Cuiú Cuiú Gold Project

NI 43-101 Technical Report and Updated Pre-feasibility Study

Itaituba, Pará, Brazil

Effective Date: July 29, 2025
Report Date: September 10, 2025

Prepared for:

Cabral Gold Inc.
409 Granville Street
Vancouver, B.C., Canada, V6C 1T2

Prepared by:

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Walter Dzick, MBA, P. Geo., W. Dzick Geoconsultants



CERTIFICATE OF QUALIFIED PERSON
Tommaso Roberto Raponi, P. Eng.

I, Tommaso Roberto Raponi, P. Eng., certify that:

1. I am employed as a Principal Metallurgist with Ausenco Engineering Canada ULC, (Ausenco), with an office address of Suite 1550 - 11 King St West, Toronto, ON M5H 4C7.

2. This certificate applies to the technical report titled "*Cuiú Cuiú Gold Project NI 43-101 Technical Report and Updated Pre-feasibility Study, Itaituba, Pará, Brazil*" (the "Technical Report"), prepared for Cabral Gold Inc. (the "Company") with a report date of September 10, 2025, and an effective date of July 29, 2025 (the "Effective Date").

3. I graduated from the University of Toronto with a Bachelor of Applied Science degree in Geological Engineering with specialization in Mineral Processing in 1984.

4. I am a Professional Engineer registered with the Professional Engineers Ontario (No. 90225970), Engineers and Geoscientists British Columbia (No. 23536) and NWT and Nunavut Association of Professional Engineers and Geoscientists (No. L4508).

5. I have practiced my profession continuously for over 40 years with experience in the development, design, operation and commissioning of mineral processing plants, focusing on gold projects, both domestic and internationally. My project design and development experience includes the generation of capital and operating costs for heap leach projects and associated infrastructure and financial modeling of project economics.

6. I have read the definition of "Qualified Person" set out in the National Instrument 43-101 Standards of Disclosure for Mineral Projects ("NI 43-101") and certify that by virtue of my education, affiliation to a professional association and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for those sections of the Technical Report that I am responsible for preparing.

7. I have not visited the Cuiú Cuiú Project site.

8. I am responsible for sections sections 1.1, 1.10, 1.14, 1.16, 1.18, 1.19, 1.20, 1.21, 1.23, 2.1, 2.2, 2.4.1, 2.5, 2.6, 3.4, 12.4, 13, 17, 18.1, 18.2, 18.4, 18.5, 18.8, 18.9, 18.10.1, 19, 21.1, 21.2.1, 21.2.2, 21.2.4, 21.2.5, 21.2.6, 21.2.7, 21.2.8, 21.3.1, 21.3.2, 21.3.4, 21.3.5, 22, 24, 25.7, 25.10, 25.12, 25.14, 25.15, 25.16, 25.26, 25.17.1.4, 25.17.1.7, 25.17.2.4, 25.17.2.7, 25.7, 26.4, and 26.7 of the Technical Report.

9. I am independent of the Company as independence is defined in Section 1.5 of NI 43-101.

10. I have had prior involvement on the project, I acted as one of the qualified persons for the technical report entitled "*Cuiú Cuiú Project NI 43-101 Technical Report and Pre-feasibility Study, Itaituba, Pará, Brazil*" with an effective date of October 21, 2024 and a report date of December 4, 2024.

11. I have read NI 43-101 and the sections of the Technical Report for which I am responsible have been prepared in compliance with that Instrument. As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the sections of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make those sections of the Technical Report not misleading.

Dated: September 10, 2025

"Signed and sealed"

Tommaso Roberto Raponi, P. Eng.

CERTIFICATE OF QUALIFIED PERSON
Scott C. Elfen, P.E.

I, Scott C. Elfen, P.E., certify that:

1. I am m employed as the Global Lead Geotechnical and Civil Services of Ausenco Engineering Canada ULC ("Ausenco"), with an office address of 1050 West Pender Street, Suite 1200, Vancouver, BC, V6E 3S7, Canada.
2. This certificate applies to the technical report titled "*Cuiú Cuiú Gold Project NI 43-101 Technical Report and Updated Pre-feasibility Study, Itaituba, Pará, Brazil*" (the "Technical Report"), prepared for Cabral Gold Inc. (the "Company") with a report date of September 10, 2025, and an effective date of July 29, 2025 (the "Effective Date").
3. I graduated from the University of California, Davis, CA, in 1991 with Bachelor of Science degree in Civil Engineering (Geotechnical).
4. I am a Registered Civil Engineer in the State of California (license no. C56527) by exam since 1996 and I am also a member in good standing of the American Society of Civil Engineers (ASCE), and the Society for Mining, Metallurgy & Exploration (SME).
5. I have practiced my profession continuously for 28 years with experience in the development, design, construction and operations of heap leach facilities, mine waste storage facilities, such as waste rock storage facilities and tailings storage facilities ranging from slurry to dry stack facilities, focusing on precious and base metals, both domestic and international. In addition, I have developed geotechnical and hydrological design parameters for open pits, plant foundation design, and other supporting infrastructure. Examples of projects where I served as global lead for the design of heap leach pads and ponds include Barrick's PEA, PFS, FS, and detail design and construction of several phases of the Pierina Gold Mine (Peru), Barrick's detailed design and construction of multiple phases for Lagunas Norte Gold Mine, and Arizona Sonoran Copper Company's PFS design for Cactuss and Parks Salyer Project.
6. I have read the definition of "Qualified Person" set out in the National Instrument 43-101 Standards of Disclosure for Mineral Projects ("NI 43-101") and certify that by virtue of my education, affiliation to a professional association and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for those sections of the Technical Report that I am responsible for preparing.
7. I visited the Cuiú Cuiú Project between June 22 and June 24, 2024.
8. I am responsible for sections 1.15.1, 1.15.2, 2.4.2.1, 18.3, 18.6, 18.7, 18.10.2, 18.10.3, 18.10.4, 25.11, 25.17.1.8, 25.17.2.8 and 26.8 of the Technical Report.
9. I am independent of the Company as independence is defined in Section 1.5 of NI 43-101.
10. I have had prior involvement on the project, I acted as one of the qualified persons for the technical report entitled "*Cuiú Cuiú Project NI 43-101 Technical Report and Pre-feasibility Study, Itaituba, Pará, Brazil*" with an effective date of October 21, 2024 and a report date of December 4, 2024.
11. I have read NI 43-101 and the sections of the Technical Report for which I am responsible have been prepared in compliance with that Instrument. As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the sections of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make those sections of the Technical Report not misleading.

Dated: September 10, 2025.

"Signed and sealed"

Scott C. Elfen, P.E.

CERTIFICATE OF QUALIFIED PERSON
Volodymyr Myadzel, P. Geo.

I, Volodymyr Myadzel, P. Geo., certify that:

1. I am employed as a Principal Geologist Consultant with VMG Consultoria e Soluções Ltda. (VMG), with an office address at Av. Do Contorno, 2905, Sala 406, Santa Efigênia, Belo Horizonte – MG – Brasil. 30110-915.
2. This certificate applies to the technical report titled "*Cuiú Cuiú Gold Project NI 43-101 Technical Report and Updated Pre-feasibility Study, Itaituba, Pará, Brazil*" (the "Technical Report"), prepared for Cabral Gold Inc. (the "Company") with a report date of September 10, 2025, and an effective date of July 29, 2025 (the "Effective Date").
3. I graduated with a degree in Geology from Kryvyi Rih National University, Kryvyi Rih, Ukraine in 1999. In addition, I have obtained a PhD in Geology from Kryvyi Rih National University, Kryvyi Rih, Ukraine in 2004.
4. I am a member #3974 of the Australasian Institute of Geoscientists.
5. I have practiced my profession for 25 years with experience in modeling and resource and reserve estimation of deposits, prospecting and surveying, geological mapping, mineralogy and petrology of metamorphic rocks and ore deposits.
6. I have read the definition of "Qualified Person" set out in the National Instrument 43-101 Standards of Disclosure for Mineral Projects ("NI 43-101") and certify that by virtue of my education, affiliation to a professional association and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for those sections of the Technical Report that I am responsible for preparing.
7. I have visited the Cuiú Cuiú Project between October 1 and October 3, 2023.
8. I am responsible for sections 1.11.3, 2.4.2.2, 12.1, 12.3, 14.4, 14.5, 25.6, 25.8.3, 25.17.1.5 and 25.17.2.5, of the Technical Report.
9. I am independent of the Company as independence is defined in Section 1.5 of NI 43-101.
10. I have had no previous involvement with the Cuiú Cuiú Project.
11. I have read NI 43-101 and the sections of the Technical Report for which I am responsible have been prepared in compliance with that Instrument. As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the sections of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make those sections of the Technical Report not misleading.

Dated: September 10, 2025.

"Signed and sealed"

Volodymyr Myadzel, P. Geo.

CERTIFICATE OF QUALIFIED PERSON
Bruno Yoshida Tomaselli, FAusIMM

I, Bruno Yoshida Tomaselli, FAusIMM, certify that:

1. I, Bruno Yoshida Tomaselli, FAusIMM, certify that I am employed as a Consulting Manager with Deswik Brazil ("Deswik"), with an office address of Rua Antonio de Albuquerque, 330, Belo Horizonte-MG, Brazil, 30112-010.
2. This certificate applies to the technical report titled "*Cuiú Cuiú Gold Project NI 43-101 Technical Report and Updated Pre-feasibility Study, Itaituba, Pará, Brazil*" (the "Technical Report"), prepared for Cabral Gold Inc. (the "Company") with a report date of September 10, 2025, and an effective date of July 29, 2025 (the "Effective Date").
3. I graduated from the University of São Paulo, São Paulo, Brazil, in 2004 with a Bachelor of Science degree in Mining Engineering.
4. I am a Fellow Member of the Australasian Institute of Mining and Metallurgy (FAusIMM).
5. I have practiced my profession for a total of 20 years since graduation. I have been directly involved in:
   - mine planning for several mines in Brazil and Latin America;
   - review and report as a consultant on many mining operations and projects around the world for due diligence;
   - feasibility study project work on many mining projects including site infrastructure. My projects include Aura Minerals Borborema, Nexa Aripuanã, Minesa Soto Norte, Andina Minerals Volcan and Sigma Xuxa; and
   - work as a mining engineer consultant on various projects around the world.
6. I have read the definition of "Qualified Person" set out in the National Instrument 43-101 Standards of Disclosure for Mineral Projects ("NI 43-101") and certify that by virtue of my education, affiliation to a professional association and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for those sections of the Technical Report that I am responsible for preparing.
7. I visited the project site on June 24, 2024 for a visit duration of two days.
8. I am responsible for sections 1.12, 1.13, 2.3, 2.4.2.3, 15, 16, 21.2.3, 21.3.3, 25.17.1.6, 25.17.2.6, 25.9 and 26.6 of the Technical Report.
9. I am independent of the Company as independence is defined in Section 1.5 of NI 43-101.
10. I have been involved with the Cuiú Cuiú Project through my involvement in the previous technical report titled "Cuiú Cuiú Project NI 43-101 Technical Report & Pre-feasibility Study, October 21, 2024", and I was responsible for sections 1.2, 1.14, 1.15, 2.3, 2.4.2.3, 15, 16, 21.2.3, 21.3.3, 25.9, 25.17.1.6, 25.17.2.6, and 26.6 of such report.
11. I have read NI 43-101 and the sections of the Technical Report for which I am responsible have been prepared in compliance with that Instrument. As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the sections of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make those sections of the Technical Report not misleading.

Dated: September 10, 2025.

"Signed and sealed"

Bruno Yoshida Tomaselli, FAusIMM

CERTIFICATE OF QUALIFIED PERSON
Rodrigo Mello, FAusIMM

I, Rodrigo Mello, FAusIMM, certify that:

1. I am employed as a Principal with RBM Serviços Técnicos Ltda. (RBM), with an office address at Rua Engenheiro Senna Freire 193, São Bento, Belo Horizonte, MG, Brazil.
2. This certificate applies to the technical report titled "*Cuiú Cuiú Gold Project NI 43-101 Technical Report and Updated Pre-feasibility Study, Itaituba, Pará, Brazil*" (the "Technical Report"), prepared for Cabral Gold Inc. (the "Company") with a report date of September 10, 2025, and an effective date of July 29, 2025 (the "Effective Date").
3. I graduated from Minas Gerais Federal University with a BSc in Geology in December 1985. I also have a Post-Graduation in Computer Sciences, in the Goiás Catholic University, in 1999.
4. I am a Geologist registered with the Professional Council of Minas Gerais (CREA 40.462/D) in Brazil. I am a Fellow of the Australasian Institute of Mining and Metallurgy (FAusIMM Nr 209332).
5. I have practiced my profession for a total of 39 years. My work experience includes 26 years as exploration geologist/manager working in Archean, Proterozoic, and Tertiary environments, 13 years as a mineral resource analyst or as a geology consultant, working in the evaluation of gold, copper, zinc, nickel and silver deposits in nine different countries. I have authored or co-authored 24 Technical reports published on SEDAR+, for gold, copper and silver projects.
6. I have read the definition of "Qualified Person" set out in the National Instrument 43-101 Standards of Disclosure for Mineral Projects ("NI 43-101") and certify that by virtue of my education, affiliation to a professional association and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for those sections of the Technical Report that I am responsible for preparing.
7. I have made three visits to the Cuiú-Cuiú property. The last visit occurred from June 19th to 20th, 2021.
8. I am responsible for sections 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9, 1.17, 1.22, 2.4.2.4, 3.1, 3.2, 3.3, 4, 5, 6, 7, 8, 9, 10, 11, 20, 23, 25.1, 25.2, 25.3, 25.4, 25.5, 25.13, 25.17.1.1, 25.17.1.2, 25.17.1.3, 25.17.1.9, 25.17.2.1, 25.17.2.2, 25.17.2.3, 25.17.2.9, 26.1, 26.2, 26.3 and 26.9 of the Technical Report.
9. I am independent of the Company as independence is defined in Section 1.5 of NI 43-101.
10. I have previous involvement with the Cuiú-Cuiú Project; Cabral Gold and Magellan Mineração, participating in the 2021 Technical Reports and other technical services to support the project development. Normal consultancy rates were applied in these instances.
11. I have been involved with the Cuiú Cuiú Project through my involvement in the previous technical report titled "Cuiú Cuiú Project NI 43-101 Technical Report & Pre-feasibility Study, October 21, 2024", and I was responsible for sections 1.3.1, 1.3.2, 1.3.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9, 1.10, 1.11, 1.19, 1.24, 1.25, 2.4.2.4, 3.1, 3.2, 3.3, 4, 5, 6, 7, 8, 9, 10, 11, 20, 23, 24, 25.1, 25.2, 25.3, 25.4, 25.5, 25.13, 25.17.1.1, 25.17.1.2, 25.17.1.3, 25.17.1.9, 25.17.2.1, 25.17.2.2, 25.17.2.3, 25.17.2.8, 26.1, 26.2, 26.3, 26.4, and 26.9 of such report.
12. I have read NI 43-101 and the sections of the Technical Report for which I am responsible have been prepared in compliance with that Instrument. As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the sections of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make those sections of the Technical Report not misleading.

Dated: September 10, 2025.

"Signed and sealed"

Rodrigo Mello, FAusIMM

CERTIFICATE OF QUALIFIED PERSON
Walter Allan Dzick, MBA, P. Geo.

I, Walter Allan Dzick, MBA, P. Geo., certify that:

1. I am employed as a Resource Geologist/Consultant at W. Dzick Geoconsultants, with an office address of 503-11726 225 St Maple Ridge, B.C., Canada.

2. This certificate applies the technical report titled "*Cuiú Cuiú Gold Project NI 43-101 Technical Report and Updated Pre-feasibility Study, Itaituba, Pará, Brazil*" (the "Technical Report"), prepared for Cabral Gold Inc. (the "Company") with a report date of September 10, 2025, and an effective date of July 29, 2025 (the "Effective Date").

3. I graduated from the New Mexico State University in 1978 with a Bachelor of Science degree in Geology. I received my MBA from the University of Nevada Reno in 2007, and I earned a citation in applied geostatistics from the University of Alberta in 2010.

4. I am a member in good standing of EGBC (Engineers and Geosciences of British Columbia), SEG (Society of Economic Geologists) and AIPG (American Association of Professional Geologists).

5. I have worked as a Geologist continuously for a total of 46 years since my graduation from university. Over the past 15 years I have been involved with Resource Estimations in Archean Greenstone belts in the Abitibi district of Quebec and Ontario and the Minas Gerais district in Brazil. On the Cuiú Cuiú Project, my work was specifically the completion of the initial Inferred Resource Estimate.

6. I have read the definition of "Qualified Person" set out in the National Instrument 43-101 Standards of Disclosure for Mineral Projects ("NI 43-101") and certify that by virtue of my education, affiliation to a professional association and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for those sections of the Technical Report that I am responsible for preparing.

7. I have not visited the Cuiú Cuiú Project.

8. I am responsible for section 1.11.1, 1.11.2, 2.4.2.5, 12.2, 14.1, 14.2, 14.3, 25.8.1, 25.8.2 and 26.5 of the Technical Report.

9. I am independent of the Company as independence is defined in Section 1.5 of NI 43-101.

10. I have been involved with the Cuiú Cuiú Project through my involvement in the previous technical report titled "Cuiú Cuiú Project NI 43-101 Technical Report & Pre-feasibility Study, October 21, 2024", and I was responsible for sections 14.12 of such report.

11. I have read NI 43-101 and the sections of the Technical Report for which I am responsible have been prepared in compliance with that Instrument. As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the sections of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make those sections of the Technical Report not misleading.

Dated: September 10, 2025.

"Signed and sealed"

Walter Allan Dzick, MBA, P. Geo.

Important Notice

This report was prepared as National Instrument 43-101 Technical Report for Cabral Gold Inc. (Cabral Gold) by Ausenco do Brasil Engenharia Ltda., Ausenco Engineering Canada ULC, and Ausenco Chile Ltda. (collectively, Ausenco), VMG Consultoria e Soluções Ltda., Deswik Mining Consultants Pty Ltd., RBM Serviços Técnicos Ltda., and W. Dzick Geoconsultants, collectively the Report Authors. The quality of information, conclusions, and estimates contained herein is consistent with the level of effort involved in the Report Authors' services, based on i) information available at the time of preparation, ii) data supplied by outside sources, and iii) the assumptions, conditions, and qualifications set forth in this report. This report is intended for use by Cabral Gold subject to terms and conditions of its contracts with each of the Report Authors. Except for the purposes legislated under Canadian provincial and territorial securities law, any other uses of this report by any third party are at that party's sole risk.

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1 SUMMARY

1.1 Introduction

Cabral Gold B.C. Inc. (Cabral Gold) commissioned Ausenco do Brasil Engenharia Ltda. (Ausenco) to compile an updated Pre-Feasibility Study (PFS) of the Cuiú Cuiú Project (the Project). The PFS was prepared in accordance with the Canadian disclosure requirements of National Instrument 43-101 (NI 43-101) and in accordance with the requirements of Form 43-101 F1. The purpose of this Technical Report is to update the PFS to include an updates mineral resource estimate for the Central and Machichie deposits, and a new mineral reserve estimate for the Project.

The responsibilities of the engineering companies who were contracted by Cabral Gold to prepare this report are as follows:

- Ausenco managed and coordinated the development of this report, developed PFS-level designs for the process plant, spent ore stockpile and general on-site infrastructure, developed the consolidated cost estimates, and prepared the economic analysis.
- RBM Serviços Técnicos Ltda. conducted a review of the environmental studies and permitting information and completed the work related to Property description, history, geology, drilling and sample preparation.
- Deswik completed the work related to mining methods and the mine plan.
- W. Dzick Geoconsultants completed work related to the Machichie and Central Resource.
- Metso conducted comminution testing for the Project.
- Kappes Cassiday & Associates (KCA) conducted metallurgical testing for the Project.

Cabral Gold is a junior resource company listed on the TSX Venture Exchange (TSX-V: CBR) (OTC: CBGZF). Cabral Gold is engaged in the identification, exploration, and development of mineral properties, with a primary focus on gold properties located in Brazil. The company has a 100% interest in several properties located in the Tapajós Region of Pará State in northern Brazil, including Cuiú Cuiú.

Cabral Gold acquired the Project in 2017 through its acquisition of Magellan Minerais e Prospecção Geológica Ltd (MNM Brazil), formerly a subsidiary of Magellan Minerals Ltd (Magellan). Since the previous Mineral Resource estimate prepared for the Project in October 2022, Cabral Gold completed infill and step-out drilling in the Central and Moreira Gomes (MG) deposits in 2023.

1.2 Property Description and Location

The Cuiú Cuiú Gold Project, situated in the Amazon Basin of Brazil, spans a total of 30,563 hectares (Ha) through direct ownership and in association with an artisanal miner's cooperative. The Project encompasses 18 mineral rights, including exploration permits, mining concessions, and small-scale mining permits (PLGs). The property features rolling topography and moderately incised streams, with exploration primarily focused on six key targets. The Project has undergone extensive exploration since 2006, including diamond and reverse circulation drilling, geophysical surveys, and regional reconnaissance, with significant historical artisanal mining activity contributing to environmental disturbances. Licenses and trial mining permits have been actively managed, with applications and renewals submitted in compliance with Brazil's mining laws, allowing continued exploration and eventual mining.

Environmental regulations and agreements play a critical role in the Project's progression. Licenses for exploration and trial mining have been approved under stringent environmental conditions, with Cabral Gold undertaking monitoring and remediation efforts to mitigate past artisanal mining impacts. The company has established surface rights agreements, including options for additional land acquisitions linked to identified gold resources. Environmental studies such as the EIA-RIMA have been completed to secure necessary permits, reflecting adherence to both federal and regional requirements. The Project also involves multiple royalty agreements and business combinations to consolidate financial and operational control over its assets, ensuring sustainable development within regulatory frameworks.

1.3 Accessibility, Climate, Local Resources, Infrastructure and Physiography

The Cuiú Cuiú Project is located approximately 195 km south-southwest of Itaituba, State of Pará, Brazil. The Transgarimpeiro road is 60 km south of the Project, and highway BR-163, which connects the city of Cuiaba (Mato Grosso State) with the city of Santarém (Pará State), lies 90 km east of the property.

Temperatures range from a low of 17°C in June to a high of 44°C in January, with an average annual temperature of 26°C. The high jungle areas tend to be cooler, with consistently higher humidity year-round. Annual precipitation averages between 1,500 mm and 2,000 mm.

Cabral Gold maintains a fleet of light vehicles and various related exploration equipment. Cabral Gold operates a relatively new camp with internet and telephone services, capacity for 80 people, and a core shed that can store 100,000 m of core, along with a laboratory for conducting sampling, multi-element XRF readings, and density measurements.

Cabral Gold's main camp is located within the village of Cuiú Cuiú, on the project site. Cabral Gold's camp is self-sustaining, with all necessary services and infrastructure. The village of Cuiú Cuiú has limited resources with a population of about 200 families. Power for both the village and the Project are supplied by diesel generator.

1.4 History

The Tapajós Mineral Province (TMP) was the site of a major gold rush by artisanal miners from the late 1970s until the late 1990s. Recorded official historical production for the entire TMP is 159 tonnes of gold (Araújo Neto, 1996). During

the peak of this gold rush in the 1980s to early 1990s, more than a quarter of a million artisanal miners were extracting over a 1.0 Moz Au annually.

The QP has been unable to verify the mineralization or the supporting information, and this information is not necessarily indicative of the mineralization on the property that is the subject of this technical report.

1.5 Geology and Mineralization

The Cuiú Cuiú Gold Project lies within the Tapajós Mineral Province of the Amazon Craton, characterized by extensive Paleoproterozoic magmatism and deformation linked to the Trans-Amazonian Orogen. The property features a basement of granite-gneiss formations intruded by a sequence of younger granitic and volcanic suites. These geological units, including the Parauarí and Maloquinha suites, host the region's primary gold deposits, which are structurally controlled by large-scale deformation zones like the Tocantinzinho Trend Deformation Zone (TTDZ). Gold mineralization at Cuiú Cuiú occurs across fresh rock, saprolite, and weathered sediments, with extensive hydrothermal alteration facilitating mineral deposition in brecciated zones and fault systems. Saprolitic weathering and erosion have led to the formation of unconformable gold-bearing Blanket deposits and placer gold in modern river systems.

The Project's mineralization styles include replacement zones, stockwork veining, and high-grade quartz veins, often associated with sulphides like pyrite. Key targets, such as the Central, Machichie, and MG deposits, are hosted within intense alteration and deformation zones and show substantial gold grades. The Central deposit comprises in situ basement mineralization, weathered saprolite, and transported gold-bearing blankets. Alteration varies from broad hematite-dominated zones to high-grade silicification and sulphidation near mineralized zones. While artisanal mining has extensively exploited surface gold, deeper mineralization remains untapped, with ongoing exploration focusing on refining geological models and identifying economically viable resources.

1.6 Deposit Types

The Cuiú Cuiú Gold Project features orogenic gold deposits, most likely linked to the Trans-Amazonian Orogen, a Paleoproterozoic regional event caused by the collision of the Guiana Shield and the West-African Craton. The gold mineralization is classified as mesozonal or hypozonal, indicative of formation at depths greater than six kilometers under greenschist facies conditions. Unlike Intrusive-Related Gold Systems (IRGS), Cuiú Cuiú's gold deposits are associated with syn-deformation processes, evident in features like dilation structures, shear veins, and banded quartz breccias. The region's mineralization model highlights structural discontinuities as pathways for hydrothermal fluids, depositing gold in zones of high strain during episodic seismic pumping.

When compared to nearby deposits like Tocantinzinho and the Palito Mine, Cuiú Cuiú shares structural and mineralization similarities but also notable differences. Tocantinzinho, located 25 km east-southeast, is classified as an IRGS-style granite-hosted deposit, characterized by pyrite-associated gold and strong gold-bismuth correlations, features not yet identified at Cuiú Cuiú. Palito, located 90 km southeast, hosts copper-rich quartz-gold veins in felsic volcanics, which are absent at Cuiú Cuiú. These comparisons reinforce Cuiú Cuiú's unique classification as an orogenic gold deposit, with its mineralization shaped by deep-crustal processes and syn-tectonic activity.

1.7 Exploration

The exploration activities at the Cuiú Cuiú Gold Project have evolved significantly over nearly two decades, with a major focus on identifying and developing viable mineral targets. Since 2017, Cabral Gold has undertaken an extensive review of historical geochemical, geophysical, and drilling data, which led to the identification of 44 exploration targets by 2024. Fieldwork has included various methods such as soil sampling, trenching, rock-chip sampling, and auger drilling, supported by high-quality Quality assurance and quality control (QA/QC) protocols. A total of 40 targets have undergone diamond or reverse circulation drilling, yielding critical data for prioritizing areas with high economic potential. Despite substantial progress, further surface sampling and mapping are needed for less developed targets to better assess their feasibility.

The Project has shown strong coherence in its geochemical follow-up programs and maintains impressive soil sampling coverage across the area. While most efforts have now shifted toward advanced-stage targets, the continued focus on data integration and refinement is key to optimizing exploration outcomes. Many targets are drill-ready, reflecting the comprehensive groundwork laid over the years. As the Project transitions into more developed phases, balancing the focus between these advanced targets and untapped greenfield opportunities will be essential to maximize both short-term returns and long-term resource potential.

1.8 Drilling

Drilling at the Cuiú Cuiú Gold Project has been extensive, with over 106,800 m drilled across 847 holes, focusing primarily on advanced targets. Key areas drilled include Central (CG), Moreira Gomez (MG), Pau da Merenda (PDM), and the Machichie Complex, among others. Each target has been evaluated for its geological potential, with drilling uncovering various gold mineralization styles such as weathered saprolite, unweathered basement rocks, and unconformable Blanket mineralization. Reconnaissance drilling has also identified promising anomalies, although some remain in the early stages of exploration. The data collected supports further resource definition and the identification of high-grade gold zones across multiple targets.

Cabral Gold utilized a combination of diamond drilling and reverse circulation (RC) drilling to achieve geological modeling. Advanced targets, such as the Central deposit, have been thoroughly explored to depths exceeding 375 m, revealing consistent mineralization patterns. Other targets, like the Machichie Complex and PDM, demonstrated extensive oxide gold zones and high-grade mineralization. The Project's comprehensive approach has led to the identification of drill-ready targets, with a strong focus on optimizing exploration to enhance resource potential and project economics.

1.8.1 Drilling Procedures

Drilling at Cuiú Cuiú follows rigorous industry standards to ensure data reliability. Diamond-drill rigs, preferred for their low footprint and adaptability to rugged terrain, were employed for infill, step-out, and reconnaissance drilling. Reverse circulation (RC) rigs, including both smaller track-mounted and larger contracted rigs, were used for faster sample collection, especially in oxide zones. Sampling protocols involved systematic collection and logging, with samples sealed and sent to accredited laboratories for analysis. These procedures included density measurements and

multi-element analysis. Drilling and sampling were tailored to adapt to site-specific conditions, including saprolite weathering and structural complexities, providing robust data for resource modeling.

1.9 Sample Preparation, Analyses and Security

The section on sample preparation, analyses, and security outlines the processes used to ensure the reliability of data for the Cuiú Cuiú Project. The preparation and analysis protocols employed at ISO-certified laboratories, including SGS Geosol, ALS, and Acme, follow established industry standards. Sample processing steps, such as drying, crushing, pulverizing, and fire assay analysis, are designed to reduce variability and improve accuracy. Quality control measures, including certified reference materials (CRMs), blanks, and duplicates, are applied to monitor laboratory precision, accuracy, and potential contamination. Cabral Gold's geology team manages a QA/QC program that includes regular reviews and actions to address any identified issues.

The QA/QC measures are supported by control chart analyses for CRMs, such as OxH163 and HiSilK2, which identify occasional failures that are followed up with re-analysis and checks. Sample security protocols describe how samples are handled from the drill site to the laboratory to prevent errors or loss. The Qualified Person (QP) concludes that the data shows sufficient precision and accuracy for Mineral Resource evaluation. Recommendations include incorporating pulp duplicates and refining field duplicate sampling, providing avenues for improving data reliability.

1.10 Mineral Processing and Metallurgical Testwork

This study focuses on production from the oxide portion of the Moreira Gomes (MG) and Central (CG) and Machichie deposits, which share similar geo-metallurgical characteristics.

The deposits can be characterized as soft, non-abrasive ore with a high natural moisture content (up to 20%) and a very fine particle size distribution, mainly due to the presence of saprolites and soils. Historical testing showed gold recoveries exceeding 95% for grind sizes below 75 microns (µm). High gold recoveries, ranging from 70% to 90%, were also achieved through column leach tests on ore crushed to -50 mm. However, agglomeration is required due to the very high natural clay content in the ore, which requires cement additions ranging from 10 to 15 kg/t.

Six test work programs have been completed since 2011. They are summarized as follows:

- In 2011, Resource Development Inc. (RDi) tested composite samples based on their location (Central and MG pits) and oxidation state (sulphides and oxides). Gold recoveries ranged from 88% to 97%.
- In 2022, KCA tested samples from MG deposit, which were composited based on their head grade (high and low) and lithology (saprolite and soil). Gold leach extractions from bottle roll tests ranged from 81% to 97%, while column leach test achieved 82% gold (Au) after 70 days leaching.
- In 2023, Testwork Laboratory tested samples based on their location (Central and MG pits), spatial distribution within the pit (upper and lower parts), and grade (high and low). The program included bottle roll leach tests, agglomeration and column leach tests. Bottle roll leach test gold extractions ranged from 86.0% to 98.3%. Column leach test gold extractions ranged from 75.4% to 96.6%, although there were issues with how the tests were performed and tests were run for excessively long times.

- In 2024, a dedicated drill program generated samples for two programs at Metso (Brazil) and KCA. The samples were composited based on their location (Central and MG pits) and lithology (saprolite and Blanket). KCA further categorized samples by grade (high and low). Metso completed point load, abrasion, crushability, and rod work index tests. Results showed the samples to be soft, easily crushable and to have low abrasivity. KCA conducted bottle roll leach tests, compacted permeability tests, and column leach tests. Gold recoveries ranged from 72.5% (from Central) to 91% (from MG) in column leach tests.
- In 2025 trenching was used to four provide samples from the Machichie deposit for a testing program at KCA. High grade vein portions of each sample were removed for separate testing. Coarse bottle rolls leach tests at -25 mm crush size had recoveries had gold leach extractions ranging from 64% to 96% on the high-grade samples and 80% to 87% on the main samples. Fine bottle rolls leach tests on the main samples had gold leach extractions of 95% to 97%. Compacted permeability tests confirmed earlier results that 10 to 15 kg/t cement addition are required to support leaching in 5 m lifts. Column leach tests gold extractions ranged from 88% to 96% after 22 to 34 days leaching.

Assaying of samples from the three deposits confirmed that mercury occurs at sufficient concentrations to require mercury capture and abatement equipment in the gold room and carbon regeneration.

Additional variability column leach tests are recommended to increase the reliability of estimated recoveries for areas of initial production and to verify cement requirements for agglomeration.

1.11 Mineral Resource Estimate

1.11.1 Central Deposit

W. Dzick Geoconsultants has estimated Indicated and Inferred Mineral Resources for the oxide portion of the Cuiú Cuiú Central Project in accordance with the CIM guidelines (CIM 2014) which have been adopted as part of NI 43-101.

The CIM Definition Standards on Mineral Resources and Mineral Reserves require that an estimated Mineral Resource must have reasonable prospects for eventual economic extraction. The Mineral Resource estimate discussed herein has been constrained by reasonable potential mining open pit design parameters, using economic and technical assumptions appropriate for an open-pit mining scenario. Mineral resources that are not mineral reserves do not have demonsrated economic viability.

Pit shells were derived from work performed by Deswik to estimate material in the block model with reasonable prospects for eventual economic extraction. Pit shells were developed by considering regular blocks measuring 5 m x 5 m x 5 m on constraining boundaries. The main input assumptions are summarized in Section 15. Table 1-1 lists the parameters used to generate the Central mining cone, as provided by Deswik.

Table 1-1: Central Resource Pit Shell Parameters

Assumption	Unit	Mineral Resources
Gold Price	US$/oz	2,600
Refining Charge	US$/oz	30
Royalties	%	4.0
Mining Cost	US$/t	3.50
Fuel Cost	US$/L	1.30
Processing Cost	US$/t	10.00
G&A	US$/t	1.5
Metallurgical Recovery MG, MAC	%	85
Metallurgical Recovery CN	%	75
Mining Recovery	%	100
Dilution	%	0
Overall Slope Angle	(°)	40
Resource Classification		Indicated and Inferred
Ore Type		All

Resource categories and cut-off grades of the deposit in the resource estimate stated herein on the requirement of "reasonable prospects for eventual economic extraction," assuming an open-pit mining method production scenario. The potential mining open-pit shell used to generate the number below is preliminary and conceptual in nature. The engineering work, including mining cone generation was done by Deswik.

Mineral resource figures based on the ordinary kriging (OK) method, with blocks reblocked to 5 x 5 x 5 m as calculated by Deswik are presented in Table 1-2.

Table 1-2: Central Resource Pit Shell $2600 Au/oz Pit Shell (Effective date: May 15, 2025)

			CN 2025 Model Pit Shell		
Type	**Class**	**Cut-off (g/t Au)**	**Tonnes**	**Au (g/t)**	**Au (oz)**
Blanket	Indicated	0.10	767,664	0.304	7,507
	Inferred	0.10	307,868	0.365	3,614
	Total	**0.10**	**1,075,533**	**0.322**	**11,121**
Saprolite	Indicated	0.10	2,596,854	0.583	48,697
	Inferred	0.10	633,768	0.488	9,945
	Total	**0.10**	**3,230,622**	**0.565**	**58,642**
SAP + BLK	Indicated	0.10	3,364,519	0.520	56,204
	Inferred	0.10	941,636	0.448	13,558
	Total	**0.10**	**4,306,155**	**0.504**	**69,763**

1.11.2 Machichie Deposit

The Mineral Resource estimate for Cuiú Cuiú Oxide Project, Machichie deposit, has been updated by the QP Mr. Walter A Dzick P Geo with W. Dzick Geoconsultants based on the addition of 41 drillholes completed in 2025. Mineralization domains are defined by lithology, grade continuity, and structural information. Indicated and Inferred Mineral Resources were estimated in accordance with the CIM guidelines (CIM 2014) which have been adopted as part of NI 43-101. Mineral resources that are not mineral reserves do not have demonsrated economic viability.

The block model Au grades were estimated into two domain shapes, Blanket and Saprolite. The block model estimates for Machichie were completed in LeapFrog Edge software using the inverse distance squared (ID2) interpolation algorithm in two passes, with the second pass using a slightly larger search ellipse and more flexible sample count parameters. A classification category of Inferred and Indicated was assigned to Mineral Resources based on the understanding of the mineralization, data density, and drill-hole spacing. The average distance for a block estimate was used for classification. Blocks with at least 2 drill holes and a minimum of 4 composites with an average distance of 30 meters or less were classified as Indicated. All other blocks within the 0.1 g/t Au shape were classified as Inferred.

Pit shells were derived to estimate material in the block model with reasonable prospects for eventual economic extraction. Pit shells were developed by considering regular blocks measuring 5 m x 5 m x 5 m on constraining boundaries. Table 1-3 lists the results of the resource estimate within the pit shells and the parameters used.

Table 1-3: Machichie Mineral Resources Reports at Cut-off Grade of 0.1 g/t Au within the Pit Shell*(Effective date: July 23, 2025)

Category	Area	Tonnage (kt)	Grade (g/t Au)	Contained Gold (koz)
Inferred	Blanket	460	0.492	7.3
Inferred	Saprolite	363	0.616	7.2
Total Inferred		**823**	**0.547**	**14.5**
Indicated	Blanket	819	0.432	11.4
Indicated	Saprolite	719	0.726	16.8
Total Indicated		**1,538**	**0.569**	**28.1**
Ind+Inf	Blanket	1,279	0.453	18.6
Ind+Inf	Saprolite	1,082	0.689	24.0
Grand Total All Classifications		**2,361**	**0.561**	**42.6**

Notes: Mineral Resources are inclusive of Mineral Reserves. Tonnes and ounces have been rounded, and this may have resulted in minor discrepancies.

Table 1-4: Machichie Resource Pit Shell Parameters

Assumption	Unit	Mineral Resources
Gold Price	US$/oz	2,600
Refining Charge	US$/oz	30
Royalties	%	4.0
Mining Cost	US$/t	3.50
Fuel Cost	US$/L	1.30

Assumption	Unit	Mineral Resources
Processing Cost	US$/t	10.00
G&A	US$/t	1.5
Metallurgical Recovery MG, MAC	%	85
Metallurgical Recovery CN	%	75
Mining Recovery	%	100
Dilution	%	0
Overall slope angle	(°)	40
Resource Classification		Indicated and Inferred
Ore Type		All

1.11.3 Moreira Gomes (MG) Deposit

The Mineral Resource Estimate for the MG deposit was not updated for this study and uses the estimate completed by VMG Consultoria e Soluções Ltda. (VMG) as documented in the 2024 Cuiú Cuiú Project 43-101 Technical Report and Pre-Feasibility Study Ausenco 2024 (Ausenco, 2024). Mineral resources that are not mineral reserves do not have demonsrated economic viability.

Table 1-5: Geological Resources Calculated by the Ordinary Kriging (OK) Method, with Classification of the Gold. Resources for a Dry Basis, Moreira Gomes (MG) Target (Effective date: October 9,, 2024)

Cut-Off	Class	Type	Volume	Tonnes	Density	Au	M_Au	Au_Capping	M_Au_Capping
Au (g/t)			m^3	t	(t / m^3)	g/t	oz	g/t	oz
0.1	Indicated	BLANKET	3,969,135	5,973,354	1.50	0.34	65,288	0.33	63,774
		SAPROLITE	1,635,830	2,884,546	1.76	0.76	70,565	0.71	66,107
	Inferred	BLANKET	885,565	1,374,089	1.55	0.17	7,454	0.16	7,034
		SAPROLITE	921,458	1,768,831	1.92	0.26	15,053	0.26	14,845

Note:
Au – Average gold grade without application of capping.
M_Au – Resource estimation without application of capping.
Au_Capping – Average gold grade with application of capping.
M_Au_Capping – Resource estimation with application of capping.

1.12 Mineral Reserve Estimate

The Mineral Reserve estimates for the Cuiú Cuiú Project as of July 23, 2025, presented in this report, are based on the Mineral Resources provided by VMG Consultoria e Soluções Ltda (MG) and Dzick Geoconsultants (Central and Machichie). The key modifying parameters used to develop the open-pit Mineral Reserve estimates as of July 23, 2025 are summarized in Table 1-6.

Table 1-6: Mineral Reserve Key Modifying Factors Used on Pit Optimization Run

Modifying Factor	Value
Gold price	US$ 2,250/oz
Gold Refining Charge	US$30/oz
Royalties	4% of Gross Revenue
Exchange rate	R$5.75 = US$1.00
Costs	
Mining	US$3.50/t
Fuel Cost	US$1.30/L
Transportation Cost Central to MG	US$1.41/t
Processing	US$10.00/t processed
General and Administrative (G&A)	US$1,500,000/a
Plant recovery	85% Machichie and MG 75% Central
Mining recovery	95%
Dilution	5% MG and Central 10% Machichie
Overall Slope Angle (OSA)	30-45°

Mineral Reserves within the engineered pit designs were reported using cut-off grades (COG) estimated by rock type, based on a gold price, including an allowance for refining costs, of US$2,220/oz and an exchange rate of R$5.75/US$1.00.

Table 1-7: Mineral Reserves Cuiú Cuiú Project, Effective Date July 23, 2025

Deposit	Area (Mining Method)	Cut-off (g/t)	Probable Reserve			Proven Reserve		
			Tonnage (kt)	Au (g/t)	Ounces (oz)	Tonnage (kt)	Au (g/t)	Ounces (oz)
MG	Open pit	0.20	4,035	0.64	82,912	-	-	-
Central	Open pit	0.25	1,511	0.62	29,959	-	-	-
Machichie	Open pit	0.21	632	0.79	16,032	-	-	-
Total			**6,178**	**0.65**	**128,903**	**-**	**-**	**-**

Notes:

1. CIM (2014) definitions were followed for Mineral Reserves.
2. Mineral Reserves have an effective date of July 23, 2025. The Qualified Person for the estimate is Bruno Yoshida Tomaselli, B.Sc., FAusIMM, an employee of Deswik.
3. Mineral Reserves are confined within an optimized pit shell that uses the following parameters: gold price including refining costs US$ 2,220/oz; mining costs US$ 4.20/t; processing costs US$ 10.00/t processed; general and administrative costs US$ 1.5 M/a; process recovery of 85% for MG and Machichie and 75% for Central; mining dilution of 5% for MG and Central and 10% for Machichie; ore recovery of 95%; pit overall slope angles that range from 30 –45°.
4. Tonnages and grades have been rounded in accordance with reporting guidelines. Totals may not sum due to rounding.

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

1.13 Mining Methods

The mine layout and operations are designed according to the following criteria:

- Mining Areas: Three independent open-pit areas, named Moreira Gomes (MG) Pit, Central Pit and Machichie Pit.
- Waste Rock Storage Facilities (WRSFs): Two facilities are planned—one to serve the MG and Machichie pits, and another dedicated to the Central pit.
- Access and ROM Management: Separate access routes connect each pit to the Run of Mine (ROM) stockpile and crushing pad.
- Ore Handling: Direct ROM feed strategy with no low-grade stockpiling.
- Bench Height: Mining benches are 5 meters in height.

Life-of-Mine (LOM): Planned at six years and two months. Scheduling assumptions include:

- Plant Capacity: 1.0 million tonnes per year (Mt/a).
- Stripping Strategy: No pre-stripping phase required.
- Mining Sequence:
    - Mining starts at the MG Pit, targeting outcropping high-grade ore.
    - Machichie Pit production begins in Year 2, also contributing high-grade material.
    - MG Pit operations continue until depletion, after which final production shifts to the Central Pit, characterized by lower grades and a greater distance from the processing plant.
- Material Movement: Maximum movement of 2.3 Mt/a.

1.14 Recovery Methods

The process selected for recovery of gold from the MG, Central, and Machichie deposits is a conventional on/off heap leach. Mine production will be fed to a primary crusher (mineral sizer) at an average rate of 2,740 t/d. Ore will be crushed to 100% passing 50 mm, mixed with cement, agglomerated, and conveyor-stacked onto on/off heap leach pads, in 5-m-high lifts. Due to the high addition rate of cement of 10 to 15 kg/t, no lime addition is required for pH control.

The stacked agglomerated ore will be leached with a dilute cyanide solution applied through a drip irrigation system. After percolating through the heap, the pregnant gold-bearing solution will flow by gravity to a pregnant solution pond,

where it will be pumped to a carbon adsorption circuit for gold recovery. The leached ore will be drained, rinsed, and subsequently removed using front-end loaders for disposal. Gold will be stripped from the loaded carbon through a pressure Zadra desorption process, followed by electrowinning to produce a sludge. The sludge will then be retorted to remove mercury and refined in a melting furnace to produce gold doré bars.

1.15 Project Infrastructure

Infrastructure to support Cuiú Cuiú Project will consist of site civil work, site facilities and process buildings, a water management system, leached ore disposal facility and in-site electrical power distribution. Site facilities include:

- Mine facilities, including administration offices, truckshop, washbay, HME workshop and gas station.
- Process facilities, including process plant, crusher facilities, stockpile facility, process plant workshop, assay laboratory, heap leach facility (HLF), spent ore pad and waste rock storage facility (WRSF).
- Common facilities include gatehouse and administration building.
- Both the mine facilities and the process facilities serviced with potable water, fire water, compressed air, power (from generators), diesel, communication, and sanitary systems.

The site was selected to provide sufficient area to all facilities required. Accommodation of employees will be located in a camp 5.89 km from the processing plant. Transport of employees will be via paved BR163 highway to Moraes Almeida and then via the all-weather Tocantinzinho – Cuiú Cuiú access road. Employee accommodations will be on the periphery of the Cuiú Cuiú community within a modular campsite with capacity of over 60 people, with accommodations, recreational and medical facilities, laundry and refectory with transport to and from the Minesite by bus and four-wheel drive vehicles.

Additional engineering is needed to confirm the suitability and location on the current area for final mine and processing facilities, should they be constructed.

The overall site plan is shown in Figure 5-1.

The site can be accessed from federal road BR-163, approximately 164 km from the nearest city with airport infrastructure, consisting of a 30 km journey on the Transgarimpeiro state highway which includes a ferry crossing, followed by a further 63 km of all-weather rural public road attending the existing GMining Tocantinzinho Gold Mine and a further 61 km of public unpaved road to the Cuiú Cuiú community and Cuiú Cuiú Project area, located 5 km from the project area.

Cabral Gold plans to improve this 61 km of unpaved road to enhance safety and year-round accessibility. Once the road upgrade is completed, a fleet of equipment will be maintained on the access road to conduct continual maintenance and upgrades, specifically during the rainy months of the year this fleet will increase in size and capacity as necessary.

