existing outcrops. Similarly, in the zone with first-order soil geochemical anomalies of gold, a trench, with the nomenclature TR-UB-07revealed only very few rocky exposures and, almost all, unconsolidated sediments related to cover sandy detritus, but showed some values greater than

100 ppb Au, and an expressive value with 15,127 ppb Au, or 15.12 g/t of gold, associated with oxidized quartz veins (Figure 32)

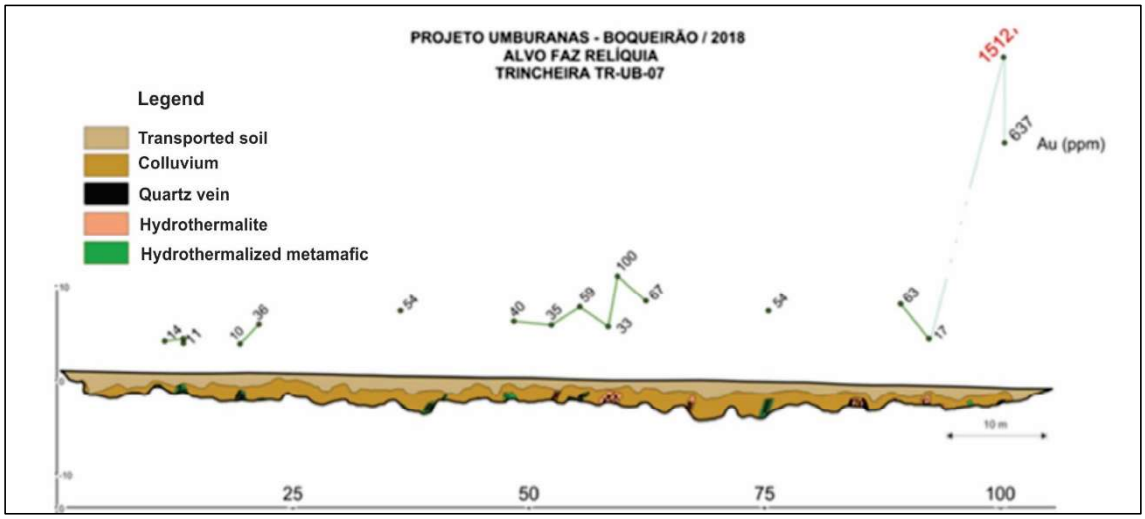


Figure 32 - Geological section of the trench TR-UB-07. Source: CBPM (2022).

The mineralized zones exposed in the trench define an association with folded and hydrothermalized mafic and intermediate volcanic rocks (Photo 11).

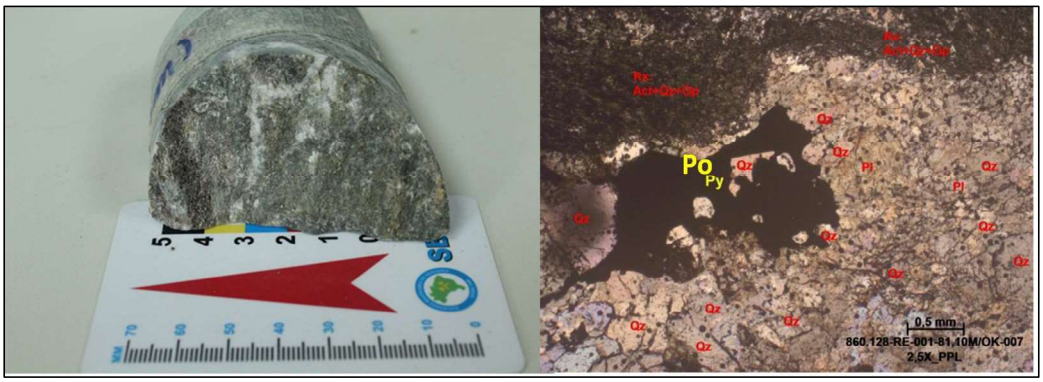


Photo 11 – Left: Amphibolite sample, containing quartz veins with iron sulfide (pyrrhotite); Right: Detail at the edge of the thin section with quartz vein (Qz), with some plagioclase crystals (Pl) containing pyrrhotite (Po). Magnification of 2.5X_PPL. Source: CBPM (2022).

Despite a discontinued channel sampling, due to few rock exposures, it was possible to correlate gold mineralization with hydrothermal alteration fronts associated with carbonation (Ca) and with high levels (high grades) associated with Bi, Mo, and V, such as shows the correlation matrix in Figure 33.

	Au	Al	Ba	Bi	Ca	Co	Cr	Cu	Fe	K	La	Li	Mg	Mn	Mo	Na	Ni	Pb	Sc	Sr	Ti	V	Y	Zn	Zr
Au	1.00																								
Al	-0.62	1.00																							
Ba	-0.27	0.25	1.00																						
Bi	1.00	-0.61	-0.26	1.00																					
Ca	-0.30	0.69	-0.13	-0.30	1.00																				
Co	-0.20	0.10	0.51	-0.20	-0.05	1.00																			
Cr	-0.42	0.57	0.21	-0.41	0.12	0.27	1.00																		
Cu	-0.08	0.45	0.16	-0.08	0.18	0.23	0.26	1.00																	
Fe	-0.68	0.39	0.51	-0.68	0.24	0.63	0.24	0.15	1.00																
K	-0.26	0.38	-0.08	-0.26	-0.02	0.01	0.87	0.07	-0.08	1.00															
La	-0.19	0.31	-0.31	-0.19	0.46	0.14	0.49	0.03	0.10	0.38	1.00														
Li	-0.33	0.25	0.34	-0.32	-0.36	0.31	0.75	0.06	0.07	0.72	0.10	1.00													
Mg	-0.35	0.36	-0.31	-0.34	0.34	0.00	0.51	-0.22	0.17	0.65	0.46	0.20	1.00												
Mn	-0.21	0.39	0.44	-0.21	0.57	0.33	-0.15	0.14	0.50	-0.40	-0.02	-0.30	-0.11	1.00											
Mo	1.00	-0.61	-0.26	1.00	-0.30	-0.20	-0.41	-0.08	-0.68	-0.26	-0.19	-0.32	-0.34	-0.21	1.00										
Na	-0.17	0.23	-0.14	-0.17	0.19	-0.13	0.15	-0.25	0.10	0.43	-0.12	-0.02	0.75	-0.02	-0.17	1.00									
Ni	-0.52	0.26	0.16	-0.51	0.06	0.19	0.72	-0.19	0.33	0.56	0.61	0.57	0.47	-0.05	-0.51	-0.06	1.00								
Pb	0.08	-0.13	0.73	0.09	-0.34	0.65	0.02	0.14	0.25	-0.20	-0.28	0.28	-0.50	0.38	0.09	-0.36	-0.06	1.00							
Sc	-0.36	0.62	-0.10	-0.37	0.55	-0.04	-0.05	0.35	0.29	-0.01	0.02	-0.30	0.37	0.24	-0.37	0.52	-0.33	-0.38	1.00						
Sr	-0.37	0.67	-0.20	-0.36	0.89	-0.12	0.31	0.00	0.21	0.29	0.50	-0.20	0.57	0.31	-0.36	0.48	0.18	-0.47	0.54	1.00					
Ti	-0.60	0.59	0.21	-0.61	0.59	-0.03	0.03	0.07	0.50	-0.03	0.09	-0.27	0.23	0.43	-0.61	0.40	0.03	-0.22	0.66	0.68	1.00				
V	0.49	0.09	0.15	0.50	0.30	0.24	0.02	0.11	-0.12	-0.03	0.00	-0.22	-0.02	0.29	0.50	0.20	-0.36	0.31	0.10	0.28	0.02	1.00			
Y	-0.29	0.50	-0.25	-0.28	0.67	0.06	0.34	0.01	0.19	0.30	0.87	-0.06	0.61	0.21	-0.28	0.19	0.44	-0.36	0.38	0.69	0.39	0.07	1.00		
Zn	-0.50	0.31	0.13	-0.49	-0.15	0.41	0.76	-0.03	0.35	0.72	0.38	0.79	0.63	-0.27	-0.49	0.24	0.72	-0.02	0.00	0.03	-0.09	-0.28	0.31	1.00	
Zr	-0.46	0.04	0.42	-0.45	-0.47	0.38	0.58	-0.11	0.38	0.53	0.01	0.73	0.35	-0.22	-0.45	0.18	0.61	0.32	-0.23	-0.30	-0.14	-0.32	-0.07	0.79	1

Figure 33 - Correlation matrix calculated with the geochemical results obtained in the trench TR-UB-07. Source: CBPM (2022).

After characterizing the gold values in the channel sampling in the trench TR-UB-07, and considering, that the continuity of the trenching program would not contribute to the definition of the anomalies of soil due to the presence of the thick detritus-lateritic cover, seven diamond drill holes were completed in the Relíquia target (Table 11).

Table 11 – List of diamond drill holes in the Relíquia target. Source: CBPM (2022).

Alvo	Furo	X	Y	Z	Azimuth (°)	Dip (°)	Profundidade (m)
Relíquia - RE	FD-PIAP-RE-002	230903,752	8437064,881	422,390	135	-45	177,40
Relíquia - RE	FD-PASAS-RE-003	231177,080	8437004,030	415,970	220	-45	225,10
Relíquia - RE	FD-PASAS-RE-004	231057,060	8436912,540	418,470	315	-45	161,45
Relíquia - RE	FD-PASAS-RE-005	231050,890	8436884,420	417,870	0	-45	202,15
Relíquia - RE	FD-PASAS-RE-006	231144,050	8436816,710	401,960	45	-45	161,80
Relíquia - RE	FD-PASAS-RE-007	230601,204	8436742,816	431,079	90	-45	125,55

The gold mineralization intercepted in the drilling program confirmed the continuity of subsurface mineralization, improved the qualification and, in a way, the control of mineralization, which is associated with silicified intermediate metavolcanic rocks with quartz veins with pyrite (Py), chalcopyrite (Cupy) and pyrrhotite (Po), which deposited parallel to foliation and also in discordant foliation strings. Commonly, mineralized levels are associated with bismuth and copper, with composites varying from 0.20 to 4.52 g/t of gold, as can be seen in Table 12 and figure 34 and 35.

Table 12 – Main gold composites in diamond drill holes of the Relíquia target. Source: CBPM (2022).

ALVO	FURO	COMPOSITE	INCLUIDO
Reliquia	FD-PIAP-RE-001	10,20m @ 1,34 g/t Au (início em 73,90m)	6,20m @ 2,13 g/ t Au (início em 75,90m) 3,10m @ 1,56 g/ t Au (início em 79,00m) 2,10m @ 3,92 g/ t Au (início em 75,90m)
Reliquia	FD-PIAP-RE-001	10,18m @ 0,25 g/t Au (início em 106,37m)	1,85m @ 0,62 g/ t Au (início em 106,37m) 0,33m @ 1,64 g/ t Au (início em 107,00m)
Reliquia	FD-PIAP-RE-001	4,90 m @ 0,20 g/t Au (início em 146,90m)	-
Reliquia	FD-PIAP-RE-002	5,00m @ 1,02 g/t Au (início em 63,50m)	1,00m @ 4,52 g/ t Au (início em 67,50m)
Reliquia	FD-PIAP-RE-002	1,55m @ 0,20 g/t Au (início em 112,30m)	-
Reliquia	FD-PASAS-RE-003	2,75m @ 0,78 g/t Au (início em 165,95m)	0,65m @ 1,51 g/ t Au (início em 165,95m)
Reliquia	FD-PASAS-RE-004	5,60m @ 0,24 g/t Au (início em 3,25m)	1,00m @ 0,79 g/ t Au (início em 5,00m)
Reliquia	FD-PASAS-RE-005	3,85m @ 0,20 g/t Au (início em 33,60m)	-
Reliquia	FD-PASAS-RE-005	1,25m @ 0,26 g/t Au (início em 199,80m)	-
Reliquia	FD-PASAS-RE-006	1,00m @ 0,48 g/t Au (início em 94,40m)	-

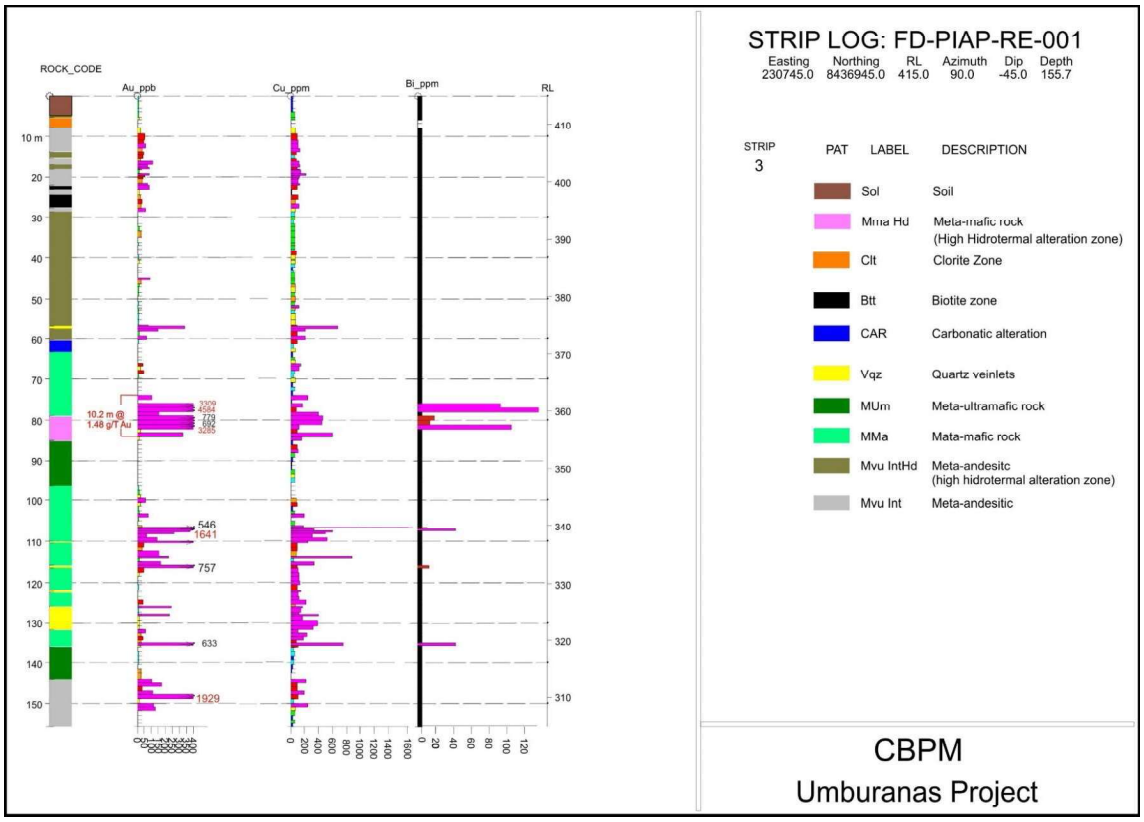


Figure 34 – Strip log of diamond drill hole FD-PIAP-RE-001, Relíquia target. Source: CBPM (2022).

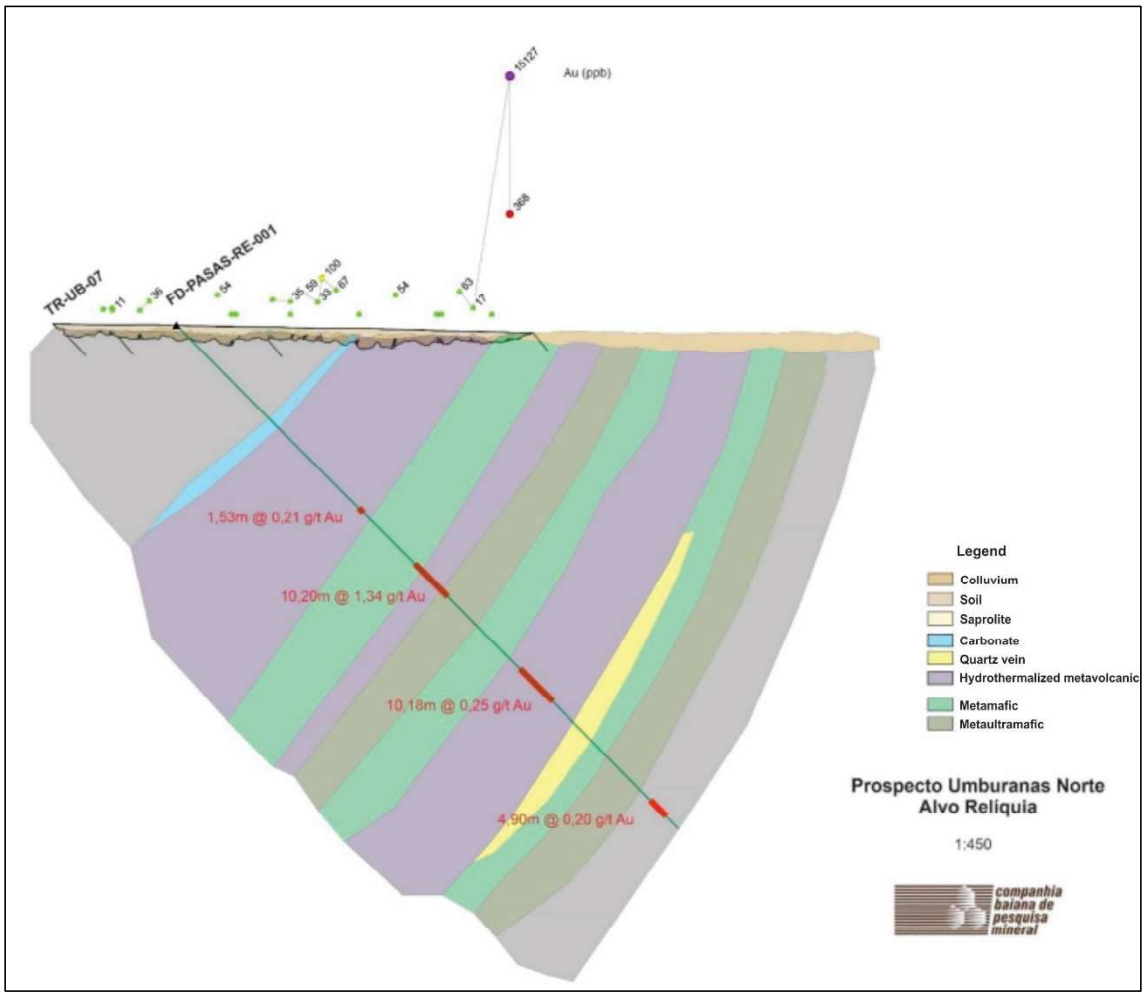


Figure 35 - Integrated geological section for the Relíquia target. Source: CBPM (2022).