Material mined from the pits (Machichie, MG and Central) is all sent to processing. There will be no pre-stripping material while the mineralized material will be sent to a ROM pad with storage capacity of 222t/h. All crusher feed is currently envisioned to be hauled from the pit by 25-tonne trucks.

The plant site consists of the necessary infrastructure to support the processing operations. All infrastructure buildings and structures will be built and constructed to all applicable Brazilian codes and regulations. Due to the warm weather conditions, no enclosed buildings will be required for processing operations. The project site will include administration building, plant maintenance shop and warehouse.

The site currently does not have access to grid power. A study conducted by Equatorial Pará, the local power supplier, identified the power demand at Cuiú Cuiú during peak production can be met with construction of a 240 km long, 138 kV transmission line from Novo Progresso city substation to the project site.

The outdoor substation is based on the calculated power demand. One 2,500 kVA, 460 V three-phase 60Hz oil-filled power transformer will be installed, capable of supplying the plant's maximum demand.

The Tapajós River basin covers 492,000 km² in the states of Mato Grosso, Pará, Amazonas, and a small part of Rondônia. It covers 16.8% of the state of Pará. The basin is divided into the following hydrographic sub-regions: Tapajós – Amazonas and Tapajós. Water resources in the area are affected by mining activities, with turbidity and contamination due to suspended solids and pollutants, but no restriction on groundwater extraction. The water take-off will be in two wells located inside a radius of 200 m from the processing plant.

1.15.1 Heap Leach Facility (HLF)

The primary goal of the HLF design is to efficiently extract gold within a geotechnically stable facility. The expected production rate is around 2,740 tonnes per day (t/d) over a 5-year LOM. The heap leach pad is designed as an on/off pad with four cells. The cell pad will be loaded with agglomerated crushed mine material, stacked to a single lift height of 5 meters using grasshopper conveyors and a radial stacker.

The operational leach cycle for a cell lasts about 120 days, during which the leached material is rinsed to remove residual cyanide and then transported to and placed in the leached material stockpile. This stockpile is designed to hold 6.18 million tonnes (Mt) of material over the five-year life of mine. The HLF consists of five ponds: Pregnant Leach Solution (PLS), Barren, Emergency, Rainwater, and Neutralization Ponds. The HLF is built according to North American standards.

1.15.2 Waste Rock Storage Facility (WRSF)

The two WRSF designs have a total storage capacity of 3.54 Mt of waste rock and overburden. Both configurations meet the minimum safety factors for geotechnical stability. The MG WRSF design can store 2.37 Mt and has a maximum height of 64 meters. The Central Section WRSF design has a capacity of 1.17 Mt and a maximum height of 47 meters. The WRSFs are built to North American standards.

1.16 Market Studies and Contracts

Cabral Gold has not completed any formal marketing studies. Market price assumptions and payment terms were based on a review of public information, industry consensus, standard practice and specific data from comparable operations in the region.

For this technical report, a gold price of US$2,500/oz was assumed. Exchange rates of US$1.00 = BRL5.70, and C$1.00 = US$0.74 were applied.

The economic analysis incorporates refining charges and payment terms based on benchmarks for comparable operations in Brazil. Payable gold in doré is assumed to be 99.5%, with a refining and transport charge of US$30.00 per ounce of payable gold.

1.17 Environmental, Permitting and Social Considerations

1.17.1 Environmental Considerations

The Cuiú Cuiú Gold Project is located in a region of ecological sensitivity within the Tapajós River basin, featuring vegetation primarily classified as Dense and Open Ombrophilous Forest. However, historical illegal mining and deforestation have significantly altered the landscape, leaving fragmented ecosystems and degraded forest areas. The biodiversity assessments revealed a rich diversity of flora and fauna, but human activity has already degraded the biodiversity in multiple aspects. Water resources in the area are affected by mining activities, with turbidity and contamination due to suspended solids and pollutants. The Project incorporates extensive environmental monitoring, mitigation measures, and restoration programs, including recovery of degraded areas, biodiversity monitoring, and adherence to international environmental standards.

1.17.2 Closure and Reclamation Considerations

Closure and reclamation planning for the Cuiú Cuiú Project is integral to its development, focusing on minimizing long-term environmental impacts. Short-term goals include topographic restoration, erosion control, and revegetation of disturbed areas. Medium-term efforts prioritize soil nutrient recycling, enhancing physical and chemical properties, and encouraging natural fauna return. Long-term reclamation aims for a self-sustaining ecosystem that integrates recovered forest cover and stable water resources. The reclamation strategy also emphasizes compliance with Article 225 of Brazil's federal constitution, ensuring that any environmental degradation caused by mining is effectively mitigated with sustainable solutions.

1.17.3 Permitting Considerations

The Project operates under Brazil's stringent permitting framework, requiring environmental licensing through the EIA/RIMA process. The Cuiú Cuiú Project holds trial mining licenses, already with their environmental permits. However, environmental permits for the full mining permits are under review. Applications for these permits have undergone thorough environmental baseline studies, addressing key components such as biodiversity, water quality, air quality, and noise. Licensing procedures involve local, state, and federal agencies, ensuring that the Project meets all legal and environmental standards. Anticipated review and approval timelines stretch into 2025, reflecting the complexity of the permitting process for large-scale mining projects in ecologically sensitive areas.

1.17.4 Social Considerations

Socioeconomic studies for the Cuiú Cuiú Project emphasize the importance of stakeholder engagement and community relations. The Project directly impacts local villages, including Cuiú Cuiú and Moraes Almeida, and aims to provide socioeconomic benefits such as job creation, infrastructure development, and capacity building. A key focus is on mitigating potential social risks through communication, education, and participatory management strategies. Social management systems and policies prioritize transparency and collaboration with local populations to ensure the Project delivers long-term positive outcomes. Efforts also include environmental education programs to foster awareness of conservation and sustainable practices among community members.

1.18 Capital and Operating Costs

The capital and operating cost estimates presented in this report provide substantiated costs that support the pre-feasibility study of the Cuiú Cuiú Project. The estimates are based on an open-pit mining operation, the construction of a heap leach pads, and adsorption, desorption, recovery (ADR) Plant, an associated leached ore disposal and management facility, infrastructure, project indirect costs, owner's costs, and provision costs.

All capital and operating cost estimates are presented in US dollars (USD) and Brazilian Reais (BRL), with no allowance for escalation or exchange rate fluctuations. The exchange rates applied are:

- Brazilian Reais (BRL) to US dollars (USD): BRL5.70 = USD1.00.
- Brazilian Reais (BRL) to Australian dollars (AUD): BRL3.65 = AUD1.00.
- Brazilian Reais (BRL) to Euro (EUR): BRL6.50 = EUR1.00.

1.19 Capital Cost Estimate

The capital cost estimate aligns with Class 4 guidelines for a PFS-level estimate with an accuracy range of -20% to +30% as specified by the Association for the Advancement of Cost Engineering International (AACE International). The capital cost estimate, developed in Q2 2025, is based on the proposed design for the Project, on Ausenco's budgetary quotations, in-house project and study database, and insights from similar operations.

The following costs and scope items are excluded from the capital cost estimate:

- Scope changes, project schedule changes, and other associated costs.
- Any facilities or structures not mentioned in the project summary.
- Financing charges and interest during the construction period.
- Demolition or decontamination costs for existing site.

The total initial capital cost for the Cuiú Cuiú Project is US$37.69M. The sustaining capital cost is US$5.46M for Year 3, and US$2.55M in Year 5. The initial capital cost summary is presented in Table 1-8.

Table 1-8: Capital Cost Summary

Description	Total Cost (R$M)	Total Cost (US$M)
Process Plant	78.68	13.80
On-Site Infrastructure	32.72	5.66
Off-Site Infrastructure	9.03	1.58
Other Costs	21.71	3.81
Direct Cost	**141.69**	**24.86**
Project Indirect	33.15	5.82
Owner's Costs	4.20	0.74
Contingency	35.81	6.28
Total	**214.84**	**37.69**

Note: Values may not sum due to rounding.

1.20 Operating Cost Estimate

Operating costs include the ongoing costs of operations related to mining, processing, leached ore disposal and general administrative activities. Table 1-9 provides a summary of the operating costs across all phases of operation, expressed on a US$/t processed basis.

Table 1-9: Operating Cost Breakdown

Item	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed
Labour	1.38	1.37	1.37	1.37	1.37	1.39	1.41
G&A	0.60	0.59	0.59	0.59	0.59	0.60	0.61
Power Generator - Rental	0.26	0.26	0.26	0.26	0.26	0.26	0.30
Maintenance, Fuel and Lubricant	0.57	0.57	0.57	0.57	0.57	0.57	0.58
Internal Access Maintenance	0.22	0.22	0.22	0.22	0.22	0.22	0.22
External Road Maintenance	0.35	0.35	0.35	0.35	0.35	0.35	0.36
Laboratory	0.06	0.06	0.06	0.06	0.06	0.06	0.07
Material Handling	1.13	1.13	1.13	1.13	1.13	1.13	0.73
Drip Emitters	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Raincoat Liner (RCL)	0.67	-	-	-	0.33	-	-
Reagents	1.58	1.54	1.50	1.50	1.48	1.52	1.54
Consumables	0.08	0.13	0.13	0.13	0.13	0.13	0.06
Cement Consumption	3.20	3.07	2.94	3.20	3.13	2.72	2.56
Power - Fuel	1.86	1.85	1.84	1.85	1.84	1.87	1.89
Mining Costs	4.54	9.11	8.01	6.02	6.83	7.43	5.90
Total Operating Costs	**16.55**	**20.29**	**19.01**	**17.28**	**18.33**	**18.28**	**16.26**

Note: Values may not sum due to rounding.

Common to all operating cost estimates are the following assumptions:

- Cost estimates are based on Q2 2025 pricing without allowances for inflation.
- Costs are expressed in USD, using the exchange rate of BRL5.70 = USD1.00.
- The majority of the operations staff is assumed to come from neighbouring municipalities.
- Processing unit operating costs were benchmarked against similar or comparable processing plants.
- Equipment and materials will be purchased as new.
- Reagent consumption rates have been estimated on the metallurgical test results.
- Mobile equipment costs include fuel and maintenance costs.

1.20.1 Sustaining Cost Estimate

Sustaining capital costs were estimated based on specific engineering requirements. The Year 3 sustaining capital cost is US$5.46M; and the Year 5 sustaining capital cost is US$2.55M. The sustaining capital costs summary are presented in Table 1-10.

Table 1-10: Sustaining Capital Costs

Description	Year 3 (US$M)	Year 5 (US$M)
Construction and Erection	4.45	2.08
Indirect Costs	0.30	0.14
Contingency	0.71	0.33
Project Total	**5.46**	**2.55**

Note: Values may not sum due to rounding.

1.21 Economic Analysis

1.21.1 Economic Summary

The Project was evaluated using a 5% discounted cash flow (DCF) analysis on a non-inflated, post-tax basis. The cash flow model includes one year of pre-production costs and five years of operational costs. Cash inflows consist of annual revenue estimates for the mine, calculated using a gold price of US$ 2,500/oz. Cash outflows include capital costs, operating costs, sustaining costs, royalties, and taxes, which are deducted from the inflows to produce the projected annual cash flows.

To reflect the time value of money, annual net cash flow (NCF) projections are discounted back to the beginning of the Project execution using a 5% discount rate. The discounted values of the cash flows are summed to determine the net present value (NPV).

The financial model is based on the Mineral Reserves outlined in Section 15, the mining rates and assumptions presented in Section 16, and processing and recovery methods covered in Sections 13 and 17, respectively. The economic analysis uses the following assumptions:

- A construction period of 12 months.
- A LOM of 6.2 years.
- Results are based on 100% ownership.
- Initial capital costs are estimated at US$37.7M, with sustaining capital, over the LOM, estimated at US$8.0 M.
- LOM operating costs are estimated at US$112.6M.
- Closure and reclamation costs are estimated at US$1.1M.
- LOM royalties are estimated at US$11.1M.
- LOM costs for gold transport and refining are estimated at US$3.4M.

The pre-tax NPV discounted at 5%, is US$84.5M, the IRR is 86.0%, and payback period is 0.82 years. On a post-tax basis, the NPV discounted at 5% is US$73.9M the IRR is 77.6%, and payback period is 0.85 years. A cash flow summary is included below in Table 1-11.

Table 1-11: Economic Analysis Summary

General	Price Base case	Spot Price Case
Gold Price (US$/oz)	2,500	3,340
Mine Life (years)	6.2	6.2
Exchange rate (BRL:US$)	5.7	5.7
Discount rate	5%	5%
Production	**LOM Total / Avg.**	**LOM Total / Avg.**
Ore to Leach (kt)	6,179	6,179
Total Recovered Gold (koz)	113.2	113.2
Total Recovered payable (koz)	113	113
Operating Costs	**LOM Total / Avg.**	**LOM Total / Avg.**
Mining Cost (US$/t ore)	7.08	7.08
Mining Cost (US$/t mined)	3.98	3.98
Processing Cost (US$/t ore)	10.54	10.54
G&A Cost (US$/t ore)	0.60	0.60
Refining & Transport Cost (US$/oz Au)	30.00	30.00
Royalties (US$/oz Au)	98.8	132.4
Total Operating Costs (US$/t ore)	18.22	18.22
Cash Costs (US$/oz Au) *	1,128.6	1,162.2
AISC (US$/oz Au) **	1,209.9	1,243.5

Capital Costs	LOM Total / Avg.	LOM Total / Avg.
Initial Capital (US$M)	37.7	37.7
Sustaining Capital (US$M)	8.0	8.0
Closure Costs (US$M)	1.1	1.1
Financials - Pre-Tax	**LOM Total / Avg.**	**LOM Total / Avg.**
NPV (5%) (US$M)	84.5	159.6
NPV (0%) (US$M)	107.6	198.4
NPV (10%) (US$M)	67.2	130.4
IRR (%)	86.0%	156.4%
Payback (years)	0.82	0.6
Financials - Post-Tax	**LOM Total / Avg.**	
NPV (5%) (US$M)	73.9	137.8
NPV (0%) (US$M)	94.4	171.3
NPV (10%) (US$M)	58.5	112.4
IRR (%)	77.8%	139.3%
Payback (years)	0.85	0.6
Others	**LOM Total / Avg.**	
EBITDA (2 first years) (US$M)	32	50
After-tax CF (2 first years) (US$M)	27	42

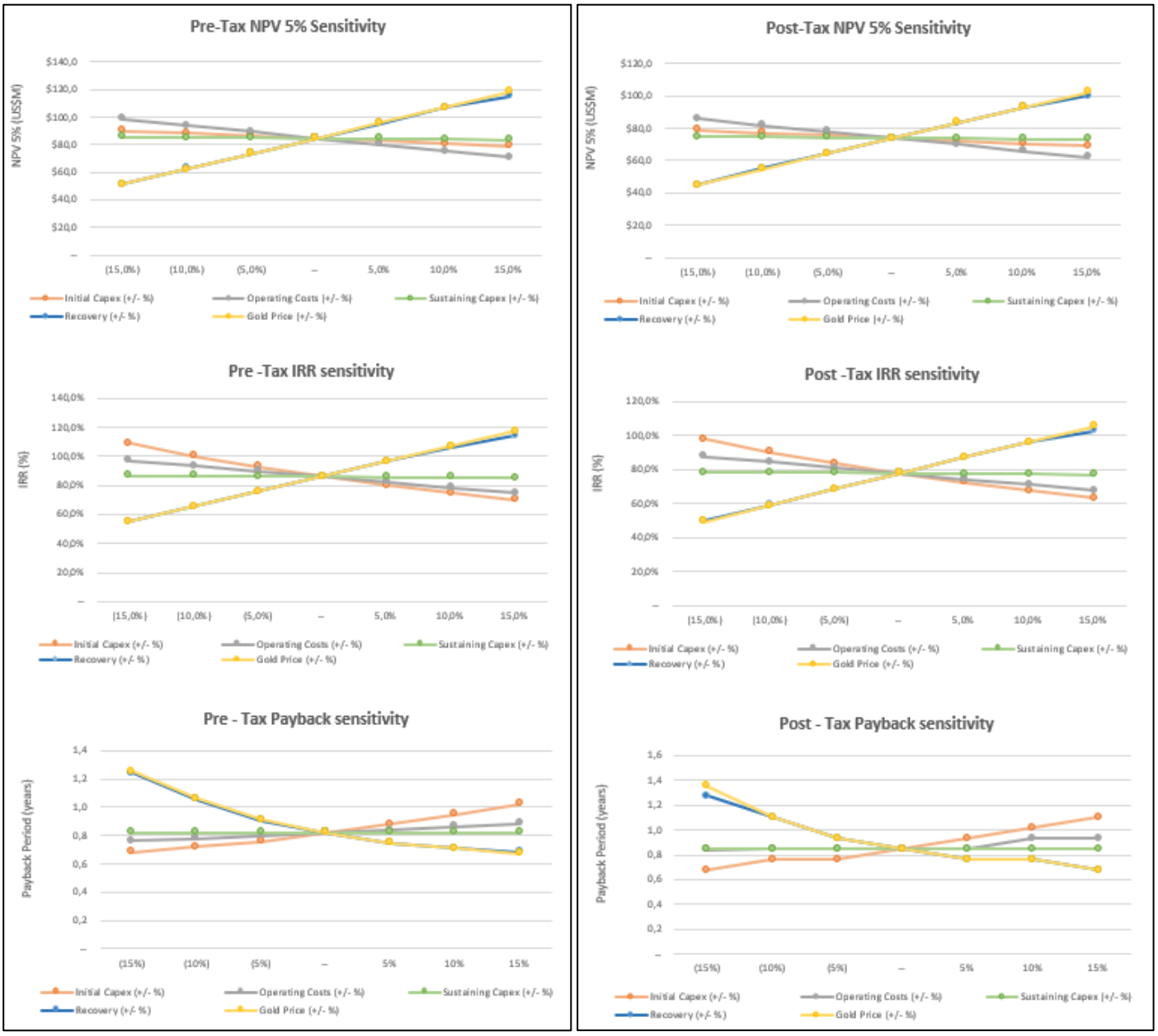
* Cash costs consist of mining costs, processing costs, mine-level G&A and refining charges and royalties.

** AISC includes cash costs plus sustaining capital, closure cost and salvage value.

1.21.2 Sensitivity Analysis

A sensitivity analysis was conducted on the pre-tax and post-tax NPV and IRR of the Project, examining the following variables: initial capital costs, operating costs, sustaining capital costs, gold recovery, and gold price. The analysis indicated that the Project is most sensitive to fluctuations in gold prices, followed by gold recovery, with lesser sensitivity to changes in operating costs, initial capital costs, and sustaining capital costs. The sensitivity results are shown in Figure 1-1.

Figure 1-1: Sensitivity Analysis Results



Source: Ausenco, 2025.

Table 1-12 presents the findings of the sensitivity analyses in pre-tax and post-tax NPV.

Table 1-12: Summary of Sensitivities

Au Price (US$/oz)	Pre-Tax NPV (5%)	Initial Capex (US$M)		Opex (US$M)		Sustaining Capex (US$M)		Au Recovery (%)	
		(-20%)	(+20%)	(-20%)	(+20%)	(-20%)	(+20%)	(-20%)	(+20%)
-25%	$28.6	$36.1	$21.1	$47.1	$10.1	$29.9	$27.3	$4.4	$51.5
-10%	$62.1	$69.6	$54.7	$80.6	$43.7	$63.5	$60.8	$22.4	$89.7
0% (Base Case)	$84.5	$92.0	$77.1	$103.0	$66.0	$85.8	$83.2	$40.3	$115.2
+10%	$106.9	$114.3	$99.4	$125.4	$88.4	$108.2	$105.5	$58.2	$140.7
+25%	$140.4	$147.9	$133.0	$158.9	$121.9	$141.7	$139.1	$85.0	$178.9
Au Price (US$/oz)	**Post-Tax NPV (5%)**	**Initial Capex (US$M)**		**Opex (US$M)**		**Sustaining Capex (US$M)**		**Au Recovery (%)**	
		(-20%)	(+20%)	(-20%)	(+20%)	(-20%)	(+20%)	(-20%)	(+20%)
-25%	$24.6	$31.5	$17.5	$41.4	$7.3	$25.8	$23.3	$6.1	$45.4
-10%	$54.8	$61.3	$48.1	$70.6	$38.2	$56.0	$53.7	$18.9	$78.4
0% (Base Case)	$73.9	$80.4	$67.4	$89.7	$58.1	$75.1	$72.8	$35.2	$100.0
+10%	$92.9	$99.4	$86.5	$108.7	$77.2	$94.1	$91.8	$51.4	$121.7
+25%	$121.4	$127.9	$115.0	$137.1	$105.7	$122.6	$120.3	$74.4	$154.1

1.22 Adjacent Properties

The most important adjacent property is the Tocantinzinho gold mine, situated in the same mineralized corridor that host the Cuiú Cuiú deposit, 25 km away. Commercial production has been declared in September 2024. This mine will produce an average of 175,000 ounces of gold per year, for ten years. The Palito gold mine, located 80 km away from the Cuiú Cuiú Project, has been operating since 2003, has similarities to Cuiú Cuiú mineralization and is also located in the Tapajós province. Other advanced projects in the same province include Coringa and São Jorge.

The QP has been unable to verify the mineralization and production information and that the information is not necessarily indicative of the mineralization on the property that is the subject of the technical report.

1.23 Conclusions and Recommendations

1.23.1 Overview

The results presented in this technical report demonstrate that the Cuiú Cuiú Project is technically and economically viable. It is recommended to continue developing the Project through additional studies, including a feasibility study. Table 1-13 summarizes the proposed budget to advance the Project to a feasibility study level.

Table 1-13: Proposed Budget Summary

Program Component	Estimated Total Cost (US$M)
Drilling	1.00
Mineral processing and metallurgical testwork	0.26
Mineral resource estimation work	0.21
Hydrogeological Work – mining pit	0.05
Geotechnical Work – mining pit	0.04
Mine Planning Work	0.08
Feasibility study – process plant and infrastructure	1.40
Infrastructure - geotechnical work	0.92
Environmental studies and permitting	0.75
Total	**4.71**

2 INTRODUCTION

2.1 Introduction

Cabral Gold B.C. Inc. (Cabral Gold) commissioned Ausenco do Brasil Engenharia Ltda. (Ausenco) to compile an updated Pre-Feasibility Study (PFS) of the Cuiú Cuiú Project (the Project). The PFS was prepared in accordance with the Canadian disclosure requirements of National Instrument 43-101 (NI 43-101) and in accordance with the requirements of Form 43-101 F1. The purpose of this Technical Report is to update the PFS to include updated mineral resource estimates for the Central and Machichie deposits, and a new mineral reserve estimate for the Project.

The responsibilities of the engineering companies who were contracted by Cabral Gold to prepare this report are as follows:

- Ausenco managed and coordinated the development of this report, developed PFS-level designs for the process plant, spent ore stockpile and general on-site infrastructure, developed the consolidated cost estimates, and prepared the economic analysis.
- RBM Serviços Técnicos Ltda. conducted a review of the environmental studies and permitting information and completed the work related to the data verification.
- Deswik completed the work related to mining methods and the mine plan.
- W. Dzick Geoconsultants completed work related to the Machichie and Central Resource.
- Metso conducted comminution testing for the Project.
- KCA conducted metallurgical testing for the Project.

The QP's have relied on Cabral Gold for guidance on applicable taxes, royalties, and other government levies or interests, applicable to revenue or income from the Project.

Cabral Gold is a junior resource company listed on the TSX Venture Exchange (TSX-V: CBR) (OTC: CBGZF). Cabral Gold is engaged in the identification, exploration, and development of mineral properties, with a primary focus on gold properties located in Brazil. The company has a 100% interest in several properties located in the Tapajós Region of Pará State in northern Brazil, including Cuiú Cuiú.

Cabral Gold acquired the Project in 2017 through its acquisition of Magellan Minerais e Prospecção Geológica Ltda (MNM Brazil), formerly a subsidiary of Magellan Minerals Ltd (Magellan). Since the previous Mineral Resource estimate prepared for the Project in October 2022, Cabral Gold has completed Central and MG 2023 infill and step-out drilling as well as infill and step-out drilling to determine an inaugural Machichie oxide resource, and existing Inferred Resources at PDM. The resource estimates were prepared based on drilling completed prior to March 2024 and do not include approximately 3,693 m of RC drilling and 1,062 m of diamond drilling completed since, which will update resources and estimate reserves in the subsequent phase prior to construction decision. Indicated and Inferred

Resources are estimated for the oxide portion of four deposits: Central, MG, Machichie, and Pau de Merenda (PDM). Inferred Resources are not considered as part of the PFS.

2.2 Qualified Persons

The Qualified Persons for this report are listed in Table 2-1. By virtue of their education, experience and professional association membership, they are considered Qualified Person as defined by NI 43-101.

Table 2-1: Report Contributors

Qualified Person	Professional Designation	Position	Employer	Independent of Cabral Gold.
Tommaso Roberto Raponi	P. Eng.	Senior Mineral Processing Specialist	Ausenco Engineering Canada ULC.	Yes
Scott C. Elfen	P.E.	Global Lead Geotechnical Services	Ausenco Engineering Canada ULC.	Yes
Volodymyr Myadzel	P. Geo.	Principal Geologist Consultant	VMG Consultoria e Soluções Ltda.	Yes
Bruno Yoshida Tomaselli	FAusIMM	Consulting Manager	Deswik Mining Consultants Pty Ltd.	Yes
Rodrigo Mello	FAusIMM	Director and owner	RBM Serviços Técnicos Ltda.	Yes
Walter Allan Dzick	MBA, P. Geo.	Resource Geologist	W_Dzick Geoconsultants	Yes

2.3 Terms of Reference

The report supports disclosures in Cabral Gold's news release titled "Cabral Gold Announces Results of Updated Pre-feasibility Study on the Gold-in-Oxide Starter Operation at the Cuiú Cuiú Gold Project," dated July 29, 2025.

This report has been prepared in accordance with National Instrument (NI) 43-101 Standards of Disclosure for Mineral Projects and with the requirements of Forma 43-101 F1.

Mineral Resources and reserves are reported in accordance with the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Definition Standards for Mineral Resources and Mineral Reserves (CIM, 2014) and the CIM Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines (CIM, 2019).

The units used in this report are metric unless otherwise noted. Currencies are expressed in United States dollars (symbol: US$ or currency: USD) unless otherwise stated. Contained silver and gold metal is expressed as troy ounces (oz), where 1 oz = 31.1035 g. All material tonnes are expressed as dry tonnes (t) unless stated otherwise.

2.4 Site Visits and Scope of Personal Inspection

2.4.1 Site Visits

A summary of the site visits completed by the QPs is presented in Table 2-2.

Table 2-2: Site Visits

Qualified Person	Date of Visit	Days on Site
Scott C Elfen, P.E.	June 22–23, 2024	2
Volodymyr Myadzel, P. Geo.	October 1–3, 2023	3
Bruno Tomaselli, FAusIMM	June 24–25, 2024	2
Rodrigo Mello, P. Geo.	June 19, 2021	1
Walter A. Dzick, P. Geo.	May 29–June 2, 2025	3

2.4.2 Site Inspections

2.4.2.1 Site Inspection – Scott Elfen, P.E.

Scott Elfen visited the site between June 22, 2024, and June 24, 2024. Activities during the site visit included the following:

- Visited the Central Sector Pit and WRSF area and reviewed surface and subsurface (existing cut slopes) geotechnical conditions and hydrological conditions.
- Visited the MG Pit and WRSF area and reviewed surface and subsurface (existing cut slopes) geotechnical conditions and hydrological conditions.
- Visited the proposed spent ore stockpile and HLF area and reviewed surface geotechnical conditions and hydrological conditions.
- Reviewed borehole cores to review general surface and subsurface geotechnical conditions.

2.4.2.2 Site Inspection – Volodymyr Myadzel, P. Geo.

Volodymyr Myadzel visited the site between October 1, 2023, and October 3, 2023. Activities during the site visit included the following:

- The purpose of the visit was to get to know the Project and verify the geological exploration work done in the field.
- The technical visit covered the core storage shack, the project area, and the mineralized zone in the field.

2.4.2.3 Site Inspection – Bruno Tomaselli, FAusIMM

Bruno Tomaselli visited the site between June 24, 2024, and June 25, 2024. Activities during the site visit included the following:

- Assessment of road conditions, potential access routes to the site, suitable locations for the processing plant and infrastructure, existing infrastructure conditions, pit and stockpile locations, slope stability in previous excavations, and drill core samples.

2.4.2.4 Site Inspection – Rodrigo Mello, P. Geo.

Rodrigo Mello visited the site on June 19, 2021, and the Brazilian office in Itaituba on June 20, 2021. Activities during the site visit included the following:

- Review of Cabral Gold exploration practices and results.

2.4.2.5 Site Inspection – Walter A. Dzick, P. Geo.

Walter A. Dzick visited the site between May 29 to June 2, 2025. Activities during the site visit included the following:

- Verify the geological exploration work done in the field, proposed new drilling, and visit mineralized zones in the field.
- Visit the core storage shack, discussions on mineralization controls.
- Visit the camp laboratory facilities.

2.5 Effective Dates

This technical report has three significant dates, as follows:

- Cuiú Cuiú MG Deposit Mineral Resource Estimate: October 9, 2024.
- Cuiú Cuiú Central Deposit Mineral Resource Estimate: May 15, 2025.
- Cuiú Cuiú Machichie Deposit Mineral Resource Estimate: July 23, 2025.
- Cuiú Cuiú Project Mineral Reserve Estimate: July 23, 2025.
- Financial analysis: July 29, 2025.

The effective date of this report is based on the date of the financial analysis, which is July 29, 2025.

2.6 Currency, Units, Abbreviations and Definitions

A list of abbreviations and acronyms is provided in Table 2-3, and units of measurement are listed in Table 2-4.

Table 2-3: Abbreviations and Acronyms

Abbreviation	Description
AAS	atomic absorption spectroscopy
ABA	Acid base accounting
ABNT	Brazilian Association of Technical Standards (Associação Brasileira de Normas Técnicas)
Acme	Acme Analytical Laboratories S.A. (ISO-certified laboratory)
ADA	area directly affected
ADR	Adsorption/Desorption and Recovery
AII	areas of indirect influence
AQI	Air Quality Index
Al	aluminum
ALS	ALS Minerals, Inc. (ISO-certified laboratory)
ANM	National Mining Agency (Agência Nacional de Mineração)
APA	Environmental Protection Areas (Área de Proteção Ambiental)
As	arsenic
Au	gold
AVBN Gold	AVBN Gold Prospecção de Mineração Ltda.
Az	azimuth
BGE	Brazilian Institute of Geography and Statistic (Instituto Brasileiro de Geografia e Estatística)
BMP	Best Management Practices
BWi	bond ball mill work index
Cabral Gold	Cabral Gold Inc.
CAD:USD	Canadian American exchange rate
CAMP	Center for Advanced Materials Processing
CERH	State Water Resources Council (Conselho Estadual de Recursos Hídricos)
CFEM	Financial Compensation for Mineral Exploitation (Compensação Financeira pela Exploração de Recursos Minerais)
CG	Central deposit
CIC	carbon-in-column
CIL	carbon-in-leach
CIM	Canadian Institute of Mining, Metallurgy and Petroleum
CIM Definition Standards	CIM Definition Standards for Mineral Resources and Mineral Reserves 2014
CN	Central North
CNRH	National Water Resources Council (Conselho Nacional de Recursos Hídricos)
CoG	cut-off grade
CONAMA	National Council for the Environment (Conselho Nacional do Meio Ambiente)
Cr	chromium

Abbreviation	Description
CR	critically endangered (classification)
CRM	certified reference material
CuEq	copper equivalent
CWi	bond crusher work index
DBH	diameter at breast height
DCF	discounted cash flow
DCIP	direct current resistivity and induced polarization
DDH	diamond-drill hole
DSM	digital surface model
E	east
E-GRG	extended gravity recoverable gold
EIA	Environmental Impact Study
EIA-RIMA	Environmental Impact Study- Environmental Impact Report (Estudo de Impacto Ambiental-Relatório de Impacto Ambiental)
EMBRAPA	Brazilian Agricultural Research Corporation (Empresa Brasileira de Pesquisa Agropecuária)
EN	endangered (classification)
Equinox	Equinox Gold Corporation
ETP	Potential evapotranspiration
ETR	Real evapotranspiration
FA	fire assay
FET	federal excise tax
FGV	Getúlio Vargas Foundation (Fundação Getúlio Vargas)
FLONA	National Forests (Floresta Nacional)
FS	feasibility study
G&A	general and administration
GPR	gross production royalty
Hg	mercury
ICP	inductively coupled plasma
ICP-OES	inductively coupled plasma - optical emission spectrometry
IDW2	inverse distance squared
IDW3	inverse distance cubed
Ig.	stream, creek, or small waterway (Igarapé)
IOCG	iron oxide copper gold
IP	induced polarization
IPHAN	Archaeological Heritage Impact Assessment Project (Projeto de Avaliação de Impacto ao Patrimônio Arqueológico)

Abbreviation	Description
IRGS	intrusion-related gold system
IRR	Internal Rate of Return
ISO	International Organization for Standardization
JB	Jerimum de Baixo
JM	Jerimum Meio
JN	Jerimum North
JV	joint venture
KCA	Kappes Cassiday & Associates
LA	red-yellow latosols
LI	installation license (Licença de Instalação)
LIDAR	light detection and ranging
LO	operating permit (Licença de Operação)
LOM	life-of-mine
LP	preliminary permit (Licença Previa)
MABA	modified acid base accounting
MG	Moreira Gomes
MNM Brazil	Magellan Minerais e Prospecção Geológica Ltda.
MRE	Mineral Resource estimate
N	north
NaCN	sodium cyanide
NAG	non-acid generating
NCF	net cash flow
NE	northeast
NI 43-101	National Instrument 43-101 (Regulation 43-101 in Quebec)
NN	nearest neighbour
NP	neutralization potential
NPV	net present value
NSR	net smelter return
NTS	national topographic system
OK	ordinary kriging
OSA	overall slope angle
Osisko	Osisko Gold Royalties Ltd.
PEA	preliminary economic assessment
PAE	Economic Utilization Plan (Plano de Aproveitamento Econômico)
PAH	Pincock, Allen & Holt

Abbreviation	Description
PAIPA	Archaeological Heritage Impact Assessment Project (Projeto de Avaliação de Impacto ao Patrimônio Arqueológico)
PARNA	National Parks (Parque Nacional)
PCA	Environmental Control Plan (Plano de Controle Ambiental)
PDM	Pau da Merenda
PFS	pre-feasibility study
PGE	platinum group elements
PGM	Pocone Gold Mineração Limitada
PL	Preliminary License
PLG	Small-scale mining permit (Permissão de Lavra Garimpeira)
PLS	pregnant leach solution
PPV	peak particle velocity
PVA	red-yellow argisol
QA/QC	quality assurance/quality control
QP	Qualified Person (as defined in National Instrument 43-101)
RADAM	Radam project
RAIPA	Archaeological Heritage Impact Assessment Report (Relatório de Avaliação de Impacto ao Patrimônio Arqueológico)
RC	reverse circulation
RCL	raincoat liners
RDi	Resource Development Inc
REBIO	Biological Reserve (Reserva Biológica)
RESEX	Extractive Reserve (Reserva Extrativista)
RF	revenue factor
ROM	Run-of-Mine
RQD	rock quality designation
RTO	reverse takeover
S	south
SAG	semi-autogenous grinding
Sandstorm	Sandstorm Gold Ltd.
SCC	Standards Council of Canada
SD	standard deviation
SEMMA	Municipal Environmental Secretariat (Secretaria Municipal de Meio Ambiente)
SG	specific gravity
SGS Geosol.	SGS Geosol Laboratórios Ltda. (ISO-certified laboratory)
SMU	selective mining unit

Abbreviation	Description
SRF	shear reduction factor
SW	southwest
TARP	trigger action response plan
TMF	tailings management facility
TMP	Tapajós Mineral Province
TSX	TSX Venture Exchange
TTDZ	Tocantinzinho Trend Deformation Zone
TVX	TVX Gold Inc.
UCS	unconfirmed compressive strength
UTM	Universal Transverse Mercator coordinate system
UV	ultraviolet
VLF-EM	very low frequency electromagnetic
VMG	VMG Consultoria e Soluções Ltda.
VMS	volcanogenic massive sulphide
VR	velocity and resulting
VU	vulnerable (classification)
W	west
WRSF	Waste Rock Storage Facility

Table 2-4: Units of Measurement

Abbreviation	Description
%	percent
% solids	percent solids by weight
CAD	Canadian dollar (currency)
C$	Canadian dollar (as symbol)
$/t	dollars per metric tonne
°	angular degree
°C	degree Celsius
µm	micron (micrometer)
cm	centimeter
cm^3	cubic centimeter
dBA	A-weighted decibel
g	gram
g/cm^3	gram per cubic centimeter
g/L	gram per liter
g/t	gram per metric ton (tonne)
h	hour (60 minutes)
ha	hectare
HP	horse power
Hz	Hertz
kg	kilogram
kg/t	kilogram per tonne
km	kilometer
km^2	square kilometer
kN	Kilonewton
kPa	kilopascal
Kt/a	Kilotons per year
kW	kilowatt
kWh/t	kilowatt-hour per tonne
L	liter
lb	pound
m, m^2, m^3	meter, square meter, cubic meter
m^3/s	cubed meters per second
M	million
Ma	million years (annum)
masl	meters above mean sea level
mg	milligram
mg/L	Milligrams per liter

Abbreviation	Description
mm	millimeter
Moz	million (troy) ounces
Mt	million tonnes
Mt/a	Million tonnes per annum
MW	megawatt
oz	troy ounce
oz/t	ounce (troy) per tonne
oz/st	ounce (troy) per short ton (2,000 lbs)
ppb	parts per billion
ppm	parts per million
S	second
t	metric tonne (1,000 kg)
ton, st	short ton (2,000 lbs)
t/d	tonnes per day
USD	US dollars (currency)
US$	US dollar (as symbol)
y	year

3 RELIANCE ON OTHER EXPERTS

3.1 Introduction

The QPs have relied on other expert reports that provided information regarding mineral rights, surface rights, property agreements, royalties, environmental, permitting, social and community impacts, social license, closure and taxation for sections of this Report.

3.2 Property Agreements, Mineral Tenure, Surface Rights and Royalties

The QPs have not independently reviewed ownership of the Project area and any underlying property agreements, mineral tenure, surface rights, or royalties. The QPs have fully relied upon, information derived from Cabral Gold and legal experts retained by Cabral Gold for this information through the following documents:

- For the purpose of the Summary and Section 4 of this Technical Report, the QPs have relied on ownership information provided in a legal opinion by Ilaria Mittiga Advocacia dated April 17, 2024, entitled Brazilian Mineral Rights' Title Opinion. The QP have not researched property title or mineral rights for the Cuiú Cuiú Project and expresses no opinion as to the ownership status of the property.

3.3 Environmental, Permitting, Closure, and Social and Community Impacts

The QPs have fully relied upon information derived from Cabral Gold and experts retained by Cabral Gold for information related to permitting, and social and community impacts through the following:

- The company Magellan Minerals Ltda. hired the company Terra Meio Ambiente to prepare the Environmental Impact Study and Environmental Impact Report (EIA/RIMA) to subsidize the Environmental Feasibility process (Preliminary License) to be processed at the Secretary of Environment and Sustainability (SEMAS/PA) for the process DNPM No. 850.615/2004 and DNPM No. 850.047/2005 in the municipality of Itaituba, located in the state of Pará. Data cited in this section of the document refers to Volume I of the Environmental Impact Study of 2020, which is subdivided into five volumes, and the RIMA is presented in a Single Volume. Other data is sourced from the RCA-PCA report also prepared by Terra Ambiente.

This information is used in support of Section 20.

3.4 Taxation

The QPs have fully relied upon, information supplied by Cabral Gold for information related to taxation as applied to the financial model as follows:

- Machado Nunes Advogados (2024). "Brazil CIT Rate," internal document prepared for Cabral Gold and emailed to Ausenco on August 23, 2024.

This information is used in support of Section 22.

4 PROPERTY DESCRIPTION AND LOCATION

4.1 Introduction

The Cuiú Cuiú Gold Project is located within the Amazon Basin of Brazil, at an approximate latitude of 5.92°S and longitude of 56.56°W (UTM-SAD69 coordinates 9,344,890 N, 547,930 E). The property is in the municipality of Itaituba, in Pará State, 1,440 km north-northwest of Brasília, 2,200 km north-northwest of São Paulo, and 1,035 km southwest of the Atlantic coast port city of Belém (Figure 4-1 and Figure 4-2).

The elevation on the property ranges between 90 and 300 m above sea level (masl). Cuiú Cuiú features rolling topography with moderately incised streams and northwest-trending ridges which rise to 100 m above low-lying valleys (Figure 4-2).

4.2 Mineral Tenure

Within the Cuiú Cuiú Gold Project, there are 18 (eighteen) Mineral Rights under the Company's name (or in which it holds interests as detailed below), of which:

(i) One is an application for an exploration permit awaiting approval by the National Mining Agency (ANM).

(ii) Four exploration permits, for which ANM has approved term renewals, and 11 (eleven) have filed Final Negatives Reports that have either been confirmed by ANM or are pending confirmation.

(iii) Eleven exploration permits have been transferred by the Company to the Cooperativa dos Garimpeiros Condominos Superficiarios Do Cuiú Cuiú (Cooperative) and transformed into small-scale mining permits (PLGs).

(iv) Two applications for mining concessions (Mineral Rights numbers 850.047/2004 and 850.615/2004). For both applications, the Company also holds two trial mining permits, as detailed below.

In relation to item (iii) above, despite the transfer of those exploration permits to the Cooperative, the Company has a Cooperation Agreement in place. This agreement grants the Company the right to continue exploration activities within areas covered by the PLGs/Mineral Rights, with full and unrestricted access. Additionally, if final positive reports are submitted to and approved by ANM, the Company holds an option to reacquire these Mineral Rights from the Cooperative by paying the amounts specified in the Cooperation Agreement.

The Company may terminate this cooperation agreement at its sole discretion and for any reason. In such a case, no payment will be owed to the Cooperative, and the Cooperative will have no obligation to assign the Mineral Rights back to the Company.

The Cuiú Cuiú Project covers 11,979.82 Ha of direct ownership and 18,582.91 Ha of indirect ownership through the Cooperative, totaling 30,562.73 Ha (Table 4-1). The three main drilling targets are located within Mining Application Licenses 850.615/2004 and 850.047/2005 (Figure 4-3).

Through its wholly owned subsidiary, Magellan Minerais e Prospecção Geológica Ltda. (MNM Brazil), Cabral Gold holds an additional five exploration licenses, one application, and one PLG application under the Cooperative agreement (Cooperative) in the surrounding Tapajós Region, as well as one mining application in Goiás state, held in joint venture (JV) with AVBN Gold Prospecção de Mineração Ltda. (AVBN Gold), totaling 16,094.34 Ha. MNM Brazil currently controls a total of 116,003.92 Ha in Brazil, of which 69,346.85 Ha have negative reports pending analysis.

The final reports on Licenses 850.615/2004 and 850.047/2005 were approved on October 29, 2015, and November 12, 2015, respectively. The Economic Utilization Plan (PAE, Plano de Aproveitamento Econômico) was submitted on October 27, 2016. Following amendment requests from ANM in 2018, the revised PAE was resubmitted in August 2018 and is currently awaiting ANM's analysis.

MNM Brazil resumed exploration in August 2017 under a Provisional Measure (Medida Provisória) that allows exploration following the submission of the final report, which has since been ratified into law in the New Brazilian Mining Code. On December 23, 2020, the EIA-RIMA (environmental background study) was submitted as part of the mining applications for Licenses 850.615/2004 and 850.047/2005 within the legally mandated time limit. Concurrently, on November 3, 2021, an application for six trial mining licenses (Guias de Utilização) was submitted for the Central (CG), Pau da Merenda (PDM), MG and Machichie target areas. The environmental licensing for these trial mining licenses included the submission of a formal RCA/PCA report to the state SEMAS/PA in December 2022. The preliminary license (LP) and installation license (LI) were approved and published on June 14, 2022. On February 3, 2021, ANM published two trial mining licenses for the MG and Machichie target areas, each allowing for a total of 50,000 t/a per tenement. On August 27, 2021, a request for reconsideration of the application was submitted to include the Central and PDM targets. Additionally, a request for an increase in mining volume was made on April 15, 2022, with technical approval submitted on April 18th. This request was subsequently ratified by a unanimous vote of the ANM Directors in Brasília on May 25, 2022. The increase in volume was officially published on June 8, 2022. The current Trial Mining Licenses now have a total capacity of 300,000 t/a, with 200,000 t/a allocated to License 850.615/2004 and 100,000 t/a to License 850.047/2005, covering all four target areas mentioned above, as well as additional areas. On November 16, 2023, a request was submitted to increase the mining volume for the 850.047/2005 tenement, from the current 100,000 t/a to 300,000 t/a, along with a request to renew the Trial Mining License for another three years. A renewal request for the 850.615/2005 Trial Mining License for an additional three years was also submitted at that time. Both requests are currently under review by ANM.

In Brazil, priority for license applications in free areas is granted on a "first come, first served" basis. Applications must adhere to an ANM format and include a plan or map with the claim's coordinates. Once the ANM evaluates an application, it is forwarded to Brasília for publication, resulting in the issuance of the "alvará de pesquisa," or exploration permit (license as detailed in Table 4-1). The information in Table 4-1 is accurate as of the effective date of this report. The duration of the exploration permit can be verified on the official ANM website.

In 2020, a new public auction system was established for all areas that become available for application. Groups of tenements are offered for public bidding, and if multiple applicants express interest, the tenements proceed to an online auction, with the highest bidder securing the tenement. If only one applicant is interested, the application process continues as previously described. If there is no interest in these areas, they become available for application as outlined earlier.

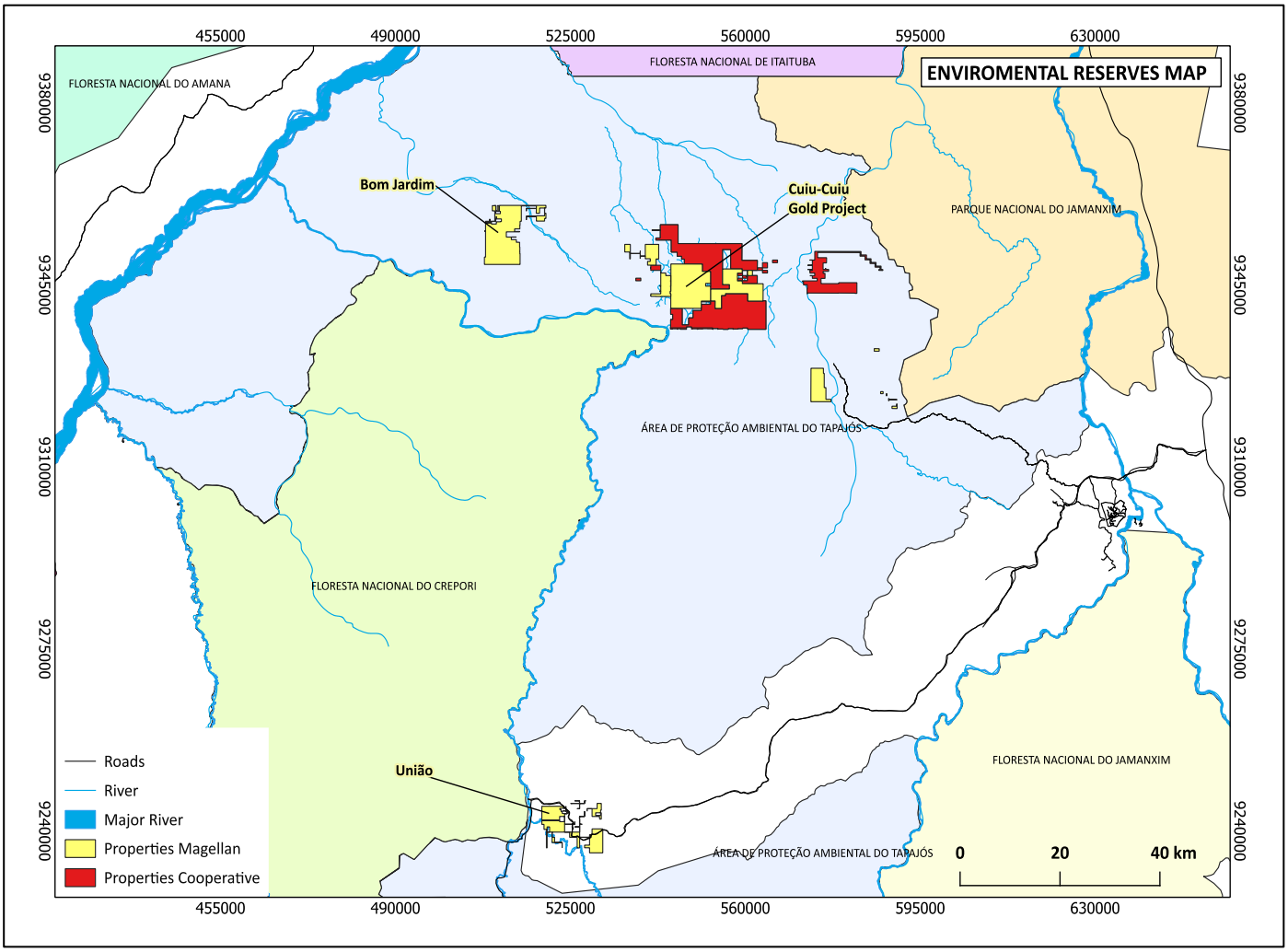
The Gazette date listed in Table 4-1 indicates the date the license is granted, which typically occurs one to four years after the application is submitted. Within three years of the license grant date, the first report detailing the work completed must be submitted to ANM. If accepted, a subsequent three-year term is granted. After the six-year period, a final report must be submitted. Once the final report is submitted, an application for an exploitation license must be made to retain the concession. Under the new Mining Code, exploration can continue on the licenses after the Final Report is submitted, provided that the ANM is notified.

Table 4-1: Cuiú Cuiú Property Exploration Permits and Applications

No. ANM	Area (Ha)	No. Alvará (License No.)	DOU (Gazette) First 3 Yrs	Garimpo (Target)	Preliminary Report	DOU (Gazette) Renewal 3-6 Yrs	Final Report	Mining Plan Application	Final Report Approved	Plano de Lavra (Mining Plan) Application Approved	Environmental Report (EIA-RIMA) Submitted	Status	Substance	Comments
PARÁ STATE														
MAGELLAN														
850.616/2004	3,555.92	4822	9/6/2014	União	4/4/2017							License	Gold	
850.472/2006	7,154.79	8535	2/9/2013	Bom Jardim	20/6/2016							License	Gold	PRELIMINARY REPORT DENIED. APPEAL FILED ON 05/12/2016.
850.614/2004	1,109.30	4821	9/6/2014	Carneirinho	4/4/2017							License	Gold	PRELIMINARY REPORT PRESENTED
850.397/2017	100	3667	1/6/2018	Cuiú Cuiú	2/4/2021							License	Gold	
850.398/2017	943.49	3209	8/5/2018	Cuiú Cuiú/ Bom Jardim	9/3/2021							License	Gold	
850.289/2018	5.07	4599	19/6/2018	Cuiú Cuiú	20/4/2021							License	Gold	
850.615/2004	6,230.67	11129	28/11/2006	Cuiú Cuiú	22/9/2009	28/10/2010	28/10/2013	27/10/2016	29/10/2015		23/12/2020	Mining Application	Gold	FINAL REPORT APPROVED ON 29/1082015) - MINING APPLICATION ON 27/10/2016.
850.047/2005	3,572.76	8544	15/9/2006	Mineiro	13/7/2009	28/10/2010	28/10/2013	27/10/2016	12/11/2015		23/12/2020	Mining Application	Gold	FINAL REPORT APPROVED ON 29/1082015) - MINING APPLICATION ON 27/10/2016.
850.139/2017	50.29			Tocantinzinho								Application	Gold	
850.046/2017	1,829.62	4396	6/6/2017	Tocantinzinho	7/4/2020	16/11/2022	16/11/2025					License	Gold	
COOPERATIVE														
850.087/2023 (850.041/2006)	9,042.42	8543	2/9/2013	Cuiú Cuiú	20/6/2016	23/8/2018	5/3/2023					PLG	Gold	
850.088/2023 (850.251/2006)	8,896.73	9686	3/9/2019	North Cuiú	5/7/2013	3/10/2018	15/4/2023					PLG	Gold	
850.817/2018	50.11	1273	3/4/2019	Cuiú Cuiú	2/2/2022							Application PLG	Gold	
850.818/2018	44.6	1274	3/4/2019	Cuiú Cuiú	2/2/2022							Application PLG	Gold	
850.819/2018	50	1275	3/4/2019	Cuiú Cuiú	2/2/2022							Application PLG	Gold	
850.820/2018	50	1276	3/4/2019	Cuiú Cuiú	2/2/2022							Application PLG	Gold	
850.821/2018	50	1277	3/4/2019	Cuiú Cuiú	2/2/2022							Application PLG	Gold	
850.822/2018	100	1278	3/4/2019	Cuiú Cuiú	2/2/2022							Application PLG	Gold	
850.823/2018	50	1279	3/4/2019	Cuiú Cuiú	2/2/2022							Application PLG	Gold	
850.851/2018	199.04	1280	3/4/2019	Cuiú Cuiú	2/2/2022							Application PLG	Gold	
850.852/2018	50.01	1281	3/4/2019	Cuiú Cuiú	2/2/2022							Application PLG	Gold	
850.211/2018	3,504.72	1608	10/4/2019	Tocantinzinho	9/2/2022							Application PLG	Gold	
Total Ha	**46,639.54**													

Source: Cabral Gold, 2024.

Figure 4-1: Properties and Conservation Units Map



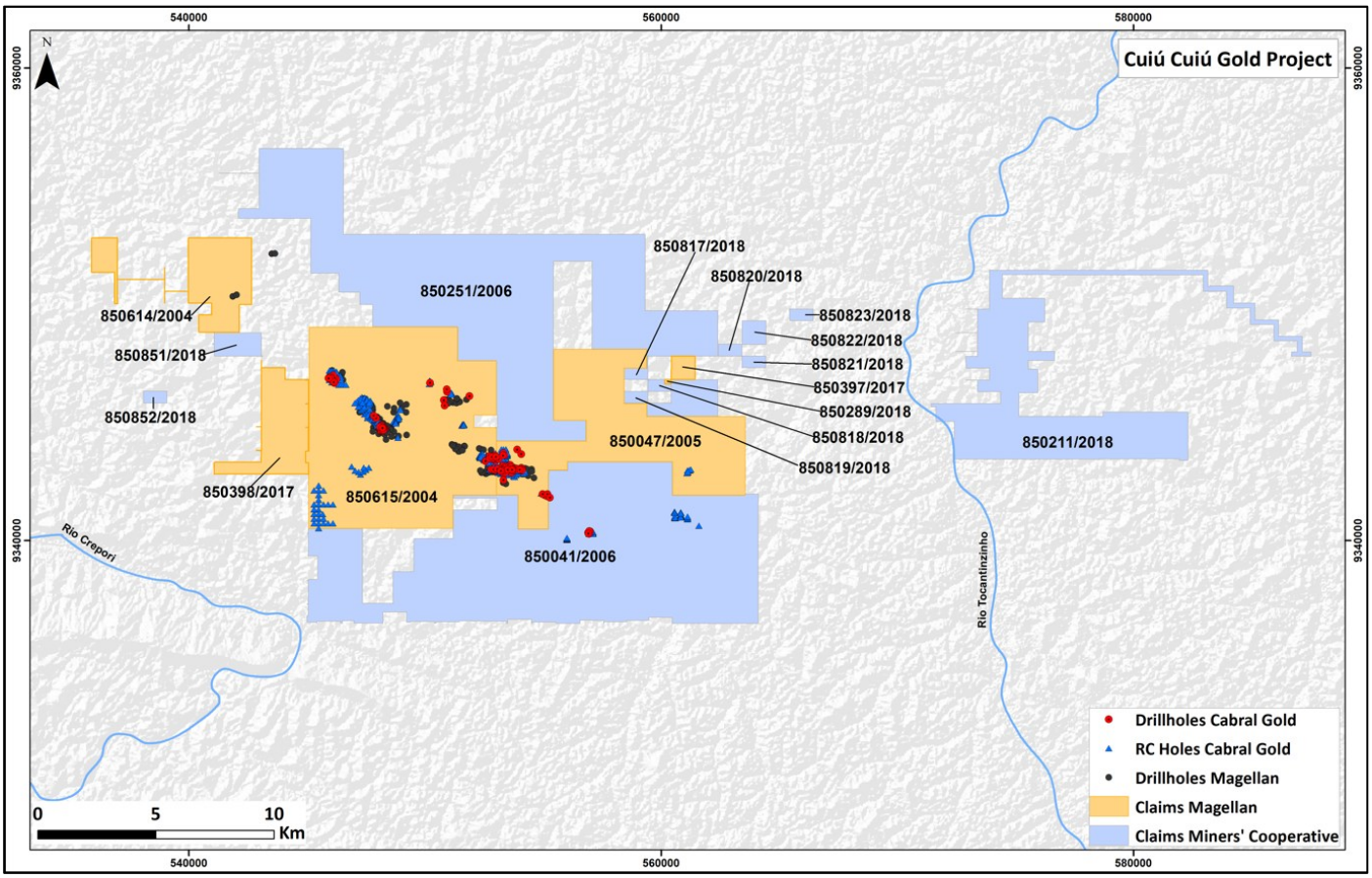
Source: Cabral Gold, 2024.

Figure 4-2: Aerial View of Property



Source: McMahon, 2011.

Figure 4-3: Cuiú Cuiú Claim Map



Source: Cabral Gold, 2024.

In McMahon (2011), PAH states that at the Cuiú Cuiú Gold Project, all the license boundaries held at that time were verified using handheld GPS, and the entire exploration program was carried out within the property limits.

The QPs cannot provide authoritative commentary on the certainty and timing of the granting or renewal of the exploration license applications. It is not expected that a failure to grant the licenses will significantly affect the recommended exploration program.

Additionally, the QPs cannot comment with authority on the certainty and timing of the approval of the two mining applications.

Cabral Gold acknowledges that determining the certainty of license approvals is a challenging question to address. It notes that MNM Brazil has completed all necessary work programs, submitted all required documentation, and made the necessary tax payments for license renewal. Cabral Gold expresses a high degree of confidence that these licenses will either be published or renewed in the near future. Licenses 850.041/2006 and 850.251/2006 were both renewed

for an additional three-year extension on August 23, 2018, and October 3, 2018, respectively. They were subsequently transferred to the Cooperative in January 2023 and converted to PLGs in July 2023. All current expiry dates have also been officially extended by an additional 15 months from the original expiry dates due to the COVID pandemic.

With respect to the Mining Applications for 850.047/2005 and 850.615/2004, Cabral reports that both received approval for their Final Reports, and the Economic Utilization Plan (PAE) has been submitted to the ANM and is currently under review. These two properties contain all Mineral Resources reported herein.

Additionally, Cabral Gold notes that under the New Mining Code of Brazil, exploration can continue following the submission of the Final Report. A letter notifying the ANM of continuation of exploration has been registered, as required by the code, ensuring that any delays in processing of the Mining Application will not impact the planned exploration programs.

The EIA-RIMA background environmental study commenced in April 2018 and continued until September 2020. The EIA-RIMA process requires a minimum of one year of data collection before an application for an environmental license can be filed. The EIA-RIMA report was officially registered with the State Environmental Agency on December 23, 2020. Any new data and resource estimates can be incorporated into to the PAE or included in a complementary report. A complementary report was submitted to the ANM at their request as part of the Trial Mining Licensing process.

The Company submitted applications for several Trial Mining Licenses in December 2020. Two licenses were granted on February 3, 2021, for the 850.615/2004 and 850.047/2005 tenements. These two Trial Mining Licenses cover a total of 85 Ha in the MG and Machichie areas, allowing the Company to process up to 100,000 t/a of ore, pending the approval of environmental licenses that have been applied for.

A request for reconsideration of the Trial Mining application to include the Central and PDM targets was submitted on August 27, 2021. An additional request for an increase in mining volume was submitted on April 15, 2022, with technical approval submitted on April 18 and subsequently ratified by a unanimous vote by the ANM Directors in Brasília on May 25, 2022. The increase in volume was officially published on June 8, 2022. The current Trial Mining Licenses now have a total capacity of 300,000 t/a, with 200,000 t/a allocated to License 850.615/2004 and 100,000 t/a to License 850.047/2005, covering all four target areas mentioned above, as well as others.

A request for renewal of the two Trial Mining licenses was submitted in November 2023 with a request to increase the total capacity of License 850.047/2005 to 300,000 t/a. A technical approval was submitted on September 17, 2024, and is currently awaiting a vote by the ANM Directors.

To the extent known, there are no other significant factors and risks that may affect access, title, or the right or ability to perform work on the Project that have not been discussed in this report.

The QP is not aware of any significant risks that might impact the title or the right to perform work on the property.

4.2.1 Exploration Rights and Obligations

The following outlines Cabral Gold's rights and obligations concerning its exploration activities at Cuiú Cuiú:

- Rights
  - To perform the necessary work to define the deposits within the maximum allowable term of the license, which is three years. This term can be extended for an additional equal period, at the discretion of ANM, provided that all conditions stipulated by the Brazilian Mining Code are fully complied with.
  - To negotiate the deed. The holder may grant or transfer the claims prior to the approval of the final exploration report of exploration work, only requiring the prior consent of ANM.
  - To relinquish the title, without compromising its obligations under the Mining Code.
- **Obligations**
  - To commence exploration, work no later than 60 days after the license is published in the official gazette, and to avoid stopping or interrupting work without a valid reason for more than three consecutive months or 120 non-consecutive days.
  - To conduct exploration activities under the supervision of a geologist or mining engineer who is legally qualified in Brazil.
  - To notify the ANM of any occurrence of mineral substances not covered in the license agreement, as well as the initiation or resumption of exploration work and any potential interruptions.
  - To carry out the exploration work and submit a detailed report on the activities conducted to the ANM before the expiration of the license or its extension.
  - To pay annual fees to the Federal Government as outlined in Table 4-2 below. As of August 31, all applicable fees have been paid.

Table 4-2: Federal Government Annual Fees

Period	Annual Fees (R$/Ha)
First 3 years	4.74
Second 3 years	7.11

4.3 Agreements

4.3.1 Previous Agreements

At the time of the QP's site visit, there were only a few garimpeiros (artisanal miners) residing within the License areas, extracting oxidized surface material (saprolite) from the claims. They do not hold PLGs, and they do not have legal rights over the surface area.

In 2006, Magellan entered into an agreement with the local garimpeiros at Cuiú Cuiú to explore and mine their properties. This agreement included annual payments over a five-year period.

In November 2010, a five-year renewal of the contract was executed, which included a 25% increase in the annual payment. The surface access contract terminated in 2015, and Magellan was two years behind on payments.

In March 2017, the agreement with the local garimpeiros at Cuiú Cuiú was renewed. Further details can be found in Section 4.3.2.2.1.

4.3.2 Cabral Gold Agreements

To acquire the Cuiú Cuiú Project, a current subsidiary of Cabral Gold acquired MNM Brazil along with its liabilities. To advance its field programs on the property, Cabral Gold has amended one surface access agreement and established new agreements.

4.3.2.1 Project Acquisition

As of September 30, 2015, Magellan's management was owed approximately C$2.4 M for loans extended to the Company, unpaid compensation, and unreimbursed expenses incurred on behalf of Magellan. The management proposed that C$500,000 of these liabilities be settled through an exchange for Magellan's interest in MNM Brazil, a wholly owned subsidiary of Magellan.

Magellan had three Brazilian subsidiary companies: MNM Brazil, Chapleau Brazil (a wholly owned subsidiary of Chapleau Resources Limited, which was also a wholly owned subsidiary of Magellan) and Pocone Gold Mineração Limitada (PGM), in which MNM Brazil held a 35% stake.

MNM Brazil held the following assets:

- Cuiú Cuiú
- Bom Jardim
- União

A new private company registered in British Columbia, referred to as "Newco," was established and acquired 100% of Magellan's shares of MNM Brazil. This company was subsequently renamed Cabral Gold Ltd. (Cabral Gold).

The consideration for the interest in MNM Brazil amounted to C$500,000, which took the form of unpaid liabilities owed to certain members of management, all of whom became Insiders in Cabral Gold.

Before the transaction was finalized, all staff of MNM Brazil were terminated, resulting in an estimated cost of C$280,000, which was paid by Magellan.

A 1% net smelter return (NSR) royalty on Cuiú Cuiú is held by Sandstorm Gold Ltd, while a 0.5% NSR is held by Anfield Gold Ltd. (now Equinox Gold Corp.). These commitments were retained under MNM Brazil and would be assumed by

Cabral Gold. Further details on these royalties can be found in Section 4.3.2.3. On May 10, 2017, San Angelo, Cabral Gold and 1116669 B.C. Ltd (a wholly owned subsidiary of San Angelo) entered into an amended and restated Business Combination agreement, which was further amended on August 11, 2017, and August 30, 2017 (the "Business Combination Agreement"). Under this agreement, San Angelo would acquire Cabral Gold Ltd. by way of a three-cornered amalgamation. Cabral Gold Ltd would amalgamate with 1116669 B.C. Ltd to form Cabral Gold B.C. Inc, which would be a wholly owned subsidiary of San Angelo. Concurrently with the closing of the Business Combination, San Angelo would implement a 1:5 consolidation of its common shares, and shareholders of Cabral Gold would receive 0.18 of one post-consolidation common share of San Angelo for each common share of Cabral Gold Ltd held.

The Business Combination was a reverse takeover of San Angelo by Cabral Gold Ltd., in accordance with the policies of the TSX Venture Exchange. Upon completion of the Business Combination, San Angelo would be recognized as the "Resulting Issuer" as defined by the TSX Venture Exchange policies and would continue the operations of Cabral Gold. The Business Combination would enable San Angelo to acquire Cabral Gold and take control of the Cuiú Cuiú Project.

Upon the closing of the Business Combination, San Angelo Oil Limited announced that it had successfully completed the previously disclosed Business Combination with Cabral Gold Ltd. and 1116669 B.C. Ltd., and subsequently changed its name from "San Angelo Oil Limited" to "Cabral Gold Inc."

MNM Brazil is a wholly owned subsidiary of Cabral Gold Inc.

4.3.2.2 Surface Access Agreements Cuiú Cuiú Property

4.3.2.2.1 Condominium Agreement

On February 19, 2006, MNM Brazil entered into a surface access agreement with the holders of traditional surface rights for the Cuiú Cuiú property. The owners are organized into a 'condominium' (similar to a cooperative but with fewer rights), consisting of both minority and majority stakeholders.

The agreement from February 19, 2006, has been amended and extended several times, with the most recent amendment occurring on March 29, 2017. Under the current terms of the agreement, MNM Brazil is required to pay R$6,300 per year (approximately C$1,613 as of December 31, 2020) to each of the 20 majority stakeholders and R$3,150 per year (C$806) to each of the 62 minority stakeholders.

The agreement stipulates that if an economically viable gold resource is identified, MNM Brazil will make an additional payment to the holders of traditional surface rights based on the defined amount of gold (measured in accordance with Australasian Joint Ore Reserves Committee definitions) as follows:

- Less than 1.0 million ounces (Moz): US$2.0M
- 1.0 Moz to 2.0 Moz: US$3.0M
- 2.0 Moz to 3.0 Moz: US$4.0M
- 3.0 Moz to 4.0 Moz: US$6.0M

- More than 4.0 Moz: an additional US$3.0M for every additional million ounces identified in excess of 4.0 Moz of contained gold.

Upon submission and approval of the final exploration reports on the areas in question to the ANM, or at any point when the size of the gold reserve is determined to be economically viable (according to a formal feasibility study), MNM Brazil must provide written notification to the condominium. Following this notification, the specified payment must be made within 90 days.

The surface access agreement with the garimpeiro condominium grants MNM Brazil with the right to acquire any stakeholder's interest at any time for a predetermined price outlined in the agreement. Such acquisitions are intended to consolidate land tenure over strategic areas.

In 2020, the Company opted to acquire a minority stakeholder's interest at a negotiated price of R$100,000 (approximately C$31,000). The full purchase price was paid in 2020.

Following the Brazilian National Mining Agency (ANM) publication of the two trial mining licenses (Guias de Utilização) for Machichie and MG in early January 2021, the company planned to acquire various majority and minority interests in the condominium underlying the trial mining licenses.

In 2021, the Company decided to acquire one minority stakeholder's interest in PDM for a negotiated price of R$ 100,000 (approximately C$31,000), as well as five majority stakeholder interests at Central, PDM and MG, Machichie and Nova Aliança at negotiated prices of R$457,600 (approximately C$111,000), R$468,900 (approximately C$123,000), R$474,000 (approximately C$117,000), R$474,000 (approximately C$117,000), and R$470,000 (approximately C$17,500). The purchase prices were paid in full during 2021.

In 2022, the Company decided to acquire a majority stakeholder's interest in PDM & Central for a negotiated price of R$410,000 (approximately C$112,000). The full purchase price was paid in 2022.

In 2023, the Company opted to acquire a majority stakeholder's interest at Central for a negotiated price of R$457,600 (approximately C$111,000), which was also paid in full during 2023.

In 2024, the Company chose to acquire a minority stakeholder's interest at MG for a negotiated price of R$100,000 (approximately C$31,000). The full purchase price was paid in 2024.

As of August 8, 2024, Magellan Brazil owned eight majority interests and two minority interests in the Cuiú Cuiú condominium.

4.3.2.2.2 New Surface Access and Purchase Agreements within the Cuiú Cuiú District

In 2020, MNM Brazil entered into three new surface access and purchase agreements covering a total of 9,285 Ha situated to the northeast and east of the main Cuiú Cuiú property.

4.3.2.2.2.1 Garimpo Cilmar

In August 2020, MNM Brazil entered into an agreement that granted access to a parcel of land with total area of approximately 5,447 Ha, situated northeast of the main Cuiú Cuiú property. The monthly fee for the year ending August 2024 amounts to R$15,318 (C$3,764), and after that, the monthly charge will be adjusted according to official inflation indices.

4.3.2.2.2.2 Garimpo Santa Barbara

In March 2020, MNM Brazil entered into an agreement that provided access to a parcel of land totalling approximately 2,769 Ha in the Nova Aliança area, situated southeast of the main Cuiú Cuiú property. The monthly fee for the year ending August 2024 is set at R$15,096 (C$3,709).

4.3.2.2.2.3 Garimpo Nova Aliança

In February 2020, MNM Brazil entered into an agreement that provided access to a parcel of land totalling approximately 1,069 Ha in the Nova Aliança area, located east of the main Cuiú Cuiú property. The monthly fee for the year ending May 2022 is R$18,870 (C$4,637).

Each of the three agreements includes an option that allows MNM Brazil to purchase the respective property by making a payment to the owner based on the amount of gold identified on the property at the time the option is exercised, as measured according to ANM provisions, as follows:

- Less than 1.0 Moz: US$1.0M
- 1.0 Moz to 2.0 Moz: US$2.0M
- 2.0 Moz to 3.0 Moz: US$3.0M
- 3.0 Moz to 4.0 Moz: US$4.0M
- More than 4.0 Moz: an additional US$1.0M for every additional million ounces identified in excess of 1.0 Moz of contained gold to a maximum of US$2.0M.

4.3.2.3 Royalty Agreements

4.3.2.3.1 Sandstorm NSR

In May 2012, Magellan, the former parent company of MNM Brazil, and MNM Brazil granted Sandstorm Gold Ltd. (Sandstorm) a 1.0% NSR on the Cuiú Cuiú Project in exchange for US$500,000. Magellan was required to pay an advance royalty of US$250,000 upon obtaining a feasibility study that recommends placing all or part of the Cuiú Cuiú Project into production, followed by an additional advance royalty payment of US$250,000 on each one-year anniversary of that date until the property begins commercial production. As part of the agreement, Magellan granted Sandstorm a right of first refusal on any future royalty or gold-stream financing related to the Cuiú Cuiú Project.

Magellan's rights and obligations under this agreement were transferred to Cabral Gold Ltd. through an agreement dated May 2, 2016.

4.3.2.3.2 Equinox NSR

Equinox Gold Corp. (Equinox) holds a 0.5% royalty on the Cuiú Cuiú property, which is subordinate to the Sandstorm NSR.

In May 2022, Sandstorm and Equinox created Sandbox, a new metals royalty company, and both the Sandstorm NSR and the Equinox NSR were sold to this entity.

4.3.2.3.3 Osisko NSR

In July 2023, the Company announced that it had finalized a royalty agreement with Osisko Gold Royalties Ltd. (Osisko), under which Osisko agreed to purchase a 1% NSR royalty on the Cuiú Cuiú Gold Project for total cash payment of US$5M. The transaction was completed in July 2023.

4.4 Surface Rights

In Brazil, surface rights are independent of ownership of a mining lease or exploration claim and must be negotiated directly with the landowner. A landowner's entitlement to share in the profits from mining operations is documented in Article 11, letter b, of the Federal Mining Code, which states, "The participation will be 50 percent of what is payable to the states, municipalities, and administrative organism, as a financial compensation for the exploitation of a Mineral Resource." The Financial Compensation for Mineral Exploitation (CFEM, Compensação Financeira pela Exploração de Recursos Minerais) is calculated based on the mineral sales value, subtracting taxes, transport costs, and insurance. The percentage of this "Financial Compensation" varies with the mineral; for gold, it is set at 1.5%.

On December 18, 2017, law No. 13,540/2017 was enacted, stemming from executive order No. 789/2017 and its subsequent bill of law No. 38/2017. This new law introduces several changes to the rules governing the collection of the CFEM, which is commonly referred to as the Brazilian mining royalty.

Prior to the issuance of the executive order, the CFEM tax was based on the net sales of mineral products, excluding sales taxes, transportation, and insurance costs. Under the new law, the tax will now be based on gross revenue, with only sales taxes excluded. From 2018 onward, if Cabral Gold consumes prices for the products (or similar products) in local, regional, national, or international markets, depending on the situation. Alternatively, the CFEM may be applied based on the reference price of the product derived from processing the minerals, as determined by the Brazilian mining authority's discretion.

4.5 Environmental Regulations

Federal law 6938/1981 establishes the environmental policy and stipulates the requirements for environmental permits related to any activities that may pose a risk of contamination or involve natural resources.

Environmental permits are classified into three stages/categories:

- Preliminary Permit (LP, Licença Previa): This permit focuses on identifying the most suitable location for the proposed activity.
- Installation Permit (LI, Licença de Instalação): This permit pertains to the construction of the Project, in accordance with an approved technical project description.
- Operating Permit (LO, Licença de Operação): This permit authorizes the initiation of mining activities.

The government environmental agency has a period of six months to approve or deny the permit following the application submission.

If the permit necessitates an environmental study (EIA-RIMA) that requires a public audience (public consultation), the approval period is expected to be extended to 12 months. However, in the case of the Pará State, this period is not defined by law.

The National Council for the Environment (CONAMA) has identified certain activities that must undergo a preliminary EIA-RIMA, and mining activities are included in that list, typically requiring public consultation.

The environmental permit must be renewed every one to five years, depending on the conditions set forth by the regulatory agency in the permit.

The Cuiú Cuiú Project was issued an operation license (Licença de Operação) by the SEMMA (Municipal Environmental Secretariat), allowing it to conduct exploration activities.

As detailed in Section 20, the two Trial Mine approvals (GU´s, the acronym for the document in Portuguese) had a, Installation Permit (LI) renewed on June 13, 2025 and published on June 23, 2025 valid for two years. A suppression of vegetation license (ASV) was requested in November 2021 and published in April 2023, with validity until April 24, 2026. An updated ASV was requested in April 2024 reflecting the changes in the plant layout as part of the PFS. The new ASV, for a total area of 244.61 Ha, was received and published on July 25, 2025, valid for 12 months. At the same time, the license for the rescue of fauna was also received on July 25,2025. Notification of the start of suppression (within 30 days) was registered with SEMAS/PA on August 5th.

The Tapajós Region is classified into six environmental categories:

- REBIO and RESEX: Biological study areas where mining is prohibited.
- Indigenous Lands: Areas governed by tribal jurisdiction, where mining is permitted only with special tribal permission.
- PARNA: National Parks where mining is prohibited.
- FLONA: Areas where mining activities are allowed under restricted environmental conditions.
- APA: The least restrictive environmental classification that permits both exploration and mining activities.

The entire Cuiú Cuiú Project is situated within the APA TAPAJÓS-Area 2 (Figure 4-2).

4.6 Environmental Liabilities

The known environmental liabilities at the Cuiú Cuiú Project primarily stem from artisanal mining activities. Extensive stream disturbances from historical placer operations, which date back to the 1980s, are largely overgrown (Figure 4-2). Artisanal miners also target soft, near-surface saprolite mineralization. Past environmental issues include shallow, water-filled pits created by the extraction of saprolitic materials, primarily using hydraulic mining methods (Figure 4-5). All historic operations were conducted manually. However, in the past decade, improvements in road access have enabled garimpeiros to use excavators for stream and saprolite work, increasing the efficiency of their operations while also exacerbating surface disturbance (Figure 4-4). Cabral Gold continues to document and monitor the status of these operations whenever possible, but due to the extensive area of the Cuiú Cuiú Project and the remote nature of the garimpeiros' operations, this is not always achievable.

The majority of Magellan's historical exploration program was limited to areas that had already been disturbed by artisanal miners. Although it is known that artisanal miners utilize mercury amalgamation for gold recovery, no traces of mercury were detected in the water samples collected by Magellan.

Figure 4-4: Artisanal Mine Workings Using Hydraulic Mining



Source: McMahon, 2011.

Figure 4-5: Recent Mechanized Garimpeiros Operating in Streams (right and bottom) and Saprolite (top left).



Source: Cabral Gold, 2024.

4.7 Risks and Opportunities

4.7.1 Permits and Licenses

The operations of the Company may require licenses and permits from various governmental authorities to carry out exploration and development at its projects. Obtaining permits can be a complex and time-consuming process. There can be no assurances that the Company will be able to obtain all necessary licenses and permits that may be required to carry out exploration, development and mining operations at its projects, in a timely manner or at all. Failure to obtain such licenses and permits may adversely affect the Company's business as the Company would be unable to legally conduct its intended exploration work, which may result in it losing its interest in the subject property. Any failure to comply with permits and applicable laws and regulations, even if inadvertent, could result in the interruption or closure of operations or material fines, penalties or other liabilities. In addition, the requirements applicable to sustain existing permits and licenses may change or become more stringent over time and there is no assurance that the Company will have the resources or expertise to meet its obligations under such licenses and permits.

4.7.2 Surface Rights and Access

Although the Company acquires the rights to some or all of the minerals in the ground subject to the mineral tenures that it acquires, or has a right to acquire, in most cases it does not thereby acquire any rights to, or ownership of, the surface to the areas covered by its mineral tenures. In such cases, applicable mining laws usually provide for rights of access to the surface for the purpose of carrying on mining activities. However, the enforcement of such rights through the courts can be costly and time-consuming. It is necessary to negotiate surface access or to purchase the surface rights if long- term access is required. There can be no guarantee that, despite having the right at law to access the surface and carry on mining activities, the Company will be able to negotiate satisfactory agreements with any such existing landowners/occupiers for such access or purchase of such surface rights, and therefore it may be unable to carry out planned mining activities. In addition, in circumstances where such access is denied, or no agreement can be reached, the Company may need to rely on the assistance of local officials or the courts. In such cases, the outcomes cannot be predicted with any certainty. The inability of the Company to secure surface access or purchase required surface rights could materially and adversely affect the timing, cost or overall ability of the Company to develop the Cuiú Cuiú Project.

No other significant risks have been identified as of the effective date of this report.

5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 Accessibility

The Cuiú Cuiú Project is located approximately 195 km south-southwest of Itaituba, a town along the Tapajós River, a major southern tributary of the Amazon River. Itaituba is located 1,000 km west-southwest of Belém. Regional airlines service the Belém-Itaituba route (a 3.5-hour trip).

The Transgarimpeiro road is 60 km south of the Project, and highway BR-163, which connects the city of Cuiaba (Mato Grosso State) with the city of Santarém (Pará State), lies 90 km east of the property.

In late 2015, local garimpeiros and timber contractors completed a 61-km, dry season track that connects Cuiú Cuiú to the Brazauro (G Mining) Tocantinzinho Gold Project, located to the southeast. Tocantinzinho is accessible from the BR-163 national highway via an all-weather gravel road approximately 103 km in length (see Figure 5-1). During dry weather, the 450 km drive from Cuiú Cuiú to Itaituba can be completed in roughly 10 hours.

Charter flights using small, single engine aircraft operate between Itaituba and the Project, with a flight time of approximately 50 minutes. The Project features a 1,000-m unpaved airstrip, and an additional emergency airstrip is available 15 km to the east at Nova Aliança, where Cabral Gold maintains a regional exploration camp.

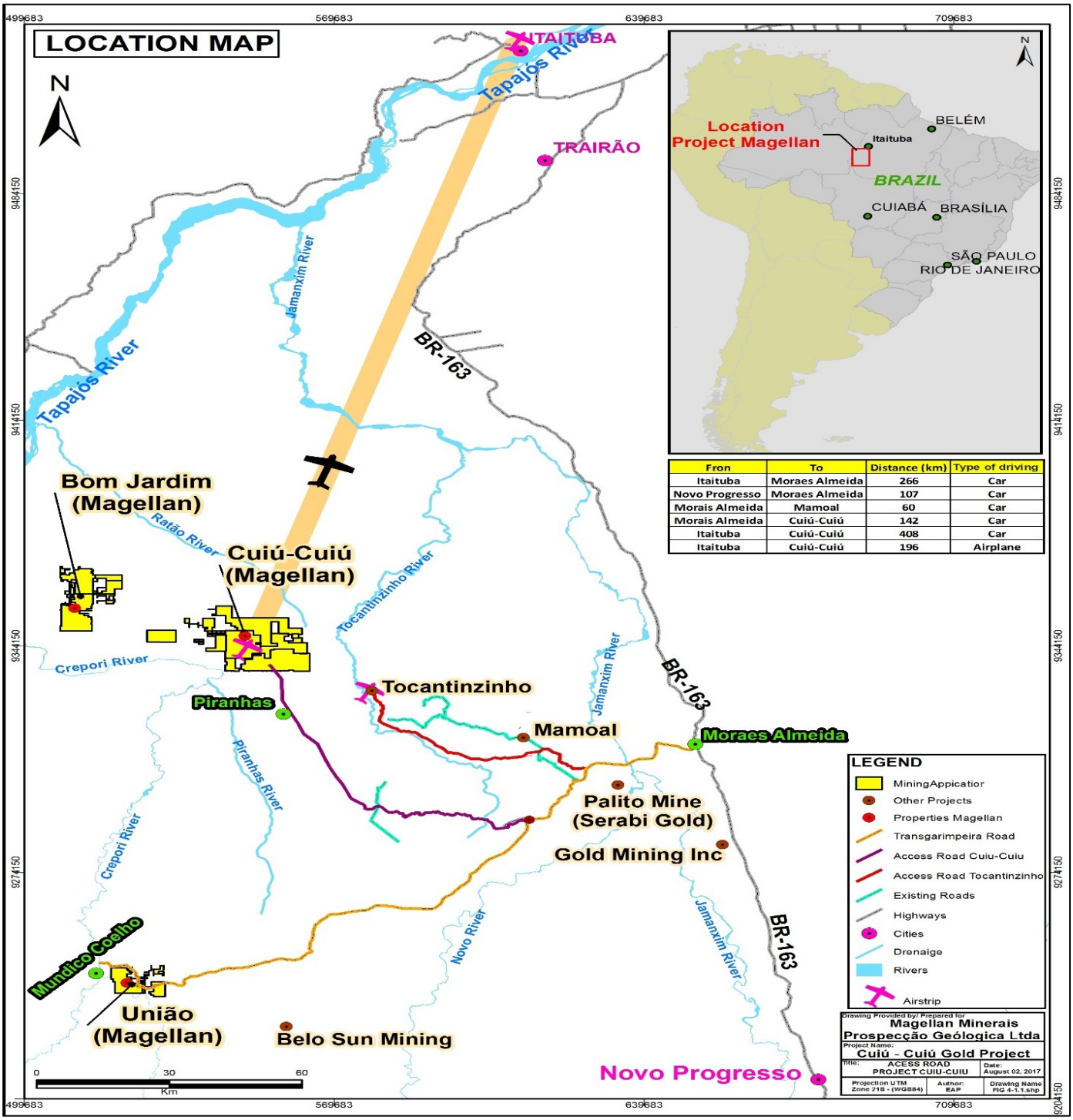
5.2 Climate

The Cuiú Cuiú Project is located within the Amazon Basin, where the dry season typically starts in late May and lasts through November, though intermittent rain occurs between June and November. Temperatures range from a low of 17°C in June to a high of 44°C in January, with an average annual temperature of 26°C. The high jungle areas tend to be cooler, with consistently higher humidity year-round. Annual precipitation averages between 1,500 mm and 2,000 mm. Despite heavy rainfall from February to May, exploration work can be conducted at the Project year-round.

5.3 Local Resources and Infrastructure

Cabral Gold's main camp is located within the village of Cuiú Cuiú, on the project site. The village comprises 80 houses and, in 2022, had a population of up to 200 families (Figure 5-1). Power for both the village and the Project are supplied by diesel generator. Cabral Gold's new camp, completed in 2022, includes an independent diesel generator for backup power when needed. New accommodation, a core shed, deposit, and geological and administrative facilities have been completed and are fully operational. Additionally, workshops for the RC drilling team, small vehicles, and a centralized fuel depot were completed in 2022.

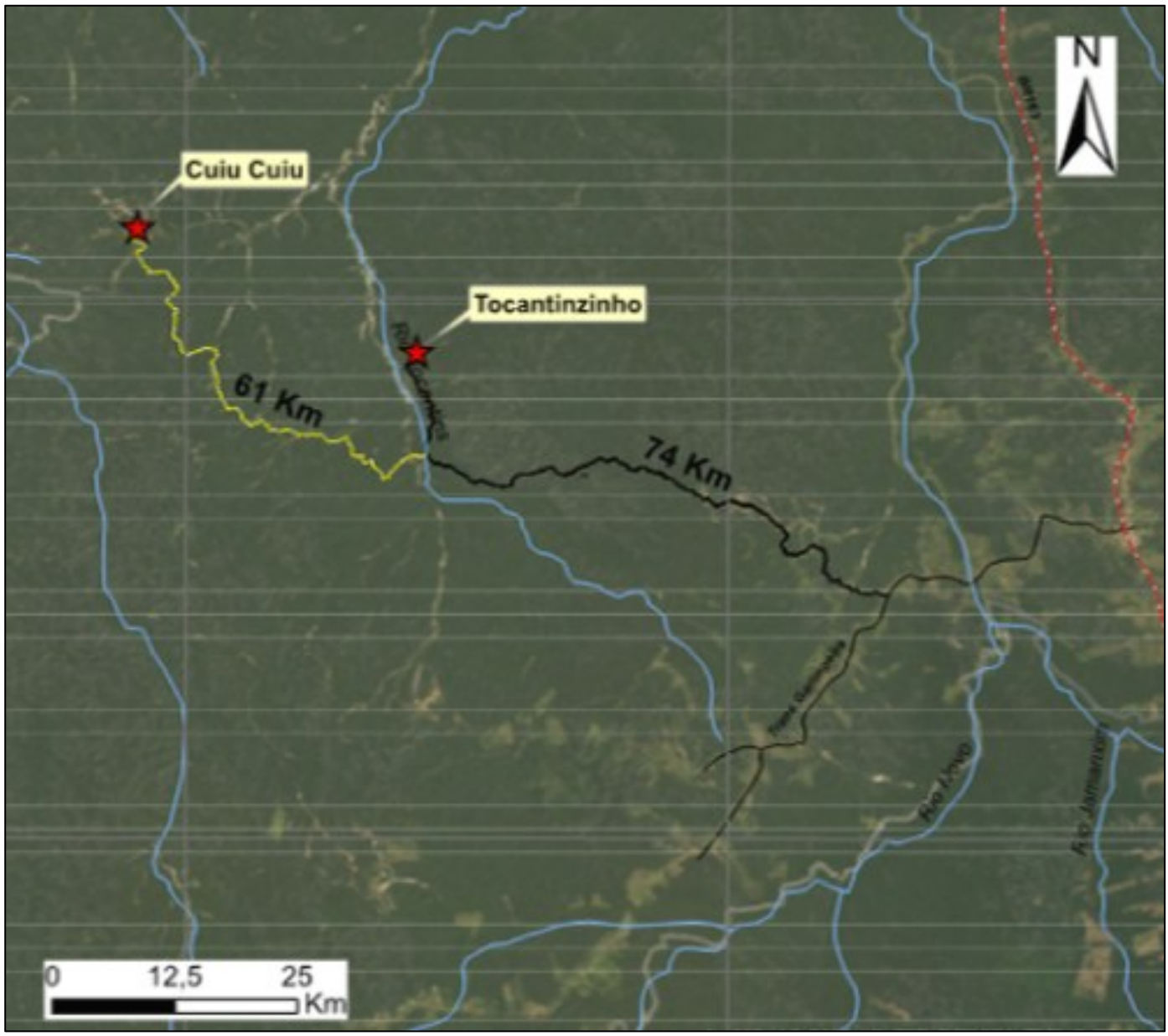
Figure 5-1: Cuiú Cuiú Project Site Access by Air



Fron	To	Distance (km)	Type of driving
Itaituba	Moraes Almeida	266	Car
Novo Progresso	Moraes Almeida	107	Car
Morais Almeida	Mamoal	60	Car
Morais Almeida	Cuiú-Cuiú	142	Car
Itaituba	Cuiú-Cuiú	408	Car
Itaituba	Cuiú-Cuiú	196	Airplane

Source: Cabral Gold, 2024.

Figure 5-2: Cuiú Cuiú Project Site Access by Road



Source: Cabral Gold, 2024.

The nearby projects and/or mines of União, Tocantinzinho, Belo Sun Mining, Gold Mining Inc., and Palito are shown in Figure 5-1.

In 2024, the village offered the following services:

- One primary school with a new facility for 75 students, set to open in the third quarter of 2024
- A nursing station
- Satellite and radio-based internet providers
- Two churches
- Six small restaurants
- Four bars
- Five grocery stores
- An electrical grid
- An illuminated football field
- A potable water bore, with a second bore drilled and being prepared for use.

The nearest town to Cuiú Cuiú that offers social services such as banking, postal services, healthcare, and regular air connections to major cities, is Itaituba. MNM Brazil's management and administrative office is located in Itaituba, which had a population of approximately 142,165 residents in 2020. With recent upgrades to road access, Moraes Almeida, located 306 Km away on the BR-163 highway, serves as an alternative source of services.

Fuel and other supplies are currently transported by road, while smaller items for the camp are delivered via small aircraft from Itaituba.

Cabral Gold maintains a fleet of light vehicles and various related exploration equipment. Cabral Gold operates a relatively new camp with internet and telephone services, capacity for 80 people, and a core shed that can store 100,000 m of core, along with a laboratory for conducting sampling, multi-element XRF readings, and density measurements.

Figure 5-3 to Figure 5-7 illustrate some of the facilities available at the new Cabral Gold camp.

Figure 5-3: Newly Drilled Water Well



Source: Cabral Gold, 2024.

Figure 5-4: Camp Core Logging Area



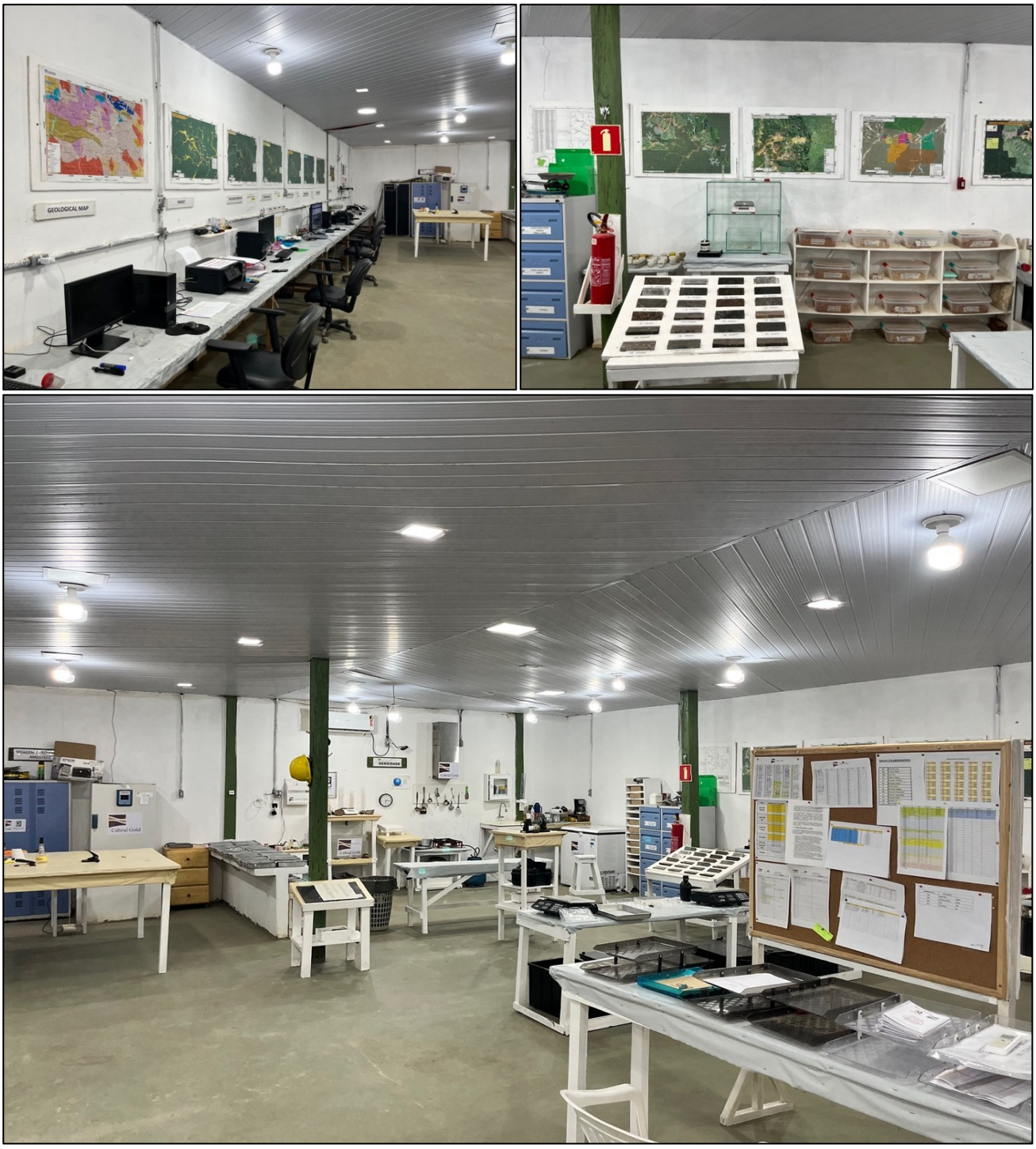
Source: Cabral Gold, 2024.