18.4 Floresta Target

The Floresta target comprises a polygon limited to a concession 870.165/2013 and is located at the interface of the two-mica granite and the GBU top sequence of the Umburanas greenstone belt. The surface geology is characterized by fragments of predominant intermediate volcanic rocks, in addition to metasediments, and rare occurrences of ultramafic rocks. The geological cartography carried out, despite the difficulties caused by the covering of residual soils, reaffirms the lithological set exposed in the semi-detail works, discretizing in an arrangement containing granite-gneiss, deformed intermediate and calc-silicate rocks, and iron formation. The gneiss-granite rock, classified on the semi-detail map as a two-mica granite, is located in the northeast region of the target, with an outcrop presenting a granular lithotype, whitish in color, containing non-magnetic, oxidized spots. This granitoid is fractured and deformed, constituted basically by quartz, feldspar, biotite, and muscovite (Photo 12).

Photo 12 - Aspect of the two-mica granite from the outcrop in the Floresta target. Source: CBPM (2002).

The schistose intermediate rocks (protomylonites) constitute a lithotype associated with the gold anomalies in the soil. Mineralogically, contain black and white micas, quartz, altered mafic minerals, and plagioclase, containing quartz veins paralleled to penetrative foliation (Photos 13 and 14).

Photo 13 - Aspect of the deformed intermediate rock (protomylonite) that occur in the Floresta target. Source: CBPM (2022).

Photo 14 - Aspect of the mylonitized intermediate rocks that occur in the Floresta target. Source: CBPM (2022).

This lithotype presents a strong dip to W and SW, in almost all its extensions, but in the northern portion of the target undergoes strong inflection and dips to NNW, conditioning the drainage of the Brumado River. Other lithotypes found in the Floresta target are (i) calc-silicate rocks, with classic greenish coloration, not magnetic, granular, sometimes epidotized, composed of quartz, in addition to greenish minerals with tremolite aspect, and epidote; (ii) iron formation, brown and dark gray in color, strongly magnetic, foliated, containing alternating layers of magnetite and quartz; and (iii) in a very restricted way, talcified rocks with an ultramafic affinity of dark color, slightly magnetic, and hosting quartz veinlets.

Considering the difficulties encountered in geological cartography, for the characterization of anomalies that motivated the selection of this target, 10 trenches were excavated (Table 13).

Table 13 – List of trenches excavated in the Floresta target. Source: CBPM (2022).

Alvo	Trench_ID	DH_East_	DH_North	DH_RL	Collar_Dip	Direção_AZ	EOH
FLORESTA	FT-TR012	231554	8439906	391	0	90	106
FLORESTA	FT-TR013	231499	8439942	383	0	90	154
FLORESTA	FT-TR014	231534	8439995	389	0	90	115.5
FLORESTA	FT-TR017	231551	8439848	402	0	90	101.38
FLORESTA	FT-TR018	231551	8440046	390	0	90	109.84
FLORESTA	FT-TR019	231550	8440751	630	0	90	51.67
FLORESTA	FT-TR020	231479	8440347	378	0	90	93.65
FLORESTA	FT-TR021	231626	8439552	409	0	90	102.67
FLORESTA	FT-TR022	231690	8438746	408	0	90	111.53
FLORESTA	FT-TR023	231489	8440699	367	0	90	112.4

Gold mineralization in this target is associated with hydrothermal alteration zones, mainly in sheared metavolcanic rocks, predominantly those of intermediate, with an epidotization, chloritization, and silicification front, the latter marked both by the presence of metric quartz veins truncating the main foliation, as well as by the formation of centimetric

venulation (Figure 36).

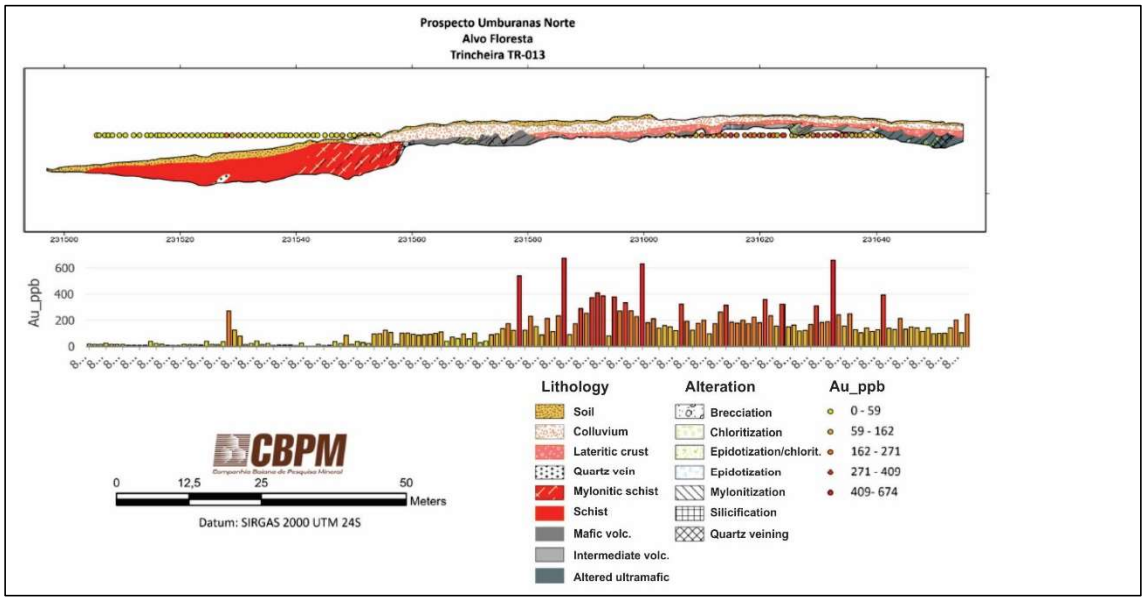


Figure 36 - Geological section of trench FT-TR-013, with gold histogram. Source: CBPM (2022).

These alteration zones form a range that varies in composite from 0.24 to 5.00 g/t (table 20), almost always associated with zones of epidotization and epidotization+chloritization in intermediate volcanic rocks, with emphasis on a band associated with a quartz vein discordant from the mylonitic foliation, with two samples containing values of 2.08 and 12.28 g/t of Au (Table 14).

Table 14 – Composites of gold mineralization, related to the Floresta trenches. Source: CBPM (2022).

ALVO	TRINCHEIRAS	COMPOSITE	INCLUIDO
Floresta	FT-TR-012	51,60m @ 0,26 g /t	6,35m @ 0,5 g/t Au
Floresta	FT-TR-013	79,10m @ 0,24 g /t Au	3,00m @ 5 g/t Au
Floresta	FT-TR-014	6,7m @ 0,24 g /t Au	-
		4,0m @ 0,4 g/t Au	-

The gold mineralization intercepted in the projections of the positive trenches, defined continuities associated with intermediate, sheared volcanic rocks. These rocks are characterized by hydrothermal changes, such as carbonation and chloritization, and alteration front such as silicification, ferrification, and sulfidation, characterized by the presence of quartz veinlets, placed parallel to the main foliation, commonly associated with sulfides in microfractures. The predominant sulfide is pyrite and subordinately chalcopyrite.

With the definition of the envelope of surface gold mineralization, six diamond drill holes were performed in the Floresta target (Table 15).

Table 15 – List of diamond drill holes performed in the Floresta target. Source: CBPM (2022).

Alvo	Furo	X	Y	Z	Azimuth (º)	Dip (º)	Profundidade (m)
Floresta - FT	FD-PASAS-FT-001	231546,582	8439907,451	405,354	90	-45	102,20
Floresta - FT	FD-PASAS-FT-002	231506,596	84399997,51	397,44	90	-45	69,20
Floresta - FT	FD-PASAS-FT-003	231486,975	8440748,405	355,836	90	-45	32,85
Floresta - FT	FD-PASAS-FT-004	231466,278	8440354,38	385,652	90	-45	71,70

These mineralized zones have a range of 0.20 to 0.47 g/t of gold, with internal levels of up to 1.13g/t of gold, commonly associated with the presence of Bi and Cu (Table 16)

Table 16 – Main gold composites of diamond drill holes of the Floresta target. Source: CBPM (2022).

ALVO	TRINCHEIRAS	COMPOSITE	INCLUIDO
Floresta	FD-PASAS-FT-001	5,95m @ 0,47 g/t Au (início em 29,50m)	-
Floresta	FD-PASAS-FT-001	6,20m @ 0,24 g/t Au (início em 46,55m)	-
Floresta	FD-PASAS-FT-002	1,60m @ 0,23 g/t Au (início em 5,40m)	-
Floresta	FD-PASAS-FT-002	2,00m @ 0,20 g/t Au (início em 52,20m)	-
Floresta	FD-PASAS-FT-003	0,65m @ 0,27 g/t Au (início em 23,55m)	-
Floresta	FD-PASAS-FT-004	9,20m @ 0,35 g/t Au (início em 40,60m)	0,95m @ 1,13 g/t Au

The integrated geological section and a geological map of the Forest target are presented, respectively, in figures 37 and 38.

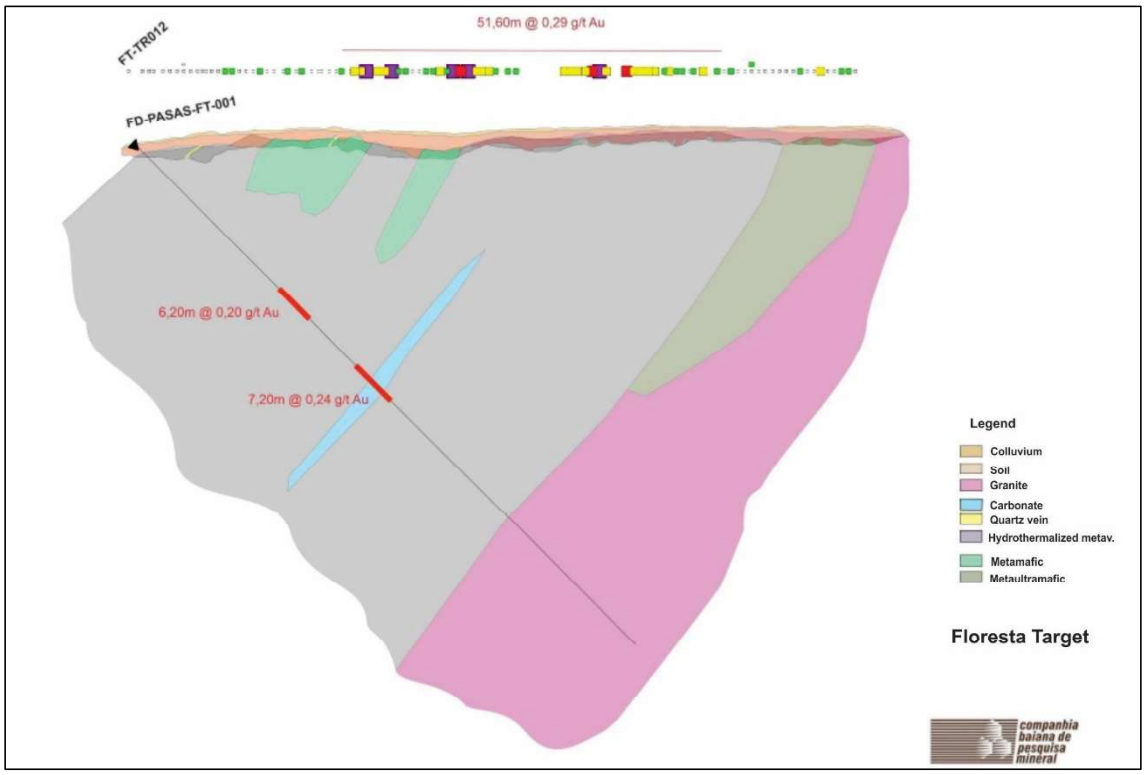


Figure 37 - Integrated section related to the Floresta target. Source: CBPM (2022).

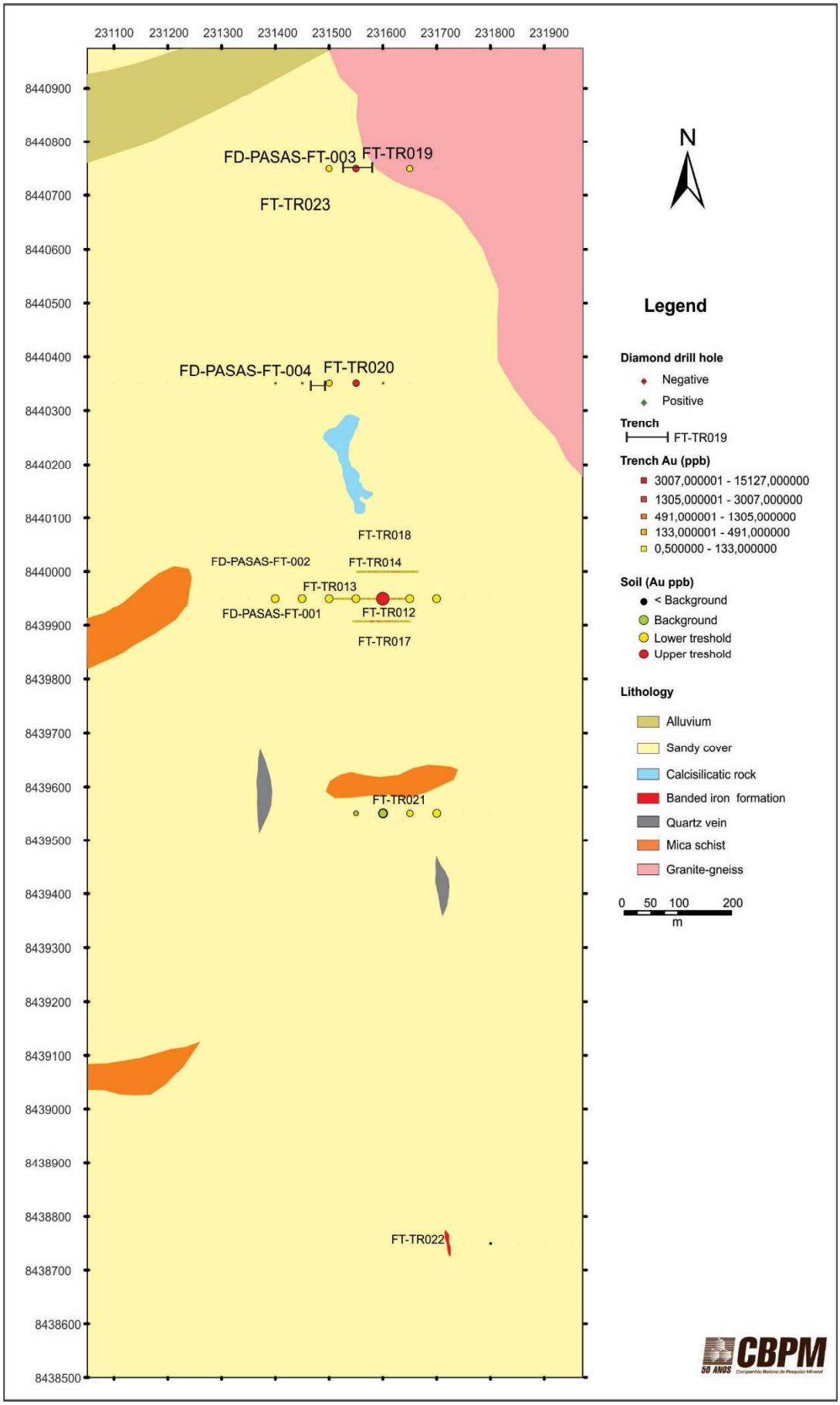


Figure 38 - Integrated geological map of the Floresta target. Source: CBPM (2022).

18.5 Morro Umburanas Target

The Morro Umburanas target comprises a polygon at the interface of the ANM processes 872,720/2013 and 870,566/2017, with resources delimited in ANM processes 872,720/2013. The target is positioned in the upper portion of the Umburanas greenstone belt, along with quartzite, conglomerate, intermediate and mafic rocks, highlighted by the presence of folded quartz veins and oxidized breccia, consisting of quartz/tourmaline, oriented approximately in the N/S direction. The geological mapping carried out was extremely hampered by the presence of transported soils and colluvial deposits.

The main rock exposure is in a section of the Centro-Atlântica railway, containing quartz veins, with thicknesses greater than two meters, and brecciated metaconglomerate and quartzite with quartz/tourmaline, both embedded in sheared intermediate and mafic metavolcanic rocks (Photo 15).

Photo 15 - View to the west of the section in the Centro-Atlântica railway, located 2.8 km SW from the Umburanas village. Photo: J.B.G. Teixeira (2021).

In this cut, one can see recumbent folds, with mass transport from west to east, in an antiformal pattern, and forming fractals of M-type fold closure, with plunges apparently to the north. High-angle shear zone affects these structures, as can be seen in Figure 39.