Figure 5-5: Camp Core Logging



Source: Cabral Gold, 2024.

Figure 5-6: Camp Laboratory Facilities



Source: Cabral Gold, 2024.

Figure 5-7: Core Storage and Logging Facilities



Source: Cabral Gold, 2024.

5.4 Physiography and Flora

The Cuiú Cuiú Project is located roughly 200 masl, with a maximum elevation of 330 m and a minimum of 75 m. The area's topography features weakly incised ridges trending north-northwest across most of the property. During the wet season, river valleys experience strong flow, while they are significantly lower from June to October. Approximately

75% of the area is covered in vegetation, primarily jungle (including some secondary growth), with trees reaching heights of up to 30 m in certain places. The remaining land has been cleared, mostly due to artisanal mining (garimpeiros) or for small-scale agriculture (Figure 5-8).

Figure 5-8: Local Physiography



Source: Cabral Gold, 2024.

6 HISTORY

6.1 Regional History

The Tapajós Mineral Province (TMP) was the site of a major gold rush by artisanal miners from the late 1970s until the late 1990s. Recorded official historical production is 159 tonnes of gold (Araújo Neto, 1996), though unofficial estimates range as high as 900 tonnes of gold (30 Moz) of gold (Au) (McMahon, 2011). During the peak of this gold rush in the 1980s to early 1990s, more than a quarter of a million artisanal miners were extracting over a 1.0 Moz Au annually.

Artisanal mining in the TMP is still active, with over 30,000 artisanal workers and a current estimated production of more than 200,000 ounces per year. Alluvial deposits were exploited to near exhaustion, prompting miners to shift to hydraulic methods for extracting the gold from laterite and saprolite. Primary veins and stockworks are occasionally mined when feasible. As road access has improved, artisanal miners have also upgraded their technology, with heavy equipment such as excavators, are now commonly utilized (see Figure 6-1).

Figure 6-1: Artisanal Mine Workings



Source: McMahon, 2011.

The earliest records of mining activities in the Cuiú Cuiú region trace back to 1958. Construction of the Cuiú Cuiú village began in the mid-1970s. Reports indicate that between 1976 and 1992, numerous flights arrived daily in the village, supporting a population of over 5,000 residents in the area (McMahon, 2011). Although artisanal mining has taken place in several areas of the Cuiú Cuiú Project, the amount of gold extracted is not known.

6.2 Ownership

In late 2005, Magellan acquired the rights to the Cuiú Cuiú Project area and initiated a program of soil sampling and exploration drilling, leading to the discovery of the Central and MG gold deposits. The Project entered a phase of care and maintenance in 2012, and no work was conducted through 2016, as Magellan prioritized the merger with Anfield Resources and other projects.

In late 2015, the Cuiú Cuiú Project was spun out of Magellan Minerals in exchange for the cancellation of a substantial debt owed to Alan Carter, who was CEO at that time. Carter had not drawn a salary from 2012 to 2015 and had invested considerable capital to keep the company viable during that period.

Following the merger of Magellan with Anfield, the Cuiú Cuiú asset was incorporated into a new company, Cabral Gold, where it became the key asset. The company underwent a reverse takeover (RTO) in 2017, resulting in a public listing. Exploration work recommenced in 2017 leading to the identification of a significant gold-in-oxide resource on the Project and the identification of numerous new targets.

6.3 Historical Exploration

The first known modern exploration in the property area was conducted by Rio Tinto PLC (Rio Tinto) and TVX Gold Inc. (TVX). There are no detailed records of the work done by Rio Tinto, which likely only included a site visit. In contrast, TVX reported having drilled 13 holes near the current JB target in the 1990s.

Between 1997 and 1999, Altoro Gold Corporation mapped the artisanal workings at Central and Jerimum, but no further information is available on this work.

From 2005 to 2012, Magellan utilized a multi-faceted approach to explore the property. This strategy included structural interpretation, geological mapping, geophysical surveys, detailed assessments and rock sampling in artisanal workings, soil sampling, auger drilling, diamond drilling, petrological studies, and preliminary metallurgical studies. These efforts led to several significant discoveries, including the major resource areas of MG, Central, Central North, PDM, and Jerimum de Baixo.

Following the hiatus in exploration between 2012 and 2017, Cabral Gold resumed exploration activities, continuing the geological, geochemical, and geophysical programs, as well as drilling and resource development, as outlined below.

6.4 Geochemical Surveys

Geochemical sampling efforts have encompassed the collection of 19,375 soil samples, 1,463 rock-chip samples, and 390 stream-sediment samples across the project area. Table 6-1 provides a breakdown of the sampling quantities by year. The last soil sampling campaign occurred in 2022.

Table 6-1: Cuiú Cuiú Project Total Surface Geochemical Samples

Number of Samples			
Year	**Soil**	**Rock Chip**	**Stream**
2005	43		
2006	3,369		
2007	2,107		
2010	2		
2018	897	138	
2019	1,402	49	
2020	2,204	476	
2021	583	14	365
2022	1,062	7	25
2025		1	
Various years	7,706	1,079	
Total 2025 Year	**19,375**	**1,764**	**390**

6.5 Geophysical Surveys

Geophysical surveys included induced polarization (IP), airborne magnetic and radiometric surveys, and ground magnetometer surveys, as detailed below:

- The IP dipole-dipole survey was conducted by Geodatos do Brasil Ltda. in 2006, covering 22.75 line-km at 50-m spacing over the PDM, Jerimum de Cima, and JB zones, as well as portions of the MG and Central zones.
- Airborne magnetic and radiometric surveys were performed by Fugro in 2007 and 2010. In 2007, the survey spanned 3,233 line-km with lines spaced 200 m apart at an altitude of 100 m. In 2010, 1,264 line-km was flown along 50 m-spaced lines, also at an altitude of 100 m.
- Ground magnetic surveys were carried out by Magellan over the MG and PDM zones in 2009 and the JB zone in 2010.
- In 2024 and 2025, reinterpretation of the geophysical data was carried out, calibrated by the new drilling information. In 2025, a test was conducted using an air-mag drone. The company decided to acquire this equipment to assist in the target development.

6.6 Historical Mineral Resource Estimates

Previous historical estimates include McMahon in 2011 (McMahon, 2011), Stubens in 2018 (Stubens et al., 2018), and SLR in 2022 (SLR, 2022) and Volodymyr Myadzel (VMG, 2024). All of these are superseded by the Mineral Resource in Section 14.

7 GEOLOGICAL SETTING AND MINERALIZATION

7.1 Summary

The regional geology outlined below is primarily based on studies conducted by the Brazil Geological Survey. The geological description of the deposit, along with the structural interpretation and geological model, was produced from field mapping, core drilling, earlier Magellan reports, and comparisons with similar deposits, such as the Tocantinzinho deposit, which is also located within the Tapajós Mineral Province (TMP).

Tapajós Mineral Province (TMP) lies within the Amazon Craton, an Archean to Proterozoic structure that spans from western Bolivia through Brazil to Guyana and Venezuela (Figure 7-1). This region was likely impacted by the Trans-Amazonian Orogen, a Paleoproterozoic compressional event resulting from the convergence and ultimate collision of the Guiana Shield with the West-African Craton, occurring from 2.26 Ga to 1.95 Ga.

The TMP is situated within the Tapajós-Parima terrane, one of six geological provinces recognized within the Brazilian portion of the Amazon Craton (Figure 7-1). This terrane stretches from the Alta Floresta gold district in northern Mato Grosso state, through the TMP, and extends to the north side of the Amazon River, where granite-hosted gold deposits occur within indigenous reserves in the state of Roraima.

The region is characterized by magmatism that occurred both during and shortly after the Trans-Amazonian Orogen, with the latter phase possibly related to the final vast magmatic pulse which occurred during the third phase of that orogen. The basement consists of granite-gneisses from the Cuiú Cuiú Complex (2.0 Ga), which were intruded by the Parauarí suite (1.89 Ga), the Maloquinha suite (1.88 Ga), and the later stages of the Irri Irri volcano-plutonic suite. During the Trans-Amazonian Orogen event, extensive anastomosing crustal-scale deformation zones were formed that can be traced back hundreds of kilometers.

The Cuiú Cuiú property, is predominately underlain by an interwoven network of granitic to dioritic plutons and granite-gneiss from the Paleoproterozoic age (Figure 7-2 and Figure 7-3). The granitic terrane in the project area has been largely metamorphosed to greenschist facies and was deformed during the Trans-Amazonian Orogen. Two segments of major crustal-scale, northwest-trending Trans-Amazonian regional deformation zones lie near the Cuiú Cuiú property, while a third segment transects the project area (Figure 7-3).

At Cuiú Cuiú, gold mineralization is found in fresh basement rocks, as well as within saprolitized and weathered in situ basement rocks, and weathered transported sediments and colluvium.

Primary basement gold mineralization at the project site occurs within hydrothermally altered deformation and fault zones, which are believed to be associated with the extensive northwest-trending, crustal-scale Trans- Amazonian deformation zone that passes through the core of the Cuiú Cuiú property. This large zone, known as the Tocantinzinho Trend, extends for several hundred kilometers and is spatially linked to many of the significant gold deposits and artisanal mining sites in the northern part of the TMP (Figure 7-3 and Figure 7-5).

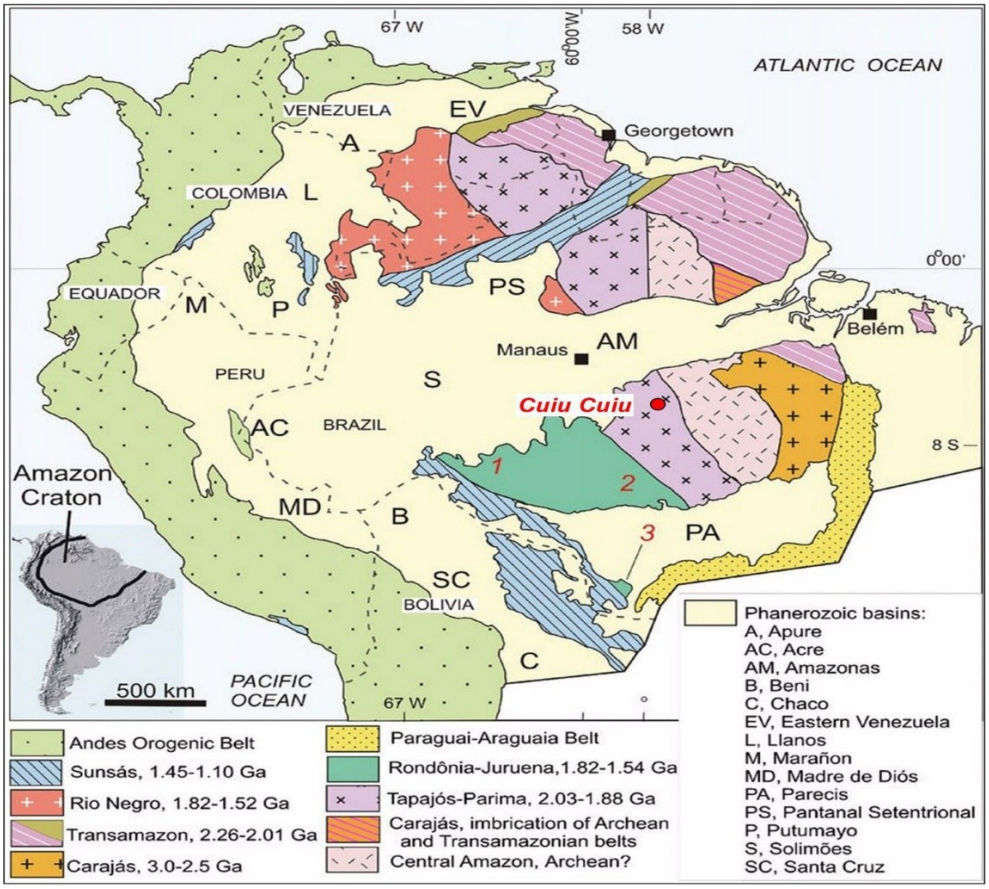
Late-stage diabase and narrow latite intrusive dykes of uncertain age have also been observed in the Project area. These rock types post-date both gold mineralization and the Trans-Amazonian Orogen deformation zones and are associated with intrusive rocks.

All basement rocks throughout the region have undergone extensive and prolonged saprolitic and lateritic weathering, resulting in deep saprolite weathered profiles.

During the weathering period, likely in the Miocene, the saprolitic basement platform was largely covered by lakes and underwent significant erosion, leading to the deposition of unconformable and disconformable fluvial, lacustrine, and colluvial sediments over older soil and lateritic weathering profiles. Petrified wood and marsh reeds have been identified within these Miocene sediments.

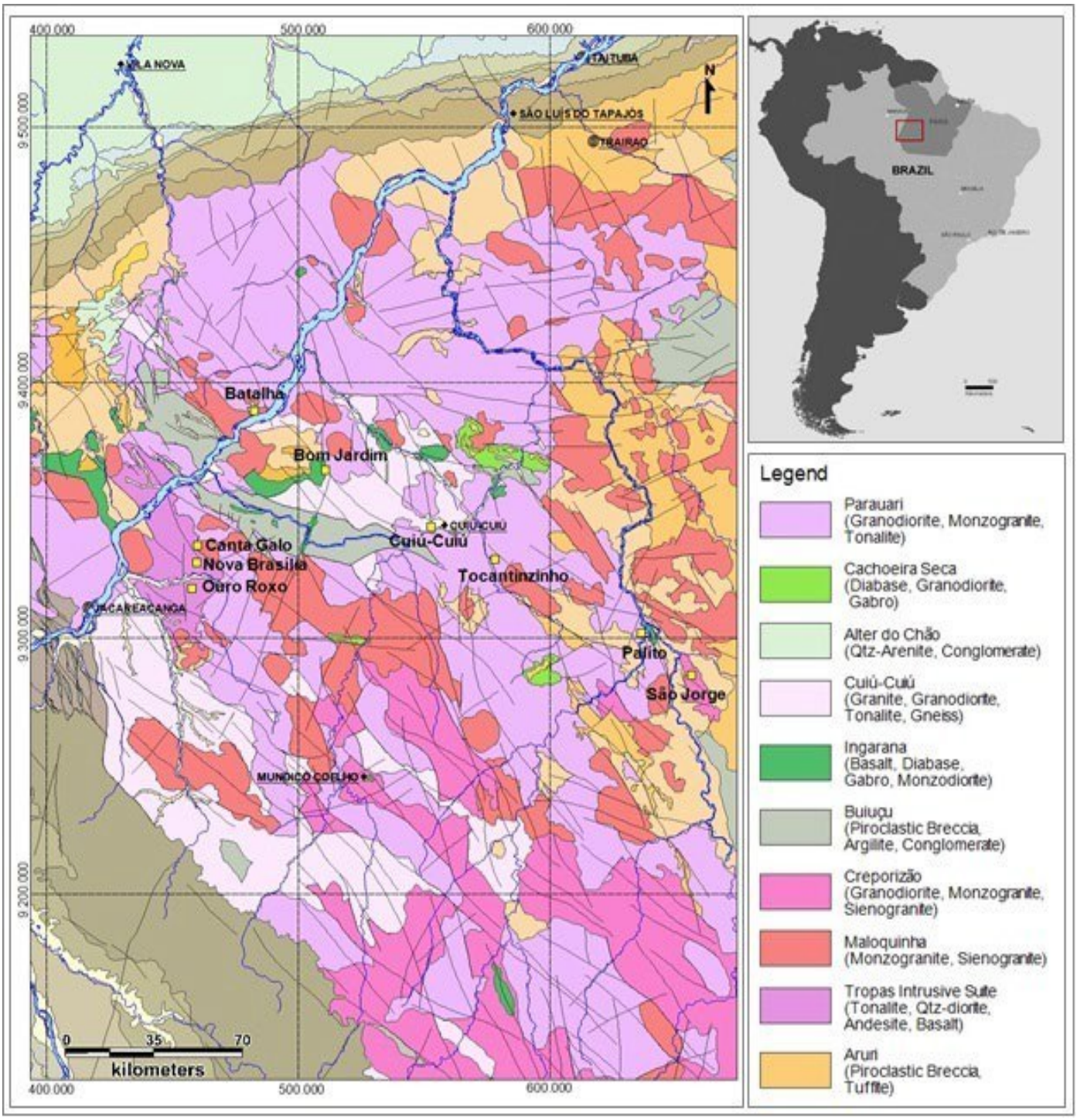
The saprolite, Miocene sediments, and colluvium have all eroded into present-day streams and rivers, forming modern fluvial sediments. These streams host extensive placer gold deposits, which have been heavily mined by artisanal miners since the late 1980s.

Figure 7-1: Major Geological Provinces within the Amazon Craton



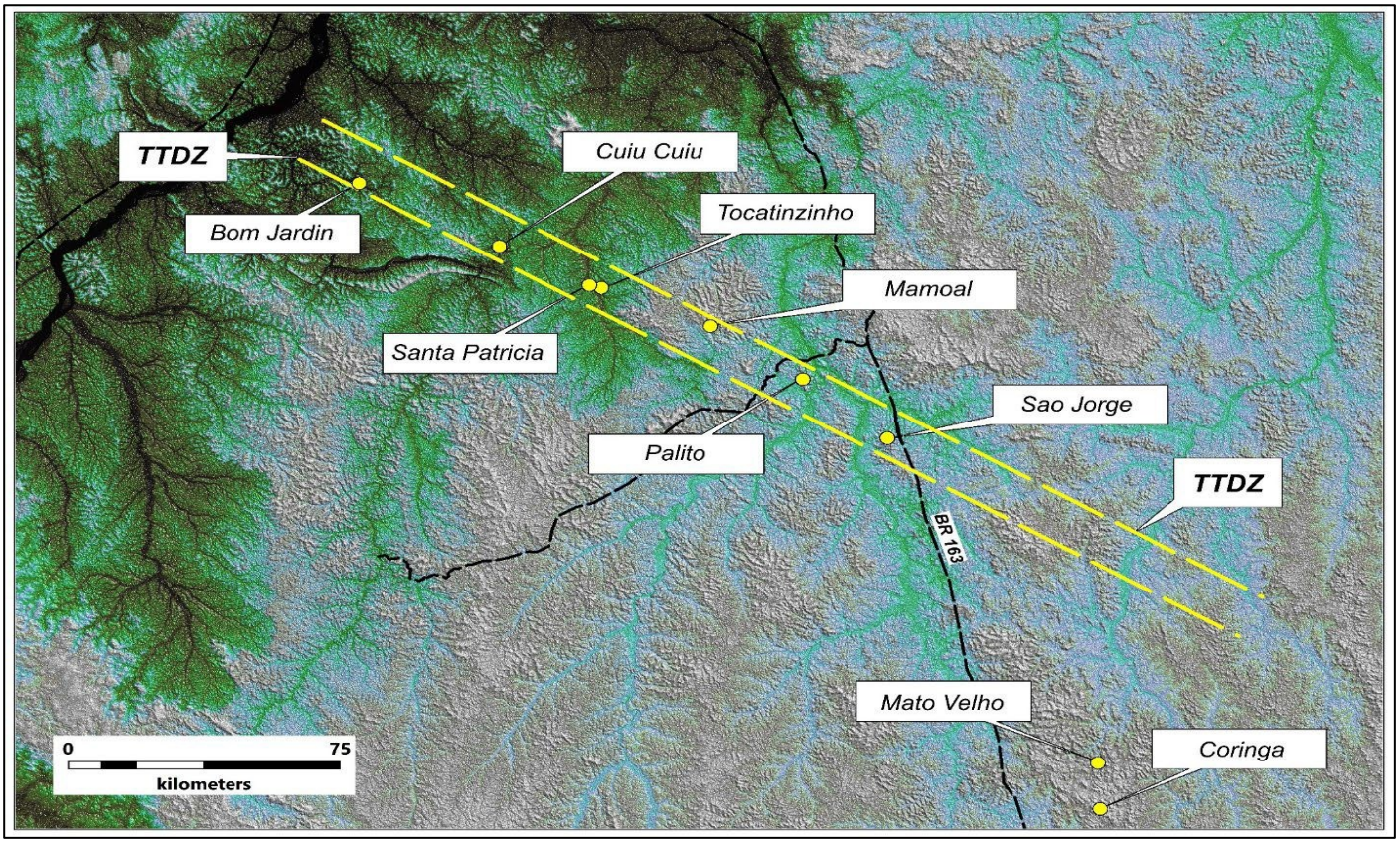
Source: Santos, et al., 2018.

Figure 7-2: Regional Geological Map of the Tapajós Mineral Province



Source: Eldorado Gold Corp., 2019.

Figure 7-3: Regional Topography Map Showing Gold Deposits and Occurrences in the Region and the Tocantinzinho Trend Deformation Zone (TTDZ)



Source: Cabral Gold, 2024.

7.2 Regional Geology

The Project is located in the central part of the TMP, which itself lies within the central portion of the Amazon Craton and covers part of the Ventuari-Tapajós and Tapajós-Parima Provinces, which are characterized by Proterozoic magmatism (Figure 7-1 and Figure 7-2).

The basement is mainly comprised of granite-gneisses of the Cuiú Cuiú Complex (2.02 Ga), which have been intruded by plutonic rocks of the Creporizão suite (2.0 Ga), the Parauarí suite (1.89 Ga), and the Maloquinha suite (1.88 Ga).

The Creporizão suite includes syenite-granites, monzonite-granites, tonalities and granodiorites, all of which are generally deformed and were emplaced during the Trans-Amazonian Orogen. The Parauarí suite is composed of monzonite-granites and granodiorites, generally exhibiting little or no deformation. A significant majority of gold deposits at the TMP are reportedly found within Parauarí intrusives, including Tocantinzinho, Palito, São Jorge, and Bom Jardim.

The Maloquinha suite is characterized by A-type granites, mainly syenite-granites and alkaline-feldspar granites. Maloquinha granites are sometimes intrusive into the Parauarí Granite. Due to the A-type alkaline nature of the Maloquinha intrusives and associated volcanic rocks, it has been postulated that this suite possibly represents a failed Proterozoic rift.

Volcanic rocks are distributed throughout the province and are grouped within the Iriri Group or Uatumã Supergroup. Mafic rocks from the Ingarana and Cachoeira Seca suites are part of the Crepori diabase (1,780 Ma ± 7 Ma, Srivasta et al., 2018) and are associated with many of the mineralized structures in the area.

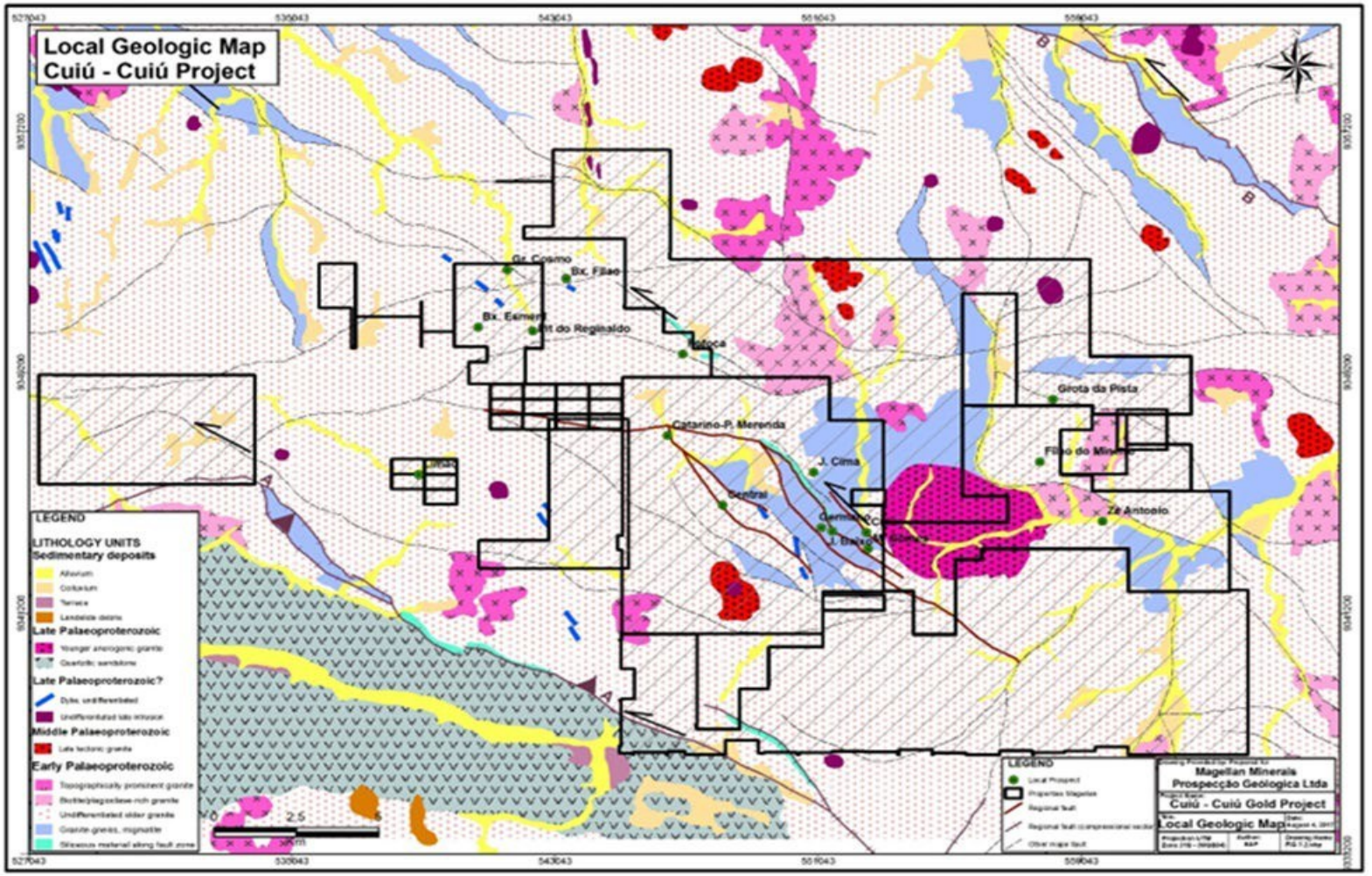
The youngest supracrustal unit in the region comprises windows of a late-Paleoproterozoic sandstone sequence, known as the Buiuçu Formation. These dense, quarzitic sandstones are considered equivalent to the Roraima Group of the northern Amazonian Craton. They form a gently curved basin, bounded by a south-facing southern scarp (Figure 7-2 and Figure 7-3), and are locally associated with mafic intrusions. Similar fault-bounded sediment-filled grabens are common in gold camps such as Timmins and Kirkland Lake.

Several regional-scale, subparallel, northwest-trending deformation zones, each several kilometers wide and extending hundreds of kilometers along strike, cut through most of the crystalline units and are thought to have formed during the Trans-Amazonian Orogen. One of the more significant of these zones is commonly referred to as the Tocantinzinho lineament, or trend (Figure 7-3), though it has also been referred to as the Chico Torres Megashear (G Mining Services Inc., 2022). Some of these structures may also have been reactivated later, as one also corresponds to the bounding fault for the Buiuçu Formation. Aeromagnetic data reveal rounded magnetic features within these broad deformation zones, possibly representing intrusions (plutons) that are coeval with, or slightly younger than, the deformation event. Gold occurrences such as Cuiú Cuiú, Tocantinzinho, Mamoal, Mato Velho, Coringa, Palito, and São Jorge are all aligned along this trend (Figure 7-3), suggesting they were influenced by this late-tectonic transpressional event.

Primary gold mineralization in the TMP is thought to be predominantly hydrothermal and associated with deformation zones. Native gold occurs in quartz-sulphide±carbonate veins and veinlets and is associated with disseminated sulphides. Pyrite is by far the dominant sulphide mineral, with subordinate sphalerite, chalcopyrite, galena, and molybdenite. Also, scheelite occurs locally, disseminated and in veins. The host rocks are typically coarse and predominantly felsic, usually consisting of granitic intrusives, which are intersected by fine-grained dykes; however, some deposits are reportedly hosted in sub-volcanic lithologies. Mineralization is frequently well-developed at the contact between the dykes and the host intrusives. Additionally, as mentioned earlier, there are rare dykes and intrusive bodies that are younger than gold mineralization.

Klein et al. (2002) describe that "*vein-quartz gold mineralization in Southern Tapajós Province is hosted by arc-related, calc-alkaline tonalitic orthogneisses (Cuiú Cuiú Complex, 2,033 Ma to 2,005 Ma) and post-collisional, calc-alkaline, K-rich granitoids (Creporizão Intrusive Suite, 1,997 Ma to 1,957 Ma). The deposits are structurally controlled and form typically tabular bodies that parallel the hosting structures and are characterized by quartz veins surrounded by halos of strongly altered wall rock, which are usually narrow and show weak to prominent ductile fabric. Steeply dipping fault-fill veins and shear veins account for 80% of the structural style, followed by breccia veins and lesser stockworks and veins hosted in low-angle reverse-oblique faults. Hosting structures vary from ductile-brittle to brittle in nature, and together with structural and textural evidence provided by the veins, indicate a wide range of depth of emplacement for the mineralization, from shallow to mid-crustal. Quartz and sericite are the main alteration minerals and pyrite is ubiquitous.*"

Figure 7-4: Project Area Geology Map Based on Remote-Sensing Interpretation

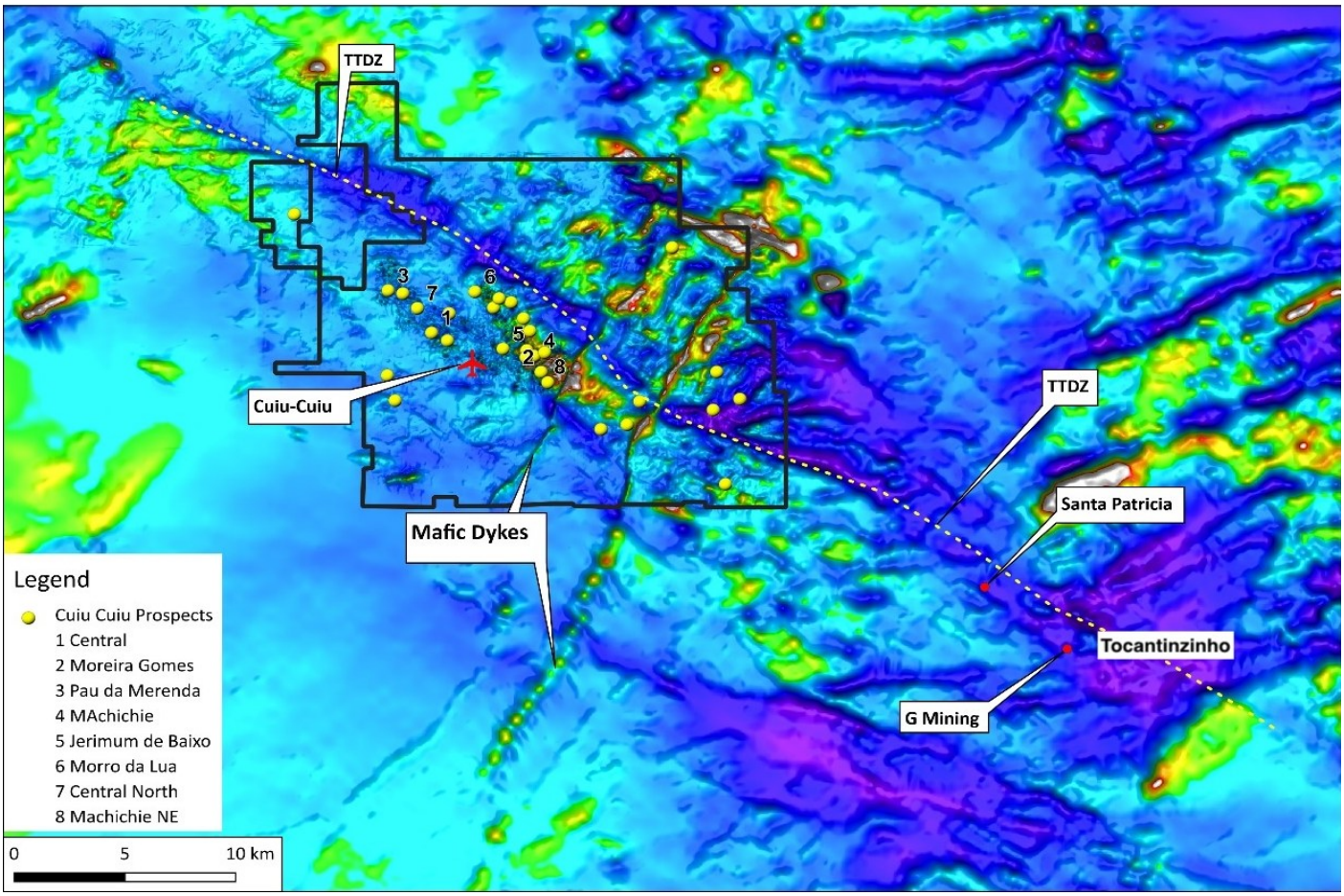


Source: Baker, 2009.

The largest and most studied gold deposit in the district is the Tocantinzinho gold deposit, which is located less than 15 km southeast of Cuiú Cuiú. The timing and paragenesis of this deposit have been documented by Biondi et al. (2018), who reported that, "*the magmas have I type signatures and were oxidized. The ages of the mineralized granites vary between 1,996.1 Ma ± 2.2 Ma and 1,989.1 Ma ± 1.1 Ma, and they are situated in the middle of a tectonic corridor formed by shear zones oriented parallel NW-SE that cut regional biotite-hornblende granodiorites with ages between 2,007 Ma ± 8 Ma and 1,997 Ma ± 10 Ma. Three hydrothermal phases, simultaneous to tectonic deformations, affected the Tocantinzinho Au deposit: the first, H1, occurred approximately at 1,996.1 Ma ± 2.2 Ma, during the magmatic-hydrothermal transition, which altered the igneous feldspars, biotite and hornblende. Then, the granites were brecciated in a transpressional, brittle and hydraulic fracturing regime, forming B1 breccias simultaneously to hydrothermal alteration H2, developed between 1,996.1 Ma ± 2.2 Ma and 1, 989.1 Ma ± 1.1 Ma. The mineralization occurred during this phase, which simultaneously disseminated 1.0 g/t Au to 1.5 g/t Au, together with pyrite and minor galena, and formed a few quartz + pyrite veins with high gold contents, between 1.5 g/t Au and 70.0 g/t Au. In an undated tectonic event that occurred after and probably near 1,989.1 Ma ± 1.1 Ma, the entire mineralized region was cut by andesite dykes that reached the Proterozoic surface, and generated a new hydrothermal, degassing episode, H3. This last hydrothermal stage generated micro-fractures filled with B2 micro-breccia formed by high-pressure water-driven cataclasis and probably remobilized previously precipitated gold but did not bring new gold to the deposit. Muscovite 40Ar/39Ar ages of the altered zone suggest that the isotopic system of this mineral was reset at approximately 1,860 Ma, about 130 Ma after the end of H3."*

The pronounced diagonal deep-blue magnetic low transecting the core of the Project in Figure 7-5 represents the Tocantinzinho Trend Deformation Zone (TTDZ). This zone also hosts the Tocantinzinho gold deposit and the Santa Patricia porphyry, located to the southeast of the Cuiú Cuiú Property.

Figure 7-5: Property Area Reduced-to-Pole Aeromagnetic Map Showing the Location of the TTDZ, Relative to Major Gold Occurrences and Diabase Dykes



Source: Cabral Gold, 2024.

7.3 Property Geology

The entire surface of the Cuiú Cuiú property is heavily weathered to soil and saprolite, with much of the property covered by a layer of unconformable Miocene and recent sediments. As a result, there is no fresh outcrop, and surface geological mapping provides limited insight about the subsurface basement geology; even trench exposures are heavily weathered. This forces reliance on geophysical data, satellite imaging, radar and aerial photography, along with local confirmation from drilling and trenching activities.

The following sections discuss: 1) the general geology of the Proterozoic basement geological units, 2) the major Proterozoic structural trends and controls, 3) Proterozoic metamorphism and alteration, and 4) the impact of weathering and erosion on the older basement rocks and the formation of the extensive and well-developed younger Miocene unconformable sequence.

7.3.1 Cuiú Cuiú General Proterozoic Basement Geology

In 2009, a remote-sensing interpretation of the Cuiú Cuiú was carried out by Magellan. This study involved mapping drainages, regolith, lithologies, and structures using aerial photos, Landsat data, satellite radar, and high-resolution Quickbird imagery. Among the products obtained were an image interpreted geological map highlighting the principal target areas at that time (Figure 7-4), and a broad description of the geological units found in the project area, summarized in Table 7-1.

Two rock types that were not discussed by Mr. Baker are late diabase and latite dykes, which will be addressed in the subsequent sections as they were observed in drill cores at the MG and Central deposits, respectively.

Figure 7-4 also illustrates three of the northwest-trending major deformation zones located within and adjacent to the Cuiú Cuiú property. The first labelled "A," occurs to the southwest of the Project and forms the northern margin of the graben-hosted sandstone of the Buiuçu Formation. The second zone labelled "B," occurs to the northeast. The third zone, which is perhaps the most significant to the Project, is the Tocantinzinho Trend, and related subsidiary structures, which cut diagonally through the center of the property. These three structures are easily recognized in the regional aeromagnetic data as linear magnetic lows (Figure 7-5).

Table 7-1: Summary of Significant Geological Units at The Cuiú Cuiú Project

Younger granites (Late Palaeoproterozoic): One pluton of younger anorogenic granite (unit gr3) is recognized in the northeast of the study area because of its distinctive rounded outline and its interruption of the local structure pattern. According to the published map, this is an alkaline granite of the Maloquinha type. Less than 10 km east of Cuiú Cuiú there is a circular region of anomalously smooth, deeply weathered terrain with very low drainage density (implying porous material). This feature closely resembles the known Late Palaeoproterozoic granite in the core of the coeval volcanic massif centered just outside the northwest corner of the study area and is therefore mapped as a granite pluton of the same age.
Late Palaeoproterozoic volcanics (Iriri Gp.): Unit av consists of rhyolitic volcanics which are thought to be mainly ignimbrite. They form prominent outliers in the northwest corner of the area and are characterized by the presence of pale outcrops visible on the air photos. They are genetically related to the youngest granites. In places they are seen to underlie by darker weathered material (unit bv), which correlates with basaltic and andesite volcanics shown on the published map.
Late Palaeoproterozoic sandstone (Buiuçu Fm.): These dense, quarzitic sandstones (units) are equivalent to the Roraima Group of the northern Amazonian craton. They form a gently basinal terrane bounded by a south-facing southern scarp. In the southwest corner of the area, there are intrusions (sills?) of dolerite (unit do).
Late undifferentiated intrusions: Unit i consists of topographically distinct bodies of small to medium size. Some show annular textures on the Landsat imagery or air photos. They appear to post-date the Palaeoproterozoic (Trans-Amazonian) deformation. Most are likely to be of Late Palaeoproterozoic age, but some may be younger.
Late tectonics mafic plutons (Ingarana Suite): Middle Proterozoic anorogenic mafic plutons occur in the region but the gabbros within the study area all appear to be affected by at least some of the Trans-Amazonian faulting and are therefore considered to be similar in age to the late-tectonic granites. These gabbroic rocks (unit gb2) can be recognized on the air photos and Landsat as they give rise to a smoother, more rounded terrain than the granites.
Late tectonics granites: These are interpreted to be of late Trans-Amazonian age as they are affected by at least some of the deformation but clearly post-date the older granites and gneiss. These late-tectonic granites (unit gr2) are mostly topographically prominent.

Older granites and gneiss: Unit gm is characterized by topographically featureless terrain, which is generally aligned along and bounded by major faults. Such terrain corresponds in part to the Cuiú Cuiú Complex shown on published maps. This unit consists of granite-gneiss, migmatite and possibly also amphibolite, lithologies which tend to be more deeply weathered. No evidence of foliation was visible on the air photos or Landsat image. The remainder of the older basement consists of various granites, some of which are foliated. Differences in topography were used to differentiate them. Unit gr+ corresponds to the more prominent hills, some of which show pale outcrops or soil on the air photos, which are underlain by granitoids with weathering resistance such as potassic and/or hornblende-rich granites. Unit gr- is used for the most weathered granites which are likely to be rich in biotite and plagioclase where there are no distinctive topographic characteristics.
Prominent ridges: Ridges along major faults are considered to be siliceous bodies related to fault movements (e.g. silicified mylonite). These are mapped as unit si.

Source: modified from Baker, 2009.

Due to the absence of outcrops and only relatively shallow test holes drilled in the area to date, the structural understanding of the region is largely based on two-dimensional data, which is limited to the horizontal plane. There is minimal knowledge about vertical movement or strain, which could be the principal strain direction, similar to what is observed in much of the Canadian Shield.

The basement within and surrounding the project area can be characterized by three distinctive structural styles:

1. Deformation zones, splays, and related faults and shears: These are interpreted as related to the major northwest-trending deformation zones discussed earlier. This structural style is most likely related to the Trans-Amazonian Orogen, a regional compressional event caused by the convergence and ultimately collision of the Guiana Shield with the West-African Craton between 2.26 and 1.98 Ga (Kroonenberg et al., 2018).
2. Subtle strain aureoles surrounding Proterozoic granitoid plutons and plugs: These were probably initially related to the emplacement of intrusive rocks as the plutonic rocks ascended through the crust in the late Proterozoic. However, some of the strain aureoles have likely been further modified during the coeval Trans-Amazonian Orogen regional compressional event, giving a curvilinear aspect to the overall structural pattern.
3. A young set of late north-northeast-trending brittle fractures or fault systems: These structures are unrelated to and post-date gold mineralization. Diabase and latite dykes have intruded along these later structures.

In the aeromagnetic map presented in Figure 7-5, the Tocantinzinho Trend can clearly be identified as a distinctive magnetic low that extends northwest through the east-central part of the project area. There are numerous subsidiary structures within the Project that trend westward that extend from the main deformation zone, as well as several parallel structures located further to the west. In some areas, these smaller subsidiary deformation zones interconnect in an anastomosing fashion. The Central deposit and PDM mineralized zone are hosted by one of the parallel northwest-trending structures, while both the MG deposit and Machichie mineralized zone are hosted by east-trending deformation structures.

In drill core observations, the deformation within the zones is primarily characterized by brecciation rather than shearing. This may reflect the competent, coarse-grained nature of much of the intrusive protolith. The character of these brittle deformation zones is highly variable, ranging from weakly to moderately fractured, to pervasively and highly brecciated. In some areas, brecciation occurs in multiple phases, with fragments of older breccias re-brecciated

within younger breccias. In the most intensely deformed areas, the primary granitic rocks have been ground to mylonite. Additionally, different types of intrusive rocks exhibit slightly varying brecciation textures, which reflect the morphology and composition of the protolith. Moreover, within broader deformed zones, there are lithons of nearly undeformed intrusive rocks surrounded by highly brecciated rocks.

7.3.2 Cuiú Cuiú Proterozoic Basement Metamorphism and Alteration

The basement rocks in the project area appear to have been subjected to greenschist facies metamorphism. However, the extent and penetration of this metamorphic event are not well known since petrographic studies have been limited to the mineralized and highly altered areas. Some of the younger plutons are surrounded by narrow amphibolite grade aureoles. The greenschist metamorphic assemblage typically comprises albite, microcline, quartz, chlorite, sericite, and patchy epidote, with the mineral content reflecting the original composition of the intrusive protolith.

In the deformation zones, the metamorphic assemblage is either overprinted by or transitions into widespread, very broad zones of strong hydrothermal alteration, comprising varying amounts of microcline, quartz, chlorite, sericite, plagioclase, and hematite. The presence of very fine hematite within feldspar imparts a deep red-brown to red coloration to these altered rocks, although microcline itself can appear as a pink or reddish-brown mineral.

Gold-related silicification and sulphidation have not been observed in many of these large alteration zones, and the hematite-rich alteration (Figure 7-7) may not be directly related to the gold mineralization event.

However, all the larger zones of gold mineralization discovered to date at Cuiú Cuiú, do occur within extensively brecciated, highly altered zones. The alteration directly associated with this gold mineralization is characterized by strong silicification and/or quartz veining (± carbonate), sulphidation (pyrite), sericitization, chloritization, k-spar metasomatism, and hematite. In areas with higher gold grades, brecciation and the original igneous textures are completely masked by the intensity of the alteration.

7.3.3 Cuiú Cuiú Area Erosion, Weathering, and Sedimentation

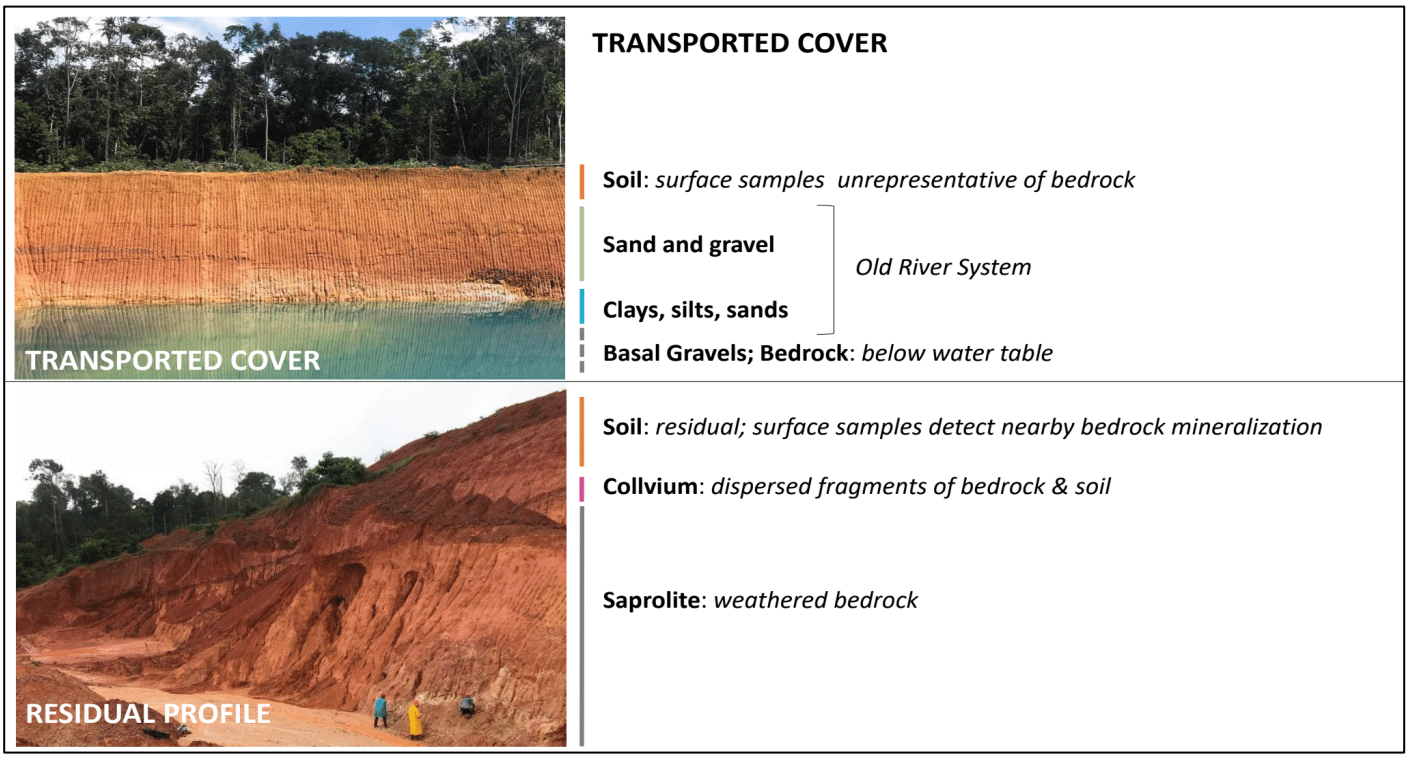
All basement rocks near the surface within the Cuiú Cuiú concessions have been subjected to extensive weathering and erosion. The date of this weathering and erosion has not been well established, however, Hoorn et al. (2010) observed that soils with predominantly thick saprolite developed in Amazonia since the Early Cretaceous (145 Ma to 100.5 Ma). To put the potential period in perspective, the last significant tectonic collisional event that impacted the area was the Trans-Amazonian Orogen, which occurred approximately two billion years ago, long before the breakup of Gondwana in the Early Cretaceous when Africa separated from Brazil approximately 140 Ma. What was once likely a mountain range during in the Proterozoic has been denuded to a peneplane over hundreds of millions of years.

The results from drilling and regional mapping indicate that the current weathering profile may reflect a complex history involving multiple climatic and depositional events (Figure 7-6).

1. At MG, evidence suggests the presence of an older lateritic weathered profile along with the widespread development of ferricrete. These older, thickly weathered profiles are thought to have been developed in arid conditions, reflecting a prolonged disconformity that resembles weathering sequences typically observed in Africa.

2. The laterite and ferricrete, are overlain by lacustrine and alluvial-fluvial sediments. Deposits of lake sediments have been observed with thick-bedded clay sequences, as well as exposures of cross-bedded deltaic and stream silt and sand fluvial sequences. These occur at many locations throughout the property. Petrified wood and trace amounts of coal have been identified locally within the sediments. This sharp angular unconformity suggests a transition from an initially arid environment to one characterized by heavy rainfall.
3. In the Miraboa area, there are exposures of fossilized marsh reeds, and in some places, the lake sediments are capped by ferricrete, indicating that the lakes ultimately subsided, evaporated, and dried out. This could indicate a return to a more arid environment; however, it is more likely a result of the drainage system's improvement during the development of the Amazon Basin. The Amazon River originated as a transcontinental river approximately 11 Ma and took its present shape approximately 2.4 Ma. Warm, wet conditions continue to weather and erode the project area today.

Figure 7-6: Weathering and Sediment Depositional Styles Evident at Cuiú Cuiú



Source: Cabral Gold, 2024.

The unconformable fluvial and lacustrine sequence identified at Cuiú Cuiú is believed to be of Miocene age (23 Ma to 5 Ma). Widespread Miocene sedimentation has been observed throughout western Amazonia. Hoorn et al. (2010) described three major depositional phases during the Miocene in Amazonia: (i) from 23 Ma to 16 Ma, characterized by lacustrine conditions alternating with episodes of fluvial drainage and marginal marine influence; (ii) from 16 Ma to 10 Ma, representing the maximum extent of lacustrine conditions with a marginal marine influence; and (iii) from

10 Ma to ca. 7 Ma, a complex of deltaic, estuarine, and fluvial environments. This widespread freshwater sedimentation was accompanied by two significant marine incursion events during the Miocene and suggests that subsidence in the western Amazonian basins was active, likely driven by interaction associated with the rise of the Andes (Jaramillo et al., 2017).

The depth of weathering and saprolitization varies throughout the property. Weathering over fresh, unaltered rock can be quite thin; for instance, the weathered profile in the only hole drilled into the fresh, unmetamorphosed diabase dyke at MG measured only a few meters thick. In contrast, the depth to the bottom of saprolitized and weathered basement directly above the best segments of the primary MG and Central deposits is closer to 80 m, locally. To some extent, these deeply weathered areas may reflect higher pyrite content of the primary altered mineralized zones, which could generate acidic groundwater during weathering, resulting in deeper weathering in those locales.

Saprolite topographic highs and hillsides are also subject to significant surface erosion by rainwater and runoff. Soils developed at the top of the saprolite are shed downslope as colluvium into drainage catchments, eventually making their way into streams and rivers. The in situ mineralized saprolite basement rocks are similarly weathered. Auriferous soil and colluvial blankets are generated at topographic highs above the mineralized basement saprolite, and the gold is then carried downhill to drainages, along with the colluvial soil material, providing the source for the extensive placer deposits found throughout streams and rivers draining the Cuiú Cuiú property. These erosional and weathering processes continue today.

Weathering and erosion have not been completely passive. Debris flows, talus, and creep are frequently observed along the margins of hills and valley walls. The accumulation of these sediments has also led to the formation of shallow soft-sediment faults, which can develop into small-scale landslides. Such deposits and features typically form during heavy rainfall events that produce significant runoff. The sharp contact between fresh bedrock and saprolite has been identified as a particularly good zone of competency contrast, making it conducive for the development of fault planes. There is evidence of soft-sediment shearing and brecciation along this contact in many drill holes. Miocene lake and fluvial sediments have filled valleys developed by larger landslides, indicating that some of the soft-sediment faulting may date back to the Miocene or earlier.

7.4 Mineralization

Several main types of primary gold mineralization are evident in the fresh basement rocks within the project area: pervasive replacement-style mineralization, sheeted and stockwork vein mineralization, and quartz vein or quartz flooding mineralization. All styles of gold mineralization are present in the larger gold deposits on the property, with higher grades typically associated with quartz-vein or quartz flooding mineralization. All of these styles occur within extensive hydrothermally altered envelopes with lower gold tenor. The sulphide content is generally a good indicator of gold grade.

Three deposit types also occur within the weathered rocks:

1. The up-dip projections of the fresh basement mineralized zones are weathered to saprolite at depths of up to 100 m from the surface. This basement saprolite exhibits a significantly lower density and completely different mineralogy compared to the unweathered primary mineralization, but it largely maintains the general orientation (strike, dip and widths) of the underlying primary mineralization.

2. Soil and colluvium have developed at the top of the saprolite, forming extensive, broad, sub-horizontal transported mineralized zones known as “blankets.” These blankets are angularly unconformable and overlie Type 1 deposits.
3. Over millions of years, the Blanket mineralization has been carried downslope into drainages by surface erosion, with both gold and colluvial materials eventually reaching larger streams and rivers to form placer deposits. Cabral Gold is not currently assessing Type 3 placer mineralization, but Types 1 and 2 could represent significant future economic resources for the company.

The Cuiú Cuiú property hosts approximately 50 gold target areas at various stages of exploration. Of those, six are relatively advanced, including the: 1) Central deposit, 2) MG deposit, 3) CN deposit, 4) JB deposit, 5) Machichie target area, and 6) PDM target area (Figure 7-5). The two largest primary fresh rock gold deposits outlined to date are Central and MG. These constitute the bulk of the current Cuiú Cuiú basement resources. The CN and JB deposits are considerably smaller. Although PDM and Machichie have much larger footprints than CN and JB, they have not been drilled sufficiently to determine resources. Section 7.5 offers a summary of the general geology for each of these targets, along with a discussion of their key attributes. Maps and sections are presented in subsequent Sections.

7.4.1 Primary Fresh Rock Proterozoic Basement Gold Mineralization

All fresh basement gold zones discovered at Cuiú Cuiú to date are associated with either extensive deformation zones or smaller-scale faults and fracture systems. The larger gold zones are mainly associated with extensive deformation and hydrothermal alteration.

Narrow mafic dykes are common within these gold zones. These dykes exhibit varying degrees of deformation, ranging from massive and undeformed to highly deformed chlorite schist. This variation may reflect a prolonged period of intrusion occurring before, during and after the deformation and gold mineralization events. These dykes are typically subvertical and steeply dipping, though some sub-horizontal mafic dykes have also been observed. Additionally, various felsic, pegmatite, and aplite dykes have been intersected in drill holes, with the exception of crowded diorite porphyries, which tend to be narrow and less abundant.

7.4.1.1 Deformation Associated with Gold Mineralization

All the larger, more advanced gold targets occur within broad, laterally extensive, highly brecciated deformation zones. These zones extend below the deepest holes drilled to date at each target and are thought to have formed concurrently with the development of the major northwest-trending TTDZ, which cuts through the Cuiú Cuiú property (Figure 7-4 and Figure 7-5), and the related Trans-Amazonian Orogen.

Two predominant structural trends at the property scale have been recognized as important for gold mineralization at Cuiú Cuiú:

1. Northwest-trending deformation zones that run parallel to the TTDZ. The most significant of these is the Central Trend, a wide linear magnetic low feature that extends over five kilometers and corresponds to an extensive soil and auger gold geochemical anomaly. Three advanced gold targets – Central, CN, and PDM – occur in this zone. Additionally, JB occurs along another of these northwest-trending structures.

2. Numerous east-trending deformation zones extend to the west from the TTDZ. These are considered to be splays, or subsidiary structures related to the development of the TTDZ but lie on its margin, where older intrusive and gneissic rocks were pushed and rotated during the creation of the TTDZ to accommodate the emplacement of later plutons within and adjacent to that major deformation zone. Two of the more notable east-trending structures host the MG and Machichie mineralized zones.

The intensity and style of deformation within the zones vary, depending largely on the primary mineralogy and texture of the granitoid protolith, as well as the location within each deformed zone. Brittle deformation is the most common form of deformation observed on the Cuiú Cuiú property, typically manifested through fracturing, stockwork and sheeted veins, extensive brecciation, and, in some areas, mylonitization. Foliation is present in several places, some of which are gneissic, but very little widespread ductile shearing is evident in any of these deformed zones. Much of the ductile shearing that has been observed in drill core is focused within narrow finer-grained, mafic intrusive phases and mafic dykes along contacts of geological unit boundaries, and within specific shear-vein structures. For instance, at Central, increased ductile deformation is common along the outer margins of the gold-bearing alteration zone, where dykes are also more prevalent. The amount and direction of movement along these significantly deformed structures are unknown, as there are no distinct marker horizons to determine offset. The deformation intensity at MG and Machichie is notably less than observed at Central, and the alteration envelope in those zones is also more restricted.

Internally, the laterally extensive, broadly deformed zones can comprise multiple anastomosing, more intensely deformed subparallel structures. Rafts of weakly to completely undeformed granitoid rocks, or lithons, occur between anastomosing brecciated zones. The margins of the deformed zones are diffuse, as brecciation yields to smaller-scale fractures and faulting. Cross-cutting features, visible in magnetic imaging along several deformation zones, and may offset, modify, or influence plunges within gold zones.

The intensity of brecciation observed in drill core (Figure 7-8 to Figure 7-11) within the deformed zones can be classified and mapped. For logging purposes, five distinct breccia types have been classified, with increasing levels of deformation, although there is a considerable overlap, even within a single core box.

1. Incipient breccias are deformed rocks with a developed fracture network, where alteration is concentrated within the fractures. Although the protolith is often pervasively altered, primary igneous textures generally remain discernible.
2. Fragment-supported breccias are brecciated rocks, wherein the fragments are in contact with each other, and the alteration and micro-brecciation within the matrix between fragments are more intense. Fragments can reach metric sizes locally.
3. Matrix-supported breccias are logged when the fragments are isolated and not in contact, with the matrix being the dominant component. Alteration is typically more pervasive, and the micro-brecciation of the matrix can reach widths of several centimeters. Fragments in this type are generally smaller compared to those in the fragment-supported breccia.
4. Chaotic breccias are matrix-supported breccias wherein fragments are rounded and locally polymictic.
5. Mylonite has been observed in some areas where the granitic rocks are leached into cryptocrystalline rocks. In many cases, these have been further altered and deformed into chlorite schist.

Widespread anomalous gold mineralization occurs throughout these deformed zones, but higher grades are more commonly observed within more highly deformed domains wherein there is pervasive gold-related alteration.

Specific mineralization intercepts with grades that exceed one ounce per short ton (1 oz/st), which corresponds to 34.286 g/t, are referred to as "high-grade zones" by the Cabral Gold staff. This reference is used in this Technical Report in the same manner.

Brecciation, fracturing, and shearing combine to provide enhanced permeability, facilitating the movement and injection of hydrothermal fluids. Banded and cross-cutting veins and multiphase breccias are evident in many places, implying that gold deposition occurred in multiple phases and was episodic.

Gold itself occurs in several forms: 1) as pervasive widespread replacement of deformed, brecciated and sheared rocks, 2) in quartz flooding and veins, 3) in quartz-carbonate veins and stringers, and 4) locally concentrated along contact zones with mafic dykes (Figure 7-8 and Figure 7-10). The lithons themselves are rarely well mineralized.

Narrow zones of gold mineralization have also been observed throughout the project area. Within these narrow zones, quartz veins and silicified zones occur within fractures or faults. There is generally no indication of movement along these structures, and wall-rock alteration typically extends less than a meter from the veins.

In some areas, there are occurrences of multiple parallel narrow gold zones that occur as a swarm or array. The best example of this, is the array that occurs in the Machichie SW region, specifically the 500 m gap between the Machichie Main Zone and the MG deposit. In this array, there are many steeply dipping and subparallel structures trending northeast over an area several hundred meters wide and approximately 500 m in strike. Individual structures have returned multiple high-grade gold values from drill intercepts and trench samples. Additionally, these narrow structures appear to merge with the east-trending Machichie deformation zone to the north and possibly the MG structure to the south. Depending on the density and periodicity of the array, these mineralized structures could ultimately represent economically significant bulk tonnage targets.

The east-trending deformed zones and the narrow northeast-trending structures are interpreted to be contemporaneous. The northeast-trending array in Machichie SW is considered to be early-stage Reidel “R” structures, whereas the more significant east-trending deformation zones that host Machichie and MG structures may be considered Reidel “P” or “Y” structures (Pucci et al., 2007). If this interpretation is correct, the geometrical relationship between the deformation zones and the narrow structures would suggest an overall sinistral (left-lateral) displacement along the MG and Machichie deformation zones. This also implies an overall northeast-southwest compression, which would be consistent with the orientation and development of the major northwest-trending TTDZ located a few kilometers to the east. To some extent, the east-trending deformation zones and vein arrays may have also been deformed and modified within restricted strain aureoles developed during the emplacement of plutons within and along the margins of the TTDZ.

7.4.1.2 Alteration Associated with Gold Mineralization

Gold grades are closely associated with the intensity of silicification (quartz) and sulphidation (pyrite). The gold-related alteration also includes minerals such as sericite, microcline, plagioclase, chlorite, carbonate, and hematite, along with trace amounts of base-metal sulphides. The percentages of these minerals occurring within the altered zones are largely influenced by the chemistry and mineralogy of the protolith. Generally, lower grades are associated with weak to moderate silicification and sulphidation, while grades tend to increase with greater alteration intensity, especially with higher concentrations of pyrite and quartz manifested as stringers, stockwork, sheeted veins, quartz flooding, and larger quartz veins.

One of the key features of mineralized zones present in several gold targets is the presence of sheeted quartz-chlorite-calcite veinlets, which contain pyrite and accessory base-metal sulphides. The veinlets typically range from 0.2 cm to 2.0 cm in width but can occasionally reach up to 20 cm. The spacing between the veinlets varies, ranging from tens of centimeters to several meters. Chlorite forms ubiquitous selvedges along fractures and veins, replacing ferromagnesian grains.

The colour of the gold-related wall-rock alteration varies, with higher grades often found in light to dark grey rocks, while lower grades are typically associated with cream, pink and reddish hues. The reddish coloration is more prevalent towards the outer edges of the alteration zones (Figure 7-8 and Figure 7-10).

As previously mentioned, many of the larger deformation zones contain extensive areas of red-brown to red hematite alteration that are likely not linked to gold mineralization. In some cases, such as at Central, gold-related alteration (Figure 7-8) occurs within one of these larger hematite- and microcline-rich zones (Figure 7-7). Conversely, in the MG and Machichie areas, the broader hematite assemblage is significantly less extensive, with gold-related alteration (Figure 7-10) being the more prominent feature. The red-brown coloration is generally attributed to the impregnation of potassium feldspar crystals with ferric oxide, such as hematite (Santiago et al, 2013).

Gold-related alteration appears to overprint or encroach on the regional hematite-rich alteration. These gold-related alteration zones are more restrictive within the deformation zones compared to the broader hematite-rich alteration zones and may be formed or deposited later by higher-temperature fluids.

Pervasive gold-related alteration can be so intense that it completely overprints and masks the textures of the granitic protolith and even later breccia textures. This results in a very fine-grained to cryptocrystalline homogeneous altered rock type that occurs in a broad range of colours, including light grey, cream, pink, and red-brown (Figure 7-7, Figure 7-8, and Figure 7-10). During logging, this texture is referred to as “ghost-textured” when the primary textures are not visible, or “relic ghost-textured” when small windows or enclaves of brecciation or granitic textures are still apparent.

Where the deformation zones transect felsic intrusions with low iron content, the broad hematite alteration may play a significant role in the genetic processes influencing gold mineralization in the basement, similar to the enhanced permeability created by brecciation within the deformation zones. Many scholars agree that the noble metal gold requires a principal complex through which it can travel in a rising (advecting) hydrothermal fluid sourced from deep-crustal levels. Chlorine and sulphur are considered the most effective complexes (Gaboury, 2019). The sulphidation of iron oxide minerals in the host rock is the most efficient method to break up a sulphur complex and release gold from the hydrothermal solutions. Given the low concentration of mafic minerals and magnetite inherent to the Central area

intrusions, the hematite within the broad alteration zones, may have added the required iron oxide to these rocks for sulphidization, leading to the formation of pyrite and the subsequent precipitation of gold from the hydrothermal solution. In contrast, the terrane at MG and Machichie is dominated by more mafic diorite, which inherently contains metamorphic-replacement and primary magnetite, thereby eliminating the need for regional hematite-rich alteration to form sulphides.

Figure 7-7: Drill Core Photos of Barren, Brecciated Red-Rock Alteration–- Central Deposit



Source: Cabral Gold, 2024.

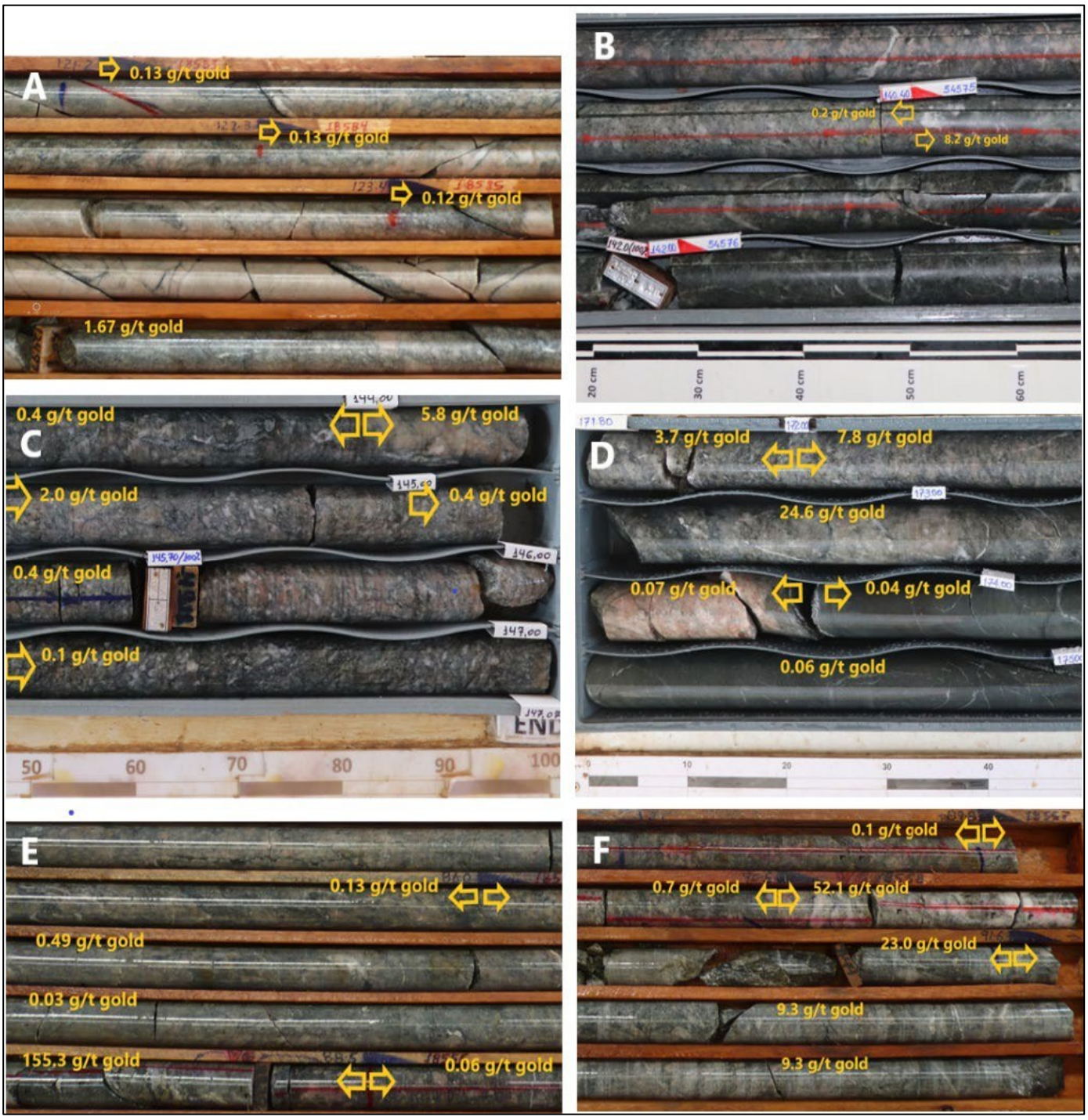
Figure 7-7 description.

A. Weakly brecciated granitic rock along the southwest boundary of the hematite-chlorite-k-spar alteration envelope. Hematite and k-spar preferentially replace feldspar. CC-117: 34.25 m to 41.14 m; 0.01 g/t Au.

B. Moderately brecciated granitic rock exhibiting strong hematite-chlorite-k-spar alteration. The breccia matrix is predominantly replaced by chlorite, while brick-red hematite and k-spar replace feldspar and occur in fractures and veins. DDH-247: 159.7 m to 163.3 m; 0.00 g/t Au.

C. Strongly brecciated granitic rock with pervasive hematite-chlorite-k-spar alteration. Hematite and k-spar largely replace the entire rock. Carbonate occurs in sheeted fractures and veins. CC-34: 116.5 m to 121.2 m; 0.00 g/t Au.

Figure 7-8: Central Gold-Related Alteration, Deformation, and Mineralization



Source: Cabral Gold, 2024.

Figure 7-8 description.

A. Pervasively altered pale intrusive rock. Early-stage alteration wherein the entire rock is completely replaced by albite, sericite, quartz, and k-spar, with minor chlorite present along fractures. No primary intrusive textures are evident. Incipient breccia fractures form within the broader altered rock. Within the pervasively altered rock and along the margins, there are zones of fragment-supported and matrix-supported breccia, wherein fragments of the pervasively altered rock serve as clasts. CC-32: 120.8 m to 125.5 m.

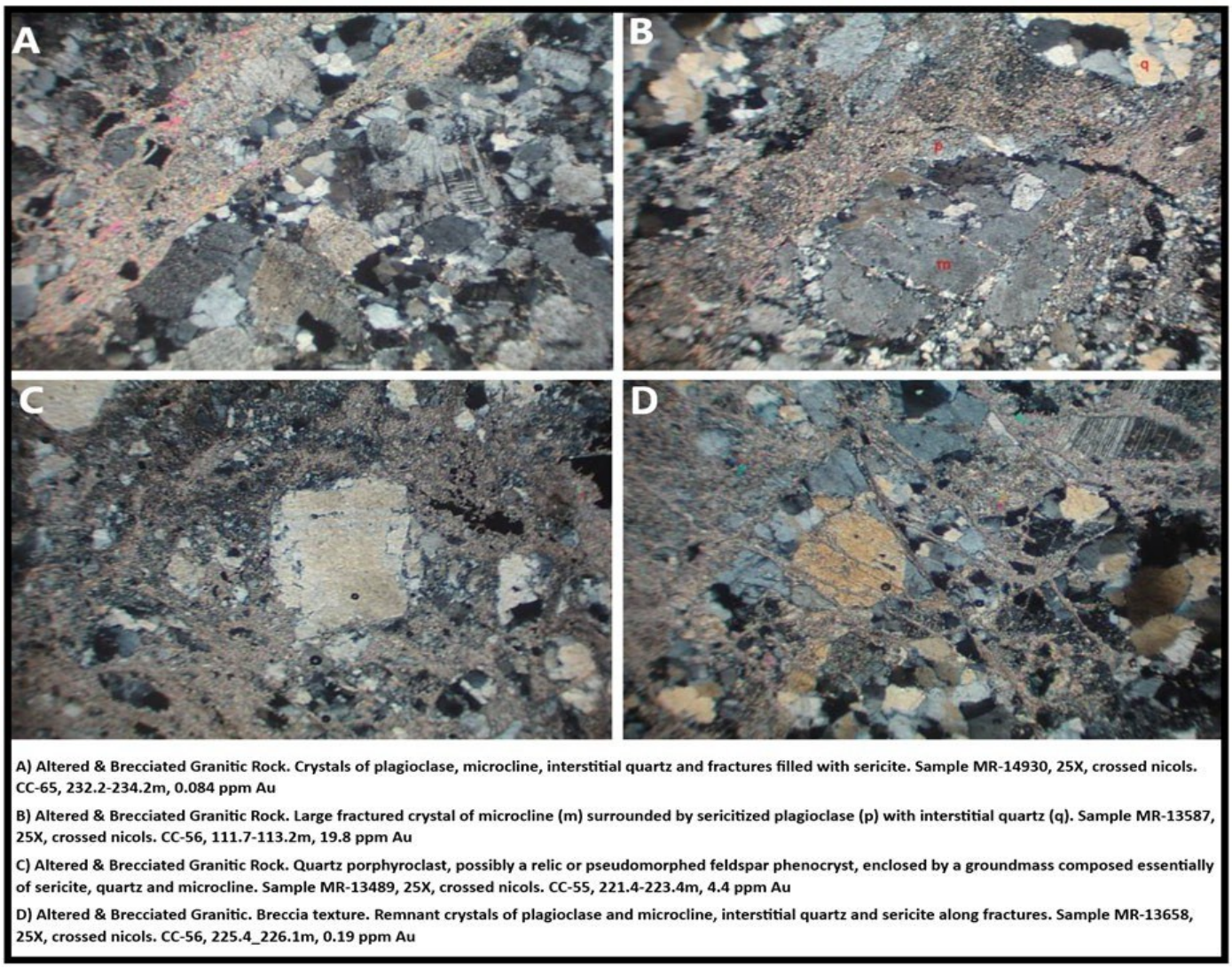
B. Moderately to highly brecciated and altered intrusive rock. Most fragments in the matrix-supported breccia are pervasively altered rock, shown in part "A." The density of quartz veining increases downhole, along with grade, silicification, sulphidation and chloritization. DDH-205: 139.0 m to 142.7 m.

C. Strongly brecciated and altered granitic rock with fragments of pervasively altered rock and quartz within both matrix- and fragment-supported breccia. It is unclear whether the quartz fragments are broken primary granitic phenocrysts or dislocated and broken quartz veins. Note: a large fragment of the pervasively altered rock is in the top right corner. DDH-258: 143.23 m to 147.07 m.

D. Strongly brecciated and altered granitic rock with fragments of pervasive-altered rock and quartz within both matrix- and fragment-supported breccia. Gold grades increase downhole (top two rows) toward a mafic dyke with an aplitic halo (in the bottom two core rows). DDH-269: 171.8 m to 147.1 m.

E, F. The two photos at the bottom show consecutive core boxes of highly altered breccia in CC-32, from 84.5 m to 93.5 m. This interval contains the up-hole portion of one of the higher-grade historic intercepts at Central, averaging 22.4 g/t Au over 7.8 m from 88.0 m. This section contains several high-grade gold intercepts, including 155.3 g/t Au over 0.5 m, 52.1 g/t Au over 0.5 m, 23.0 g/t Au over 0.6 m, 9.3 g/t Au over 2.0 m, and 61.1 g/t Au over 0.5 m. Chaotic breccia with visible gold is observed associated with the 115.3 g/t Au intercept at 88.5 m, and a quartz vein containing visible gold is associated with the 52.1 g/t Au intercept that starts at 90.5 m.

Figure 7-9: Central Deposit Thin Section Photomicrographs



A) Altered & Brecciated Granitic Rock. Crystals of plagioclase, microcline, interstitial quartz and fractures filled with sericite. Sample MR-14930, 25X, crossed nicols. CC-65, 232.2-234.2m, 0.084 ppm Au

B) Altered & Brecciated Granitic Rock. Large fractured crystal of microcline (m) surrounded by sericitized plagioclase (p) with interstitial quartz (q). Sample MR-13587, 25X, crossed nicols. CC-56, 111.7-113.2m, 19.8 ppm Au

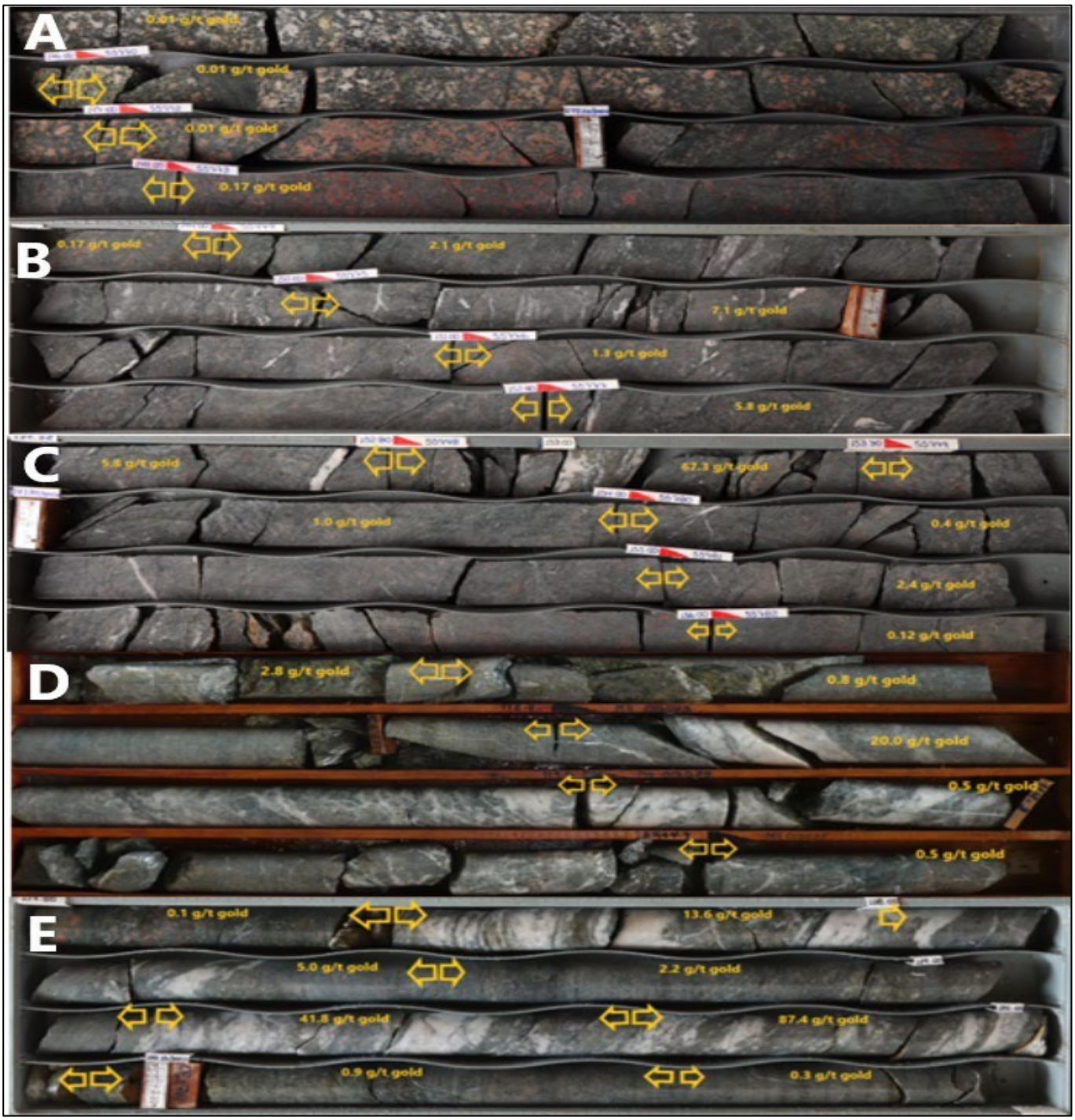
C) Altered & Brecciated Granitic Rock. Quartz porphyroclast, possibly a relic or pseudomorphed feldspar phenocryst, enclosed by a groundmass composed essentially of sericite, quartz and microcline. Sample MR-13489, 25X, crossed nicols. CC-55, 221.4-223.4m, 4.4 ppm Au

D) Altered & Brecciated Granitic. Breccia texture. Remnant crystals of plagioclase and microcline, interstitial quartz and sericite along fractures. Sample MR-13658, 25X, crossed nicols. CC-56, 225.4_226.1m, 0.19 ppm Au

Source: Cabral Gold, 2024.

The most pronounced micro-brecciation and alteration is presented in Figure 7-9 (Photos B and C), corresponding to sample intervals with gold grades of 19.8 g/t and 4.4 g/t, respectively. The weakest alteration and least intense are depicted in Figure 7-9 (Photos A and D), which correspond to the lowest gold grades of 0.084 g/t and 0.19 g/t, respectively.

Figure 7-10: MG Gold-Related Alteration, Deformation, and Mineralization



Source: Cabral Gold, 2024.

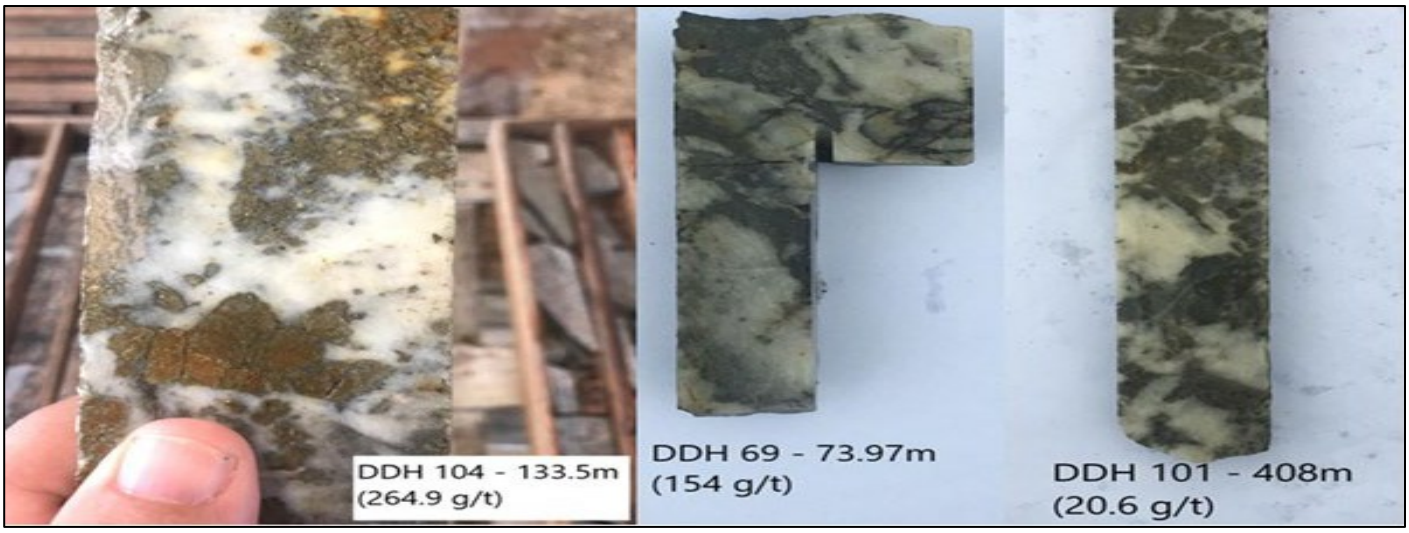
Figure 7-10 description.

A, B, C. The top three photos show consecutive core boxes from 145.08 m to 156.35 m in DDH-215. In Box A, the transitions downhole from weakly altered, fractured and brecciated coarse-grained diorite into brecciated diorite replaced by red k-spar/hematite and dark chlorite. The brecciated diorite is pervasively altered, with the red alteration partially overprinted by silicification and sulphidation, giving the rock a dark grey colour. Photos B and C show the continuation of this grey alteration further downhole, with frequent quartz veinlets and local evidence of shearing. This section represents the upper part of a 17.6 m wide mineralized zone, returning 4.1 g/t Au from 149.0 m, and included 0.5 m at 67.3 g/t Au and 0.5 m at 23.0 g/t Au.

D. A higher-grade zone averaging 6.0 g/t Au within grey, brecciated, and altered quartz diorite, featuring significant quartz veining/flooding from 110.9 m to 115 m in hole CC-46. This interval is part of a broader 20.9 m section grading 1.7 g/t Au from 104.8 m, which includes one meter grading 20.0 g/t Au from 112.9 m.

E. A high-grade zone in DDH-271 from 117.2 m to 120.9 m occurs within grey, brecciated, and altered quartz diorite featuring significant quartz veining, flooding, and some shearing. The 3.1 m interval from 117.5 m to 120.6 m averaged 24.4 g/t Au, with highlights including 0.5 m at 13.6 g/t Au, 0.5 m at 41.8 g/t Au, and 0.5 m at 87.4 g/t Au.

Figure 7-11: Select Core Samples of MG Pyrite-Rich High-Grade Veins

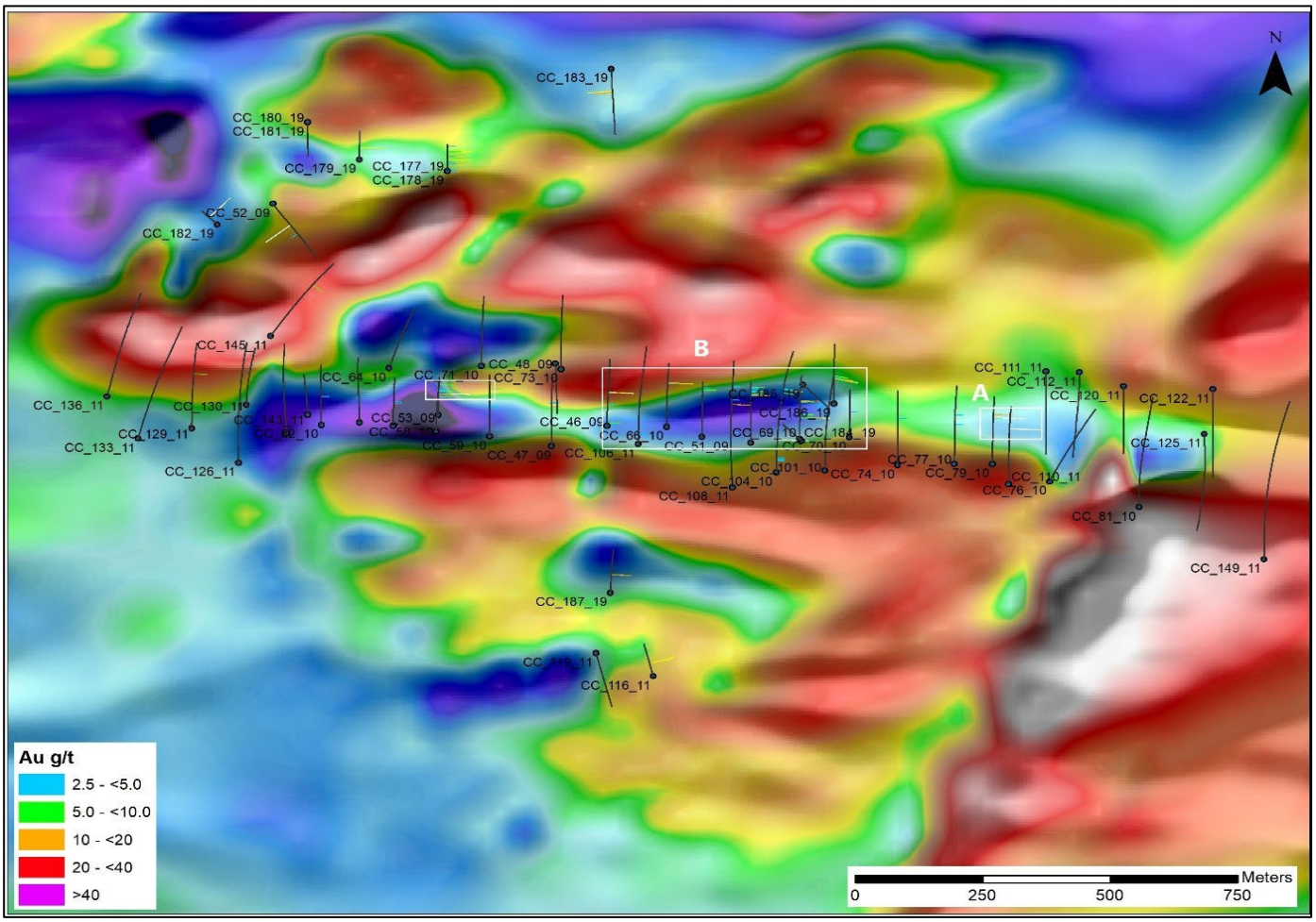


Source: Cabral Gold, 2024.

As mentioned earlier, the larger deformation zones coincide with regional magnetic lows, likely due to the deconstruction of magnetite caused by alteration within those zones. This is further supported by downhole magnetic susceptibility logging, where strong alteration – particularly in silicified and pyrite-rich rocks – is generally associated with low magnetic susceptibility readings. On a regional scale, this has become a valuable mapping tool for identifying gold-alteration zones within deformation zones. In some cases, the highest gold grades align with the lowest magnetic amplitude in these linear magnetic low anomalies. This correlation likely stems from a regional metamorphic event

followed by gold-related alteration. Initially, disseminated magnetite would be formed during greenschist metamorphism as primary mafic minerals (amphibole, biotite, and pyroxene) were recrystallized into metamorphic chlorite and magnetite. During the gold-related alteration event, sulphur in the hydrothermal fluids transforms magnetite into non-magnetic sulphides, primarily pyrite. The strongest negative magnetic lows are most prevalent in the MG/Machichie region, which developed within older, more magnetic diorite and porphyritic diorite of the Cuiú Cuiú Complex (2.02 Ga). At MG, the broad magnetic pattern presented in Figure 7-12 outlines the alteration envelope and defines the deformed zone. Within the magnetic low, three distinct low-anomaly zones are present, with the middle one labeled “B,” corresponding to underlying areas of higher-grade mineralization within the MG fresh basement deposit. A similar east-trending magnetic low corresponds to the linear trend of gold mineralization at Machichie, located at the northern edge of Figure 7-12. One of the late diabase dykes appears as a north-northeast magnetic high in Figure 7-12 cutting through the eastern end of MG and intersecting diamond-drill hole CC_81_10 (see also Figure 7-10).

Figure 7-12: Reduced-to-Pole Total Field Magnetic Image of the MG and Machichie Region



Source: Cabral Gold, 2024.

7.4.1.3 Basement Gold and its Association with Sulphide and Other Minerals

In the larger mineralized zones, there is an overall positive correlation between the frequency of quartz veins and the percentage of sulphides present to gold grade (Figure 7-8, Figure 7-10, and Figure 7-11).

Pyrite is the predominant sulphide associated with gold mineralization at Cuiú Cuiú and serves as the primary host for native gold. However, coarse visible gold is also found associated with base-metal sulphides and, more rarely, as free gold in quartz. Minor to trace amounts of base-metal sulphides have been recognized in many gold targets, including galena, sphalerite, and chalcopyrite.

Other minerals have been identified that do not seem to be linked to gold mineralization. Rare fluorite and amethyst have been observed, and cassiterite is noted in petrographic reports, although no elevated tin assays have been observed in analyses. Coarse molybdenite has been found in drill core and basement exposures at Machichie, where it is fairly common (Figure 7-13), and has also been observed in one hole at MG. Scheelite is reasonably widespread in the Machichie region and occurs both as disseminations and within quartz veins (Figure 7-14).

While molybdenite and scheelite are found intimately associated with gold mineralization at Cuiú Cuiú, they also occur outside of the gold zones, and there is no direct correlation with gold grades. Throughout the world, molybdenite is generally associated with porphyry deposits, whereas scheelite is a key mineral in intrusion-related gold deposits (IRGD), such as those found throughout the Tintina Gold Province of the northern North American Cordillera (Hart and Goldfarb, 2005).