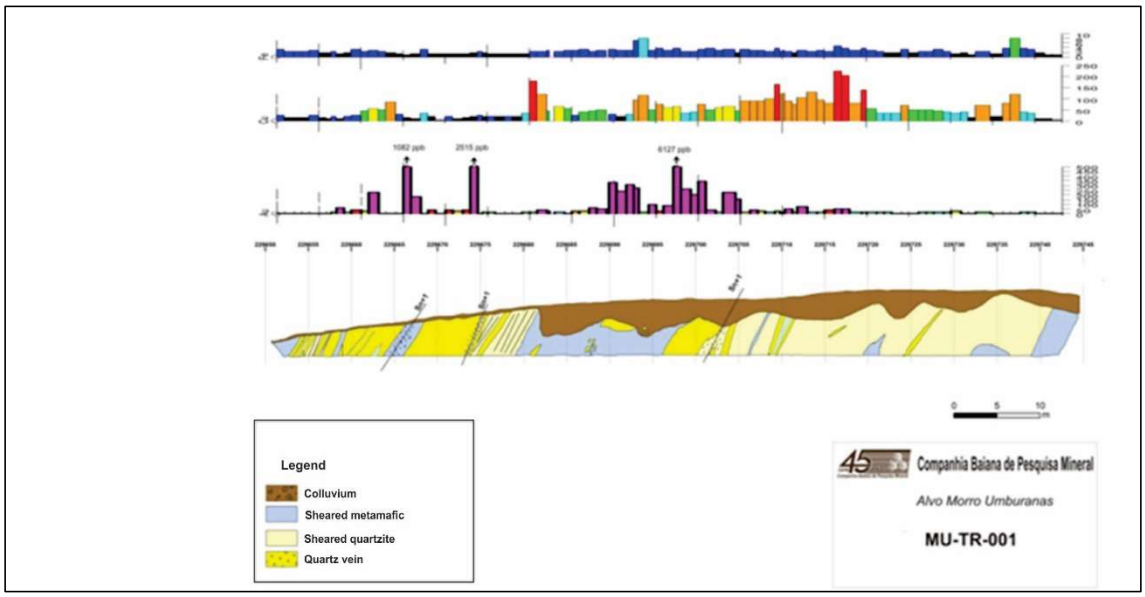


Figure 39 - Geological section of trench CD-TR-001 (cut of Centro-Atlântica railway), with gold, copper, and iron histograms. Source: CBPM (2022).

A channel was excavated and sampled along the railway cut (Tables 17 and 18), but the main activity was focused on the drilling program, considering the hypothesis that the gold mineralization is controlled by the fold plunge

Table 17 – Location of the channel excavated in the cut of the railway in the Morro Umburanas target. Source: CBPM (2022).

Alvo	Trech_ID	DH_East_geodesico	DH_North_geodesico	DH_RL_geodesico	Collar_Dip	Direcao_AZ	EOH
MORRO UMBURANAS	MU-TR001	229660,078	8435746,166	417,06	0	90	93,00

Table 18 - Main gold composites, related to the channel performed in the railway cut in the Morro Umburanas target. Source: CBPM (2022).

ALVO	TRINCHEIRAS	COMPOSITE	INCLUIDO
Morro Umburanas	MU-TR-001	13,00m @ 0,58 g /t Au	1,00 @ 2,65 g/t Au
Morro Umburanas	MU-TR-001	16,00m @ 0,55 g /t	8,00 @ 0,99 g/t Au 1,00 @ 2,65 g/t Au

The gold mineralization in the Morro Umburanas target occurs mainly related to zones of hydrothermal alteration controlled by early folds and remobilized in a high-angle shear deformation, which affected metaconglomerate and quartzite layers with resulting oxidized zones with quartz, tourmaline, sulfides, and fuchsite (Photos 16 and 17).

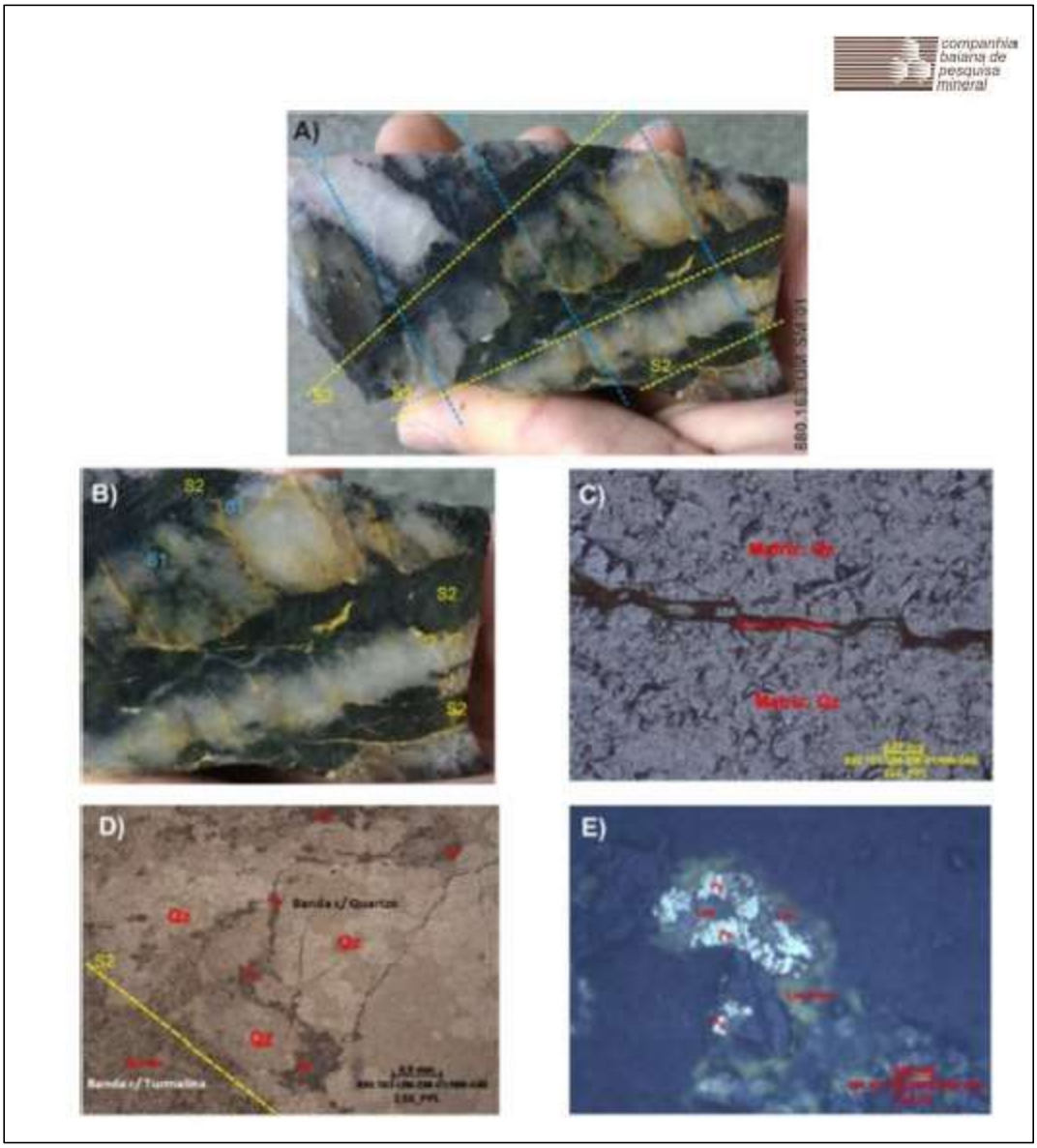


Photo 16 – (A) Deformed metaconglomerate with tourmaline depicting two folding phases (S1) and (S2). XRF results of 6 ppm Au, 9,000 ppm Bi, 20 ppm Cu, and 2800 ppm Fe_2O_3. (B) It is observed the existence of limonite is intrinsically related to the phase S2, which later enters the S1 foliation through subsequent fracturing. (C) venules of hematite related to subparallel to S1-phase fracturing. (D) Existence of two phases of tourmalinization. (E) zone of pyrite with locally limonitized hematite. Source: CBPM (2022).

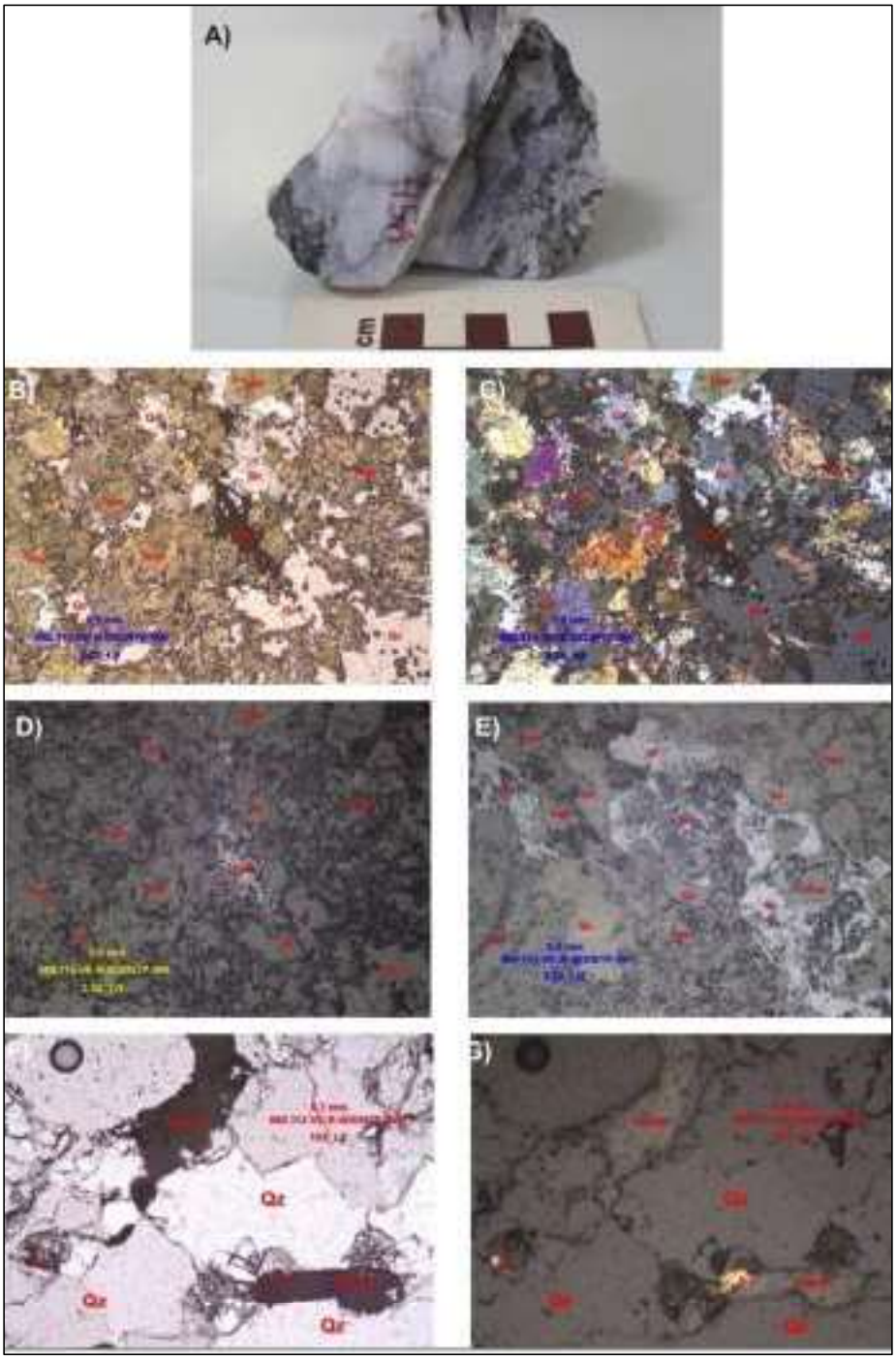


Photo 17 - (A) Sample of deformed metaconglomerate associated with quartzite and quartz veins; (B) hematite associated with fracture zone in tourmaline, plane polarized light; In (C), the same feature as before in cross-polarized light; (D) early feature in reflected light; (E) Detail of the rock with a mosaic of tourmaline (Tour), quartz (Qz) and opaque minerals represented by goethite (Gt); (F) plane polarized light: quartz vein filling fracture with hematite and gold; (G) gold detail, light under reflected light. Source: CBPM (2022).

Similarly, it was possible to characterize the association of gold with other chemical elements, sometimes marking a direct association and, eventually, marking the association with pervasive fronts of hydrothermal alteration, as exemplified by the outer halo of K, an inner halo

of Cu and Ca, with high-grade zones with Bi, and pervasive halo of V, possibly related to iron-rich minerals associated with gold (Figure 40).

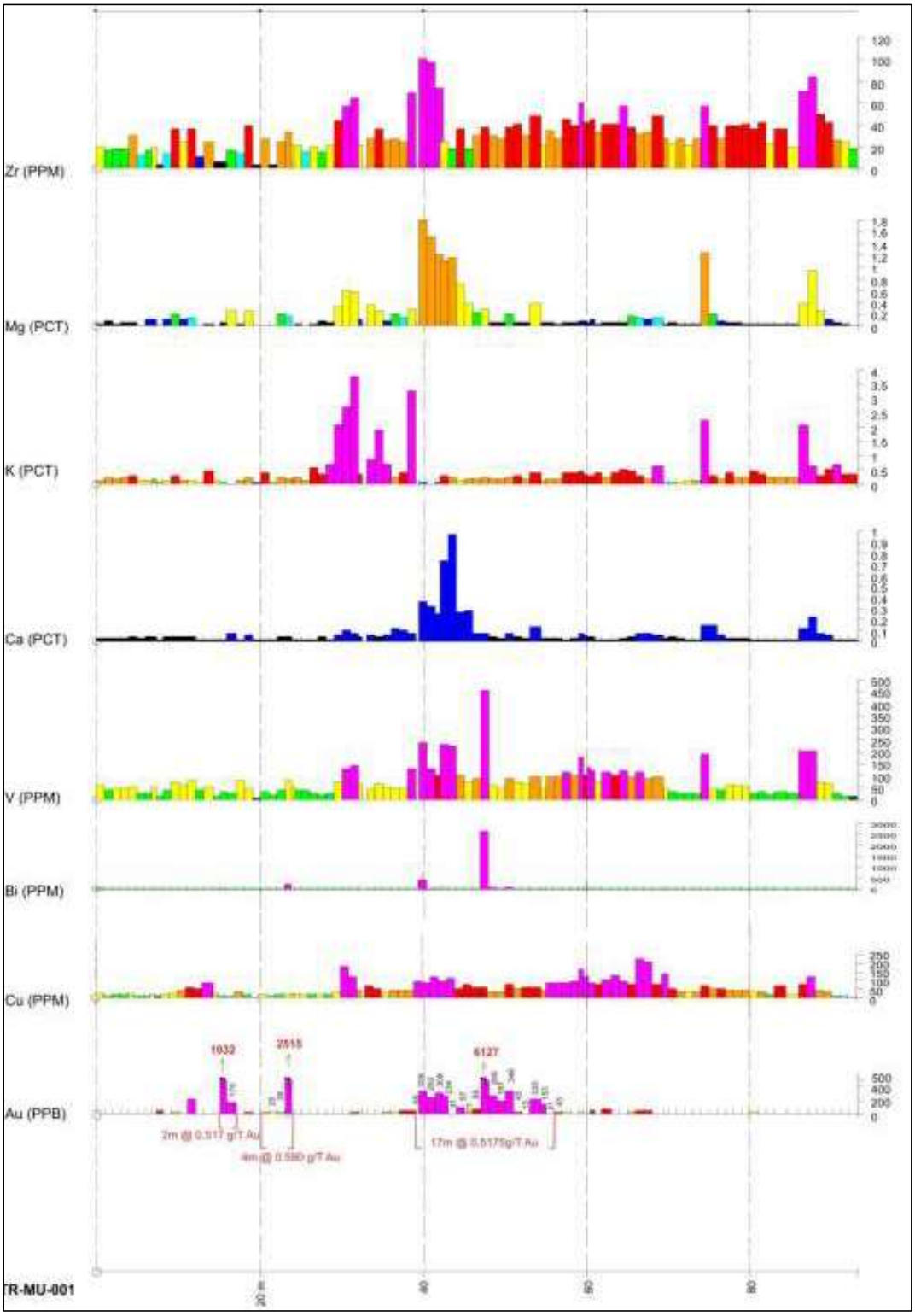


Figure 40 - Geochemical chart related to trench CD-TR-001 of the Morro Umburanas target, with histograms of gold-correlated elements. Source: CBPM (2022).

After the delimitation of the mineralized zones in the Morro Umburanas target, nine diamond drill holes were completed (Table 19).

Table 19 – List of diamond drill holes completed in the Morro Umburanas target. Source: CBPM (2022).

Alvo	Furo	X	Y	Z	Azimuth (°)	Dip (°)	Profundidade (m)
Morro Umburanas - UM	FD-PIAP-MU-001	229662,233	8435759,810	433,511	90	-45	12,20
Morro Umburanas - UM	FD-PIAP-MU-002	229617,727	8435744,824	431,317	90	-45	122,65
Morro Umburanas - UM	FD-PIAP-MU-003	229537,245	8436025,909	461,972	135	-45	169,15
Morro Umburanas - UM	FD-PASAS-MU-004	229688,950	8435766,510	434,350	90	-80	72,00
Morro Umburanas - UM	FD-PASAS-MU-005	229646,240	8435757,930	432,680	90	-45	70,10
Morro Umburanas - UM	FD-PASAS-MU-006	229671,380	8435710,000	426,090	90	-70	101,05
Morro Umburanas - UM	FD-PASAS-MU-007	229693,100	8435837,860	442,100	90	-60	70,45
Morro Umburanas - UM	FD-PASAS-MU-008	229583,240	8435547,610	415,840	90	-45	106,55
Morro Umburanas - UM	FD-PASAS-MU-009	229708,914	8435908,322	436,845	90	-45	70,10

The mineralization intercepted in the drilling program confirmed the continuity of the mineralization in the subsurface and improved the qualification of the host rocks, which concentrate brecciated and silicified zones with quartz/tourmaline, sulfides, and bismuth on major correlation with gold, delimiting the composite range from 0.20 to 11.41 g/t of gold, as can be seen in Table 20 and figures 41 and 42.

Table 20 - Main gold results obtained in the diamond drill holes of the Umburanas target. Source: CBPM (2022).

ALVO	FURO	COMPOSITE	INCLUIDO
Morro Umburanas	FD-PIAP-MU-002	1,90m @ 0,26 g/t Au (início em 95,20m)	-
Morro Umburanas	FD-PIAP-MU-003	0,60m @ 0,45 g/t Au (início em 87,35m)	-
Morro Umburanas	FD-PASAS-MU-004	16,45m @ 0,20 g/t Au (início em 22,40m)	2,75 m @ 0,87 g/ t Au (início em 26,00m)
Morro Umburanas	FD-PASAS-MU-005	1,60m @ 0,61 g/t Au (início em 28,20m)	-
Morro Umburanas	FD-PASAS-MU-007	13,85m @ 0,75 g/t Au (início em 47,50m)	3,50 m @ 2,95 g/ t Au (início em 51,50m) 0,90 m @ 11,41 g/ t Au (início em 52,95m)
Morro Umburanas	FD-PASAS-MU-008	0,55m @ 0,21 g/t Au (início em 30,90m)	-
Morro Umburanas	FD-PASAS-MU-008	1,10m @ 0,25 g/t Au (início em 32,05m)	-

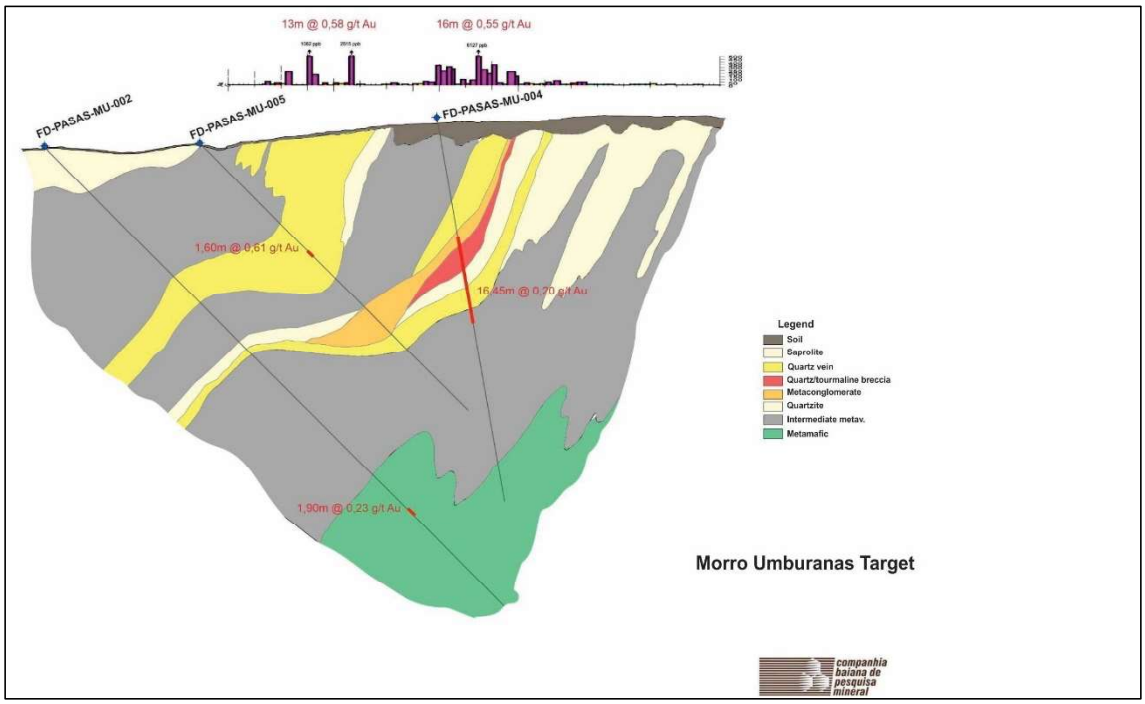


Figure 41 - Integrated section of the Umburanas target. Source: CBPM (2022).

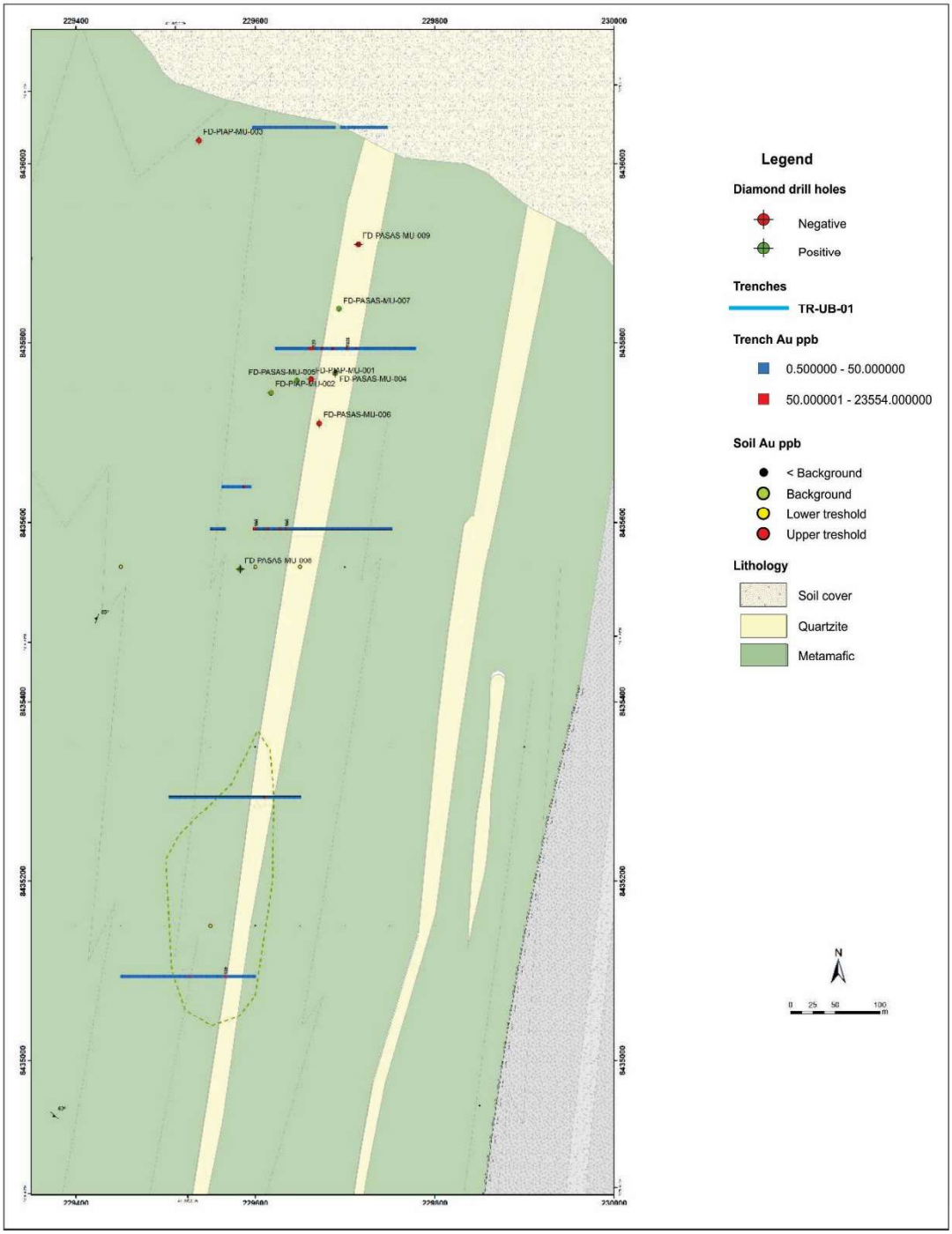


Figure 42 – Integrated geological map of the Morro Umburanas target. Source: CBPM (2022).

19. MINERAL PROCESSING AND METALLURGICAL TESTING

A sample sent by CBPM (CBPM 034/2022) was submitted to technological characterization at SGS GEOSOL between August and September 2022. This sample consisted of 1/4 drill cores collected from two drillholes, at various depth intervals (Table 21).

Table 21 – List of drill core samples sent for metallurgical testing. Source: CBPM (2022).

Target	DDH	Depth Interval (m)
CALDEIRÃO	FD-PIAP-CD-002	52 - 57
	FD-PASAS-CD-005	86 - 100
	FD-PASAS-CD-006	83 - 86
RELÍQUIA	FD-PIAP-RE-001	81 - 88
	FD-PIAP-RE-002	68 - 72
	FD-PASAS-RE-003	173 - 175

As shown in Figure 43, the works were divided into the following steps:

- Acceptance and composition of the original sample.
- Staged crushing up to a top size of 3.35 mm.
- Separation of 20 kg to perform the BOND BALL BWi test.
- Crushing the remaining mass to a top size of 2.0 mm.
- Homogenization and division into 1.0 kg sub-samples using a rotary divider.
- Determination of the global content of the sample by the metallic screen method and chemical analysis of three sub-samples in triplicate.
- Determination of the grinding curve targeting P80 at 150 and 75 micrometers.
- Granular chemical analysis of the milling product.
- Grinding the sample in P80 of 75 micrometers.
- Direct leaching within 24 hours.
- Gravity separation using Knelson centrifuge, 20 kg in P80 at 75 micrometers.
- 8-hour intensive leaching of Knelson concentrate.
- Direct leaching of Knelson tails within 24 hours.
- Direct flotation resulting from the P80 milling at 75 micrometers.
- Flotation of Knelson tails.
- Chemical analysis of liquor and solid residue from direct leaching.
- Chemical analysis of Knelson tails.
- Chemical analysis of liquor and solid residue from intensive leaching.
- Chemical analysis of the liquor and solid residue from the leaching of the Knelson tails;
- Chemical analysis of flotation concentrates and tails.
- Mass balance and calculation of gold recovery in each test.

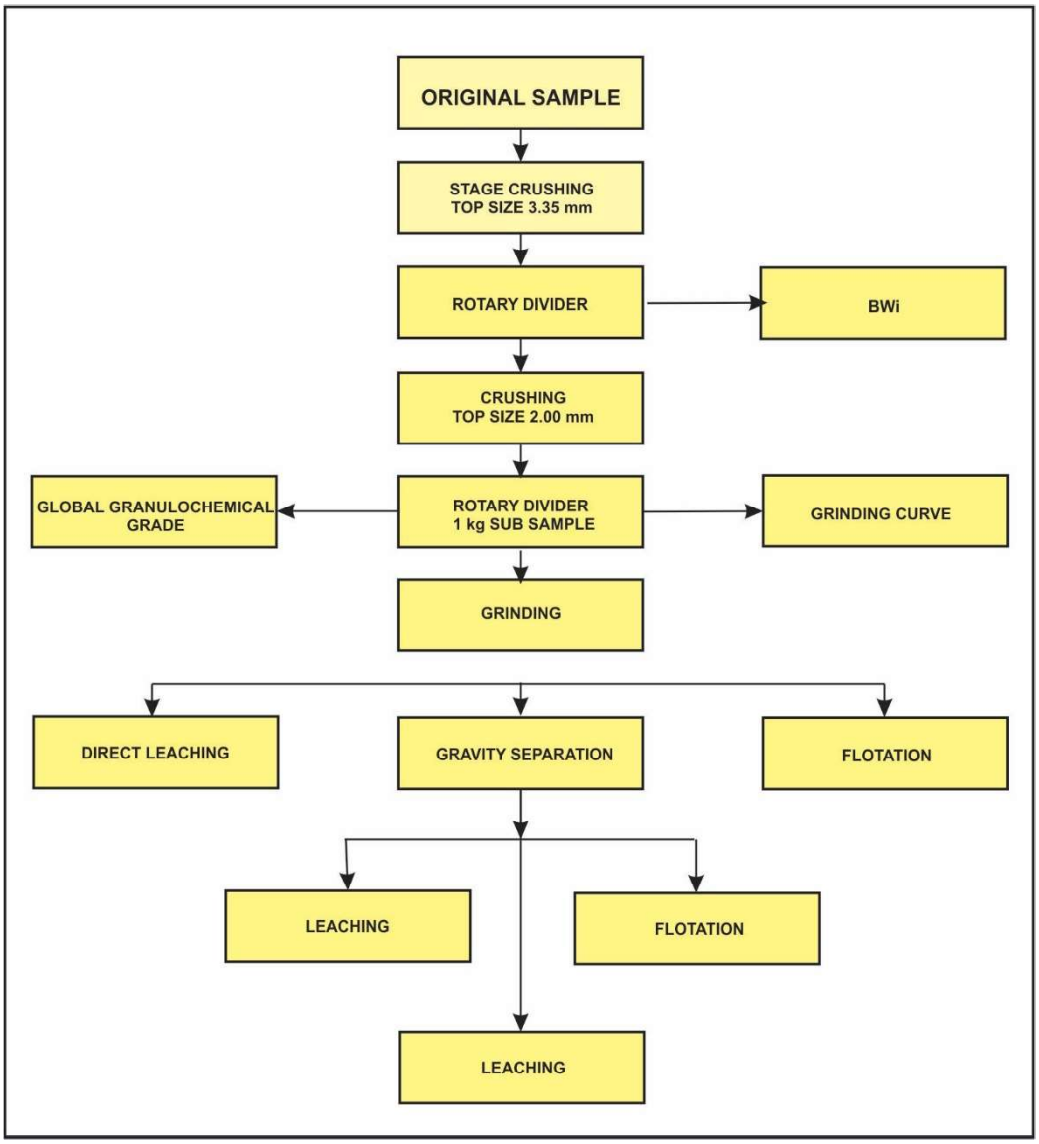


Figure 43 - Process flowchart. Source: SGS GEOSOL (2022).

19.1 Methods of Chemical Analysis

The following methods were used for chemical analysis of the overall content of the sample CBPM 034/2022, as well as the products generated in the gravity separation tests, leaching and flotation:

- FAA505: Gold by fire assay - AAS in solid samples (Photo 18).
- FAA52T - Au Determination by fire assay – AAS.
- FAA01V: Determination of Au in coal samples by Fire Assay – AAS.
- CSC60V: Gold, by AAS in cyanide liquor.
- ICP40B - Determination by multiacid digestion.
- MACNL: Free cyanide in liquor.

Photo 18 – Chemical analysis. Source: SGS GEOSOL (2022).

19.2 Acceptance of the Original Sample

The individual samples were received by SGS GEOSOL on 04 August 2022, with a total weight of approximately 100 kg (Photo 19). The contents of packages passed through the stages of preparation being combined, homogenized, and submitted as a single sample (CBPM 034/2022) to the tests and analyses reported here.

Photo 19 – Received samples. Source: SGS GEOSOL (2022).

19.3 Overall Content of the Head Sample

The determination of the global content for the CBPM 034/2022 sample was made from three sub-samples analyzed in triplicate. The results presented in the Table 22 show an average Au content of 0.64 ppm.

Table 22 – Overall gold content (Head Sample). Source: SGS GEOSOL (2022).

SAMPLE	Au ppm		
	Aliquot	SAMPLE GRADE	GLOBAL GRADE
CBPM 034/2022 - A1	0,64	0,66	0,64
CBPM 034/2022 - A2	0,69		
CBPM 034/2022 - A3	0,66		
CBPM 034/2022 - B1	0,67	0,65	
CBPM 034/2022 - B2	0,64		
CBPM 034/2022 - B3	0,64		
CBPM 034/2022 - C1	0,58	0,61	
CBPM 034/2022 - C2	0,60		
CBPM 034/2022 - C3	0,64		
CERTIFICADO DE ANALISE QUIMICA: BM2200780			

The global content of the head sample was also estimated by the metallic screen method, which is less susceptible to the nugget effect (originating from the heterogeneity of the distribution of gold grains in the mineral matrix). In this method, a 1.0 kg sub-sample is successively powdered and dry sieved at 106 micrometers, until the mass of material retained on the sieve is less than 50 grams. The retained is then weighed and analyzed for exhaustion, while the passing is analyzed in triplicate. The overall content of the sample is calculated by the average weighted. As shown in Table 23, the gold content in the analyzed sample was 0.69 ppm.

Table 23 - Overall gold content, calculated by the metallic screen method. Source: SGS GEOSOL (2022).

SAMPLE	MASS (%)	Au (ppm)	
		ALIQUOT	GLOBAL GRADE
CBPM 034/2022 - RETIDO 106 MICRONS	5,28	0,72	0,69
CBPM 034/2022 - PASSANTE 106 MICRONS - A	94,7	0,70	
CBPM 034/2022 - PASSANTE 106 MICRONS - B		0,68	
CBPM 034/2022 - PASSANTE 106 MICRONS - C		0,65	
CERTIFICADO DE ANALISE QUIMICA: BM2200782			

Table 24 presents the results of chemical analysis using SWW and ICP. These results indicate a total sulfur content of 0.57%, 201 ppm copper and 11 ppm lead. The levels of arsenic,

cadmium, thorium and uranium are low, close to or below the limit of detection.

Table 24 – Chemical analyses ICP and LECO.

SAMPLE	S %	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %
CBPM 034/2022	0,57	<3	6,63	<10	194	<3	<20	7,07	<3	38,0	106	201	6,09
SAMPLE	K %	La ppm	Li ppm	Mg %	Mn %	Mo ppm	Na %	Ni ppm	P %	Pb ppm	S %	Sb ppm	Sc ppm
CBPM 034/2022	1,33	<20	42,0	1,83	0,21	5,00	1,50	90,0	0,03	11,0	0,50	<10	20,0
SAMPLE	Se ppm	Sn ppm	Sr ppm	Th ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Y ppm	Zn ppm	Zr ppm	-
CBPM 034/2022	<20	<20	150	<20	0,50	<20	<20	174	<20	20,0	68,0	56,0	-
CERTIFICADOS DE ANÁLISE QUÍMICA: BM2200781													

19.4 BWI Bond Test

Bond's BWI test (Ball Mill - Grinding Work Index) is used worldwide to quantify the hardness of an ore sample in terms of energy consumed for its grinding to a target granulometry. The test runs on cycles, using a 305x305 mm mill operated at 70 rpm with a diameter between 15.9 mm and 36.5 mm (Photo 20).

Photo 20 – Bond mill. Source: SGS GEOSOL (2022).