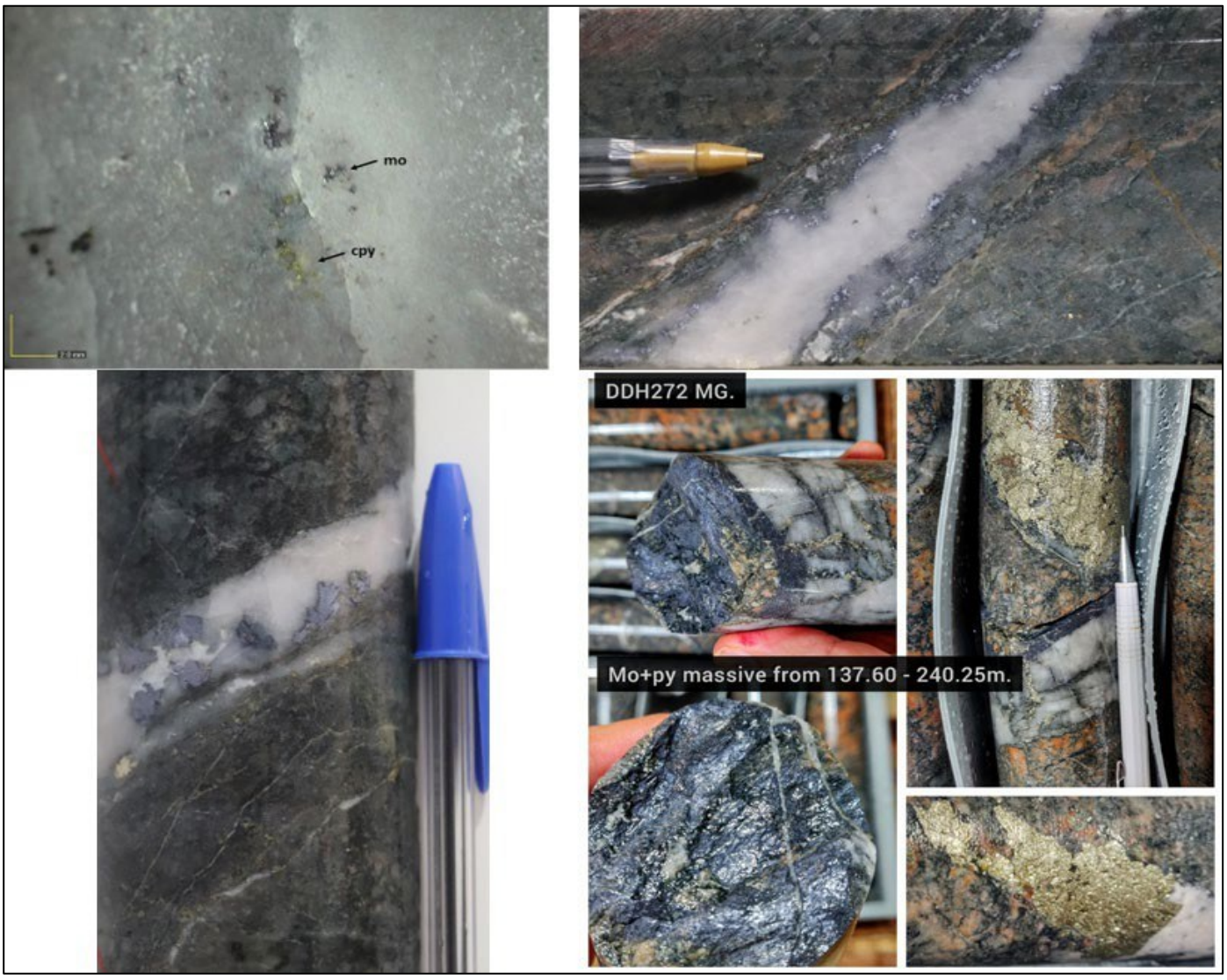
Significant amounts of columbite, a niobium-bearing mineral, have been identified at a placer site where artisanal miners have also recovered large gold nuggets. However, no columbite has been found in situ. Niobium, a rare-earth metal, is used in a variety of applications, including wind turbines, jet engines, aircraft bodies, high-pressure pipelines, superconducting magnets, bridges, brake discs, and in the steel frames of skyscrapers.

In the fresh basement stockwork mineralization and disseminated replacement zones, pyrite content ranges from a volume of 0.5% to 4%, while base-metals, such as galena, sphalerite, and chalcopyrite, average volumes of less than 0.2%.

Like Tocantinzinho, the mineralization at Cuiú Cuiú can be considered “low sulphide,” with an overall sulphide content of less than 2%. Higher-grade gold zones above 5.0 g/t Au are associated with increased levels of both pyrite and base-metal sulphides, accompanied by significant silicification. In some quartz veins, pyrite content is so high that it forms semi-massive sulphide rock, which often yields high-grade gold values, such as the core samples from MG shown in Figure 7-6.

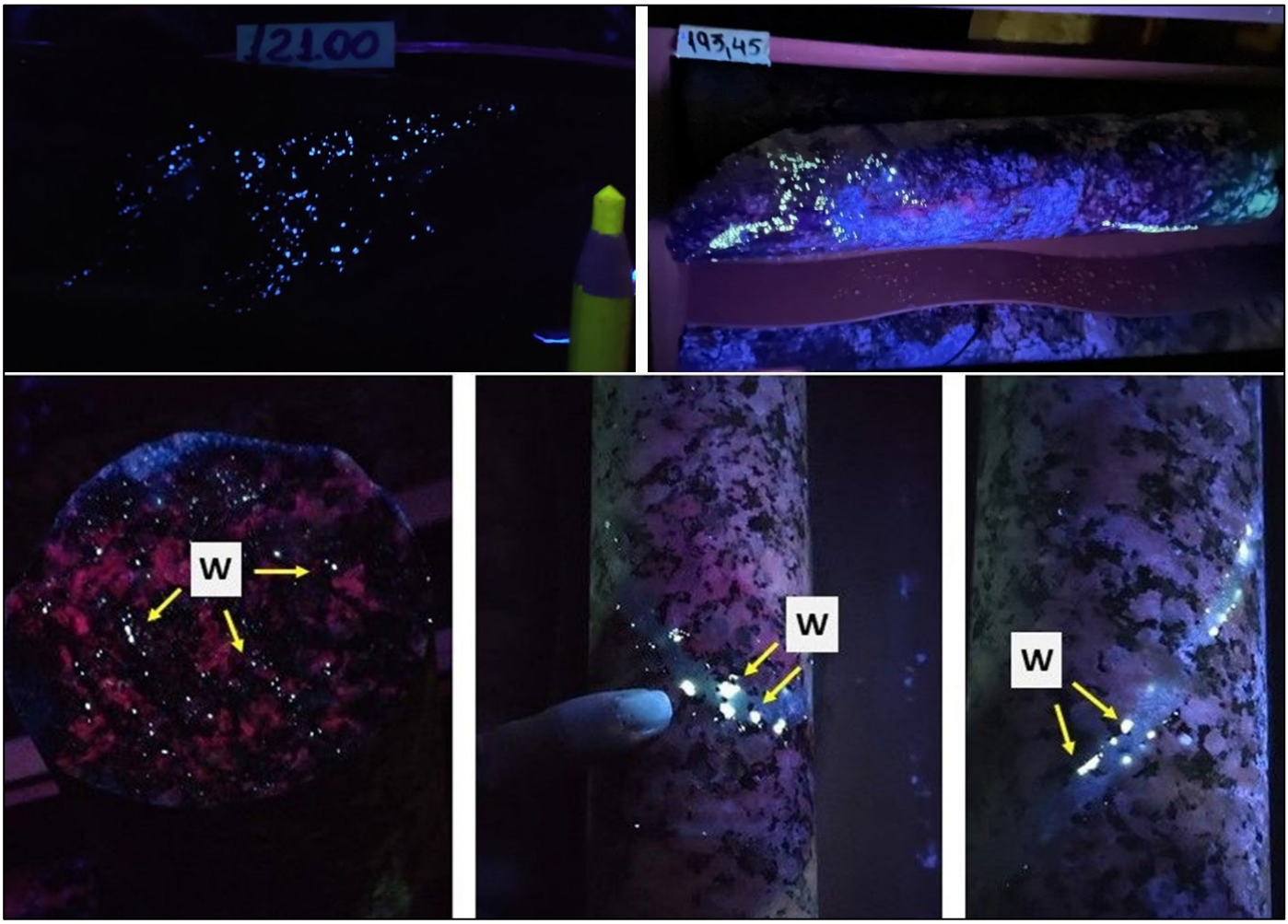
In drill core, visible gold grains range up to 2.0 mm in diameter. Coarser gold has been observed in rock samples taken from both underground and surface artisanal workings (Figure 7-15). Based on five polished sections from Central drill holes, gold grains occur as inclusions and in fractures within pyrite, ranging from 2 µm to 50 µm. Gold grains located near or attached to pyrite are coarser, with sizes typically ranging from 100 µm to 250 µm. This is similar to the nearby Tocantinzinho deposit, where gold grains are found closely associated with pyrite, occurring along grain boundaries, within fractures, and locally as inclusions within pyrite (G Mining Services Inc., 2022).

Figure 7-13: Molybdenite in Machichie Core from DDH 279, 272, and 312



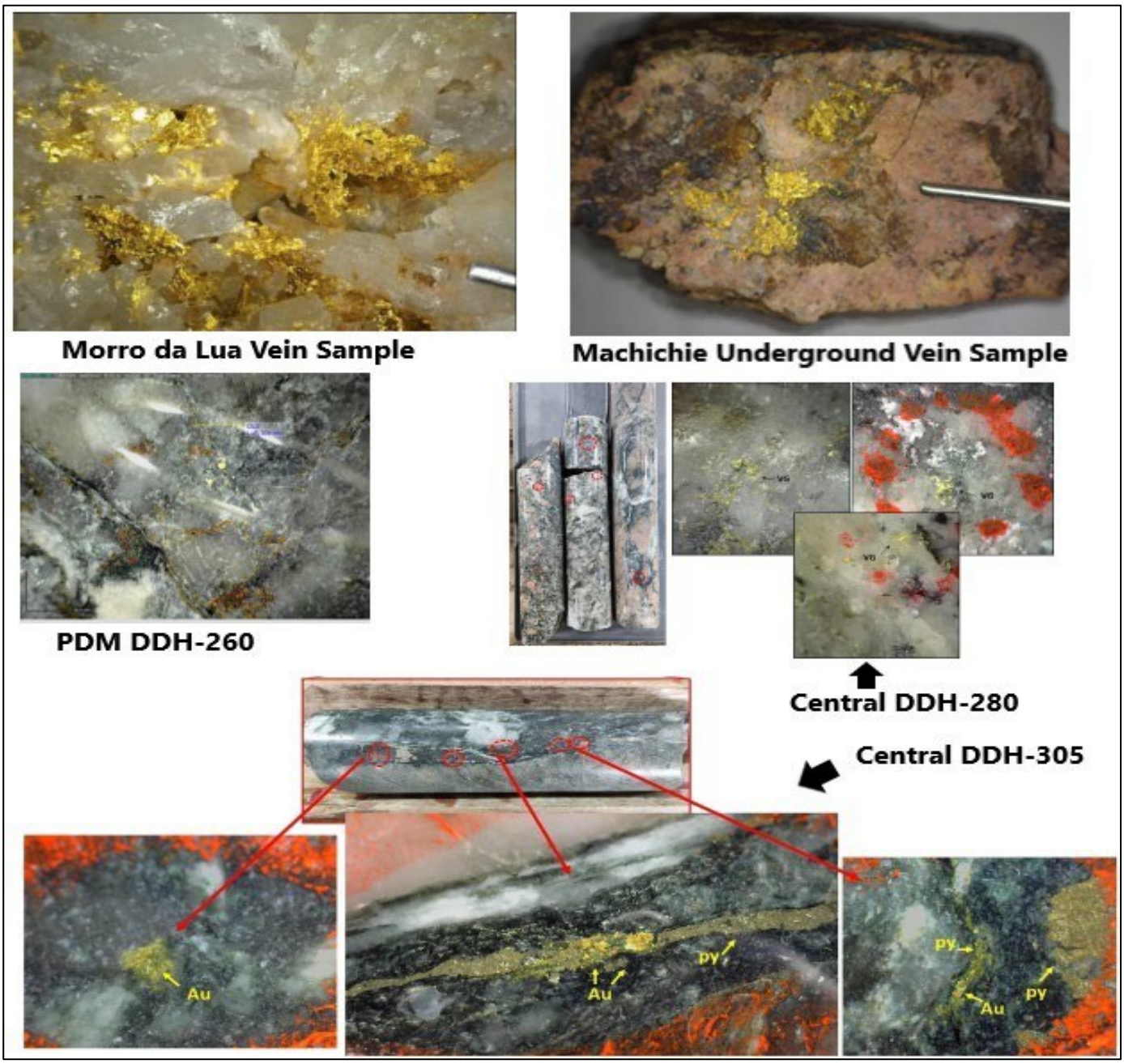
Source: Cabral Gold, 2024.

Figure 7-14: Machichie DDH 279, Disseminated and Vein Scheelite – Blacklight Core Photographs



Source: Cabral Gold, 2024.

Figure 7-15: Examples of Visible Gold in Bedrock



Source: Cabral Gold, 2024.

In Figure 7-16, Blanket (A) unconformably overlies the saprolitized and weathered mineralized basement (B-D). As depth increases, the material becomes denser, while the intensity of saprolitic weathering decreases.

Figure 7-16: Weathered Profile DDH-250, Central Deposit



Source: Cabral Gold, 2024.

7.4.2 Weathered Mineralization

In a flatter topographic terrane, the in situ weathered mineralized basement extends to the surface, where unconformable Miocene sediments and transported colluvium are absent. In areas that rise to topographic highs, such as MG, Central, and PDM, this weathered basement material is commonly covered by unconformable Blanket mineralization.

The extent and implications of these mineralized weathered rocks became more apparent in 2021. They exhibit a much lower density than basement rocks, potentially resulting in lower mining costs, as many are unconsolidated and can be excavated without the need for blasting. Recent metallurgical testing suggests that they may also be well-suited for heap leach processing (see Section 13).

Visible gold is significantly more prevalent in weathered veins at the surface compared to the drill core. Gold is locally found in abundance within pan concentrates of crushed weathered vein material, wall rock, mineralized colluvium, and mineralized soil (Figure 7-17).

Such nuggetty gold can be difficult to assess through traditional fire assay sampling methods, resulting in subdued grades from drilling and analysis within the weathered profile. This is discussed further in Section 13.2.3.

Figure 7-17: Visible Gold in Weathered Quartz Veins and Gold in Crushed Rock Panned from Machichie Trenches



Source: Cabral Gold, 2024.

7.4.3 In Situ Weathered Basement Mineralization

All primary gold mineralization that is closer to the surface is heavily weathered into soil and in situ saprolite. This weathering process involves the replacement of silicate minerals with clay minerals, while iron-bearing mafic minerals and sulphides are replaced by iron oxides and clay, which can locally pseudomorph pyrite grains. This overall weathering process reduces rock densities from fresh rock, which ranges from 2.6 g/cm^3 to over 3.0 g/cm^3, to between 1.4 g/cm^3 to 2.7 g/cm^3 in weathered rock, depending on the stage of saprolite development (Figure 7-16). Generally, the lowest densities are observed near the surface in mineralized soil and transported Blanket material, while densities tend to increase with depth within in situ mineralized saprolite. However, lower densities may also be encountered at greater depths within the weathering profile for several reasons, including focused weathering along aquifers such as deep-penetrating fractures or faults, or the repetition of the saprolitic profile caused by soft-sediment faulting.

Intrusive, deformation, and hydrothermal textures are well-preserved in less saprolitized in situ weathered basement saprolite, particularly in areas of strong silicification.

Gold grades within the mineralized in situ weathered materials tend to be higher than in their fresh basement counterparts, which is typical of weathered rock. During saprolite weathering, felsic silicate, mafic silicate, and sulphide minerals are preferentially replaced with clays and iron oxides, while gold content remains largely unchanged. Consequently, although the rock density decreases, the amount of gold per tonne of rock increases. Additionally, there may be an upgrading effect from local in situ supergene enrichment. Gold can be transported in oxidized groundwater through chlorine complexes (Greffie et al., 1996) or sulphate (thiosulphate) complexes (Craw et al., 2015).

Highly weathered mineralized basement rocks exposed in trenches display locally abundant visible gold in veins, and fine-grained gold can be easily panned from crushed samples (Figure 7-17).

7.4.3.1 Unconformable “Blanket” Mineralization

As discussed earlier, the process of erosion of the in situ saprolite mineralization has formed flat-lying colluvial-fluvial blankets that lie above the steeply dipping basement deposits, creating an angular unconformity. These blankets consist of auriferous in situ soils, alluvial sediments (including transported soils, colluvium, talus), fluvial sediments (formed by creeks and streams), and lacustrine sediments (lake sediments). Although these sediments are now highly saprolitized, they represent immature placer and paleo-placer mineralization that formed close to the source.

Recently spent tailings and waste rock from artisanal mining operations, many of which date back to the 1970s and 1980s, are generally indistinguishable from Blanket sediments in drill core. These materials still retain significant amounts of gold due to the rudimentary processing techniques used by artisanal miners and are included in the Blanket.

Blankets formed as a result of downslope creep have been widely dispersed from the mineralized primary weathered surface exposures through water runoff and gravity.

Blanket-style mineralization has been identified unconformably above the MG and Central deposits, and at the PDM target. Evidence of Blanket mineralization is also present at CN and Machichie. This type of mineralization is particularly extensive at MG, where drilling has outlined mineralized Blanket covering a surface area of 45 Ha. In certain locations,

the Blanket's footprint is more than five times wider than the surface projection of the underlying basement mineralization.

It is important to understand that the present arrangement of the Blanket mineralization has been deposited over an extended period. The elevation and ruggedness of the topographic surface do not accurately represent the original topographic profile, which has been denuded for millions of years. This original weathered topographic profile could have been hundreds of meters higher before erosion reduced it to the current elevation. Deposition from such an elevated source is the most reasonable explanation for the current sizes of these widespread horizontal mineralized Blanket deposits, which can extend up to several hundred meters laterally from the current surface expression of in situ saprolite mineralization.

Figure 7-16 illustrates Blanket mineralization exposed in the workings at the foot of PDM Hill. Here, the lower slopes are covered by transported overburden flanking the current river position, comprising sands, point bar gravels, and bedded clays that conceal the basement. The lateral limit of the transported overburden is unknown, but the workings extend 150 m to 200 m from the current water line. The basal bedded sediments appear to be onlapped by soil shed from the hill. Artisanal mining in this area targeted a buried quartz gravel horizon. Additionally, Figure 7-16 shows slightly weathered talus cobbles and fragments within colluvial debris flows that form part of the mineralized blanket at MG, which has also been mined by artisanal workers.

Similar unconformable deposits have been identified above several deposits in Africa. One of the best examples is the Tulawaka deposit in Tanzania, which contains 1.0 Moz Au. This deposit was a blind discovery located beneath unconformable Lake Victoria sediments. At Tulawaka, gold mineralization located beneath the lake sediments was hosted in both saprolite and hard rock overlain by discontinuous laterite that also contains detrital or chemically remobilized gold (Canadian Mining Journal Staff, 2005). Two surface weathered quartz-rubble zones at Tulawaka were initially estimated at 246,000 t, grading 7.29 g/t Au, or 57,700 oz Au (Taylor, 2009).

7.5 General Descriptions of Advanced Gold Targets at Cuiú Cuiú

The following subsections provide summaries of the general geology and morphology of the six more advanced targets at Cuiú Cuiú that have undergone additional drilling. For further details and figures for each target, refer to Sections 9, 10, and 14 of this Technical Report.

7.5.1 Central Gold Deposit

The Central deposit is composed of three distinct gold-bearing units: 1) unweathered basement mineralized rocks that are highly altered and brecciated, 2) in situ weathered and saprolitized basement rocks, and 3) unconformable sub-horizontal Blanket mineralization.

The Central gold deposit region is one of the most heavily exploited areas of the property by artisanal miners. All drainage basins have been worked over multiple episodes, with artisanal workers extracting near-surface, free-digging mineralized basement saprolite, and Blanket mineralization. Access to readily available surface water is critical for artisanal miners, as they rely on rudimentary methods to process mineralized rock, and streams flow over much of the southeastern part of the Central deposit.

The primary basement deposit at Central consists of a laterally extensive, northwest-trending, steeply dipping series of subparallel mineralized zones that extend below the depth of the deepest drill holes completed to date.

The primary gold mineralization within 80 m of the surface has been extensively weathered into saprolite. The intensity of weathering and saprolitization decreases with depth, while density correspondingly increases (Figure 7-16). The basement extending up to 20 m directly beneath the saprolite profile, is commonly weakly weathered, with intrusive rocks appearing bleached and containing rusty fractures. Locally, more deeply penetrative saprolite weathering is concentrated along these fractures.

Mineralized in situ saprolite, is unconformable overlain by sub-horizontal transported Blanket material, which is covered by spent artisanal tailings and waste material over much of the southeastern half of the deposit. The latter is indistinguishable from fluvial sediments in drill core.

The primary Central deposit lies within a broad, northwest-trending, highly altered deformation zone that transects, and has deformed and altered multiple primary rock types, including coarse- to medium-grained granite, granodiorite, quartz monzonite, and tonalite along with narrower intermediate, mafic and felsic dykes.

The original mineralogy and characteristics of these predominantly altered and deformed rocks are generally very difficult to ascertain. They are thought to primarily belong to the Creporizão intrusive suite (2.0 Ga) but may also include rocks of the older Cuiú Cuiú Complex (2.02 Ga), as well as smaller dykes and plutons from the younger Parauarí suite (1.89 Ga), and Maloquinha suite (1.88 Ga). Coarse granite is the most representative host rock, with colors ranging from pale pink to reddish (when not altered), depending on the amount of microcline and hematite present. Unaltered tonalite typically appears pale grey.

Micro-brecciation and crushing of the granite or granodiorite is widespread (Figure 7-8 and Figure 7-9) but is not always related to mineralization. However, the more mineralized zones are invariably hosted in brecciated intrusive rocks, indicating that brecciation very likely played a key role in preparing the rock for movement of hydrothermal fluids.

A swarm of mafic dykes, variably altered and deformed, intrudes the deformation zone. These dykes typically display abundant carbonate stringers and veins, and typically align parallel or subparallel to the deformed zone, with steep dips, although some dykes are nearly horizontal. Due to their more mafic composition, many of these dykes are altered and deformed into chlorite schists within the deformed zone. While inherently barren and not genetically related to gold mineralization, many mafic dykes are highly altered and locally well-mineralized, with higher grades often found along their contacts. The deformation of the dykes varies from massive to weakly deformed, to chlorite schist. They are believed to have been intruded before, during, and late in the deformation event.

The alteration envelope at Central has been traced by drilling along a strike length of 1,350 m. It is subvertical, up to 200 m wide in some areas, and extends to a maximum vertical depth of 430 m.

The alteration is generally subdivided into two zones: an inner zone of pink, cream and grey hues, which is associated with gold mineralization, and an outer zone with deep red to red-brown hues, characterized by intense chloritization, hematization, and k-spar alteration (Figure 7-7 and Figure 7-8). Most significant gold mineralization at Central is restricted to the inner grey-cream-pink core zone, while the outer red zone is typically very low grade or barren. However, subsidiary mineralized zones do occur within more intensely altered sections of the outer red zone. The

contact between these two altered zones can be sharp, gradational, and layered, and in some areas, it is sheared, with locally abundant mafic dykes.

The core grey/pink mineralized alteration zone is up to 110 m wide and extends from the basement saprolite contact to a depth of 430 m below surface, where it was encountered in the deepest drill hole on the property to date.

In the core of this mineralized alteration zone, rocks vary from light grey to pinkish grey, with alteration dominated by silicification, sulphidation, sericitization, carbonatization, albitization, chloritization, and k-spar (microcline) alteration, ±hematite. Silicification manifests in three forms: 1) replacement of the brecciated host rock, 2) very narrow sheeted quartz-carbonate veins and stringers, and 3) quartz and quartz-sulphide veins. Many of the veins and stringers are surrounded by narrow chlorite alteration selvages (± sulphides).

Within the mineralized alteration zone at Central, numerous steeply dipping, subparallel, northwest- trending, higher-grade, gold-bearing mineralized zones have been intersected, locally displaying high grades. These zones are generally surrounded by more extensive lower-grade mineralized halos. For instance, DDH268, drilled on Section 19550N in the southern part of the Central deposit, intersected 6.95 m grading 22.7 g/t Au started from 167.0 m. This included 0.55 m grading 12.9 g/t Au, 0.60 m grading 202.9 g/t Au, 1.05 m grading 11.7 g/t Au, and 1.05 m grading 11.5 g/t Au.

Cabral Gold's recent drilling efforts have focused on the south-central area of the Central deposit. However, the historic drill hole density throughout much of Central is still too widely spaced to adequately interpret and correlate many of the higher-grade intercepts. Similarly, much of the historic drilling was deep, and intersected mineralization below the in situ saprolite and Blanket mineralization. As a result, there is limited knowledge regarding the distribution and extent of those types of mineralization in the northern and southern parts of Central, where drilling remains sparse.

At Central, two narrow, steeply dipping, north-northeast-trending, post-mineral porphyritic latite dykes that transect the northwest-trending mineralized zones in the southeastern half of the deposit. These dykes exhibit localized fractures filled with carbonate and cryptocrystalline chalcedony but show no signs of brecciation or deformation. Dyke margins were chilled and have been metamorphosed. The mineralogical composition of the dykes is relatively unique, indicating a shoshonitic intrusive suite. Thin section analysis reveals a phenocryst-rich porphyry that contains plagioclase, K-feldspar, quartz, biotite, and olivine phenocrysts, with coarse phenocrysts of sanidine (k-spar), plagioclase and quartz up to 8 mm in diameter. Xenoliths of mineralized wall rock are occasionally found within the dikes, but they are otherwise barren.

7.5.2 Moreira Gomes (MG) Gold Deposit

The MG gold deposit consists of three components: 1) an extensive primary basement gold deposit, 2) weathered in situ mineralized saprolite, and 3) an extensive sequence of unconformable Blanket mineralization.

The MG area is primarily underlain by the slightly older Cuiú Cuiú Complex (2.02 Ga) intrusive suite. The majority of igneous rocks hosting MG gold mineralization are diorites, and they vary from fine to coarse-grained and are predominately porphyritic, with abundant megacrysts of plagioclase. Multiple intrusive phases are evident, with variably assimilated mafic xenoliths (possibly assimilated supracrustal rocks) and older diorite being locally common. Rare gneissic layering is evident in places. Mafic dykes are also scattered throughout the MG area but are not as common as at Central.

Gold mineralization at MG occurs within several subparallel, east-trending, steep north-dipping deformation zones that have been subjected to intense hydrothermal alteration. This combined alteration envelope has been drilled over a strike length of 2,100 m, with the altered zone locally reaching widths of up to 200 m wide, although it typically measures less than 100 m in width. Mineralization has been drill tested to a maximum vertical depth of approximately 375 m in the deepest hole drilled to date (CC-101) at MG. Both the alteration and gold mineralization within it, remain open along strike and at depth. Also, while grades and widths diminish significantly towards both the western and eastern ends of the 2.1 km-long deposit, based on existing drilling data, mineralization continues to be present.

Deformation and alteration are less intense than at Central, and lithons of weakly deformed and altered to fresh, undeformed and unaltered diorite commonly occur between anastomosing zones of stronger deformation and alteration.

In the deformed zones, breccias are often well-developed, showing similar textures to those observed at Central. Shearing is locally associated with quartz veining, and many of the mafic dykes within the deformed zones are also highly foliated.

Alteration is somewhat zonal, with better-grade gold mineralization commonly associated with grey alteration, characterised by disseminated sulphide, sericite, pervasive silicification, chloritization and quartz stringers and veins (Figure 7-10). Higher grades commonly occur within sulphide-rich quartz veins (Figure 7-11). More distal alteration is dominated by chlorite, k-spar and hematite, which are overprinted or encroached upon by gold-related alteration. The broad, strongly developed red-rock alteration zone surrounding the alteration core of the Central deposit is significantly less extensive.

MG is the most extensively drilled deposit within the Project, allowing for further refinement of the mineralized system. Numerous distinct subparallel and anastomosing basement gold mineralized zones and vein systems can now be interpreted within broader alteration zones at MG. Most of these zones contain narrower, higher-grade zones that locally display High grades. In some locations these higher-grade zones occur in an en-echelon fashion. For example, DDH-199, drilled on Section 552700E intersected 34.3 m with a weighted average of 5.0 g/t Au from a depth of 82.6 m within Zone 2, one of the main northwest-trending, north-dipping zones. This intercept included the three stacked, moderately north-dipping higher-grade zones, each containing high-grade structures. The upper higher-grade zone intersected 6.8 m grading 3.0 g/t Au from 82.6 m, including 13.0 g/t Au over a section of 1.2 m. The middle higher-grade zone returned 7.6 m grading 7.6 g/t Au from 91.9 m and included sections of 1.0 m grading 14.6 g/t Au, 1.0 m grading 35.5 g/t Au, 1.0 m 14.9 g/t Au, 1.1 m grading 44.2 g/t Au, and 1.5 m grading 15.6 g/t Au. The lower higher-grade zone returned an intercept of 6.0 m grading 1.3 g/t Au, including 1.0 m grading 5.5 g/t Au.

At the western end of the east-striking deposit, it turns to the northwest, wrapping around a granodiorite pluton. Most of the intrusion intersected in drilling is undeformed, and it is interpreted as part of the Parauarí suite (1.89 Ga). An amphibolite-facies contact metamorphic aureole surrounds the margin of the intrusion within the older diorite.

At the extreme eastern end of the MG deposit, a steeply dipping, north-northeast-trending unmetamorphosed diabase dyke, approximately 45 m in width, cuts through the east-trending gold mineralized zones. The diabase was emplaced post mineralization and is characterized as massive, undeformed, and barren.

Primary basement mineralization has been saprolitized and weathered in situ, reaching depths locally exceeding 80 m. Brecciation and hydrothermal alteration, including veining, are evident in less weathered material. Grades generally appear to be higher than the bulk of the unweathered underlying mineralization, with indications of supergene enrichment near the surface and along geological contacts, and deeper fractures or faults where groundwater flow has concentrated. The surface footprint of this weathered basement mineralization aligns with that of the unweathered basement mineralization and its associated alteration.

The Blanket mineralization at MG primarily consists of soil and transported colluvium, with lesser fluvial and lacustrine sediments. Beneath the lake sediments, there are thick clay deposits that also contain gold in certain places. In one locale, near a small body of water, there is an area of disturbed ground with rejects and tailings from artisanal mining. Drilling indicates that the mineralized Blanket covers a surface area of approximately 36 Ha. The thickness of the Blanket varies from just a few meters in the west, to nearly 40 m below the surface in the central region. Its long axis has been traced for 1.5 km from east to west, aligning roughly with the strike of the underlying basement deposit. In some places, the Blanket extends from north to south for over 500 m, crossing the up-dip projection of the underlying basement mineralization's strike. This north-south footprint is more than five times the width of the underlying basement mineralization in certain locations.

Mineralization closer to the surface within the weathered profile is believed to have been locally affected by faulting and redeposition. In the central-eastern part of the deposit, evidence suggests that a significant shallow-dipping listric fault system developed into a paleo-landslide before or during the Miocene. At the base of the landslide, mineralized basement saprolite is present, interpreted to have been offset and downthrown to the east, possibly by several hundred meters. The mineralized basement saprolite within the downthrown block has experienced soft-sediment shearing and is heavily saprolitized. A fault-bounded paleo-valley created by the landslide was later filled with a variety of Miocene sediments, including clay-rich lacustrine sediments, alluvial sediments, and colluvial deposits. The thickest portions of the Blanket mineralization at MG occur within this landslide-generated paleo-valley. Ferricrete is commonly observed at both the base and top of the lake sediments. Fault-scarp-style talus deposits, characterized by angular laterite clasts, are present within the lake sediments and along the northern end of the basin, suggesting that movement along the controlling faults continued during sedimentation.

Carbon and sulphur analyses were conducted by KCA (2022) on various materials within the Blanket and underlying basement saprolite revealed that sulphide sulphur levels in both the basement saprolite and colluvium were less than 0.01%. Sulphate sulphur reached 0.04% in soil samples. Organic carbon in bedrock saprolite and colluvium was mainly below 0.14%, though it was slightly higher in soil, with a maximum of 0.27%. Inorganic carbon was less than 0.3% across all rock types. The analysed lake clays exhibited higher levels of both sulphur and carbon, where sulphide and sulphate sulphur measured 0.03% and 0.04%, respectively. The carbon content in these clay sediments was significantly higher at 1%, including 0.95% organic carbon and 0.05% inorganic carbon, respectively. Slightly elevated carbon levels in soil, likely indicate the presence of a small amounts of decomposing plant material and roots. Additionally, rare tiny fragments of coal have been observed along a bedding plane within clay sediments in diamond-drill hole Met007. Petrified logs, wood fragments, and other vegetation have been observed in similar sediments elsewhere in the property. It is likely that gold mineralization found in lake sediments, will need to be excluded from processing; however, the gold in clay sediments represent much less than 1% of the oxidized weathered deposit at MG.

7.5.3 Central North (CN) Deposit

The Central North (CN) deposit is located 250 m north of the main Central deposit. There is limited drilling between Central and CN, suggesting that the two may be connected by alteration.

Drilling at CN is sparce and widely spaced. The general geology is quite similar to Central, with the basement mineralized zone found within a brecciated and altered zone. This includes an unweathered basement gold deposit, which is overlain by an in situ mineralized basement saprolite deposit and a thin, unconformable sub-horizontal Blanket that covers the primary deposit.

Cabral Gold completed widely spaced RC holes above and around the CN deposit to outline the extent of any significant Blanket. No drilling tests have been conducted in the basement deposits since the original ten historic holes were drilled by Magellan prior to 2012, only five of which tested the deposit. However, based on recent findings from other areas on the property, a new geological interpretation of the CN deposit has been developed, and the deposit has been remodeled.

The CN is now interpreted to extend 650 m along a northwest strike, comprising two mineralized zones that span over a 65-m width, and dipping steeply to the northeast. It has been drilled to maximum vertical depth of 240 m.

The Blanket area outlined by Cabral Gold's drilling is relatively small and low grade, covering an area of 10.5 Ha and elongated from northwest to southeast.

7.5.4 Jerimum de Baixo (JB) Deposit

The Jerimum de Baixo (JB) deposit has also seen limited drilling with no holes drilled by Cabral Gold following the 17 holes completed by Magellan prior to 2012. Fourteen of the historic Magellan holes intersected mineralization included in the resource estimate.

The JB deposit is interpreted to comprise three steeply dipping, northwest-striking, subparallel higher-grade zones, surrounded by a lower-grade shell. It is approximately 650 m long, 150 m wide at its widest point, and has been tested to a depth of 180 m.

Mineralization occurs within a weakly to moderately brecciated and altered granite, primarily characterized as stockwork to sheeted vein type. The highest-grade individual intercept (0.5 m grading 17.3 g/t Au from 223.2 m in CC-100) occurs in a more strongly brecciated, weakly sheared, and silicified grey rock with quartz veining.

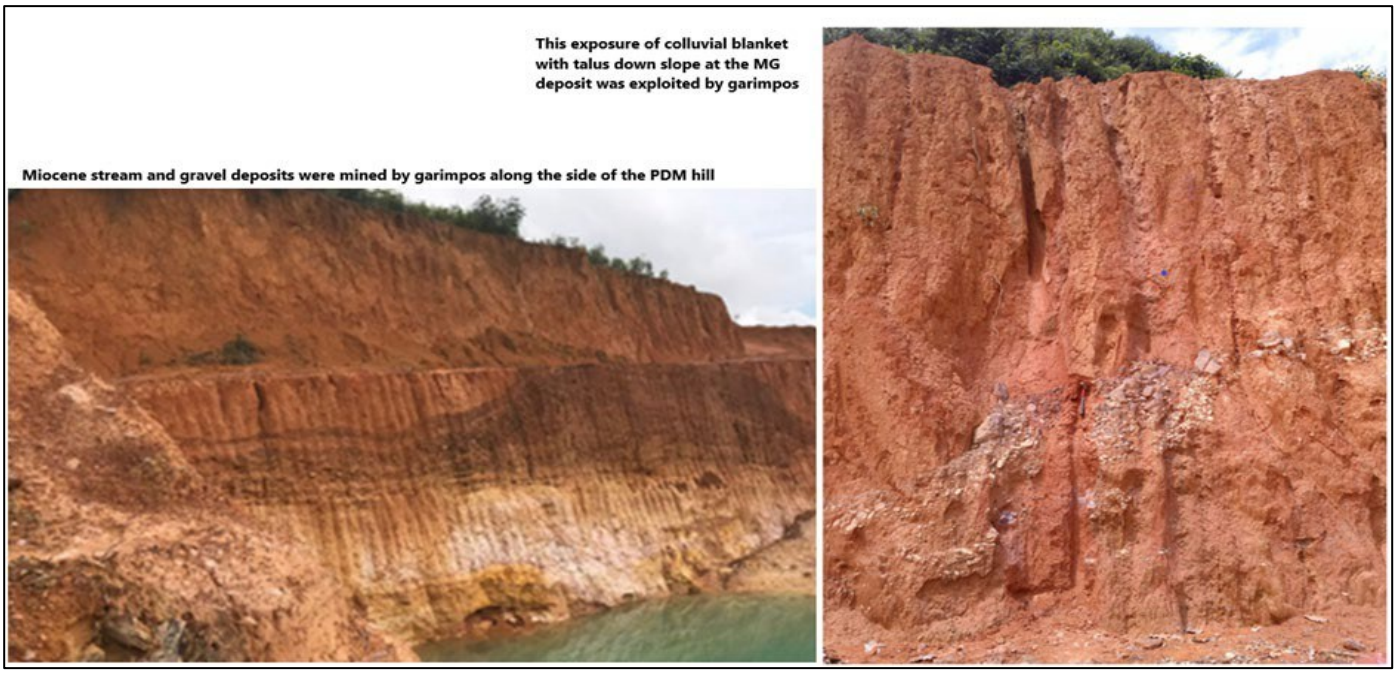
7.5.5 PDM Target

The current PDM resource is restricted to weathered rocks, which include in situ basement saprolite and the unconformably overlying Blanket. As of the writing of this Technical Report, there is insufficient drilling to estimate a resource for the underlying primary basement mineralization.

The Blanket mineralization at PDM comprises soil, colluvium, and fluvial sediments, covering an area of 27.3 Ha. It extends 950 m from north to south, and 500 m from east to west, effectively draping over a prominent hill. The

thickness of the mineralization ranges from a few meters to over 25 m (Figure 7-18). A higher-grade northwest-trending corridor occurs near the center of the Blanket deposit, following the long axis of the hill and aligning with the interpreted trend of the mineralized zones found in the underlying basement saprolite.

Figure 7-18: Colluvial and Fluvial Blanket Exposed on Hillsides Exploited by Garimpos at MG and PDM



Source: Cabral Gold, 2024.

Two northwest-trending zones have been identified through RC drilling and limited diamond drilling testing the underlying basement saprolite. Each zone has a horizontal width of 60 m and has been drill tested along a strike length of 550 m. The saprolitic weathering in these zones extends to depths between15 m and 75 m.

Unweathered primary basement mineralization has been intersected in 19 drill holes, but the drilling is currently restricted in strike, depth, and density. Only a 190 m segment of the western mineralized zone, interpreted within the weathered basement saprolite, has been drilled on 50 m sections, reaching a maximum depth of 150 m. The basement mineralization remains open down-dip and along strike in this zone, while the eastern zone has been intersected only by scattered historic holes. Given the current stage of drilling and our understanding of the general geology, and the geology of the unweathered mineralization at PDM, a resource estimate would be premature.

Within the well drilled area, the unweathered basement mineralization in the western zone is interpreted to strike northwest and dip steeply to the east. It remains open along strike to the north and south, as well as down-dip. The rocks and mineralization style observed here closely resemble those found at Central, 2.3 km to the southeast.

7.5.6 Machichie Target Complex Area

Machichie was discovered by Cabral Gold in 2019 and is better characterized as a mineralized complex comprising multiple zones. Thus far, the Machichie Complex has the third largest mineralized footprint found on the Cuiú Cuiú property, after MG and Central, but it continues to expand. To date, mineralization within the complex spans an area of 1.2 km from east to west and several hundred meters from north to south.

The complex consists of at least three distinct mineralized basement zones: 1) Machichie Main Zone, 2) Machichie NE Zone, and 3) Machichie SW array. The basement mineralization has undergone weathering to saprolite, with depths ranging from 25 m in the Machichie SW region to 45 m in the Machichie NE region. Blanket mineralization and Miocene sediments are primarily concentrated in the eastern part of the Machichie Complex, where they are thickest above the Machichie NE zone.

Similar to MG, the host rocks for the mineralization within the Machichie Complex are primarily deformed diorite from the Cuiú Cuiú Complex (2.02 Ga) intrusive suite.

No systematic drilling has been completed to determine the extent and provenance of the weathered mineralization; therefore, it will not be addressed below.

Considerable drilling has been completed on the Machichie Main Zone; however, many wide-spaced sections remain only sparsely drilled, partly due to the expanding size of the mineralized system. Recent trenching indicates the zone extends and additional 350 m to the west, but drilling has not been done in that area. Limited drilling at Machichie NE and Machichie SW has yielded encouraging results. All three of the basement zones are open along strike and down-dip, and there is a 150 m gap between the Machichie Main Zone and the Machichie NE zone that has yet to be drilled.

Further infill and step-out drilling at Machichie is necessary to better define the vertical and lateral extents of the various zones, establishing continuity, and test the clear gaps between the zones.

7.5.6.1 Machichie Main Zone

The Machichie Main Zone is an east-trending deformation zone, similar to the MG deposit, and located 500 m north of MG. It lies within a regional magnetic low corridor (Figure 7-12). Drilling and trenching have traced the zone for 1.1 km from east to west, with the zone remaining open to the west, beyond a newly trenched area referred to as Machichie West. However, drilling further east did not yield any significant gold intercepts.

The alteration and deformation in the Machichie Main Zone are remarkably similar to those in the MG deposit. The Machichie Main Zone lies within a steep, north-dipping altered and deformed zone that extends beyond the depth of the deepest drill hole at Machichie (150 m) and approximately 60 m in width.

Within this broader altered and brecciated zone, several parallel zones show more intense silicification and sulphidation, which can be traced both down-dip and along strike. Like at MG, these zones are higher-grade, with high-grade intercepts in some places and abundant quartz veins and pervasive quartz flooding.

Pyrite is the dominant sulphide at Machichie, while molybdenite is relatively common, occurring disseminated in wall rock, along fractures, and in quartz veins (Figure 7-13). Chalcopyrite, although present in minor or trace amounts, is more frequently encountered here than at other Cuiú Cuiú gold targets. Scheelite is also fairly common, like molybdenite occurs disseminated in wall rock, fractures, and in quartz veins (Figure 7-14). Machichie also has the highest number of visible gold occurrences observed at Cuiú Cuiú. Visible gold is primarily associated with pyrite but can also be found as free gold within quartz and along fracture planes (Figure 7-15 and Figure 7-17).

7.5.6.2 Machichie NE Zone

Similar to the Machichie Main Zone, the Machichie NE zone appears to occur in an east-trending deformation zone. Located 150 m northeast of the Machichie Main, this zone has been tested by only six drill holes along a 120 m strike length and a vertical depth of 85 m. The deformation and alteration patterns associated with mineralization at Machichie NE resemble those at Machichie Main Zone, though information remains limited.

Recent drilling suggests a potential NW-trending structural control, potentially influenced by NE-trending structures and the prominent east-trending deformation zone to the north.

Machichie NE was a blind discovery in 2019, revealed through testing a coincident Au-Cu-Mo-W soil anomaly corresponding to an untested IP anomaly identified by a historic Magellan geophysical survey. Multiple reverse circulation and diamond-drill holes have successfully intercepted continuous high-grade zones within the underlying primary granodiorites and gabbros. The gold deposit lies beneath a thick sequence of colluvium, as well as Miocene fluvial and lacustrine sediments.

7.5.6.3 Machichie SW Array

Many narrow, subparallel, steeply dipping, northeast-trending zones of gold mineralization have been observed throughout the area southeast of the Machichie Main Zone and north of the MG deposit, evident in both drill holes and trenches. More recently, similar narrow structures have also been identified in trenches north and west of the Machichie Main Zone, suggesting a more extensive mineralized network than previously thought. The Machichie SW array includes northeast-trending structures observed in areas previously referred to as Machichie SW, as well as in the newly defined Machichie West. Trenching and mapping have now traced these structures over a large area extending west, north, and southwest of the Machichie Main Zone. The mineralization observed in Machichie West aligns closely with regional magnetic lows and is open to the northwest, west, and southwest.

As previously noted, the area containing these narrow, mineralized structures is extensive with the entire array following a general northeast strike, parallel to the gold-bearing structures themselves. The array extends to the northeast approximately 500 m in length, while its width spans at least 350 m across strike.

Within each of the narrow, mineralized zones in the array, quartz veins and silicified zones occur within fractures or faults, with wall-rock alteration typically extending less than a meter from the veins. Some exceptionally high grades were encountered in two of the three diamond-drill holes testing these structures, including 0.5 m grading 46.2 g/t Au from 89.0 m in Magellan hole CC-52, and 0.7 m grading 162.7 g/t Au from 33.9 m in DDH-182. The down-dip and on-strike continuity of these structures remain largely untested.

Based on mineralization exposed in trenches and magnetic interpretations, these narrow structures also appear to merge and curve into the east-trending Machichie Main Zone to the north and possibly the MG structure to the south. Depending on the density and frequency of the array, these mineralized structures could prove to be economically significant bulk tonnage target. This potential increases if the structures can be traced into either the MG or Machichie pits, which are designed to exploit the larger gold zones associated with east-trending deformation zones.

7.6 Evidence for Porphyry Intrusive-Related Mineralization

In recent years, several Proterozoic-age copper-molybdenum porphyry deposits have been discovered in the Tapajós Region and its surroundings. The first of these discoveries was the Santa Patricia deposit (G Mining Services Inc., 2022), situated within the TTDZ and located just over 10 km southeast of the Cuiú Cuiú property (Figure 7-3 and Figure 7-5).

The Santa Patricia deposit was discovered 2.5 km west of the main Tocantinzinho deposit and has been described by G Mining Services Inc. (2022), although limited public data regarding copper and molybdenum grades is available. Santa Patricia is a significant northwest-striking copper anomaly (>20 ppm Cu) that extends 8 km, as determined through soil geochemistry, and coincides with a regional magnetic lineament (Figure 7-5). It is mainly comprised of intrusive rocks, including mafic to intermediate and alkali granitoid plutonic suites, which are intersected by late-stage fine-grained andesite and rhyolite dykes. Copper-molybdenum mineralization occurs within veins that are hosted by these igneous rocks, including the late andesite. The highest copper-molybdenum grades are associated with the most intense, multi-stage stockwork vein zones, showing an increase in copper grades with depth. Although the Santa Patricia copper-molybdenum system is generally low in gold content, localized gold grades of around 0.15 g/t Au have been identified. The main copper-molybdenum stage at Santa Patricia is associated with second-generation veins composed of magnetite, muscovite, quartz, chalcopyrite, pyrite, molybdenite, ± hematite, all within a matrix of strong pervasive coarse muscovite alteration. The alteration exhibits a broad zoning pattern, from K-feldspar and muscovite-rich alteration associated with the most intense stockwork centers to outer pyrite-sericite alteration and to a distal propylitic alteration.