The sample is staged to 3.35 mm and subjected to compression in a beaker to determine the feed mass. At the end of each cycle, the milling product is sieved through a 106-micrometer

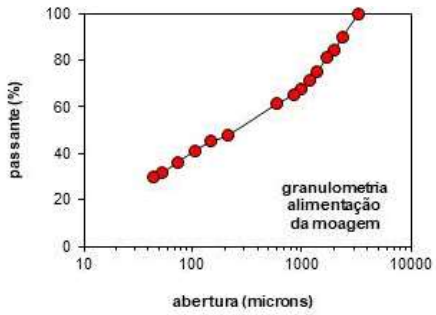
sieve, and the passing material is replaced by a new feed. The number of rotations for the next cycle is calculated based on the grain size of the feed and the amount of material passing through the control sieve. The test runs for a minimum of seven cycles until the mobility value, expressed in grams of material passing through per rotation, is stabilized.

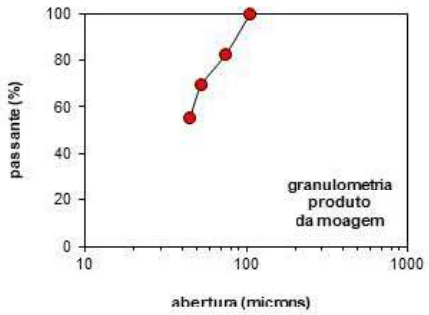
The results summarized in Table 25 indicate P80 of 71 microns and BWI of 10.5 kWh/ton for sample CBPM 034/2022.

Table 25 - BWI results. Source: SGS GEOSOL (2022).

CBPM 034/2022		
massa compactada em 700 mililitros (gramas)		
1535	1540	1530
passante ideal (gramas)		439
distribuição granulométrica da alimentação		
A80 (microns)		1653
peneira de referência (microns)		106
passante na peneira de referência (%)		41,1
moagem		
numero total de ciclos		9
passante no ultimo ciclo (gramas)		439
moabilidade (gramas de produto por rotação)		1,89
carga circulante (%)		250
distribuição granulométrica do produto		
P80 (microns)		71
resultados em tonelada curta		
indice de trabalho (KWh / ton)		10,5

ciclo	massa alimentação nova	número de rotações	massa retida final do ciclo	massa passante final do ciclo	massa passante inicio do ciclo	produto gerado no ciclo	Mob gramas por rotação	diferença três ultimos ciclos
1	1535	1	903	632	631	1	0,80	-
2	632	1	1274	261	260	1	1,10	-
3	261	20	1363	172	107	65	3,24	142%
4	172	114	1227	308	71	237	2,08	100%
5	308	150	1118	417	127	290	1,94	54%
6	417	138	1100	435	172	264	1,91	9%
7	435	136	1103	432	179	253	1,86	4%
8	432	140	1090	445	178	267	1,91	3%
9	445	134	1096	439	183	256	1,91	3%





microns	retido %	passante %
3360	0	100
2360	10	90
2000	6	84
1700	3	81
1400	6	75
1180	4	71
1000	4	68
850	3	65
600	4	61
212	13	48
150	3	45
106	4	41
75	5	36
53	5	32
45	2	30
fundo	30	0
total	100	-

microns	retido %	passante %
106	0	100
75	17	83
53	13	69
45	14	55
fundo	55	0
TOTAL	100	-

19.5 Grinding Curve

The milling of the 1.0 kg sub-samples for the gravity separation, leaching and direct flotation, CIL leaching, and Knelson tailings flotation was performed using a 12x8 inch mill operated at 67 rpm with twenty-one-inch bar load in diameter and percentage of solids of 60% in the feed. The grinding time required to reach P80 of 150 was 3:00 minutes, and to reach P80 in 75 microns was 05:43 minutes, as shown in Figure 44.

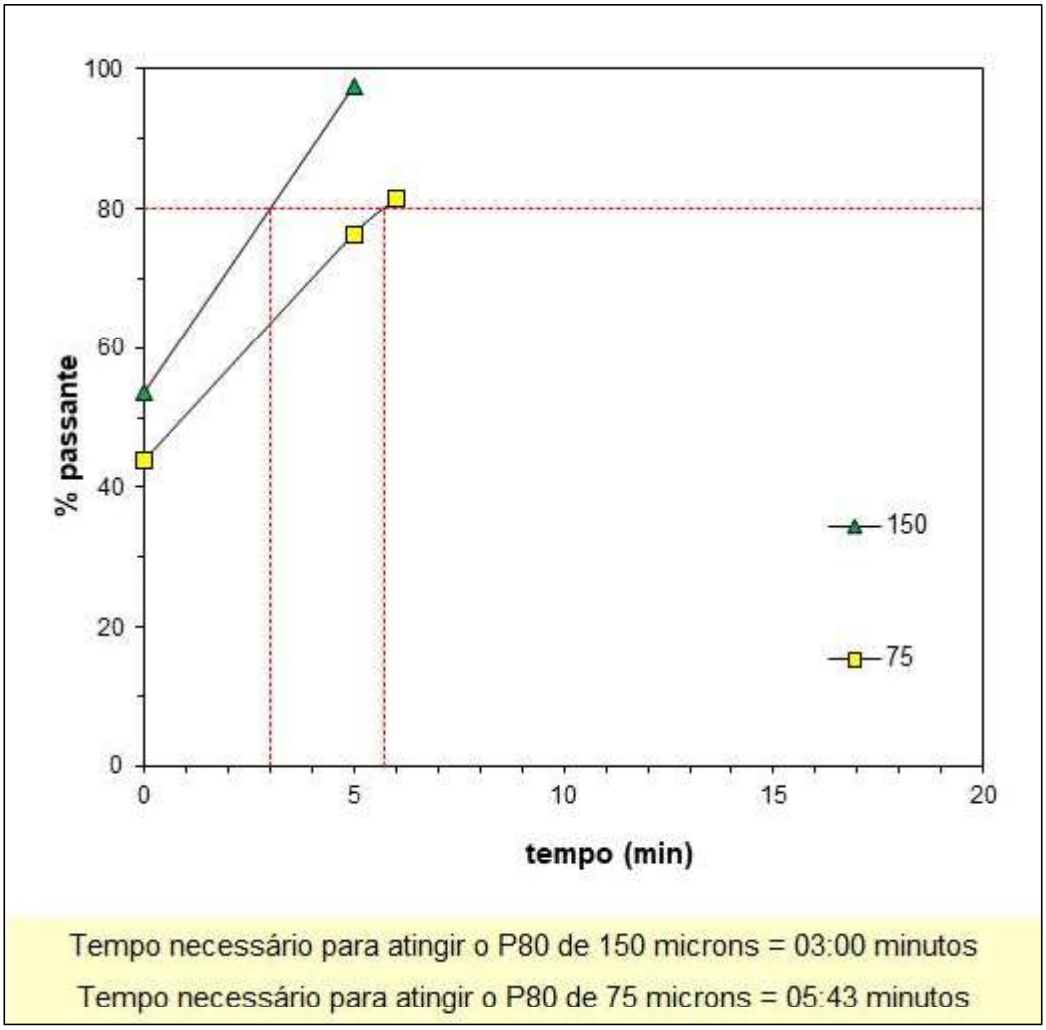


Figure 44 – Grinding curve. Source: SGS GEOSOL (2022).

19.6 Granulochemical Analysis

This test was performed after grinding in P80 at 75 micrometers and indicated an Au content of 0.63 ppm. The overall gold content was therefore determined experimentally by chemical analysis in triplicate, by the metallic screen method, and by granulochemical analysis, presenting an average of 0.65 ppm of Au. Figure 45 shows the granulochemical results for sample 45CBPM 034/2022.

Malha (µm)	Retido %	Au ppm	Au %
106	7,47	0,62	7,36
75	10,8	0,52	8,91
53	10,6	0,47	8,03
45	12,9	0,45	9,28
38	5,84	0,46	4,33
PAN	52,3	0,74	62,1
ALM CaL.	100	0,63	100

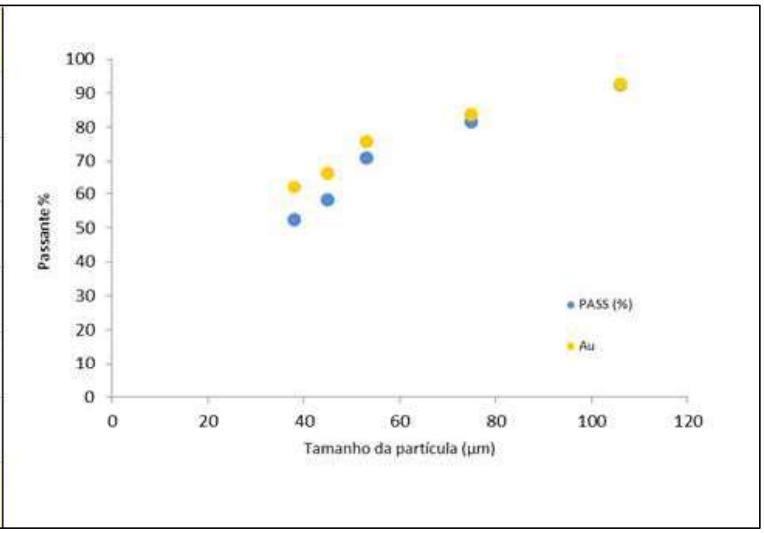


Figure 45 - Granulochemical analysis P80 75 micrometers. Source: SGS GEOSOL (2022).

19.7 Gravity Recoverable Gold in Knelson Concentrator

The CBPM 034/2022 sample was subjected to a gravity separation step (GRG) in a Knelson centrifuge, after being ground to 75-micrometer P80 (Photo 21).

Photo 21 – Knelson concentrator. Source: SGS GEOSOL (2022).

The centrifuge operated at a frequency of 71.4 Hz, a gravitational field of 250 G, 40% solids, and water from fluidization of 12 L/min. The results for this step were determined from the chemical analysis of an aliquot of the GRG tails, yielding a gold extraction of 12.9% for this step (Table 26).

Table 26 – Gravity separation – GRG. Source: SGS GEOSOL (2022)

CBPM 034/2022			
feed mass (g)	20000	Au feed CALC (g)	0,66
tail mass (g)	19957	Au tail (ppm)	0,57
concentrate mass (g)	43,5	Au conc. CALC (ppm)	39,0
MASS RECOVERY	0.22%	EXTRACTION%	12.9%

19.8 Intensive Leaching

The Falcon concentrate was subjected to intensive leaching for 16 hours at a pH of 10.5, with a 20% percentage of solids, an initial concentration of 15,000 ppm of free cyanide in solution, and the addition of 0.04 grams of leach aid. The results for this step presented in Table 7 indicate extraction of 95.3% of Au (Table 27).

Table 27 - Intensive leaching results. Source: SGS GEOSOL (2022).

INTENSIVE LEACHING - KNELSON CONCENTRATE									
ID CLIENTE	ID SGS GEOSOL	GRADE			MASS		EXTRAÇÃO Au (%)	ADIÇÃO CAL (gpt)	CONSUMO NaCN (gpt)
		CONC GRG (CALC) Au (ppm)	LICOR Au (mg/L)	RESIDUO Au (ppm)	LICOR (g)	RESIDUO (g)			
CBPM 034/2022	TESTE - 02	39,0	9,30	1,85	174	43,5	95,3	17,0	94901
CERTIFICADOS DE ANÁLISE QUÍMICA: BM2200780 BM2200811 BM2200813									

19.9 CIL Leaching - Tail GRG

The Falcon tails, obtained at 75-micrometers P80, were separated into a 1.0 kg sub-sample and subjected to CIL leaching for 24 hours. 20 g/L of charcoal was added, and the test was performed with 50% solids, 1,000 ppm free cyanide target, and pH 12. The results experimental results presented in Table 28 indicate extraction for this step of 81.6%.

Table 28 - CIL Leaching - GRG Tail

CIL LEACHING - KNELSON TAIL												
ID CLIENTE	ID SGS GEOSOL	GRADE					MASS			EXTRAÇÃO Au (%)	ADIÇÃO CAL (gpt)	CONSUMO NaCN (gpt)
		REJ GRG (Exp.) Au (ppm)	REJ GRG (CALC) Au (ppm)	LICOR Au (mg/L)	CARVÃO Au (ppm)	RESIDUO Au (ppm)	LICOR (g)	CARVÃO (g)	RESIDUO (g)			
CBPM 034/2022	TESTE - 03	0,57	0,60	0,01	18,1	0,11	849	26,4	995	81,6	1610	1314
CERTIFICADOS DE ANÁLISE QUÍMICA: BM2200799 BM2200828 BM2200829 BM2200827												

19.10 Flotation

The flotation was carried out in a Denver D12 flotation cell (Photo 22) in the following operating conditions: 150 micrometers P80 grinding, 4-liter bowl, 4-liter airflow per minute, and impeller rotation of 1,500 rpm. The reagent dosage was 100 gpt of copper sulfate, 30 gpt of PAX, and 20 gpt of DF250.

Photo 22 – Flotation cell. Source: SGS GEOSOL (2022).

19.11 Direct Flotation

Direct flotation was carried out with two 1.0 kg sub-samples ground at P80 of 75 micrometers, that is, the test was performed with 2.0 kg of feed. The results, presented in Table 29, show Au content in the concentrate and the tails of 7.95 ppm and 0.32 ppm, respectively. The mass recovery for this step was 3.30% while the Au recovery was 45.5%.

Table 29 – Results of direct flotation. Source: SGS GEOSOL (2022).

DIRECT FLOTATION				
SAMPLE CBPM 034/2022	Mass (g)	Au (ppm)	DISTRIBUTION	
			Mass %	Au %
FEED CALC.	2000	0,58	100	100
CONCENTRATE	66,0	7,95	3,30	45,5
TAIL	1934	0,32	96,7	54,5
CERTIFICADO DE ANALISE QUIMICA: BM2200780 - BM2200863				

19.12 Flotation of GRG Tails

The tails from the gravity separation step in a Knelson centrifuge were submitted to flotation and its results are presented in Table 30. These show an Au recovery of 41.3%, with concentrate and tail content of 8.85 ppm and 0.38 ppm, respectively.

Table 30 - Flotation GRG tails. Source: SGS GEOSOL (2022).

FLOTATION TAILS GRG KNELSON				
SAMPLE CBPM 034/2022	Mass (g)	Au (ppm)	DISTRIBUTION	
			Mass %	Au %
TAIL GRG CALC.	19957	0,63	100	100
CONCENTRATE	590,5	8,85	2,96	41,30
FINAL TAIL	19366	0,38	97,04	58,7
CERTIFICADO DE ANALISE QUIMICA: BM2200799 - BM2200864				

19.13 Process Routes

Following the process flowchart, two composite routes were carried out, namely:

- GRG + INTENSIVE LEACH + CIL LEACH
- GRG + CONCENTRATED INTENSIVE LEACHING + TAILING FLOTATION GRG

The global recovery for each route was calculated using the following equation:

$$Global\ Rec = Knelson\ Rec/100 * Intensiv\ Rec + (1 - Knelson\ Rec/100) * CIL\ Rec$$

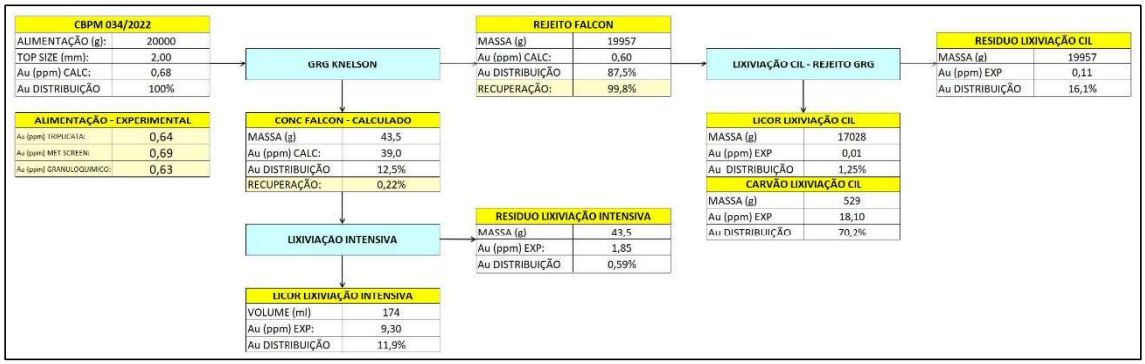
This route has resulted from global extraction of 83.3% (Table 31).

Table 31 - Gold recovery for GRG route + INTENSIVE LEACH + CIL LEACH. Source: SGS GEOSOL (2022).

GRG + INTENSIVE LEACHING + CIL LEACHING	
STEP	**Au EXTRACTION %**
GRG KNELSON	12.5
INTENSIVE LEACHING	95.3
CIL LEACHING	81.6
GLOBAL EXTRACTION	83.3

Table 32 presents the summarized results for the route composed by leaching intensive GRG concentrate and a CIL leaching of the tails.

Table 32 - Route GRG + CONCENTRATE INTENSIVE LEACHING + TAILING CIL LEACH. Source: SGS GEOSOL (2022).



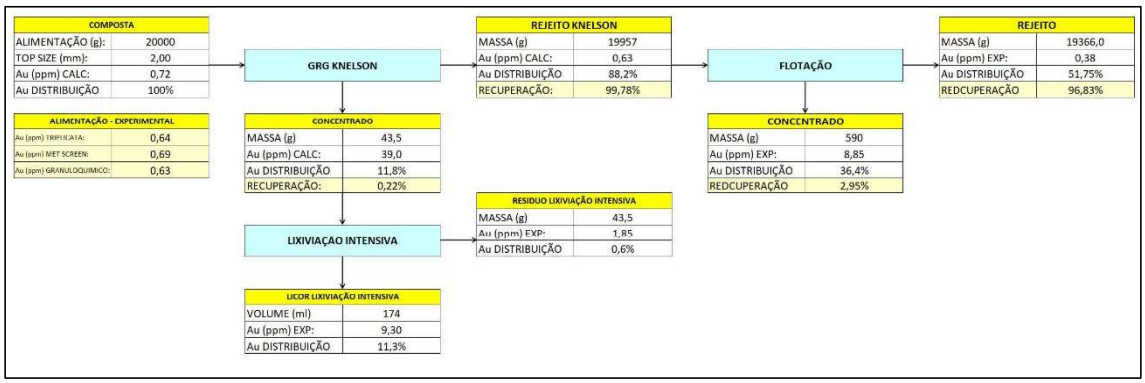
This route has resulted from global extraction of 83.3% (Table 33).

Table 33 - Gold recovery for GRG route + INTENSIVE LEACH + CIL LEACH.