Serabi Gold PLC discovered the Matilda Prospect, a porphyry copper deposit located within the Palito Complex, situated 90 km southeast along the TTDZ (Figure 7-3). Assay results from Serabi's initial three-hole diamond drilling program testing at the Matilda Prospect confirmed the discovery of a Cu-Au-Mo porphyry system. Anomalous copper mineralization was throughout each hole, with average grades exceeding 0.2% copper equivalent (CuEq). Notable values included: 7.55 m grading 0.52% CuEq, 21.00 m grading 0.44% CuEq, 19.08 m grading 0.51% CuEq, and 22.90 m grading 0.47% CuEq. The copper equivalent grades reported by Serabi were calculated using spot metal prices as of June 29, 2022 (US$1,817/oz Au, US$3.81/lb Cu, and US$19.73/lb Mo). Core photos included in the press release show coarse molybdenite within and along the selvages of quartz veins, accompanied by disseminated chalcopyrite and bornite. Gold grades were generally low but ranged up to 400 ppb Au.

Scheelite is another mineral commonly associated with intrusive-hosted gold deposits. Hart and Goldfarb (2005) note that scheelite is a key indicator of intrusive-hosted gold systems (IRGS), although it also occurs as an accessory mineral associated with hydrothermal alterations in orogenic gold deposits, such as those observed in the Archean gold deposits of the Kalgoorlie-Norseman region in Western Australia (Ghaderi et al., 1999).

At Cuiú Cuiú, Cabral Gold has not initiated a systematic exploration program for copper-molybdenite porphyries or scheelite mineralization within and adjacent the TTDZ. So far, most efforts have focused on easily identifiable gold mineralization that has been exposed and exploited by artisanal workers.

However, there are indications that porphyry deposits could occur within the Project area.

At Cuiú Cuiú, an intriguing set of crowded feldspar diorite porphyries (Figure 7-19), interpreted as dykes, have recently been recognized within and along the margins of both the Central and PDM gold zones. These rocks contain nearly 50% white feldspar crystals, which can reach up to 1.0 cm in diameter, set within a very fine-grained to cryptocrystalline dark grey to black groundmass. No petrography has been done on these rocks, so the white feldspar mineral has not been identified. These crystals exhibit a range of habits from euhedral to subhedral, with many appearing to be broken fragments and some being rounded. It remains uncertain whether the feldspars were broken during regional deformation or as a result of high-energy magmatic/hydrothermal emplacement. The dykes clearly intrude into the more highly brecciated granitic rocks that host gold mineralization, but they still show lesser degrees of deformation and alteration, with gold also present within them. Evidence of shearing is visible in some areas, along with a local, well-developed alignment of minerals and fragments. K-spar/hematite alteration occurs as both patches and veins, replacing feldspar. The emplacement of the crowded feldspar porphyry dykes appears to be coeval with the overall deformation and gold mineralizing event. Such crowded diorite porphyries could be an indicator of porphyry deposits in the area.

Coarse molybdenum, along with minor amounts of chalcopyrite, occurs in quartz veins and is disseminated in the wall rock throughout the Machichie mineralized zones (Figure 7-13). This type of molybdenite mineralization closely resembles the images presented in the press release for the Matilda porphyry copper discovery (Figure 7-20). While molybdenite has been observed in proximity to gold mineralization at Machichie, no direct correlation between molybdenite content and gold grade has been established. However, the occurrence of molybdenite may be a good indicator of nearby porphyry-style mineralization.

Hematite, k-spar and chlorite alteration are widespread throughout the Cuiú Cuiú property, with epidote being part of a broad metamorphic assemblage. Pyrite, silicification, sericitization and k-spar alteration are frequently associated with stockwork gold-related alteration zones at Cuiú Cuiú. These regional alteration and metamorphic assemblages are particularly pronounced within larger deformation zones. The overall character and mineralogy of this assemblage closely resemble and may mask the propylitic, phyllic, and potassic alteration envelopes that typically surround porphyry deposits.

Immediately north of Machichie lies a pronounced magnetic low that appears to be an apophysis, or intrusive arm, extending several kilometers westward from the TTDZ. Scheelite occurrences are located to the north, west and south of this apophysis, with disseminated scheelite identified within highly altered granitic rocks in the only hole drilled within it. Moreover, all known molybdenite occurrences on the Cuiú Cuiú property are located in east-west deformation zones south of the apophysis. This alteration and mineralization along the margin of an apophysis connected to the TTDZ suggests it could be a promising target for further exploration.

The previously mentioned apophysis points toward a large circular feature located within the TTDZ, interpreted as an alkaline (A-Type) granite of the 1.88 Ga Maloquinha type (Baker, 2009). This Maloquinha phase of plutonism is also

coeval with the regional transgressional event, forming breccias at the Tocantinzinho gold deposit during a major phase of hydrothermal alteration which occurred between 1,996.1 Ma ± 2.2 Ma and 1,989.1 Ma ± 1.1 Ma (Biondi et al., 2018).

The QP has not been able to verify the information provided here on adjacent properties outside of the Cuiú Cuiú Project and is relying on the literature cited herein. Information cited on these adjacent properties is not necessarily indicative of mineralization on the Cuiú Cuiú property.

Figure 7-19: Examples of Crowded Diorite Porphyry from Central and PDM



Source: Cabral Gold, 2024.

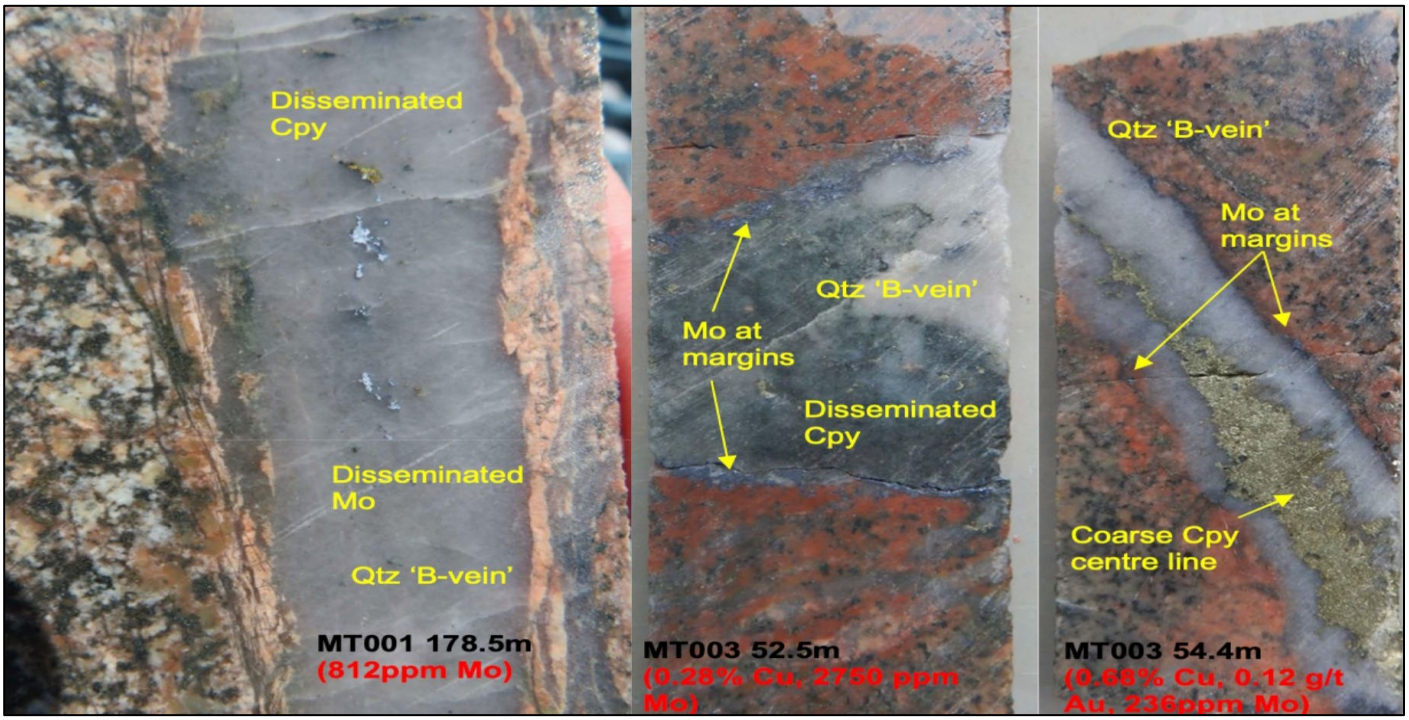
Figure 7-19 description.

A. Crowded diorite porphyry from DDH-260 at PDM. This sample contains white to pink feldspar crystals measuring up to 1.0 cm in diameter, embedded in a dark fine-grained matrix. The feldspars range in habits from euhedral to subhedral, with many appearing as broken fragments and some appearing rounded. Red k-spar and hematite alteration occurs in patches and in veins as replacements of feldspar. Low gold values of up to 0.16 g/t Au occur within the box.

B. Crowded diorite porphyry from DDH-250 at Central. This sample features white to pink feldspar crystals, also reaching up to 1.0 cm in diameter, embedded in a dark fine-grained matrix. The feldspars range in habits from euhedral to subhedral, with many appearing as broken fragments and some appearing rounded. K-spar/hematite alteration occurs in patches and in veins as replacement of feldspar. Gold values of up to 1.16 g/t Au occur in this intercept.

C. Crowded diorite porphyry from DDH-269 at Central. This sample contains white to pink feldspar crystals measuring up to 1.0 cm in diameter, embedded in a dark fine-grained matrix. The feldspars range in habits from euhedral to subhedral, with many appearing as broken fragments and some appearing rounded. The porphyritic rock is strongly overprinted by k-spar/hematite alteration. However, only trace gold values were returned from this core.

Figure 7-20: Molybdenite Occurrence in Quartz Veins from the Matilda Porphyry Zone



Source: Serabi, 2022.

8 DEPOSIT TYPES

8.1 Summary

While some researchers suggest gold deposits in the TMP are genetically intrusive-related gold system (IRGS) type, the overwhelming relationship between gold occurrences within deformation zones also supports the orogenic gold classification defined by Groves et al. (1998). There is also some evidence that indicates sulphide mineralization could be associated with porphyry deposit types; however, this has not been sufficiently reviewed or documented.

The definition of IRGS rigidly demands that deposits be post-deformation and formed at crustal depths of less than eight kilometers (Hart and Goldfarb, 2005). While mineralization at Cuiú Cuiú exhibits spatial and mineralogical similarities to IRGS types of deposits, the overwhelming evidence indicates it is a coeval deposit with deformation. Moreover, the alteration and metamorphic mineralogy observed at Cuiú Cuiú, as described in Section 7 of this Technical Report, is more typical of greenschist facies, which occurs at crustal depths below eight kilometers. These conflicting observations make direct comparisons with IRGS-style deposits less likely.

All gold mineralization at Cuiú Cuiú occurs in intrusive host rocks, and all basement rocks encountered at Cuiú Cuiú are intrusive rocks. All gold discovered to date in the project area occurs in deformed zones, or smaller-scale structures, that transect, deform, and clearly post-date the emplacement of the igneous intrusions. The remainder of the gold mineralization that has been identified in the Project area occurs within the weathered sequences created by erosion and weathering of the primary basement mineralization.

The overall temporal and spatial relationships of gold mineralization to deformed zones and related deep-seated alteration and metamorphism suggest that classification as a mesozonal class (6 to 12 km) or hypozonal class (>12 km) orogenic gold deposit best describes the mineralization observed at Cuiú Cuiú, despite its occurrence within intrusive rocks.

Gold mineralization at Cuiú Cuiú is most likely associated with the Trans-Amazonian Orogen, a Paleoproterozoic regional compressional event caused by the convergence and ultimate collision of the Guiana Shield with the West-African Craton from 2.26 to 1.95 Ga (Kroonenberg et al., 2018).

8.2 Orogenic Gold Deposits

Orogenic gold deposits have produced 75% of the world's extracted gold, either from the erosion of primary gold deposits or from hydrothermal accumulation. These deposits formed from the Archean to Phanerozoic Eons at crustal depths of greater than four kilometers (Gaboury, 2019).

Most orogenic gold deposits were previously referred to as mesothermal gold deposits or shear-zone hosted gold deposits. These are associated with regionally metamorphosed terranes of all ages. Colvine et al. (1988) introduced a model where such deposits could occur continuously from the surface to great depths, and the character of gold mineralization changes with both depth and host rocks. Groves et al. (1998) further noted that these deposits occur

over a broad depth range of formation, and that the term mesothermal is not applicable to this deposit type as a whole. Instead, Groves et al. focused on the temporal and spatial association of this deposit type with regional transpressional deformation processes, related to convergence of plate margins in accretionary and collisional orogens, and suggested that this type of vein systems are best termed orogenic gold deposits. Gold-bearing quartz veins that typify orogenic gold deposits are emplaced over a broad depth range. Based on depth of formation, Groves et al. further subdivided the orogenic deposits into epizonal (<6 km), mesozonal (6 to 12 km) and hypozonal (>12 km) classes.

In a shear-zone hosted gold deposit model introduced by Colvine et al. (1988), gold mineralization was recognized to occur in zones of anomalously high strain that form linear mappable deformed units up to several kilometers wide, and hundreds of kilometers long. The nature of the deformation along with its attendant mineralogy and alteration, varies with depth and primary rock type, ranging from brittle fracturing and brecciation at shallower depths to deep-seated ductile shearing.

One of the most critical features to introduce and retain gold in such a deformed structure is seismic pumping, first introduced by Sibson et al. (1975), and later refined by Sibson (1996). While rising hydrothermal fluids travel intragranularly between mineral boundaries, they can also be focused in specific zones with higher permeability. In this simple model, increased pore-fluid pressure in deformation zones rises during regional compression until there is failure. At that stage, voids are created in the deformed rocks. These are quickly filled by the indigenous hydrothermal fluids, which form new minerals in the void space. The process is episodic; once the void space is filled, the entire process begins anew. Maintaining structures as highly permeable conduits requires fluid over-pressuring at shallower depths in extensional-transtensional regimes. Favoured localities include linkage structures along large displacement fault zones, such as dilational jogs.

Gaboury (2019) also noted that the formation of orogenic gold deposits is known to be associated with fluid pressurization and fault ruptures, driven and triggered by high fluid pressure, implying that the fault geometry or its kinematics are secondary in importance for forming an orogenic gold deposit.

The formation of orogenic gold deposits is related to structural discontinuities (faults, shear zones, fold noses, competency contrasts). These discontinuities act as conduits for fluid migration from deeper in the crust, to a precipitation site in the upper crust, commonly under greenschist facies conditions (Gaboury, 2019).

Hundreds of structural studies worldwide have demonstrated that mineralization is hosted in various types of faults and dilatational features (Gaboury, 2019; Colvine et al, 1988). Examples include:

1. High-angle reverse faults (Abitibi belt, Canada).
2. Low-angle thrust faults (Macraes mine, New Zealand).
3. Normal faults during exhumation (Otago Schist, New Zealand).
4. Saddle-reef dilatation zone (Ballarat-Bendigo).
5. Transcurrent faults (Archaean Yilgarn belt; Australia, and the Paleoproterozoic Birimian belts of western Africa).

Additional examples are also provided by Vearncombe and Zelic (2015).

In many orogenic gold deposits, there is a strong spatial relationship with syn-tectonic plutonic intrusive rocks. In some orogenic gold districts or camps, the pre- to syn-gold intrusions may play an important structural role for the location of gold mineralization (Stott and Smith, 1988; Groves et al, 2018). Syn-tectonic to late-tectonic andesitic to dacitic dykes, aplitic and pegmatitic dykes, and alkalic lamprophyre dykes are also commonly found within orogenic gold deformation zones. However, their providence may simply indicate ease of emplacement within a deep-seated zone of crustal weakness.

An intimate genetic relationship between gold and magmatic intrusions in orogenic gold deposits is less evident (Colvine et al., 1988), and in many orogenic gold deposits, there is no apparent connection to plutonism.

8.3 Intrusive-Related Gold Systems

IRGS focus on a group of gold deposits primarily hosted within intrusions or their immediate wall rocks but have recently been suggested to reflect a distinct class of magmatic-hydrothermal system.

The region that most typifies IRGS is the Tintina Gold Province (Goldfarb et al., 2007), formed from 105 to 70 Ma in Alaska and the Yukon. Over 50 Moz of lode gold resources have been identified in the accreted terranes of interior Alaska and adjacent continental margin rocks of Yukon, with the major deposits occurring late in the deformational history. There is some overlap with the orogenic gold deposit model. IRGS deposits occur within accretionary orogenic belts characteristic of the Pacific rim, and several IRGS deposits are spatially associated, high-grade shear-zone-related orogenic gold deposits formed at similar depths.

IRGS deposits are shallow crustal deposits associated with intrusive rocks at depths of one to nine kilometers, forming a zoned sequence of auriferous mineralization styles that extend outward into the surrounding metasedimentary country rocks (Goldfarb et al., 2007).

The key component expounded by most researchers involved defining this deposit style is the magmatic-hydrothermal connection to gold mineralization, which has metal zonation (Lang and Baker, 2001; Hart and Goldfarb, 2005; Goldfarb et al, 2007; and Sillitoe and Thompson, 1998).

Some key geochemical associations are also evident in IRGS deposit styles. Sillitoe and Thompson (1998) cite Au-Fe Oxide-Cu, Au-Cu-Mo-Zn, Au-As-Pb-Zn-Cu, Au-Te-Pb-Zn-Cu and Au-As-Bi-Sb from their studies of arc-related vein deposits along the Pacific rim. Hart and Goldfarb (2005) describe the metal zonation in the Tintina Gold Province as follows: 1) Intrusive-hosted (Au ± Bi ± W ± Te, Mo, As); 2) Proximal (Au-As ± W, Sb); and 3) Distal (Au-As-Sb ± Ag, Pb, Zn).

The causative plutons are products of potassic mafic magmas believed to have formed in the subcontinental lithospheric mantle that interacted with overlying lower to middle crust to generate the more felsic ore-related intrusions (Goldfarb et al., 2007).

In their 2005 paper, distinguishing IRGS from orogenic deposits, Hart and Goldfarb identified the five best discriminators for IRGS, which are likely to be:

1. Regional location in deformed shelf sequences on the inboard side of a series of accreted terranes and within terranes that also contain important tin and (or) tungsten deposits.
2. Local spatial association of gold ores with cupolas and contact aureoles of relatively reduced, alkaline-leaning, and volatile-rich plutons.

3. Post-deformational timing of gold deposition.
4. Extremely low sulphide content (commonly <1 vol. %) in ores within igneous bodies and the outward zoning, through proximal skarns and to distal base-metal-rich veins, from the causative pluton.
5. Low grades (<1 g/t Au) in auriferous sheeted vein systems within pluton cupolas. The authors also indicate that magmatism and associated mineralization are entirely post-orogenic, occurring at least 10 million years after the peak metamorphism of rocks in the TMP.

8.4 Categorization of Cuiú Cuiú Style Mineralization

Cuiú Cuiú mineralization shares some attributes with IRGS deposits, including 1) the general association with intrusive rocks, 2) low gold grades and low sulphide content overall, and 3) the broad occurrence of scheelite and molybdenite in the Machichie region. However, the morphology at Cuiú Cuiú is very different, and the absence of associated supracrustal rocks implies a very different geological setting. Moreover, gold mineralization at Cuiú Cuiú exhibits syn-deformation attributes, as opposed to late deformation. At Cuiú Cuiú, it does not appear to be an association with any particular intrusive rock type, and the greenschist facies metamorphism that typifies Cuiú Cuiú, implies deeper crustal levels of deposition than IRGS. Finally, there is no evident metal zonation that can be directly related to gold.

The mineralization at Cuiú Cuiú is best classified as an orogenic gold type based on its nature, occurrence, and style. More specifically, it is consistent with a mesozonal (6–12 km) or hypozonal (>12 km) class of orogenic gold deposit, as defined by Groves et al. (1998). This classification is supported by the following observations:

1. The region has been metamorphosed to greenschist facies, indicating formation at crustal depths at greater than 6 km.
2. Cuiú Cuiú mineralization is hosted within dilation structures within highly altered deformation zones that transect multiple intrusive rock types, and gold is hosted in many different metamorphosed igneous rocks throughout the Project area.
3. High-grade shear veins are evident within most Cuiú Cuiú mineralized zones.
4. Auriferous banded quartz veins and multiphase breccia structures are common at Cuiú Cuiú, and are indicative of episodic seismic pumping, but also define the gold mineralization as syn-deformation, and coeval with regional deformation, alteration, and metamorphism.
5. No genetic relationship with magmatic-hydrothermal fluids other than the presence of molybdenite and scheelite in the Machichie area, neither of which has any recognized positive correlation with gold grades.

Cuiú Cuiú gold mineralization is most likely associated with the Trans-Amazonian Orogen, a Paleoproterozoic regional compressional event caused by the convergence and ultimate collision of the Guiana Shield with the West-African Craton from 2.26 to 1.95 Ga (Kroonenberg et al., 2018).

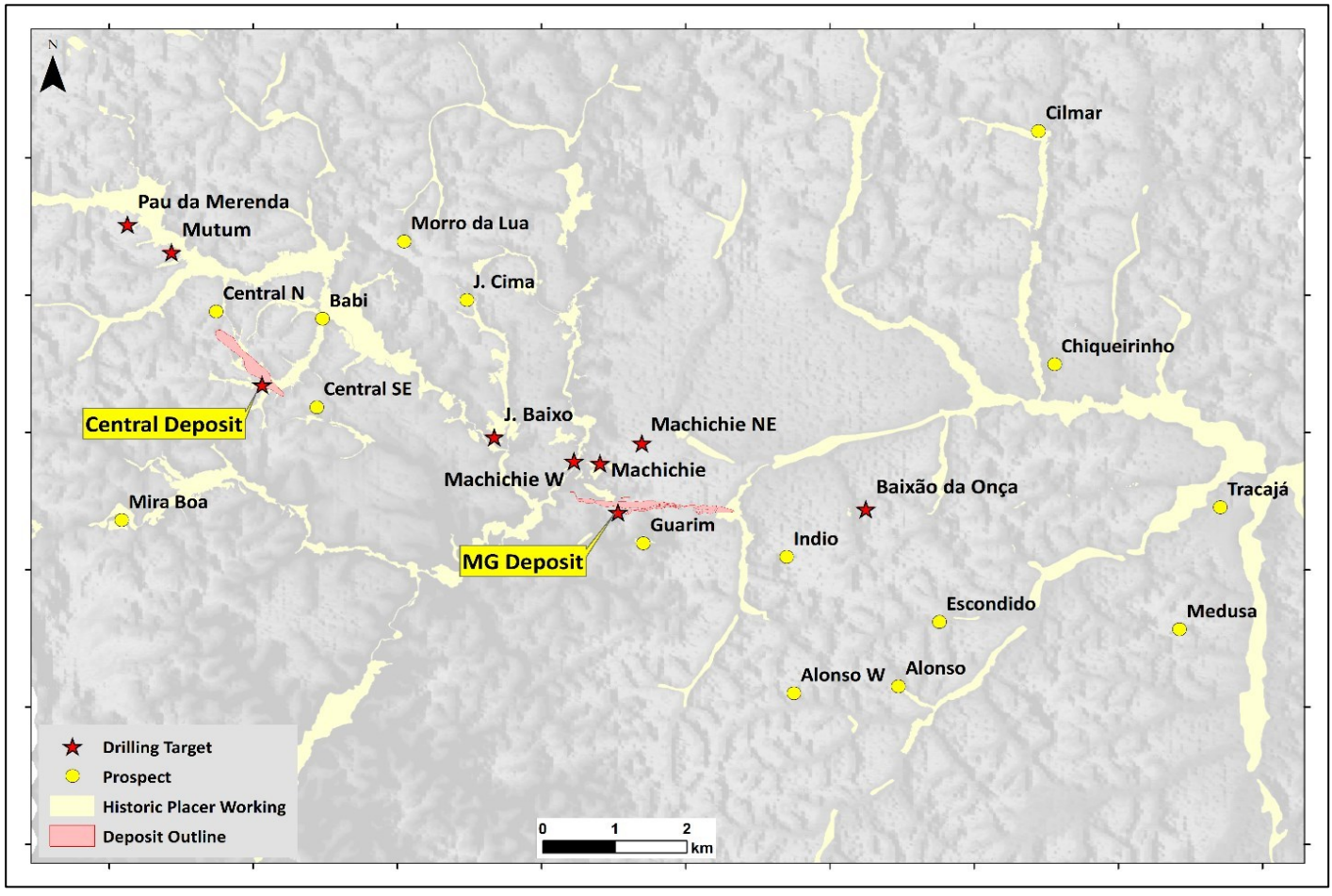
At Cuiú Cuiú, both weathered and saprolitized basement gold mineralization, unconformably overlying transported Blanket gold mineralization, and placer gold mineralization (Section 7) are all derived from the primary orogenic-style gold mineralization.

9 EXPLORATION

Historical exploration is described in Section 6 (History) of this Technical Report. Cabral Gold's exploration campaign commenced with a review of historic data initiated in 2017 and continuing into 2018. This involved an assessment of historic geochemical, drilling, and geophysical data (including airborne and ground magnetic, and IP survey data). Eighteen targets were initially identified.

Cabral Gold's field exploration programs commenced in February 2018, with the objective of identifying and refining drill targets for an initial Cabral Gold drill campaign in 2019. Reconnaissance field programs have continued until 2022. By the end of July 2025, forty-four target areas had been identified and examined that were considered to have significant potential for additional discoveries (Figure 9-1).

Figure 9-1: Target, Mineral Occurrence, and Deposit Locations



Source: Cabral Gold, 2024.

Exploration field work has involved several of integrated methodologies, including stream-sediment sampling, soil sampling, surface channel and rock-chip sampling, surface trenching, and auger drilling. Pan concentrates were also taken from auger hole material and streams to provide gold counts along with routine gold geochemical analysis. Results are detailed in numerous Cabral Gold's press releases and in the 2024 Technical Report.

A total of twenty-seven of these targets have now been tested by diamond or RC drilling, in addition to follow-up exploration drilling testing potential high-grade zones at MG and Central. Results from RC and diamond drilling are discussed in detail in Section 10 (Drilling).

The cumulative field work completed by Cabral Gold from 2019 to July 23, 2025, the effective date of this report, is summarized in Table 9-1.

Table 9-1: Cabral Gold Sampling Summary by 2019

Year	Soil Samples	SS Samples	PC Samples	Rocks Samples	Type	Metreage	Samples	Sampled (m)	No. Holes	No. Samples	No. Well	Metreage	No. Assay Samples
2019	1,323	-	-	49	TR/CH	142.6	81	137.0	70	147	-	-	-
2020	2,116	-	-	187	TRC/CH	299.3	172	297.2	64	154	6	5.9	12
2021	583	365	365	34	TRC	73.0	76	64.8	-	-	-	-	-
2022	1,426	25	25	13	TRC/CH	948.5	741	947.9	-	-	-	-	-
2023	-	-	-	-	-	-	-		9	171	-	-	-
2024					TRC/CH	43.80	44						
Total	**5,448**	**390**	**390**	**283**	**TRC/CH**	**1,507.20**	**1114**	**1,446.9**	**143**	**472**	**6**	**5.9**	**12**

Notes:
1. SS: stream sediments.
2. PC: pan concentrates.

The cumulative work per target is depicted in Table 9-2. The totals do not align precisely with those in Table 9-1 because the data encompasses the entire history of the Project, from 2006 to 2025. The objective is to illustrate the intensity of the exploration effort undertaken to discover and prioritize the different exploration targets of the Cuiú Cuiú Project. Since this report is a pre-feasibility study, greenfield exploration is not directly relevant, except to provide the reader with an understanding of the potential for further discoveries. Many of these targets are drill-ready; others require more surface sampling and mapping activities. It has become clear that it will be necessary to determine which of these targets have a high potential for ore discoveries and which should be discarded. However, to concentrate the focus on available financial resources on the most developed targets is well justified.

Table 9-2: Cabral Gold Sampling Summary by Target

Target	Auger Holes				Trenches/Channels			Soil	Rock	Stream
	No. of Holes	Metreage	No. of Assay Samples	No. Pan Concentrate	No. Channel/ Trenches	Metreage	No. of Assay Samples	No. of Assay Samples	No. of Assay Samples	No. of Assay Samples
Alonso	26	239	50	4	79	40	298	45		
Alonso W								5		
Antonio Jaci				1	10	4		3		
Babi				1	13	6				
Baixão da Onça				4	9	9				
Central				1	12	7		3		
Central North					104	121		1		
Dona Moça							395	31		
Escondido							302			
Índio								11		
Jerimum de Baixo				3	8	8		9		
Jerimum do Meio				3	33	20		6		
Jerimum North	36	296	70	1	15	10				
Jerimum de Cima				1	44	44				
Machichie					33	1,035	767		50	
Medusa	22	315	55		3	34	16	1,281		
Mineiro Cilmar	33	370	76					1,847	19	
Mira Boa					1	9	7		2	7
MG									5	
Morro da Lua					1	5	2		1	
Nova Aliança	17	233	36		2	4	6	1,325	58	
Mutum					1	28	12			
Pau da Merenda					5	12	12		1	
Regional									29	383
Vila Rica					5	43	23		4	
Total	**134**	**1,452**	**287**	**19**	**378**	**1,449**	**1,840**	**4,567**	**169**	**390**

10 DRILLING

10.1 Introduction

Since 2005, Cabral Gold and its predecessor, Magellan, have completed 116,116 m of drilling in 929 holes on the Project. This includes 337 diamond-drill holes totalling 77,815 m and 592 RC-drill holes totalling 38,301 m. Most of the drilling has focused on advanced targets.

This section describes Cabral Gold's drilling activities from 2022 through July 31, 2025, primarily based on press releases filed on SEDAR during that period, as listed in Section 27 of this Technical Report. Historical drilling conducted by Magellan is summarized in Section 6.3.1.3.

As a summary of the drilling performed since the last technical report (2014), it is reported that, from late-2024 through mid-2025 Cabral conducted reverse-circulation (RC) and limited diamond drilling plus surface trenching at Machichie Main, Machichie NE and Jerimum de Cima, and RC drilling at Central. Two rigs were active by February 2025, rising to four rigs (two added diamond rigs) by June 2025.

10.2 Cabral Gold Drilling

Cabral Gold began its drilling program in early 2019 and subsequently drilled 196 exploration diamond-drill holes, totalling 24,542 m, and 630 exploration RC-drill holes, totalling 38,401 m, through the end of July 2025. Table 10-1 and Table 10-2 summarize the Cuiú Cuiú drilling by target and year, respectively.

The locations of each of the 21 targets that Cabral Gold has drilled are shown on Figure 10-1. Of those 21 targets tested, six have had considerable drilling and are considered to be advanced. The targets that are considered advanced include Central, MG, PDM, Machichie Complex, Central N, Jerimum de Cima, and Quebra Bunda. Cabral Gold has not drilled any holes at JB. Drill testing at the remaining targets has only been at a reconnaissance stage.

In addition to testing established basement targets, Cabral Gold has also completed 134 holes, totalling 5,042 m, as part of several of reconnaissance RC and diamond-drill programs (Figure 10-2), designed to:

- evaluate regional soil, geochemical, and geophysical structures,
- establish the source of transported high-grade boulders, and
- look for new transported gold-in-oxide Blanket deposits. Except the discovery of Blanket mineralization at PDM and Central, the results of these programs have encountered low gold values and rare isolated higher-grade values and are not considered material.

Cabral Gold has had as many as five drills turning, including: the Company's wholly owned RC rig, a contracted larger RC rig, and up to three contracted diamond-drill rigs (see also Section 11).

- Much of the RC drilling conducted by the Company's nimble, track-mounted rig was strictly reconnaissance in nature, following up regional soil and stream anomalies, and examining areas with potential for mineralization hosted either in saprolite or transported weathered material. As the 2.5 t rig tested numerous blind targets with no surface exposure, the success rate was low, but it provided key information for follow-up work. This rig has been operating continuously since 2020.
- All of the diamond-drill rigs utilized at Cuiú Cuiú by Cabral Gold have been manned portable rigs. Not only do these rigs leave a much smaller environmental footprint, but they are efficient and very useful in rougher or wet terrain with poor access. These rigs have been used to test new in-situ gold discoveries made through trenching and prospecting, for infill drilling, to delimit higher-grade zones, and for step-out and expansion drilling in known areas of mineralization.

A much larger, 25 t RC rig was added in August 2020, and was tasked with drilling off near-surface oxide mineralization and unweathered basement mineralization directly beneath. It was capable of drilling faster and was more efficient once sited, but it had considerable difficulty navigating rougher and wet terrain, and some planned drill holes had to be drilled with one of the smaller, more nimble drill rigs. All targets tested by the large RC rig had been identified previously by the Company's RC rig, trenching, or earlier diamond drilling. This drilling was completed in late 2021, at which time the RC rig was released from the site.

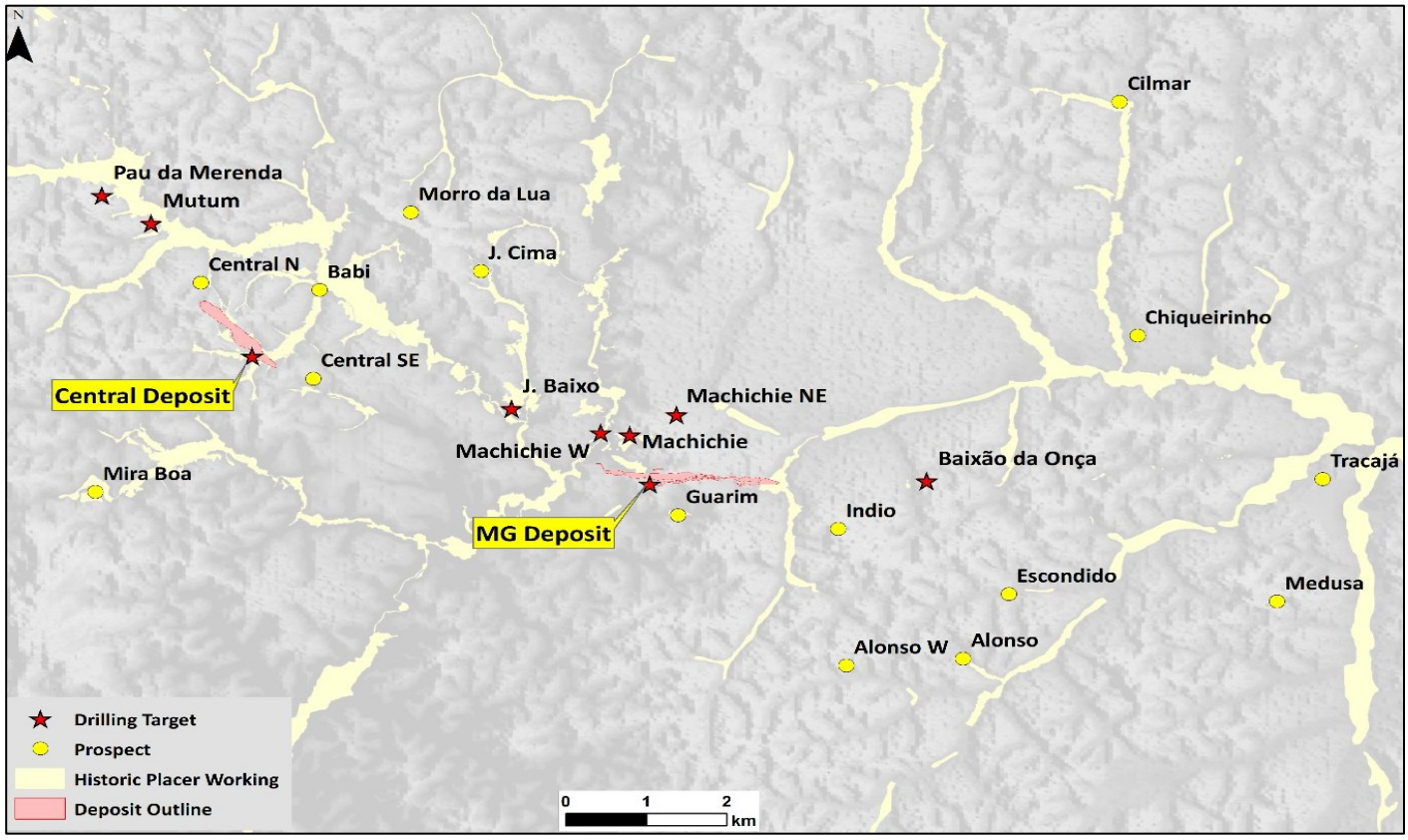
In addition to taking 23,482 core and 35,134 RC-chip samples to analyze for gold, and where appropriate multi-element ICP analysis, Cabral Gold also measured 12,019 samples of diamond-drill core for density, as summarized in Table 10-1 and Table 10-2.

Table 10-1: Drilling Summary from 2019 through September 31, 2024, by Target

Target	Diamond-Drill Holes				RC-Drill Holes		
Name	No. Holes	Meterage	No. Assay Samples	No. Density Samples	No. Holes	Meterage	No. Assay Samples
Central	41	4,944,2	3809	2,151	48	3268	3188
Central North	1	53		41	64	3728	3588
Jerimum do Norte	2	343.5	145	3	146.5	91	
Jerimum de Cima	2	252.6	91	121	-	-	-
Jerimum do Meio (JM)	1	123	53	85	6	499.5	389
Machichie Main Zone	24	3,543.9	2803	466	35	2170	1794
Machichie NE	4	564.6	323	259	35	2367	2109
Machichie West	2	143.7	46	95	24	1327	1316
Machichie E					16	1160	862
MG	77	12,241.8	9,976	6,835	98	7340	7339
Quebra Bunda	2	299.6	180	192			
Índio	6	932.0	720	190	6	289.5	188
Morro da Lua	1	183.0	111	155	6	499.5	500
PDM	17	3,618.6	3,295	1,067	59	3616	3616

Target	Diamond-Drill Holes				RC-Drill Holes		
Name	No. Holes	Meterage	No. Assay Samples	No. Density Samples	No. Holes	Meterage	No. Assay Samples
RECONNAISSANCE DRILLING							
Central Stream Drilling					40	249.7	269
Central SE					1	61.0	61
Mira Boa					33	1,152.0	1,152
Alonso	5	816.5	647	233	15	748.5	250
Guarim	1	148.5	66	129			
Medusa					26	1311	727
Tracajá					7	634.5	256
Dona Moça					1	66	66
Total	**186**	**23264.3**	**22265**	**12019**	**523**	**30633.7**	**27761**

Figure 10-1: Drill Target Locations



Source: Cabral Gold, 2024.

Table 10-2: Cabral Gold Drilling Summary by Year from 2019 through September 31, 2024

Year	RC-Drill Holes				Diamond-Drill Holes		
	No. Holes	Meterage	No. Assay Samples	No. Density Samples	No. Holes	Meterage	No. Assay Samples
2019	31	4,099	1,993	3,362	-	-	-
2020	-	-	-	-	45	2,591	1,178
2021	57	9,925	9,112	5,404	225	15,768	14,578
2022	72	12,617	11,182	4,109	73	4,439	4,382
2023	9	527	-	88	78	4,011	3,931
2024	17	1,040	468	81	75	4,421	4,372
2025	10	1,278	1,107	-	93	6,862	6,767

10.3 Advanced Targets

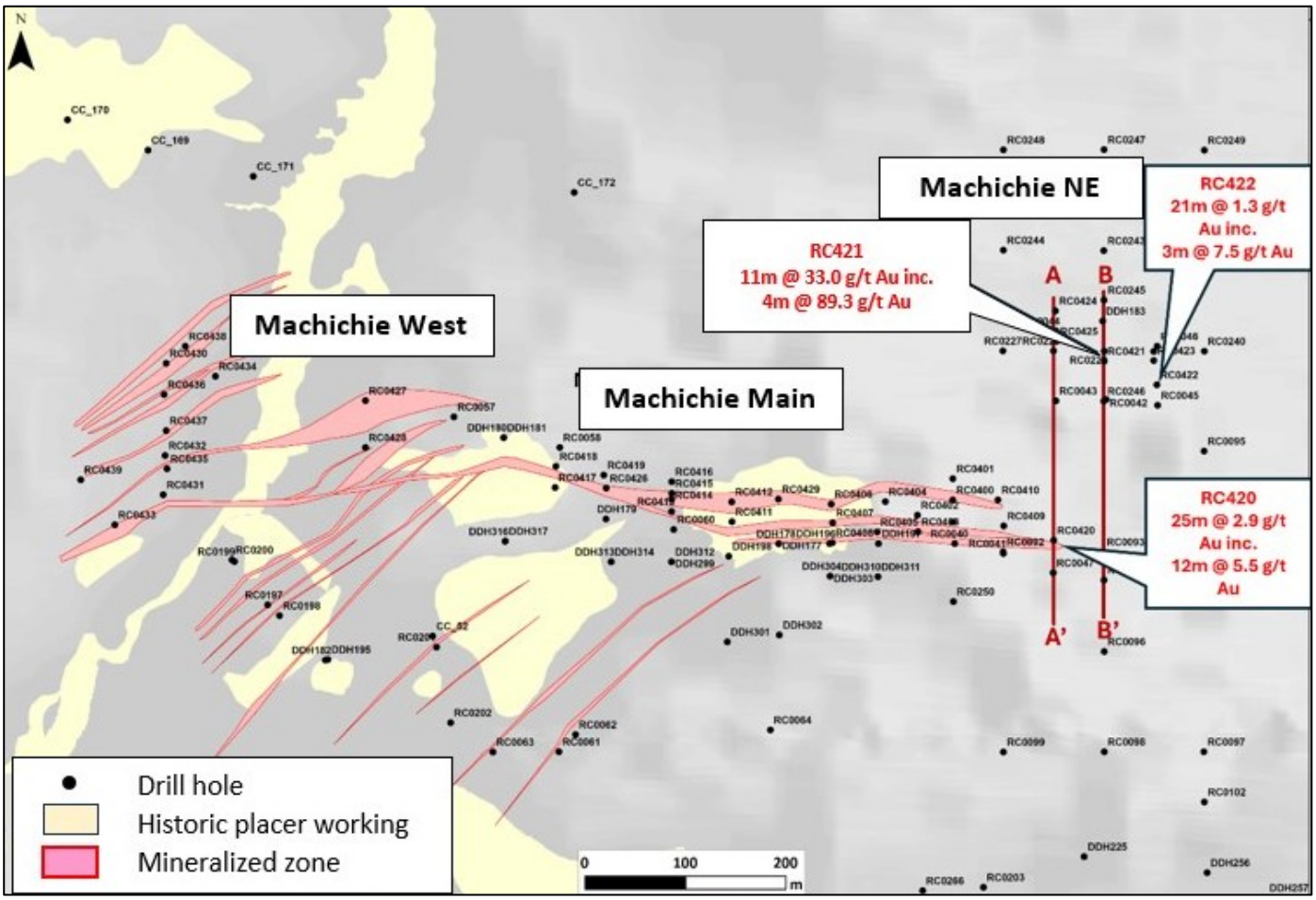
10.3.1 Machichie Complex Target Area

The Machichie target was the first new discovery made by Cabral Gold at Cuiú Cuiú (CBR, 2018). Only one hole (CC-52) had been drilled in the region by Magellan. It was drilled on a distinct narrow structure 300 m north of the MG deposit (Figure 10-2) but was not followed up at that time. Cabral Gold's Machichie drilling program commenced in 2018 and continued sporadically through July 2025.

As work advanced at Machichie, additional discoveries were made around the original target, and the size and scope of the mineralized structures and overall mineralized footprint continued to grow.

As this new information unfolded, the nomenclature and names of the various discoveries, targets, and vein structures at Machichie evolved, and were gradually modified and changed, and in some cases, targets were amalgamated. Three separate zones, or target types have now been recognized at the Machichie Complex, including, the Machichie Main Zone, the Machichie NE zone, and the Machichie West Array (Machichie W). Mineralization within the various zones and MG is believed to be coeval, and the spatial and geometrical relationship of these zones shows similarities to a network of Riedel structures, as discussed in previous sections of this report.

Figure 10-2: Machichie Complex Target Map



Source: Cabral Gold, 2024.

10.3.1.1 Machichie Main Zone

As of July 31, 2025, the east-west trending Machichie Main Zone (Figure 10-1) had been intersected by 24 diamond-drill holes, totalling 3,543 m, and 67 RC holes, totalling 4,369 m, as illustrated in Figure 10-2 and Figure 10-3. The zone is coincident with a pronounced magnetic low and has now been drill tested over a strike length of 900 m, and to a vertical depth in excess of 175 m. Grade and width of intercepts weaken considerably east of Section E553280 (RC-47), but it remains open to depth, and recent trench results to the west indicate it may be open in that direction.

Higher gold grades are commonly associated with pervasive silicification, quartz veining and flooding, and abundant disseminated pyrite. Visible gold, although rare, is more prevalent than observed at other deposits within the Cuiú Cuiú Project.

In addition to gold and pyrite, core samples returned elevated levels of molybdenum, copper, and tungsten. Coarse molybdenite, disseminated chalcopyrite and scheelite are widely recognized throughout the Machichie Main Zone and are particularly prevalent to the east. Indeed, the nature of the molybdenite mineralization at Machichie is quite similar to that occurring at the newly discovered Matilda porphyry zone at the Palito Complex (Serabi, 2022). These may be evidence of the presence of a buried porphyry system nearby (see Section 7.6).