GRG+ LIXIVIAÇÃO INTENSIVA + LIXIVIAÇÃO CIL	
ETAPA	**EXTRAÇÃO DE Au (%)**
GRG KNELSON	12,5
LIXIVIAÇÃO INTENSIVA	95,3
LIXIVIAÇÃO CIL	81,6
EXTRAÇÃO GLOBAL	**83,3**

Table 34 presents the summarized results for the route composed by the flotation of the tails from gravity separation (GRG) and intensive leaching of its concentrate.

Table 34 - GRG Route + CONCENTRATE INTENSIVE LEACHING + TAILING FLOTATION. Source: SGS GEOSOL (2022).



The results for global extraction are in Table 35 and show a gold overall extraction of 47.7%.

Table 35 - Gold recovery for GRG route + INTENSIVE LEACHING + TAILING FLOTATION GRG

GRG + INTENSIVE LEACHING + FLOTATION	
STEP	Au EXTRACTION %
GRG KNELSON	11.8
INTENSIVE LEACHING	95.3
FLOTATON	41.3
GLOBAL EXTRACTION	**47.7**

19.14 Conclusions

The results of the technological characterization of the CBPM 034/2022 sample indicate that:

- The average global content of the CBPM 034/2022 sample was **0.65 ppm of Au**.
- Bond Wi index was 10.5 kWh/ton.
- The time to reach P80 of 150 micrometers in the mill was **03:00 minutes** and for P80 of 75 micrometers **05:43 minutes**.
- Au extraction for the direct leaching step was **84.3%** and for flotation of the milling product was **45.5%**.

- The GRG + INTENSIVE LEACH+CIL LEACH process route obtained **83.3%** global extraction, while for the GRG route + INTENSIVE LEACH+TAILING FLOTATION GRG the result was **47.7**%.

In summary, the results obtained for **direct leaching** were superior to the other analyzed routes. i.e., flotation of the milling product, GRG + intensive leaching + CIL leaching, as well as for the GRG + intensive leaching + tailings flotation processing route GRG

20. DENSITY

The tests were performed from selected drill core intervals, with widths varying between 5 and 20 cm, in samples contained in the mineralized sections and in the proximal host, in the five mineralized targets. Two procedures were employed, based on the methods of (i) measurement of water displacement and (ii) the gravimetric buoyancy technique, which utilizes Archimedes' principle, which states that a body immersed in fluid experiences a buoyant force acting upwards on it.

The presence of fractured intervals led to the need of wrapping the samples with PVC film or paraffin wax. In the water displacement method, the density of the selected samples was defined through a simple formula (see below), from obtaining two variables: volume (ml), by the water displacement method; and the mass (g), acquired directly in a precision weighing scale.

$$d = \frac{m\ (g)}{V\ (ml)}$$

Where:
d = density of sample
m = mass of sample
V = displaced volume of water

The equipment used was a digital scale, with a measuring capacity of 1 g, a graduated cylinder with a variation of 1 ml and a container adapted to transfer the displaced water to the beaker (Photo 23)

Photo 23 - Image of the procedure based on the water displacement method, with obtaining the dry sample mass, wrapped by PVC, and volume of displaced water (ml). Source: CBPM (2022).

In the gravimetric buoyancy method (Photo 24), the determination of the sample density involved the use of paraffin, regardless of the degree of porosity and fracture, to seal the probing samples during fluid immersion. In that procedure, the weight is obtained in dry samples without and with paraffin, and the mass with paraffin in the water, in addition to the mass of the paraffin used by the sample, aimed, by the formula below.

$$d = \frac{A}{\frac{B - A}{\left(\frac{C - A}{d_p}\right)}}$$

Where:
d = density of the sample
A = weight of dry sample
B = weigtht of immersed sample
C = weight of paraffin
d_p = density of paraffin = 0.9 g/cm^3

Photo 24 - Images of the procedure based on the gravimetric buoyancy method, with obtaining the sample mass at dried, with paraffin, and the sample sealed and immersed in water. Source: CBPM (2022).

21. MINERAL RESOURCE ESTIMATE

This section was prepared by Mr. Esdras Andrade Varjão, a geologist from the technical staff of CBPM. For the definition of the model of the mineralized zones, and subsequent

estimation of the resources of the gold targets, a sequence of activities taking place, as described below.

a. Topographic survey (data acquisition and DTM).

b. Trench database.

c. Survey database.

d. Solids representing the mineralized zones.

e. Block model, interpolation of gold grades, and resource estimation.

This sequence of activities represents the method adopted in this work for the evaluation of the gold resources, and, to conclude, the resources contained in the five targets are assessed.

21.1 Topographic Survey

The topographic survey was carried out with the use of geodetic GPS to collect the coordinates from trenches and drill holes beyond checkpoints, and a drone for the acquisition of images and points with precise X, Y, and Z coordinates. From the database of points surveyed by the drone, contour lines were generated with 0.5 or 1.0 space, depending on the terrain characteristics, and exported in .dxf format and later interpolated to create digital terrain models (DTM) of the targets (Figure 46).

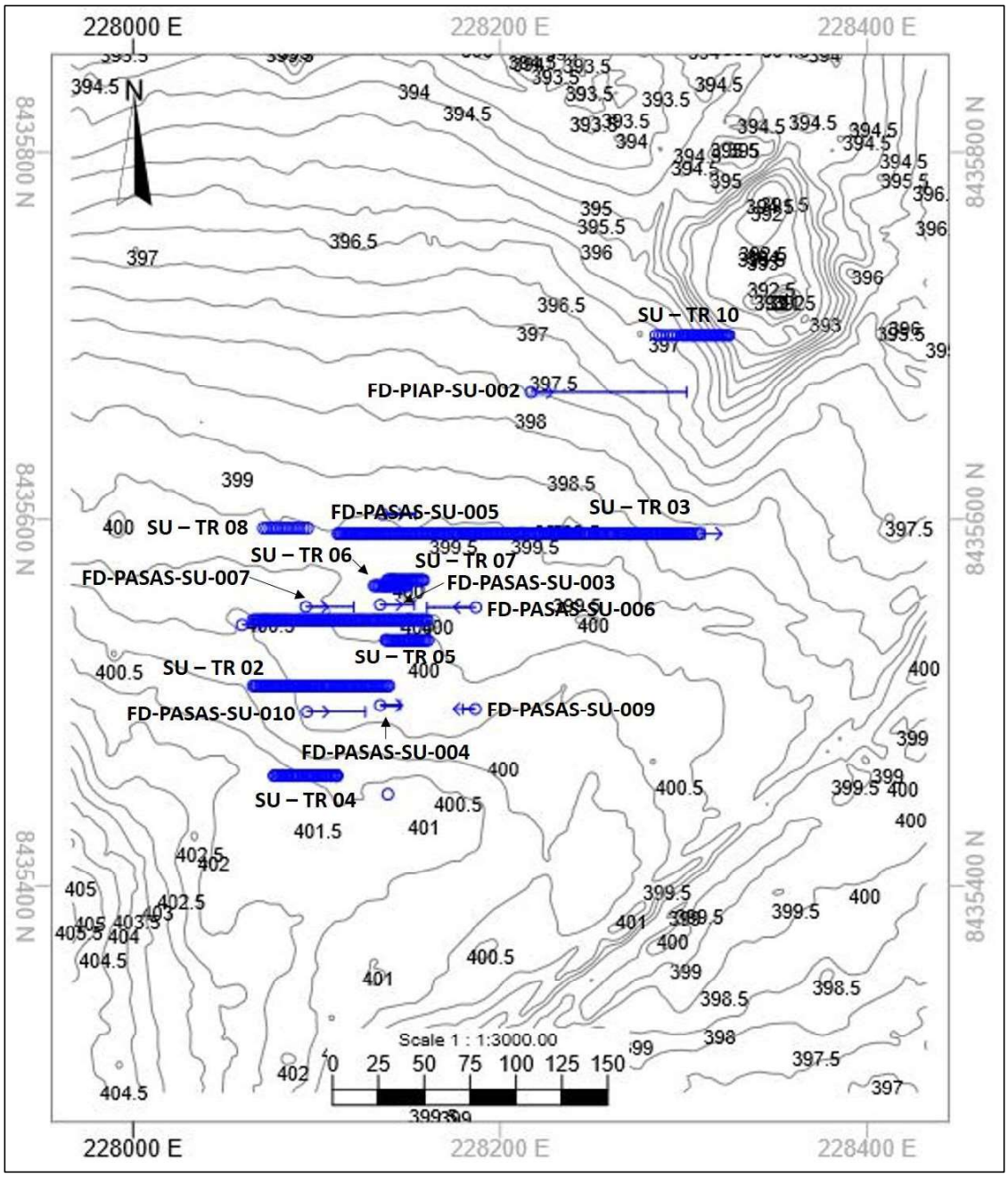


Figure 46 - Detail topographic map of the Sucuruiú target with 0.5 meter spaced contour lines. The blue colors represent diamond drill holes (FD-PASAS-SU) and trenches (SU-TR). Source: CBPM (2022).

21.2 Survey and Trench Database

The information extracted from the logs of the drill cores and the sections (planks) of trenches were typed and distributed in four spreadsheets, in .xls format, and later converted to .csv format, according to the list below:

(a) Collar: hole identification (hole_id), the X, Y, and Z coordinates (UTM), and the length of the drill hole.

(b) Survey hole identification (hole id), depth, azimuth (direction), and dip (dip) of the drill hole.

(c) Litho: hole identification (hole_id), from (from), to (to), rock code (identification of lithology) and ore_zone (ore or waste identification);

(d) Assay: hole identification (hole_id), from (from), to (to), and au_ppb (analytical results from gold in ppb).

The results of chemical analyses, both from the trenches and diamond drill holes are summarized below and in Table 22. The distribution of holes and trenches carried out at targets Sucuruiú and Caldeirão are represented in Table 36 and figures 47 and 48, respectively.

- **CALDEIRÃO** - Database with 6 DRILLholes, 1,608 meters drilled, and 766 core samples; 15 trenches, 1,608 meters excavated, and 933 channel samples.
- **FLORESTA** - Database with 4 drill holes, 278 meters drilled, and 292 drill core samples; 3 trenches, 1,052 meters excavated, and 378 channel samples.
- **MORRO UMBURANAS** - Database with 9 drill holes, 794 meters drilled, and 896 drill core samples; 93 meters excavated trenches, and 100 channel samples.
- **RELÍQUIA** - Database with 7 drill holes, 1,209 meters drilled, and 1,324 drill core samples; 2 trenches, 250 meters excavated, and 52 channel samples.
- **SUCURUIÚ** - Database with 10 drill holes, 766 meters drilled, and 831 drill core samples; 9 trenches, 585 meters excavated, and 544 channel samples.

Table 36 – Computable samples used in the resource calculation of the Umburanas project.

ALVO	TIPO DE AMOSTRAGEM	EXECUTADO	PERFURADO/ESCAVADO (m)	AMOSTRAS
CALDEIRÃO	FUROS DE SONDAGEM	6	1608	766
	TRINCHEIRAS	15	1179	933
FLORESTA	FUROS DE SONDAGEM	4	278	292
	TRINCHEIRAS	3	1052	378
M.UMBURANAS	FUROS DE SONDAGEM	9	794	869
	TRINCHEIRAS	1	93	100
RELÍQUIA	FUROS DE SONDAGEM	7	1.209	1324
	TRINCHEIRAS	2	250	54
SUCURIU	FUROS DE SONDAGEM	10	766	831
	TRINCHEIRAS	9	585	514
TOTAL	**FUROS DE SONDAGEM**	**36**	**3447**	**4082**
	TRINCHEIRAS	**30**	**3159**	**1979**

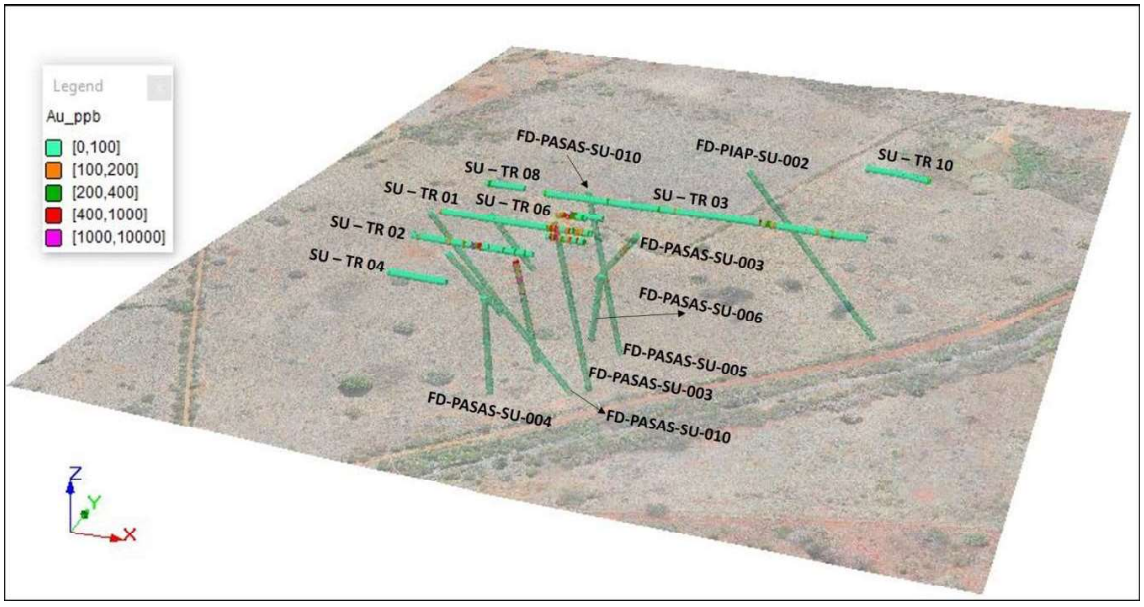


Figure 47 – Diamond drill holes (FD-PASAS-SU) and trenches (SU-TR) of the Sucuruiú target, with the representation of gold contents. Topographic base with 50% transparency.

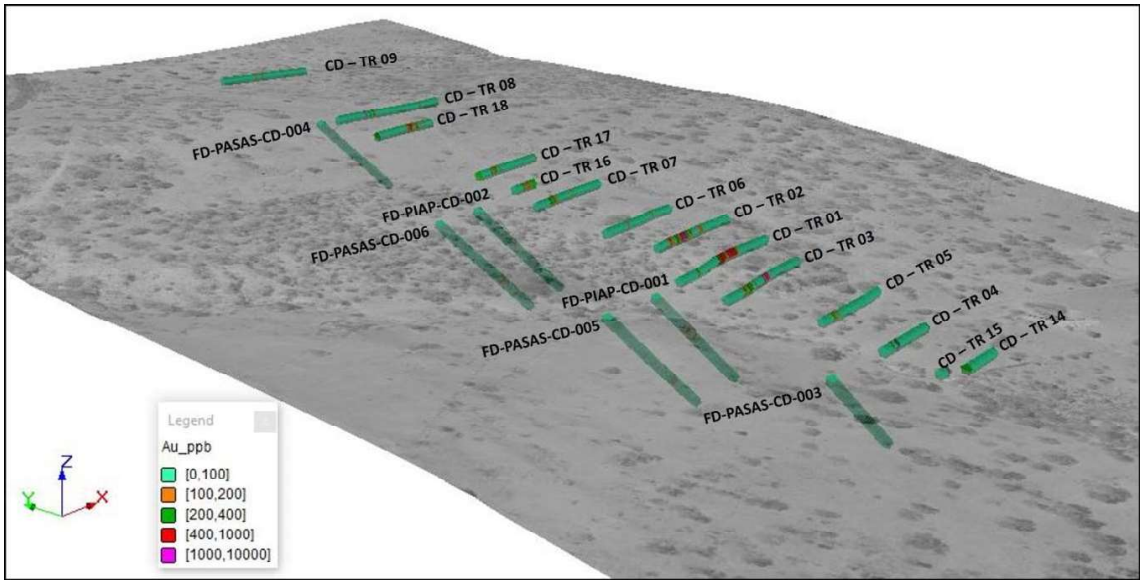


Figure 48 – Diamond drill holes (FD-PASAS-CD) and trenches (CD-TR) of the Caldeirão target, with the representation of gold contents. Topographic base with 50% transparency.

21.3 Modeling Method

The modeling of the mineralized zones of the Umburanas prospect targets was carried out from the data contained in the Litho tables, highlighting the Ore Zone field, and the Au contents, in ppb, resulting from the fire assay analyses registered in the Assay table. These two combined information allows the creation of envelopes of the mineralized zones, where the main sections are drawn, allowing the interpretation of subsequent sections. All sections together form the mineralized gold body in the targets. The vertical sections were interpreted

with the lithology data and the gold contents of the samples from drill holes and trenches and through the *snap point* feature. It was guaranteed that the polygons generated in each vertical section were tied together, composing the solid (envelope) of the mineralized body (Figure 49).

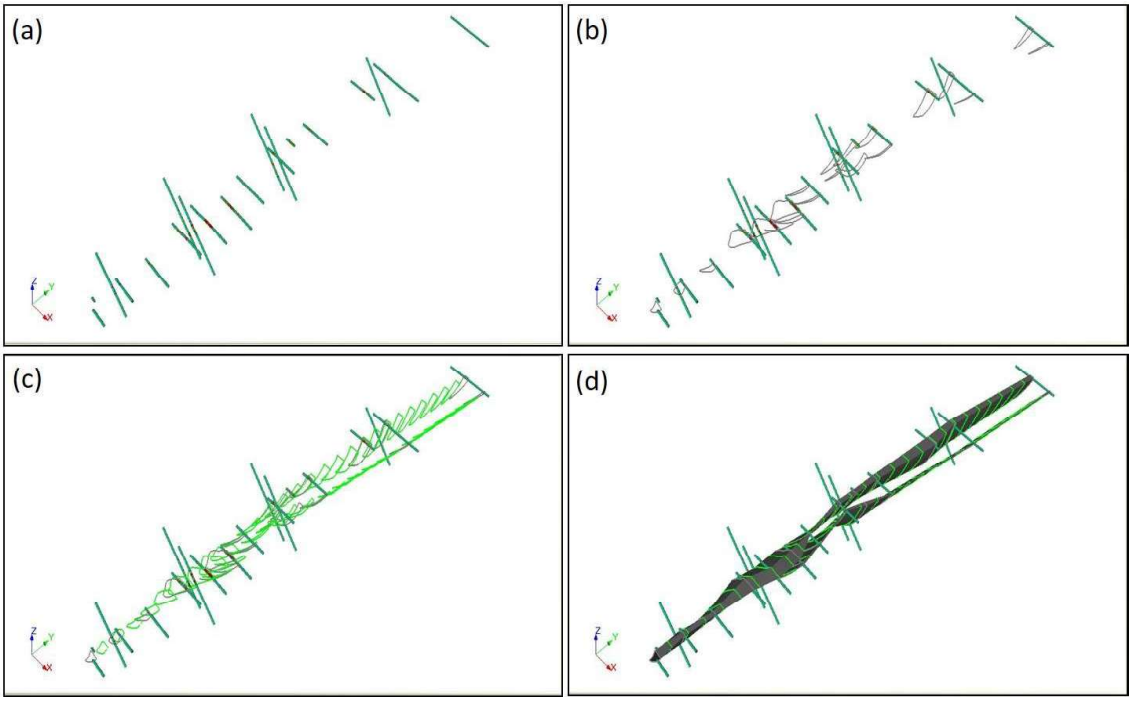


Figure 49 - Sections with combined information on lithology and Au contents. (a) Drill holes and trenches of the Caldeirão target; (b) Cross-sections constructed in places with a greater number of information extracted from drilling and trenching; (c) Cross-sections interpreted from the main section, and their spatial relationships; and (d) All sections drawn together to form the final solid (mineralized envelop). Source: CBPM (2022)

The solids from the mineralized zones add up to a total of 2,854,547 million cubic meters for the entire Umburanas project. When compared to the total volume of the blocks used, we have a difference of 0.01%, and this value validates the blocking performed within the mineralized solids (Figure 50 and Table 37).

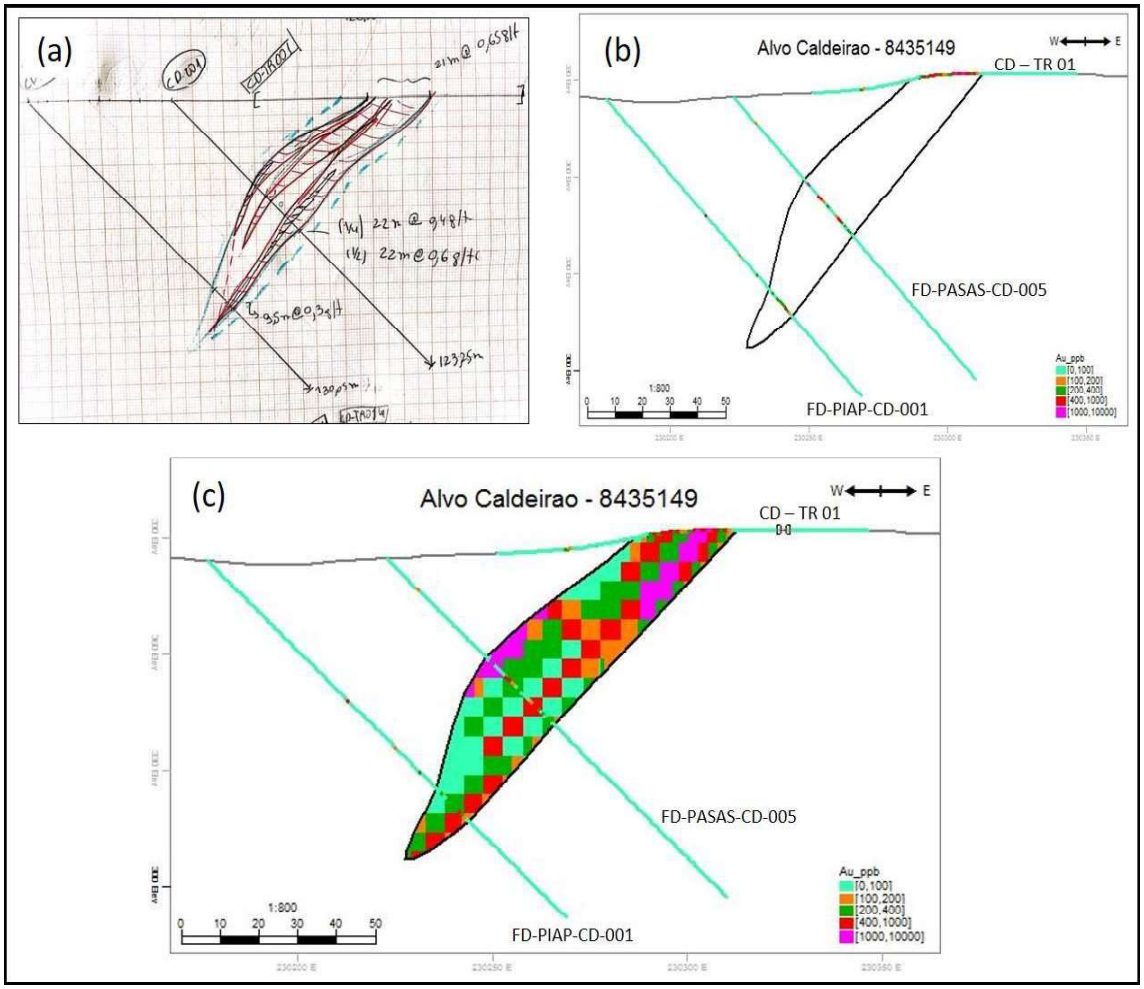


Figure 50 - Sequence of the method adopted for modeling the mineralized zone and fitting the block model to the modeled solid. (a) original section; (b) interpretation of the mineralized zone, and (c) fitting the block model to the mineralized solid.

The volumes of mineralized solids and solid-adjusted blocks.are in Table 36.

Table 37 - Volumes of mineralized solids and solid-adjusted blocks. Source: CBPM (2022).

	CALDEIRÃO	FLORESTA	M. UMBURANAS	RELÍQUIA	SUCURIU	TOTAL
Sólido (m3)	759.155	871.347	35.858	756.768	431.419	**2.854.547**
Blocos (m3)	759.112	871.371	35.756	756.542	431.946	**2.854.727**
Diferença (m3)	43	-24	102	226	-528	**-180.5**
Diferença (%)	0,01	0	0,28	0,03	-0,12	**-0,01**

21.4 Density

The density used to calculate the ore mass in each target was calculated by the average of the results obtained from the tests of samples of the mineralized intervals as described above. The average densities calculated for each target appear in Table 38.

Table 38 – Average density, as defined for each gold target. Source: CBPM (2022).

Gold Target	Ore density (t/m^3)
Caldeirão	2.63
Sucuruiú	2.29
Relíquia	2.51
Floresta	2.79
Morro Umburanas	2.61

21.5 Resource Estimate

Gold resources on the five studied targets were defined in the Indicated and Inferred categories. In this work, the resources are classified according to the degree of reliability of the estimate for each block and this is supported by the combined relationship of the distance between the individual block and related composites, and the minimum number of composites used for the block estimate. This relationship is a function of the spacing between the holes and trenches and their relative configuration. With this, the resources calculated for the targets of the Umburanas project were estimated considering the gold contents in ppb contained in diamond drill core and trench channel samples, which are found inside the representative solids of mineralized bodies (solid mineralized) and classified according to the degree of reliability of the estimate as resources.

Statistical analyzes were performed on the gold analytical results for all the targets of the Umburanas project. The samples were separated into different populations according to their Au_ppb content, being classified according to pre-established limits, which are:

1 - < 100 ppb

2 - ≥ 100 ppb < 200 ppb

3 - ≥ 200 ppb

Statistical data were computed considering all samples within the mineralized zone, and a summary of the statistical analyses, for the Au samples, used in the modeling is shown in Table 39.

Table 39 - Descriptive statistics of the Au variable (ppb) of the mineralized zones of the Umburanas project. Source: CBPM (2022).

FIELD	CALDEIRÃO			FLORESTA			M. UMBURANAS			RELÍQUIA			SUCURIU		
	<100	>100 <200	>200	<100	>100 <200	>200	<100	>100 <200	>200	<100	>100 <200	>200	<100	>100 <200	>200
TOTAL NUMBER OF RECORDS	1,504	69	98	746	205	141	929	12	26	1,315	23	38	1,212	51	77
NUMBER OF SAMPLES	1,504	69	98	746	205	141	929	12	26	1,315	23	38	1,212	51	77
NUMBER OF MISSING VALUES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NUMBER OF VALUES > TRACE	1,501	69	98	746	205	141	929	12	26	1,315	23	38	1,212	51	77
MAXIMUM	99	196	6,997	99	199	3,287	98	197	6,127	99	195	4,584	99	199	6,488
MINIMUM	0.0	100	201	2.5	100	200	2.5	109	200	2.5	100	227	2.5	100	201
RANGE	99.0	96	6,796	97	99	3,087	96	88	5,927	97	95	4,357	97	99	6,287
TOTAL	27,752.5	9,642	75,111	28,639	28,519	56,442	9,101	1,796	24,180	15,978	3,024	38,494	16,496	7,428	47,243
MEAN	18.5	139.7	766.4	38.4	139.1	400.3	9.8	149.7	930.0	12.2	131.5	1,013.0	13.6	145.6	613.5
VARIANCE	453	730	1,363,000	897	869	139,200	192	872	1,921,000	302	703	1,595,000	299	736	769,100
STANDARD DEVIATION	21.3	27.0	1,167.0	30.0	29.5	373.1	13.9	29.5	1,386.0	17.4	26.5	1,263.0	17.3	27.1	877.0
STANDARD ERROR	0.5	3.3	117.9	1.1	2.1	31.4	0.5	8.5	271.8	0.5	5.5	204.9	0.5	3.8	99.9
SKEWNESS	1.7	0.2	3.5	0.4	0.5	4.7	3.2	0.3	2.5	2.6	0.6	2.0	2.3	-0.1	4.8
KURTOSIS	2.4	-1.0	12.7	-1.1	-1.0	27.7	12.0	-1.4	5.8	7.5	-0.6	2.5	6.0	-0.9	26.2
GEOMETRIC MEAN	9.6	137.1	468.4	23.2	136.1	333.0	5.5	146.8	494.3	6.2	128.9	608.7	7.3	143.0	426.7
SUM OF LOGS	3,398.2	339.5	602.6	2,346.8	1,007.3	818.9	1,589.0	59.9	161.3	2,394.0	111.8	243.6	2,405.4	253.1	466.3
MEAN OF LOGS	2.3	4.9	6.1	3.1	4.9	5.8	1.7	5.0	6.2	1.8	4.9	6.4	2.0	5.0	6.1
LOGARITHMIC VARIANCE	1.4	0.0	0.7	1.4	0	0	0.9	0	1	1.2	0	1	1.2	0.0	0
LOG ESTIMATE OF MEAN	19.3	139.8	657.9	46.9	139.1	379.9	8.8	149.7	795.3	11.0	131.4	920.1	13.2	145.7	546.1

21.6 Sample Support and Support Regularization (Composite)

The database used to calculate the estimated resources needs to be the most homogeneous possible, and one of the variables that we can work with is the sample size. This variable can be controlled by generating composites that allow the sample support to be in the vast majority with the same size, thus reducing the variance, but maintaining the sample mean. For the calculation of the estimate in the targets of the Umburanas project, samples with a thickness of 1 meter, allow for a small variation, which is common in the sampling process. A thickness histogram is a tool used to check whether the objective regarding the thickness of samples was reached. The database presents most samples with one meter (Figure 51).

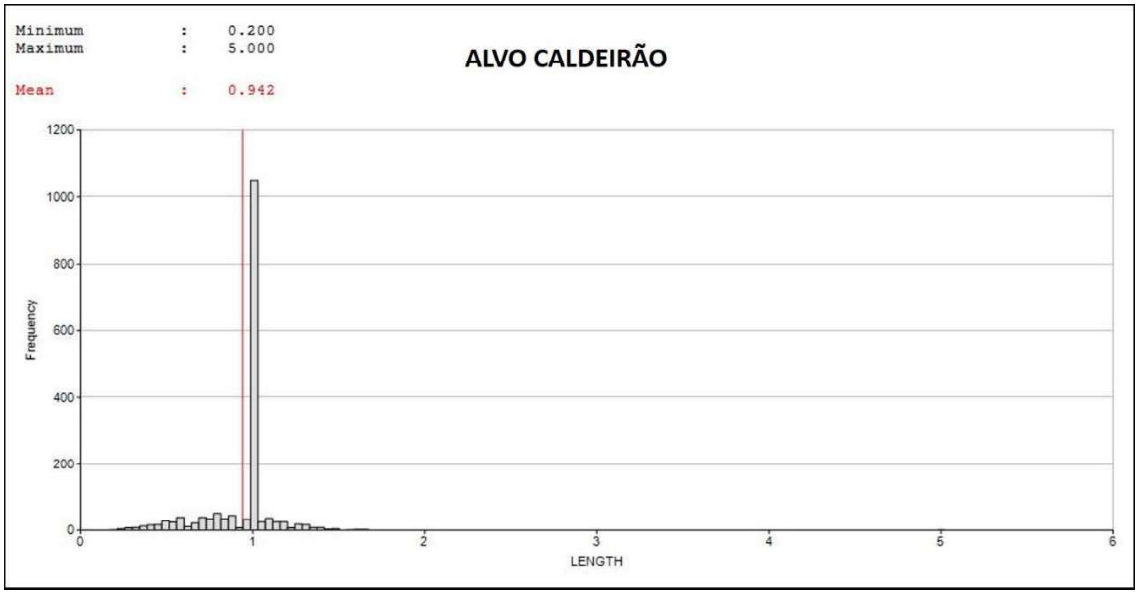


Figure 51 – Histogram for the thickness of the samples from the Caldeirão target, this example demonstrates that there are no significant variations in the thickness of the sample population. Source: CBPM (2022).

21.7 Grade Estimation

Representative solids of the mineralized bodies have geometric complexity, and for better adherence between the block model and the generated solids, a defined block was established, with a dimension of 5 x 5 x 5 meters, with a sub-blocking of up to 4 x 4 subcells, which allowed an even better fit between solids and blocks. The volumes of solids and blocks were compared, verifying a total difference of 0.01%. The targets of the Umburanas project are estimated through the inverse square distance (ISD). An ellipsoid was defined, with a search radius (Indicated Resource) of 25 meters defined in the X axis, 25 meters in the Y axis, and 8 meters in Z. Considering at least 1 and at most 5 samples for the block estimation. The Featured Feature was calculated with a search radius of 42 meters in X, 42 meters in Y, and 13 meters in Z, with a minimum of 1 and a maximum of 8 samples. The last pass, used to calculate the Inferred feature, has its radius defined as 100 meters in X, 100 meters in Y, and 32 meters in Z. The rotation of these ellipsoids was changed according to the geometry of each mineralized body, defined for each target, and can be seen in Table 40 and figures 52, 53, and 54.

Table 40 - Rotation axes of the search ellipsoids used for each target of the Umburanas project. Source: CBPM (2022).

TARGET	ROTATION		
	X	Y	Z
Caldeirão	0°	45°	5°
Floresta	0°	44°	355°
Morro Umburanas	0°	72°	334°
Relíquia	0°	62°	30°
	0°	64°	80°
	0°	-68°	326°
	0°	89°	27°
Sucuruiú	0°	0°	0°

Because of its complexity, the Reliquia target required 4 different rotations to be used, adapting the search to the spatial geometry of the mineralized body. The visual check of the estimate was carried out by observing the adherence of the contents and analyzing the samples collected from the drill holes and in the trenches, with the estimated blocks

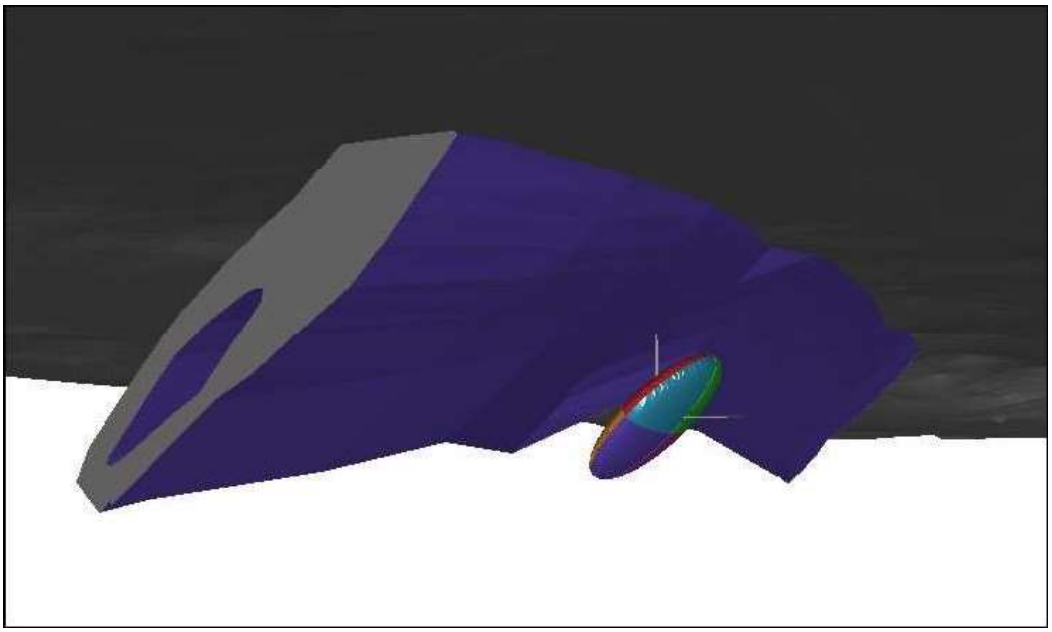


Figure 52 – Search ellipsoid for the Floresta target. Source: CBPM (2022).

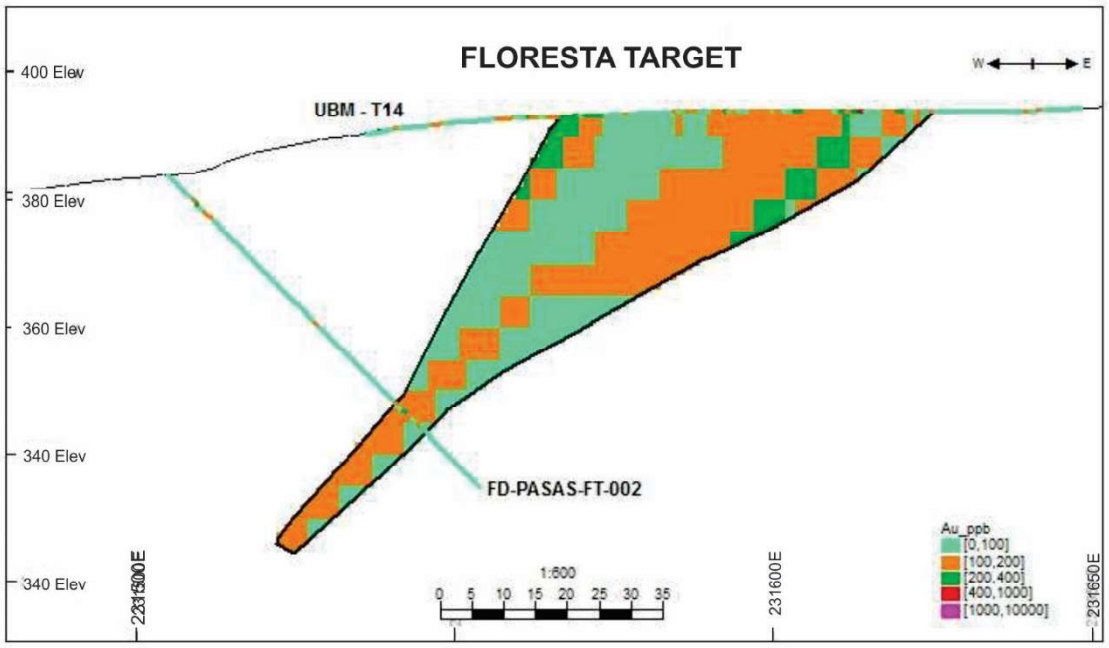


Figure 53 - Visual comparison of the gold grades of the samples and the estimated gold grades of the Floresta target. Source: CBPM (2022).

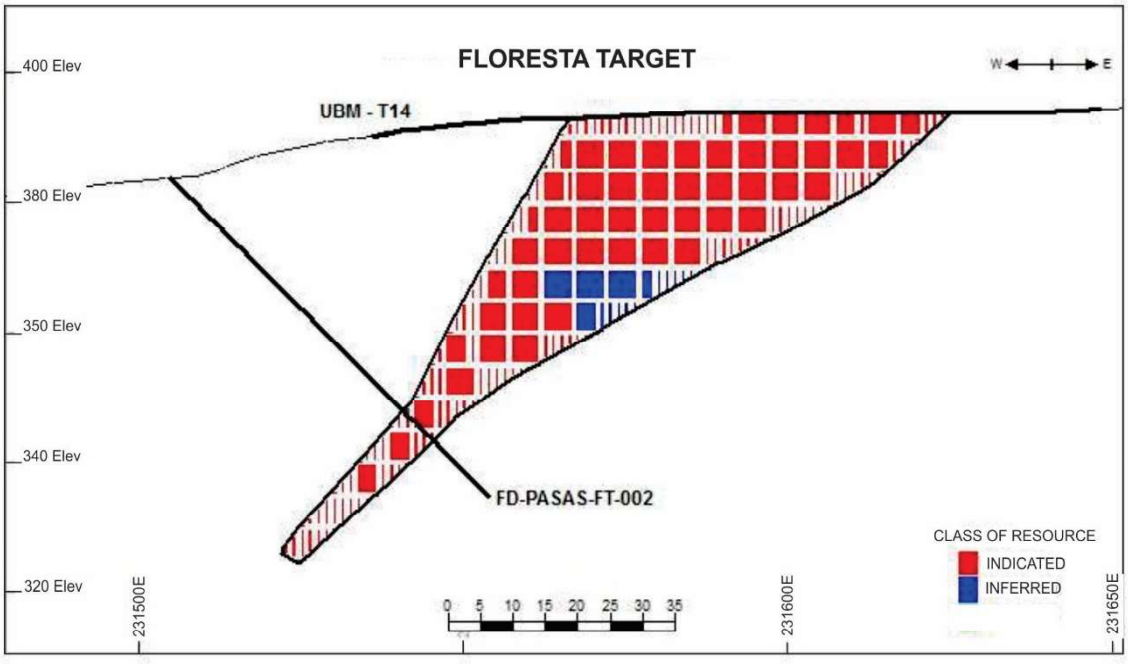


Figure 54 - Visual comparison of the degree of reliability of the estimated gold resource (Indicated and Inferred) of the Floresta targe. Source: (CBPM, 2022)

21.8 Gold Resources

The gold resources estimated here are classified as Indicated and Inferred. In the verification of the available data, it was observed that the techniques of sample collection and

preparation, chemical analysis, descriptions of geological data, drilling techniques, and retrieval of samples from drill cores, as well as the integrity of the database, are reliable. The density-related data achieved a good level of reliability, and the integrated information in the job justifies the category of resources adopted here. As a result, for the Umburanas project, total indicated resources of 1,184,097 t @ 0.56 gAu/t, with a cutoff OF 0.2 g/t, including 512,547 t @ 0.953 gAu/t, with a cutoff of 0.4 g/t. The results of the Indicated and Inferred resources, separated by targets and respective mineral concessions, are presented in detail in Table 41.

Table 41 – Gold resources of targets in the Umburanas project, with resources discretized by mining right concessions. Source: (CBPM (2022).

CONCESSION 870,165/2013							
FLORESTA TARGET							
RESOURCE CATEGORY	**VOLUME (M3)**	**TON**	**Au_ppb**	**Au_g/ton**	**DENS**	**Au (g)**	**Au (oz)**
INDICATED	178,480	497,958	360.5	0.361	2.79	179,531	5,772
INFERRED	50,583	141,962	433.6	0.434	2.79	61,552	1,979
TOTAL	**229,362**	**639,921**	**376.7**	**0.377**	**2.79**	**241,083**	**7,751**

CONCESSION 871,917/2012							
SUCURUIÚ TARGET							
RESOURCE CATEGORY	**VOLUME (M3)**	**TON**	**Au_ppb**	**Au_g/ton**	**DENS**	**Au (g)**	**Au (oz)**
INDICATED	56,393	129,141	488.3	0.488	2.29	63,061	2,027
INFERRED	1,348	3,088	349.8	0.350	2.29	1,080	35
TOTAL	**57,742**	**132,229**	**485.1**	**0.485**	**2.29**	**64,141**	**2,062**

CONCESSION 870,566/2017							
CALDEIRÃO TARGET							
RESOURCE CATEGORY	**VOLUME (M3)**	**TON**	**Au_ppb**	**Au_g/ton**	**DENS**	**Au (g)**	**Au (oz)**
INDICATED	68,212	321,040	667.9	0.668	2.63	214,429	6,894
INFERRED	4,328	64,464	323.6	0.324	2.63	20,862	671
TOTAL	**75,541**	**385,504**	**610.3**	**0.610**	**2.63**	**235,292**	**7,565**

CONCESSION 872,720/2013							
CALDEIRÃO TARGET							
RESOURCE CATEGORY	**VOLUME (M3)**	**TON**	**Au_ppb**	**Au_g/ton**	**DENS**	**Au (g)**	**Au (oz)**
INDICATED	68,212	6,224	439.9	0.440	2.63	2,738	88
INFERRED	4,328	2,276	267.3	0.267	2.63	608	20
TOTAL	**72,541**	**8,500**	**393.7**	**0.394**	**2.63**	**3,347**	**108**
MORRO UMBURANAS TARGET							
RESOURCE CATEGORY	**VOLUME (M3)**	**TON**	**Au_ppb**	**Au_g/ton**	**DENS**	**Au (g)**	**Au (oz)**
INDICATED	10,240	26,727	827.0	0.827	2,61	22,105	711
INFERRED	3,779	9,864	511.5	0.512	2,61	5,045	162
TOTAL	**14,019**	**36,591**	**742.0**	**0.742**	**2,61**	**27,150**	**873**
RELÍQUIA TARGET							
RESOURCE CATEGORY	**VOLUME (M3)**	**TON**	**Au_ppb**	**Au_g/ton**	**DENS**	**Au (g)**	**Au (oz)**
INDICATED	88,650	203,007	894.5	0.894	2.29	181,586	5,838
INFERRED	103,388	236,757	358.3	0.358	2.29	84,821	2,727
TOTAL	192,037	**439,765**	**605.8**	**0.606**	**2.29**	**266,406**	**8,565**

22. ADJACENT PROPERTIES

The block of concessions owned by CBPM and related to the Umburanas gold project together with those adjacent properties appear in Figure 55.

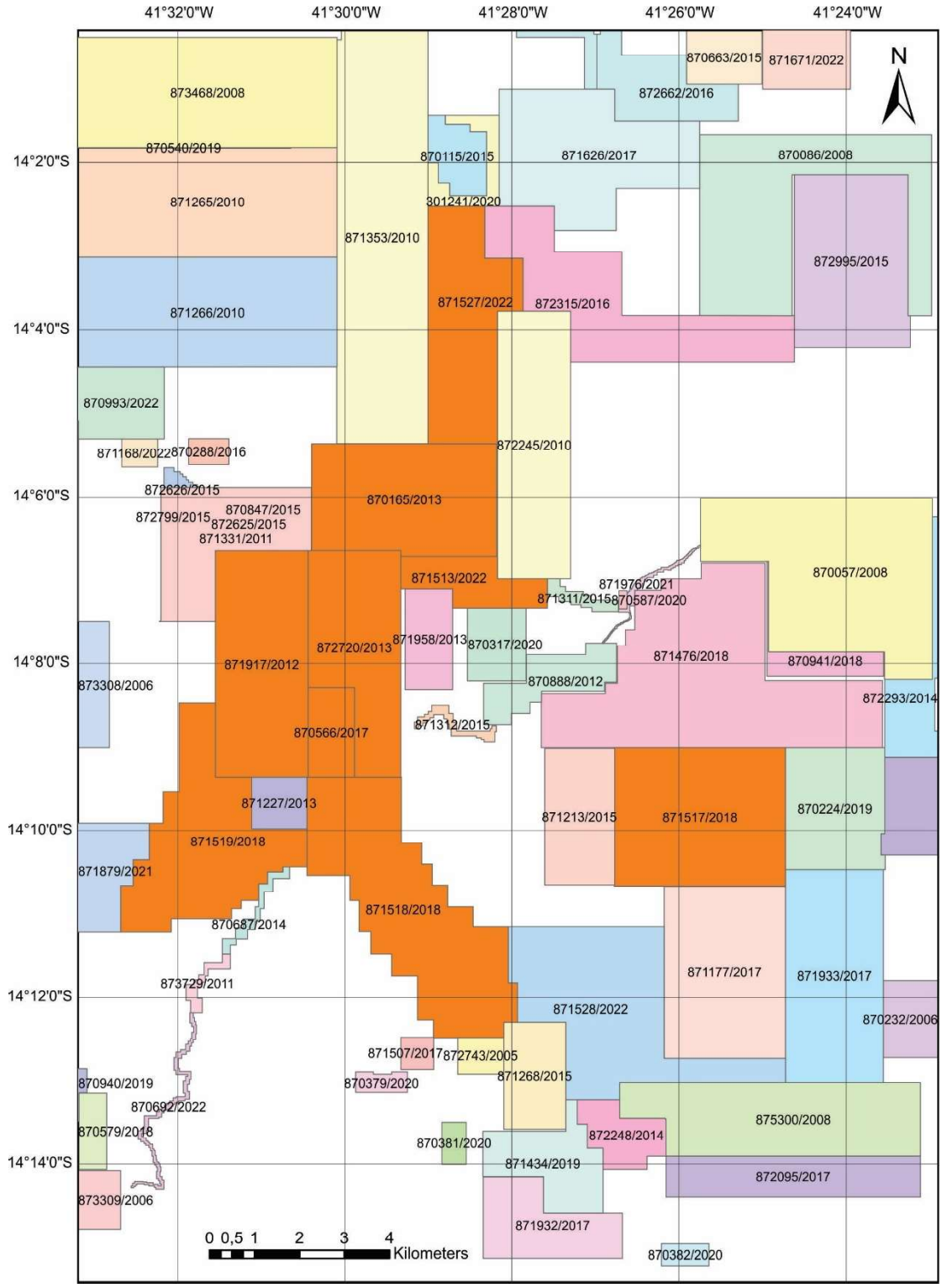


Figure 55 – The CBPM's concessions of the Umburanas block (in orange) along with those adjacent properties. The area number 871527/2022, at the extreme north, was claimed very recently, on 09/26/2022.

23. OTHER RELEVANT DATA AND INFORMATION

As far as the Author is aware, there is no other relevant data and information that has not been provided in this report

24. INTERPRETATION AND CONCLUSION

- Based on their geological characteristics and geotectonic context, the auriferous mineralization of Umburanas can be included in the class of orogenic deposits. These are vertically extensive deposits, containing only gold as an ore mineral (gold-only deposits), formed in broad thermal equilibrium with host rocks of various types, from hydrothermal mineralizing solutions rich in H_2O-CO_2, of low salinity, at crustal depths of 2 to 20 km.
- The Umburanas deposits were probably generated in a post-collisional tectonic environment, during the movement of hot fluids, caused by the intrusion and cooling of Paleoproterozoic granitic bodies.
- During the process of crustal uplift, the Umburanas deposits were affected by the "Cambrian Tectonothermal Event", of predominantly brittle-ductile character, which produced faults and shear zones in a general NW-SE direction. This event caused a new phase of hydrothermal alteration, accompanied by boron metasomatism (B), which produced concentrations of black tourmaline and possibly caused the local impoverishment of some of the Paleoproterozoic mineralization.
- The deposits in the current targets (Caldeirão, Relíquia, Sucuruiú, Floresta, and Morro Umburanas) are those that were most easily identified through the interpretation of airborne geophysical data, geological mapping, soil geochemistry and drilling. Other targets will certainly be found in the geological environment of the Umburanas greenstone belt as exploration continues, both at the surface and into deeper downward.
- The Relíquia-Caldeirão belt and its continuity both to the north and to the south, is the most promising mineralizing zone for blocking economic bodies, with grades varying from 0.60 to 1.00 ppm Au (see figures 15 and 25).
- The Sucuruiú, Floresta, and Morro Umburanas targets contain apparently smaller bodies, whose grades vary from 0.50 to 0.80 ppm Au, and therefore deserve a more emphatic investment in exploration.
- Although the actual information from the drill holes was used to detect and characterize the gold mineralization of Umburanas, the sampling of only 1/4 of the NQ diameter testimonies was not adequate for this type of deposit.
- Consequently, the author recognizes that the gold content in the drill core analyzes was

underestimated. This issue can be verified by comparing these results with the average values obtained in the analysis of trench samples, which are systematically higher, and with the gold content of the head sample from the mineral processing and metallurgical test, which yielded a global value of 0.64 ppm Au.

- Bond Wi index was 10.5 kWh/ton, and Au extraction for the direct leaching step with free cyanide was 84.3% effective, indicating this method as the most suitable for gold recovery in this type of deposit.

25. RECOMMENDATIONS

- The Umburanas project justifies a larger exploration and budget, most of which should be invested in ground geophysics (IP and Electro-resistivity), soil geochemistry, trench excavation and expansion of the diamond drilling program.
- The priority target should be the mineralized belt defined by the Caldeirão-Relíquia targets, which must be investigated at depths much greater than the shallow level of the current investigation (about 100 meters)
- All attention should be given to the problem of representativeness of drill core samples, since in this type of low-grade deposit, the distribution of gold is erratic and the “nugget effect” can be significant.

26. REFERENCES

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27. CERTIFICATE OF QUALIFIED PERSON

To accompany the NI 43-101 Technical Report “Umburanas Gold Deposits, Bahia, Brazil”, November 3, 2022.

I, João Batista Guimarães Teixeira, with a business address at 13 Rua Camuripeba, Piatan, Salvador, Bahia, Brazil, 41650-035, hereby state that:

1. I am an Independent Consulting Geoscientist, specializing in mineral exploration and economic evaluation of mineral deposits.

2. I am a graduate of the University of São Paulo, Brazil, with a BSc degree in Geology in 1968.
3. I am a graduate of the Federal University of Bahia, Salvador, Brazil, with an MSc degree in Economic Geology in 1984.
4. I am a graduate of the Pennsylvania State University, University Park, PA, USA, with a Ph.D. degree in Geosciences in 1994.
5. I am a member in good standing of the Association of Professional Geoscientists of Ontario (APGO), of Ontario, Canada.
6. I have published several papers in international journals, eg. *Mineralium Deposita*, *Economic Geology*, *Precambrian Research*, *Ore Geology Reviews*, *Chemical Geology*, *Gondwana Research*, *Journal of South American Earth Sciences*, and *Brazilian Journal of Geology*, all of them related to mineral exploration, geotectonic evolution, and metallogenesis.
7. I have worked as a geologist and practiced my profession continuously for more than 40 years since graduating, and specifically, I have been involved for more than five years in evaluating data quality and preparing resource estimates, scoping, pre-feasibility and feasibility studies for nickel, copper, gold and iron projects in Brazil.
8. 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 confirm that because of my education, affiliation with professional associations (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for NI 43-101.
9. I made a site visit to the Umburanas Property on July 12-18, 2021.
10. I am the Author of the Independent Technical Report "Umburanas Gold Deposits, Bahia, Brazil", dated Nobember 3, 2022.
11. I have read NI 43-101 and this report has been prepared in compliance with that instrument.
12. For the Umburanas NI 43-101 Technical Report, I am independent of Companhia Baiana de Pesquisa Mineral (CBPM), as defined by Section 1.5 of National Instrument 43-101 Standards of disclosure for mineral projects.
13. 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.

November 3, 2022

João Batista Teixeira

João Batista Guimarães Teixeira, P.Geo.