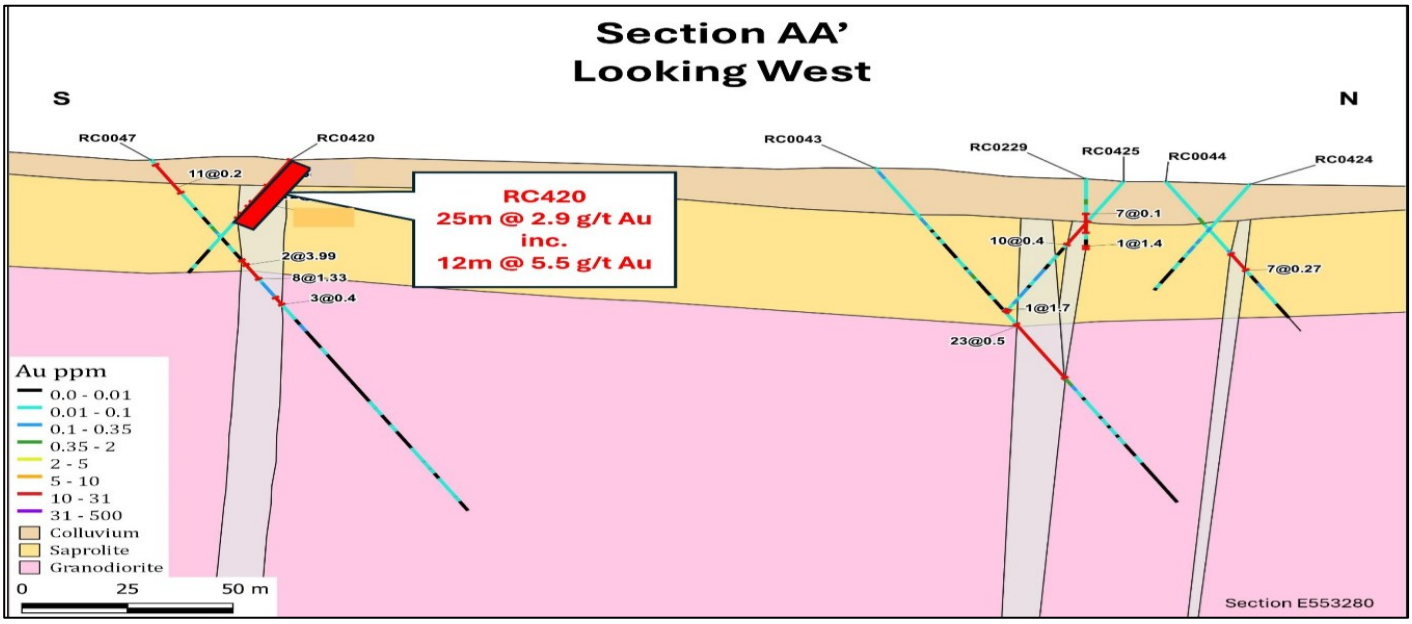
The surface projection of the Machichie Main Zone is shown on Figure 10-2 and Figure 10-3, while a typical section is shown in Figure 10-4. Holes are drilled in multiple orientations, and widths do not represent true widths.

Holes collared close to the surface projection of the Machichie Main Zone also intersect near-surface gold grades in weathered and oxidized rock. Unfortunately, not all holes were assayed to surface, as the importance of weathered basement mineralization and unconformable Blanket mineralization was not recognized until 2021. No systematic drilling has been undertaken in this area yet to identify and constrain this near-surface oxide mineralization, and it is not entirely clear whether it is in situ saprolite, transported saprolite, or both. There is also a component of spent artisanal mining tailings and workings overlying portions of the area (Figure 10-3). In some places, workings are more extensive and all the saprolite has been exploited to the fresh mineralized basement. There are also shallow artisanal shafts, and one hole (DDH-181) intersected old underground galleries with no core recovery.

Recent developments in Machichie Main zone include results announced on Mar 13, 2025 — Trench CT051: 20 m at 3.6 g/t Au (incl. 4 m at 15.7 g/t) in oxide at surface; RC drilling beneath/nearby returned primary-zone hits including 4 m at 3.1–3.9 g/t Au; on March 26, 2025, with the discovery of a new, parallel mineralized zone ~40 m north of the main structure (e.g., RC0504: 12 m at 3.1 g/t, incl. 3 m at 11.2 g/t in oxide); additional oxide intercepts include RC0515: 3 m at 15.9 g/t from 16 m; and on May 13, 2025 — Western area hole RC0499A intersected 2 m at 52.3 g/t Au in fresh intrusive rock; several holes also returned near-surface oxide intervals (e.g., 18 m at 0.87 g/t in RC0530).

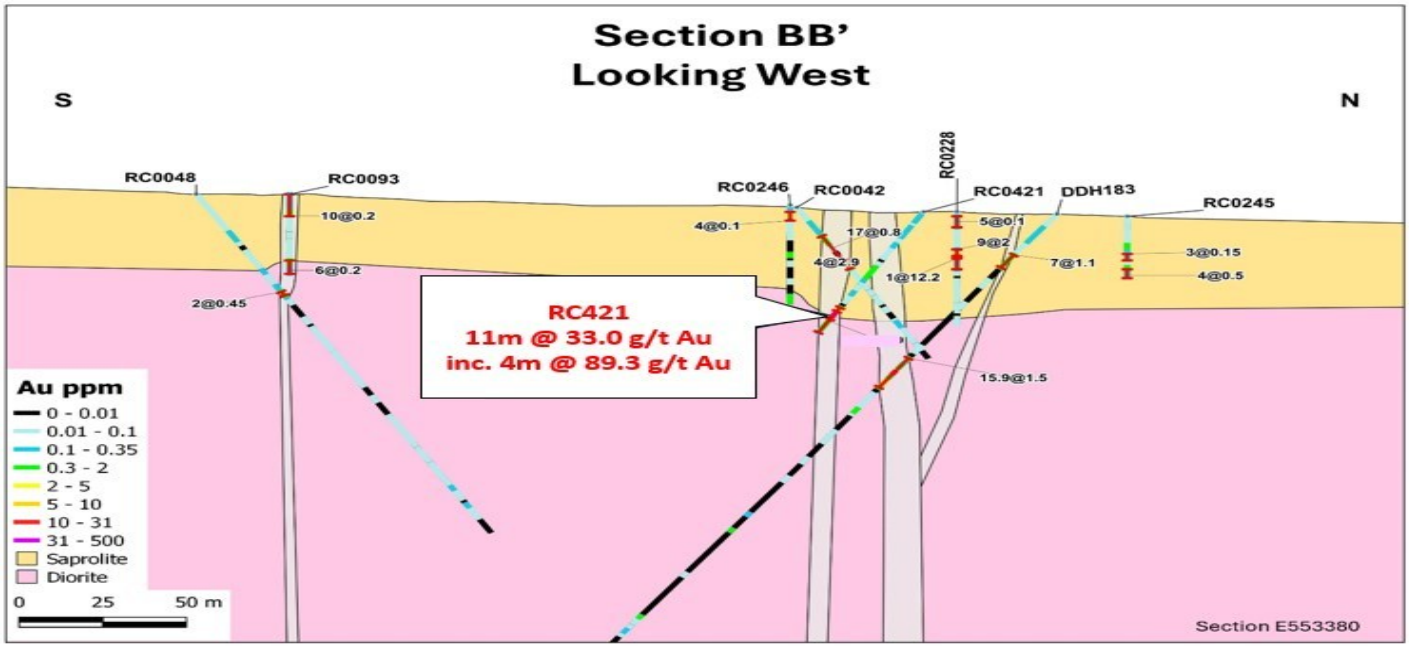
Additional drilling will be required to test for the potential strike extent indicated by trenches to the west (Section 9.2.2.1), as well as to fully establish the overall grades, widths, continuity, and depth extent of Machichie Main Zone before a resource estimate for Machichie Main Zone is recommended.

Figure 10-3: Section A-A Machichie



Source: Cabral Gold, 2024.

Figure 10-4: Section B-B Machichie



Source: Cabral Gold, 2024.

10.3.1.2 Machichie NE Zone

At the Machichie NE target area (Figure 10-1), bedrock and basement saprolite are covered by sediments and there is no surface exposure. This blind discovery was found by following up auger geochemical anomalies of greater than 100 ppb Au with elevated copper, molybdenum, and tungsten values. The geochemical anomaly is also coincident with an induced-polarization geophysical anomaly and a magnetic low.

Four diamond-drill holes and 47 RC holes, as listed in Table 10-1 were initially completed at Machichie NE. Gold mineralization is interpreted as steeply dipping, but the strike beneath the cover sequence is not yet known.

The structure is interpreted to be an east-west orientation, subparallel to the Machichie Main Zone; however, it is also possible that some of the near-surface mineralization that was intersected within saprolitic rocks may reflect weathering and redeposition of underlying basement mineralization.

The first reconnaissance exploration diamond-drill hole (DDH-183) encountered strong mineralization in bedrock below the cover sequence, including: 25.5 m at 0.8 g/t Au in weathered and oxidized rock from surface, and 47.6 m at 0.9 g/t Au in fresh basement from 37.9 m. The 47.6 m basement intercept included 0.2 m at 23.8 g/t Au from 37.9 m, 0.4 m at 13.4 g/t Au from 44.5 m, 0.3 m at 11.4 g/t from 53.7 m, and 2.4 m at 7.8 g/t Au from 61.8 m. Along with significant gold values, it also returned elevated silver, copper, molybdenum, and tungsten values within the principal intersection, with a maximum of 27 g/t silver, 0.1% copper, and 0.06% tungsten. More broadly outside of this zone, the tungsten mineral scheelite and coarse centimeter-sized molybdenite were observed in veins. Scheelite also occurs locally in wall-rock alteration zones. Values up to 0.17% tungsten, 0.12% molybdenum, and 0.15% copper were encountered in selected samples throughout the hole. Tungsten was also recognized outside of the higher-grade gold intervals.

Notable intervals reported recently include announcements on October 28, 2024 — Step-out DDH331 returned 5 m at 24.5 g/t Au (incl. 2 m at 60.5 g/t); together with prior holes the zone was traced ~200 m along strike and on April 3, 2025 — RC520 cut 22 m at 15.9 g/t Au, including 12 m at 27.7 g/t Au (5 m at 65.5 g/t) in saprolite/altered bedrock, confirming a bonanza-grade shoot within the same 200 m trend, open in all directions.

The presence of elevated tungsten, molybdenum, and copper suggests the possibility that a concealed intrusive source may be present (see Section 7.6). The deeper induced-polarization geophysical anomalous response has still not been adequately tested by drilling.

Additional drilling will be required to fully establish the overall orientation as well as the true width, continuity and size of Machichie NE; moreover, the deep geophysical target has yet to be explained. Drilling is currently insufficient to determine true widths, and a resource estimate for Machichie NE is not yet justified.

10.3.1.3 Machichie West Array

Numerous northeast-trending narrow structures have been found in the area between Machichie Main Zone, and the MG deposit through surface mapping of artisanal miner workings, and in trenches completed by Magellan. CC-52 was the only historic hole drilled by Magellan in this area. It drilled directly beneath veining exposed in a surface trench and returned 3.3 m at 7.4 g/t Au, including 0.5 m at 46.2 g/t Au.

The best drill result from one of these potential northeast structures was in diamond-drill hole DDH-182. It tested the original Machichie southwestern (SW) vein structure and cut 3.4 m at 36.9 g/t Au (including 0.7 m at 162.7 g/t Au). RC-63 was drilled 35 m southwest of CC-52 on the Hamilton Novo structure and returned 3 m at 13.2 g/t Au, including one meter at 36.7 g/t Au. Previous Magellan surface trenching 75 m to the northeast of RC-63 returned 5.8 m at 16.0 g/t Au 75 m along the same Hamilton Novo structure.

Up to July 2025, Cabral Gold drilled two diamond holes and twenty-four RC holes, testing several of the original structures. The results allowed the interpretation of an array of parallel veins, totalling 16 veins. No drilling was added since the 2024 Technical Report on this target.

This suggests there are additional unmapped northeast-trending structures present.

The narrow, northeast-trending structures are thought to be a specific style of vein mineralization that occurs as a swarm, or array. This mineralization is currently 400 m by 450 m, but remains open in all directions, as discussed in Section 7.5.6.

At Machichie West, mineralization is oxidized and weathered to greater than 30 m deep in places. However, the orientation of the veins, periodicity, and continuity have not yet been adequately established to determine true widths. Follow-up drilling is planned to further test these interpreted northeast-trending structures.

10.3.2 Central Deposit

The Central deposit (Figure 10-1 and detailed in Figure 10-5 to Figure 10-8) is one of four deposits on the Cuiú Cuiú property with historic and previous resource estimates, as discussed in Sections 6.4 and 6.5.

Figure 10-6 is a plan view of the Central deposit showing the drill hole collar locations and the projected outlines of the deposit, and Figure 10-9 shows a typical section through the deposit.

Three distinct types of gold mineralization combine to form the Central deposit:

- Fresh highly altered and brecciated mineralized basement rocks
    - In situ weathered and saprolitized basement rocks
    - Unconformable sub-horizontal Blanket mineralization

The Central gold deposit occurs within a broad, northwest-trending magnetic low, as presented in Figure 10-6. The geometry, geology, style of mineralization, alteration, resources, and other details of the Central deposit are discussed extensively in Sections 6, 7, 13 and 14.

The primary basement deposit at Central comprises a laterally extensive, northwest-trending steeply dipping series of subparallel mineralized zones that extend below the deepest holes drilled to date (see Section 7.5.1). Like most other zones within the Project, at Central gold occurs within higher-grade shear veins, silicified zones, and intense breccia zones characterized by very strong hydrothermal alteration that occurs within the lower-grade alteration halo. In places, the Central low-grade alteration halo is over 110 m wide.

In the core of this mineralized alteration zone, rocks range from light grey to pinkish grey, and alteration is dominated by silicification, sulphidation (predominantly pyrite), sericitization, carbonatization, albitization, chloritization and k-spar (microcline) alteration, +/- hematite. Silicification is evident, and very narrow sheeted quartz-carbonate veins and stringers, or quartz, and quartz-sulphide veins. Many of the veins and stringers are surrounded by narrow chlorite alteration selvages (+/- sulphides).

Within the mineralized alteration zone at Central, numerous steeply dipping, subparallel, northwest-trending, higher-grade, gold-bearing mineralized zones have been intersected, locally displaying bonanza grades.

Mineralized in situ saprolite is unconformably overlain by a veneer of sub-horizontal transported Blanket, which is covered by spent tailings throughout much of the southeastern half of the deposit. The spent tailings are indistinguishable from fluvial sediments in drill core.

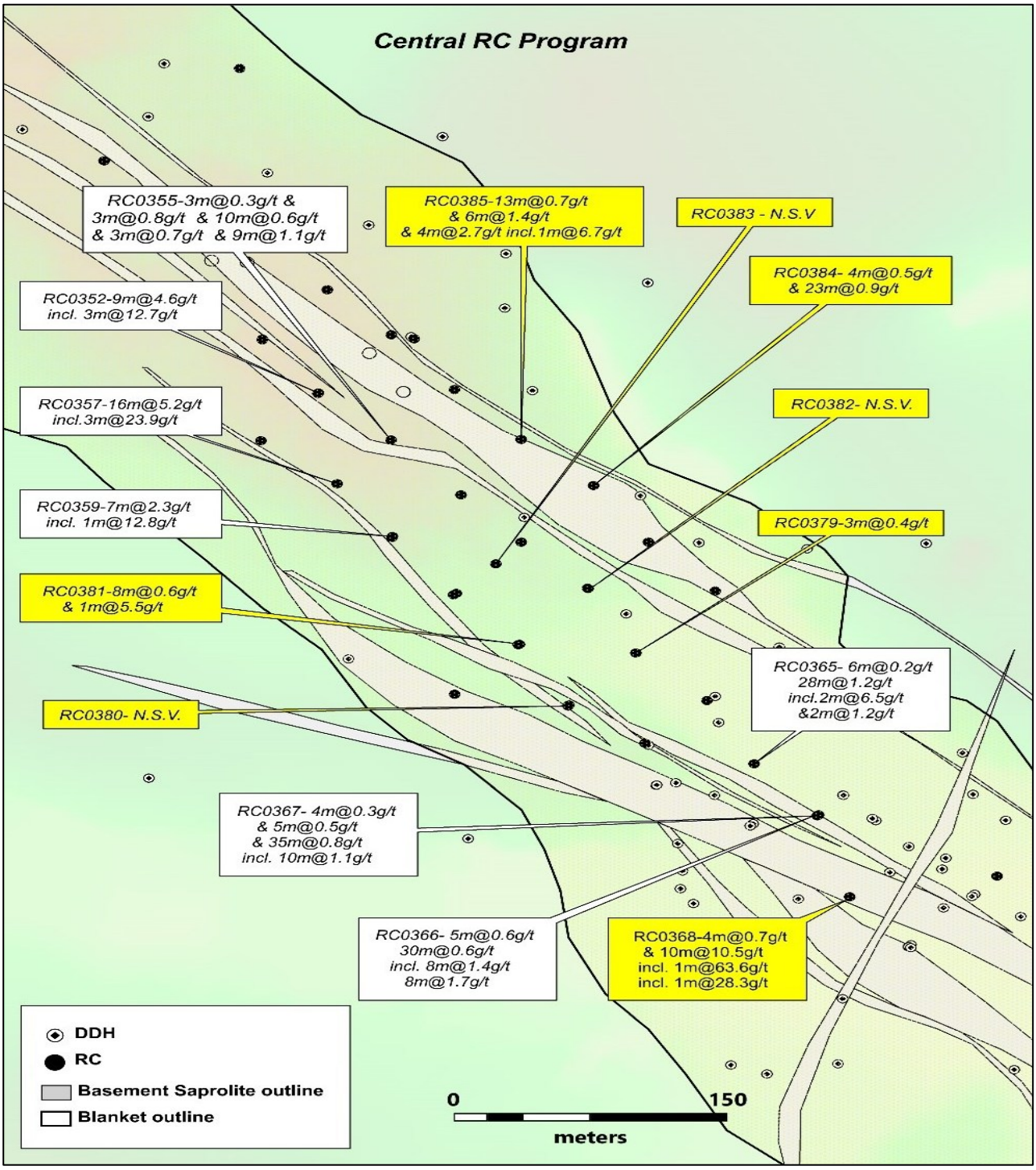
At Central there are two narrow, steeply dipping, north-northeast-trending, post-mineral porphyritic latite dykes that transect the northwest-trending mineralized zones in the southeastern half of the deposit.

In general, Cabral Gold's initial drill programs at Central have successfully shown that higher-grade gold intercepts can be correlated up and down-dip, and that in situ gold mineralization extends within weathered basement rocks close to the surface. While it seems that not all the high-grade structures can be interpreted to have significant vertical continuity, it is also possible that some may have inclined plunges, which cannot be delimited by the spacing of the current drill pattern.

The current drilling program is focused on the definition of a weathered zone, close to surface and amenable to heap leach metallurgical method. For this objective, RC drilling has been used extensively. As announced on October 28, 2024, RC drilling focused largely outside the oxide starter-pit shell to upgrade Inferred to Indicated; notable intercepts included 56 m at 0.85 g/t Au (RC0475) and 41 m at 0.37 g/t Au (RC0476), among others.

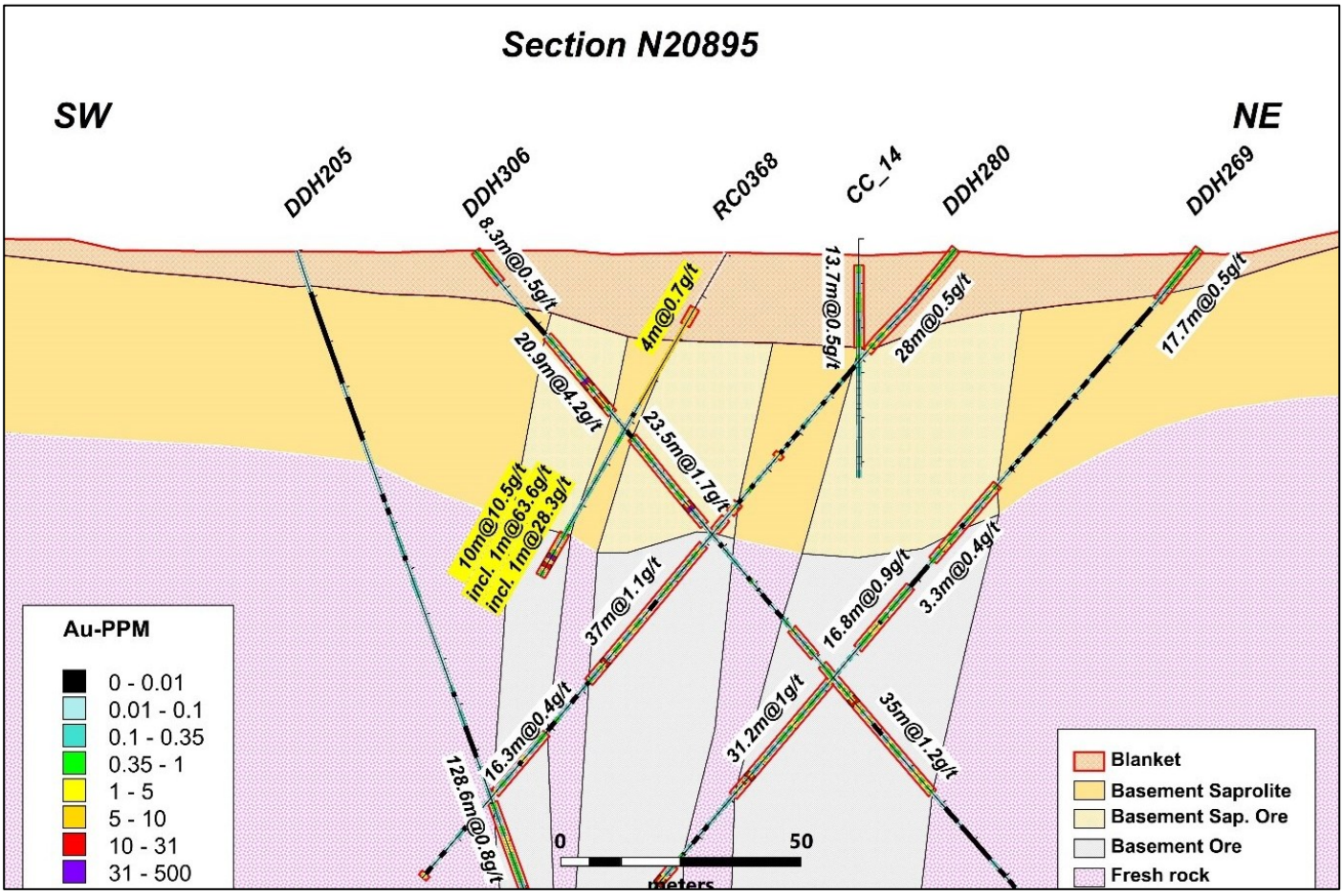
The QP is in accordance with this change of strategy, given that RC allows a faster rate of production and adequate sampling of the weathered zone.

Figure 10-5: Map of the Main Zone at the Central Deposit



Source: Cabral Gold, 2024.

Figure 10-6: Typical Section for the Central Deposit



Source: Cabral Gold, 2024.

10.3.3 Moreira Gomes (MG) Deposit

The MG deposit (Figure 10-1) is one of four deposits on the Project with historic and previous resources estimates (Sections 6.4 and 6.5).

Figure 10-8 present drill hole collar locations, the surface projection of basement mineralization, and the surface extent of unconformable Blanket mineralization for the 2.1 km-long MG deposit. Figure 10-9 present a representative section through the deposit.

Three distinct types of gold mineralization combine to form the MG deposit:

- A laterally extensive primary unweathered basement gold deposit

- Weathered in situ mineralized basement saprolite
- An extensive sequence of unconformable Blanket mineralization

The geometry, geology, resources, and other details of the MG deposit are discussed extensively in Sections 6, 7, 13 and 14. Gold mineralization at MG occurs within several subparallel east-trending, steeply north-dipping deformation zones that have been subjected to intense hydrothermal alteration. The combined alteration envelope has been drilled over a strike length of 2,100 m. It is locally 200 m wide, but more commonly it occurs over less than 100 m in width. Mineralization has been drill tested to a maximum vertical depth of approximately 375 m in the deepest hole drilled to date (CC-101) at MG. Both the alteration and gold mineralization, contained within it, remain open along strike and at depth. The deposit has a strike length of approximately 2.1 km based on existing drilling.

Deformation and alteration are less intense than at Central, and lithons of weakly deformed and altered to fresh, undeformed and unaltered diorite commonly occur between anastomosing more strongly deformed and altered zones. Within the deformed zones, breccias are commonly well-developed, showing similar textures as described above at Central. Shearing is locally associated with quartz veining, and many of the mafic dykes are also highly foliated within the deformed zones.

Alteration is somewhat zonal, with better-grade gold mineralization commonly associated with grey alteration, characterized by disseminated sulphide (predominantly pyrite), sericite, pervasive silicification, chloritization and quartz stringers, veins and quartz flooding. Bonanza grades commonly occur within pyrite-rich quartz veins. More distal alteration is dominated by chlorite, k-spar and hematite, which are overprinted, or encroached by gold-related alteration. Molybdenite has been also recognized in some holes, but it is rare.

MG is now the most densely drilled gold deposit within the Project, which has allowed for further refinement in the interpretation of the mineralized system. Numerous distinct subparallel, anastomosing basement gold mineralized zones and vein systems can now be interpreted within broader MG alteration zones. Within many of these zones, there are narrower higher-grade zones that locally display bonanza grades. In some locations, these higher-grade zones occur in an en-echelon fashion.

Primary basement mineralization has been saprolitized and weathered in situ to depths locally exceeding 80 m, as illustrated in Figure 10-8 and Figure 10-9. Brecciation and hydrothermal alteration, including veining, is evident in less weathered material. Grades generally appear to be higher than the bulk of the unweathered underlying mineralization, and there is evidence of supergene enrichment near the surface, along geological contacts and deeper fractures or faults, along which groundwater flow was focused. The surface footprint of this weathered basement mineralization is the same as the unweathered basement mineralization and related alteration.

Blanket mineralization at MG predominantly includes soil and transported colluvium, with less fluvial and lacustrine sediments. At the base of the lake sediments, are thick clay deposits, which also contain gold in places. Drilling indicates the mineralized Blanket covers a surface area of approximately 36 hectares. The thickness of that Blanket varies from just a few meters to the west, to nearly 40 m below the surface in the middle. The long axis has now been traced 1.5 km from east to west and roughly corresponds to the strike of the underlying basement deposit. In places, the Blanket extends north to south for over 500 m, across the strike of the up-dip projection of strike of the underlying basement

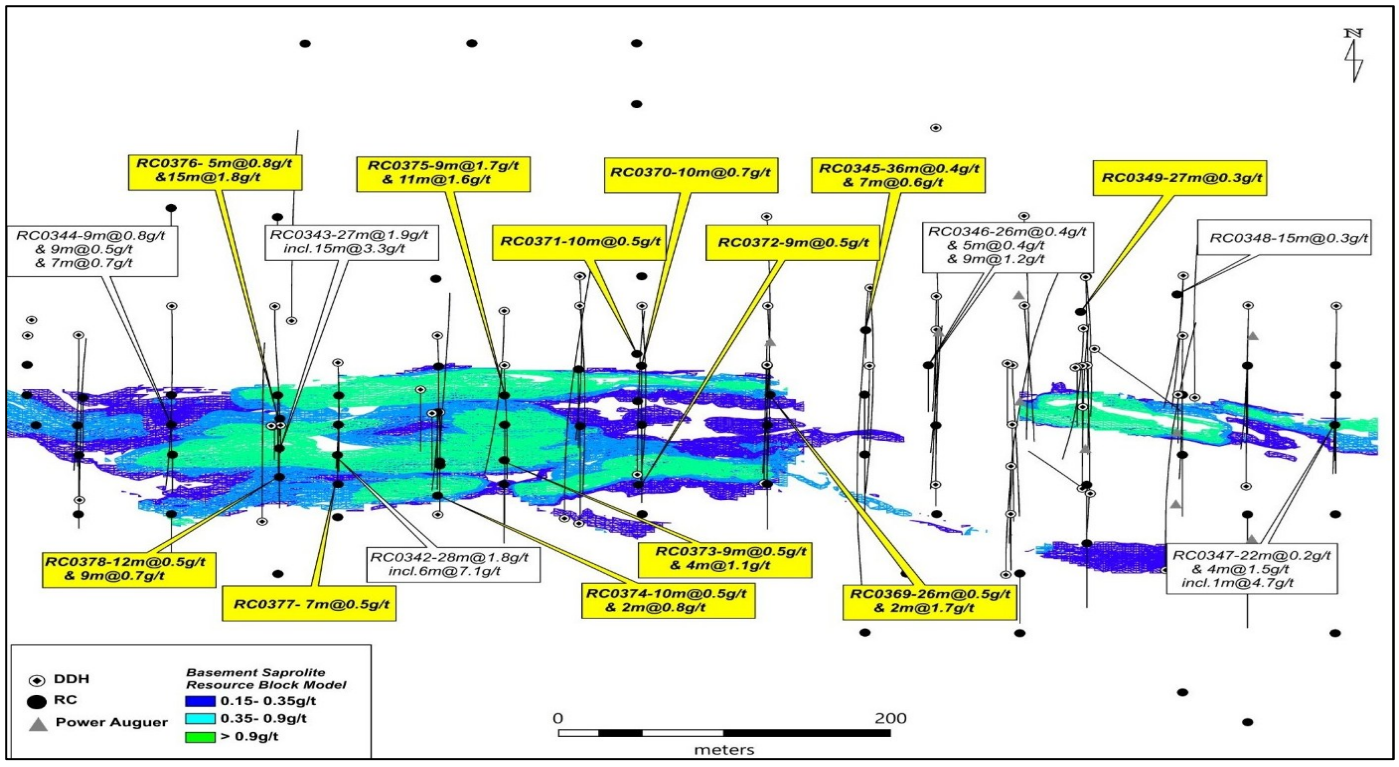
mineralization (Figure 10-8). This north-south footprint is more than five times the width of the underlying basement mineralization in places.

At the extreme eastern end of the MG deposit, a north-northeast-trending, steep-dipping unmetamorphosed diabase dyke, approximately 45 m wide, transects the east-trending gold mineralized zones. The diabase was emplaced post-mineralization. It is massive, undeformed, and barren.

Cabral Gold's drill programs at MG successfully identified significant and extensive near-surface weathered and oxide gold mineralization within both transported unconformable Blanket and in situ weathered basement rocks. The tighter-spaced drilling also expanded and refined the distribution of known mineralized basement zones and showed that higher-grade mineralization is both more continuous and widespread than previously thought.

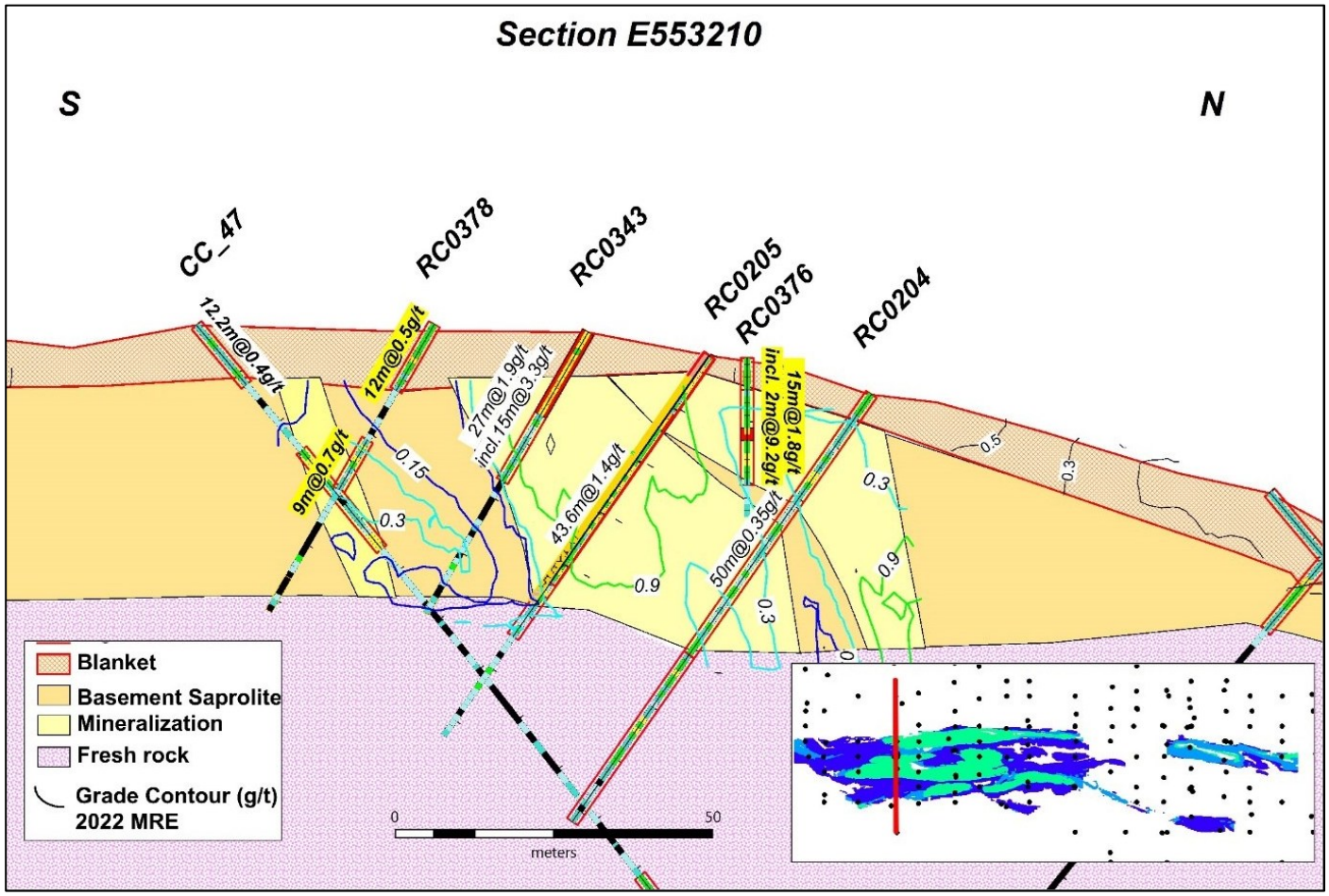
Additional drilling is planned to further test and refine principal zones of mineralization at MG, along with the higher-grade structures in areas where drill spacing is still wide. The deposit remains open at depth, and deeper drilling may result in adding additional open-pit resources where drilling is still shallow, as well as underground resources, particularly where grades are higher, and plunges are evident.

Figure 10-7: Map of the MG Deposit with Relevant Drill Intercepts



Source: Cabral Gold, 2023.

Figure 10-8: Section Example of the MG Deposit



Source: Cabral Gold, 2023.

10.3.4 Pau da Merenda (PDM) Target

The PDM target (Figure 10-1) exhibits three styles of gold mineralization:

- Primary unweathered gold mineralization in basement
- In situ weathered mineralized basement saprolite
- Unconformable Blanket mineralization

Figure 10-9 shows the surface extent of Blanket mineralization and the surface projection of basement mineralization. A typical cross section displaying both basement and weathered mineralization is shown on Figure 10-10.

Historic drilling and trenching at PDM was limited. While several high-grade intercepts were obtained in historic drilling, continuity could not be established, and results from this early drilling were not well understood.

Following the discovery of unconformable transported Blanket gold mineralization at MG, a reconnaissance RC program was initiated at PDM to see if Blanket-style mineralization was evident there. The reconnaissance drilling was very successful, and the Cabral Gold announced it had discovered a second gold-in-oxide Blanket mineralization at PDM (CBR, August 10, 2021). Ten of the 11 holes returned gold mineralization over intervals up to 40 m in thickness, suggesting the possibility of an extensive gold-in-oxide Blanket. The highlight of these initial holes was RC-112, which intersected 40 m of weathered and oxidized rock grading 2.2 g/t Au from surface, including 7 m at 9.4 g/t Au from 33.0 m. The last two meters of that hole averaged 23.8 g/t Au, indicating that the mineralized zone at that location is open at depth.

Subsequent RC drilling continued to expand the surface footprint to 27.5 ha, and the weathered zone has been traced up to 950 m north to south, and up to 500 m east to west. This drilling also defined a higher-grade northwest-trending core within the overall footprint (CBR, October 28, 2021). Additional infill RC drilling was completed at tighter spacing along the higher-grade corridor (CBR, August 18, 2022). Two northwest-trending, higher-grade zones are interpreted from tighter-spaced RC drilling and from limited diamond drilling testing the underlying basement saprolite. Both zones have a horizontal width of 60 m. They have been drill tested along a strike of 550 m, and saprolitic weathering extends to depths ranging from 15 m to 75 m.

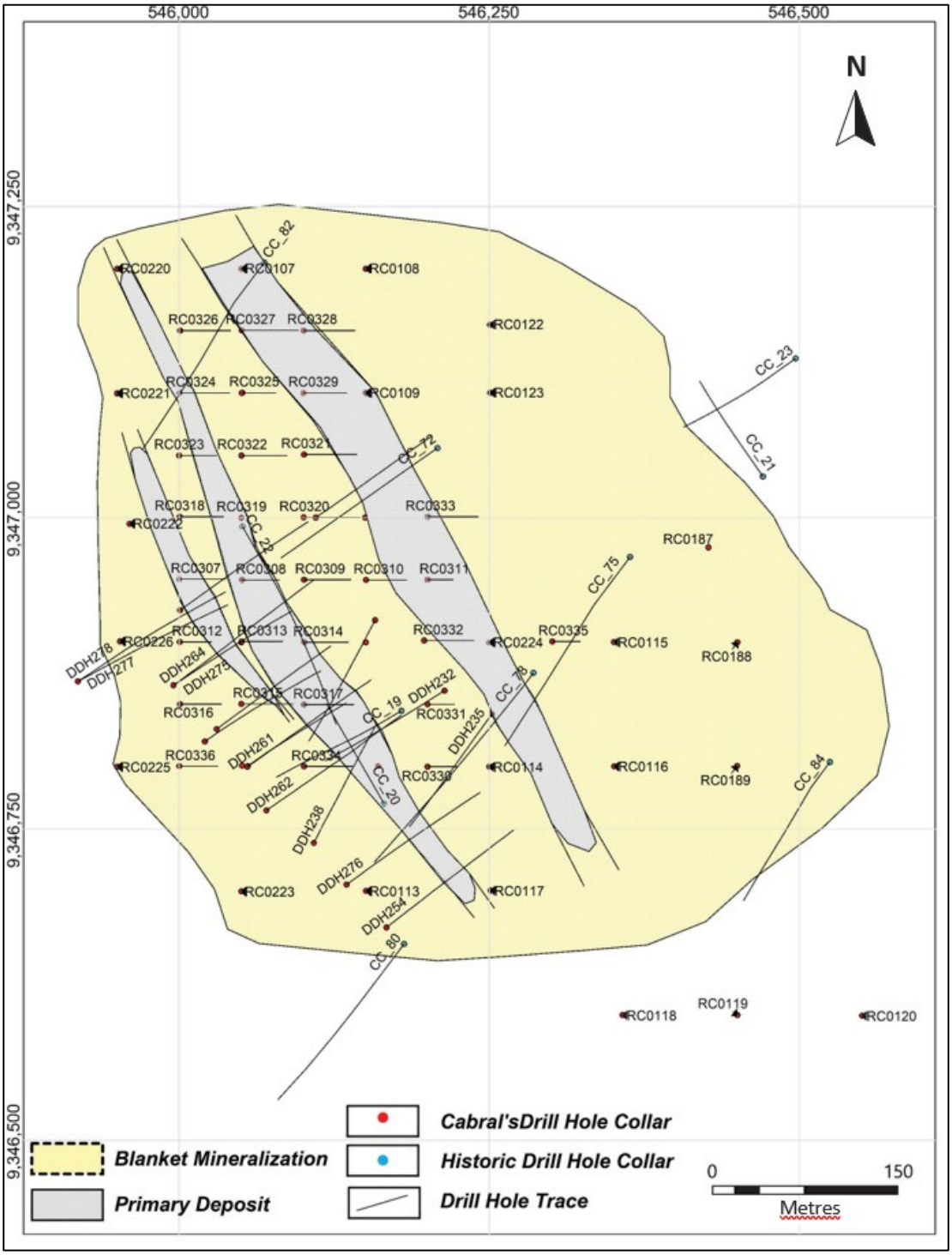
Weathered and oxidized mineralization at PDM comprises weathered and oxidized in situ basement mineralization, which is unconformably overlain by Blanket-style gold-bearing colluvium and sediments. Intercepts of in situ weathered basement are more common in the higher-grade core. Blanket-style mineralization at PDM includes soil, colluvium, and fluvial sediments, and essentially drapes over a large, pronounced hill. Thickness varies from just a few meters to more than 25 m, as shown in Figure 7-10.

The rocks encountered and style of mineralization at PDM are very similar to those observed at Central, which is located 2.3 km to the southeast.

Unweathered, primary basement mineralization has been intersected in 19 drill holes, but the drilling is still quite restricted in strike, depth, and drill density. Only a 190 m segment of the western mineralized zone interpreted in weathered basement saprolite has been drilled on 50 m sections, to a maximum depth of 150 m. Basement mineralization remains open down-dip and along strike on that zone, while the eastern zone has only been intersected by scattered historic holes.

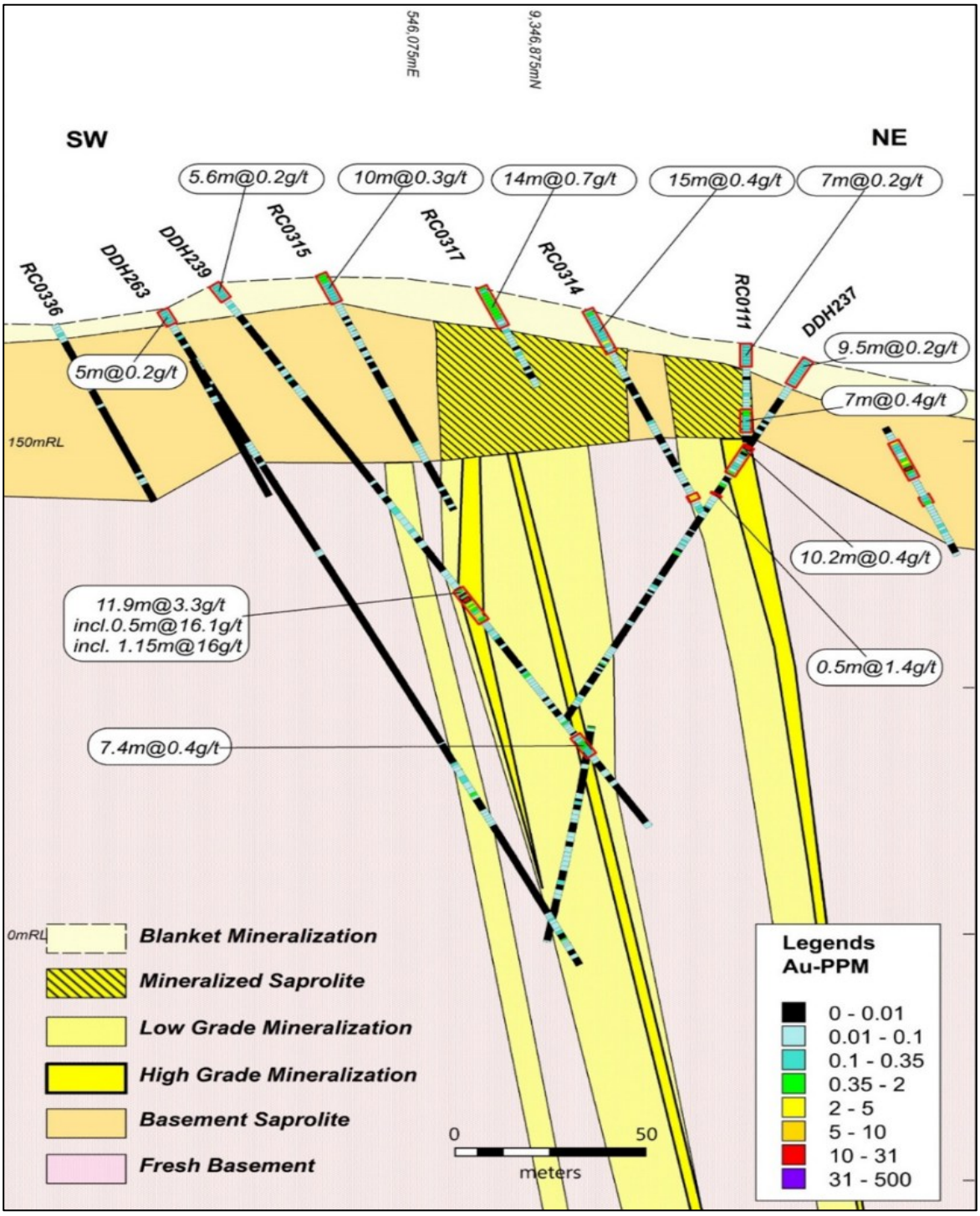
While a resource has been determined herein for the weathered material, at this stage of drilling and understanding of the general geology and mineralization of the PDM unweathered mineralization, or the extent of the mineralized zone, a resource estimate for the basement mineralization would be premature. Additional drilling is planned along strike and down-dip.

Figure 10-9: Plan View Showing Drill Hole Locations and Mineralization in the PDM Area



Source: Cabral Gold, 2023.

Figure 10-10: Typical Section through the Basement and Saprolite Mineralization at PDM



Source: Cabral Gold, 2023.

10.4 Other Targets

10.4.1 Seis Irmãos (Six Brothers) and Guarim Targets

The Seis Irmãos (Six Brothers) and Guarim Prospects lie 300 m and 500 m south of the MG deposit, respectively (Figure 10-1). Both prospects are associated with parallel, variably demagnetized east-trending structures, and are open along strike.

At Guarim, one of two historical diamond-drill holes returned 0.5 m at 30.2 g/t Au from 57.2 m beneath historical workings. A prominent demagnetized corridor extends westwards from Guarim and trends towards the Mira Boa region.

Additional drilling will be required to establish the overall orientation as well as the continuity, size, and true widths of the Guarim and Seis Irmãos mineralized zones.

10.4.2 Jerimum Region Targets

The Jerimum region is quite large and consists of a number of separate target areas (Figure 10-1). Within the region there are multiple gold-rich alluvial workings and a greater than 100 ppb gold- in-soil anomaly extending over 22 ha. Magnetic data shows an array of east- and northeast-trending structures, most of which remain untested.

Historical drilling was focused on an east-west trend, which returned peak results of 39 m at 5.1 g/t Au. A single diamond drill hole in the 2019 campaign identified a western extension to that structure. DDH- 189 was drilled to test the western extension to the Jerimum Cima zone and returned 24 m at 0.7 g/t Au from surface to 24.0 m including 0.7 m at 8.9 g/t Au.

Six reconnaissance RC holes were drilled to test the Jerimum North (JN) target in 2021 (CBR, March 31, 2021, and April 29, 2021). The drill program at JN was abandoned due to excessive water flows, such that none of the holes reached the projected target depth and were unable to test the down-dip extent of a high-grade vein structure exposed in the artisanal workings. The JN target will be tested via diamond drilling in the future.

Jerimum Meio (JM) is an east-trending vein structure that was identified 2.2 km northwest of the MG gold deposit. In 2021, six reconnaissance RC holes (RC-74 to RC-79) were drilled to test the JM target (CBR, March 31, 2021, and May 19, 2021). All returned gold values, including 1 m at 2.6 g/t Au from 76 m in RC-75 and 8 m at 0.5 g/t Au from 59 m, 2 m at 1.0 g/t Au from 73 m, and 3 m at 1.4 g/t Au from 81 m in RC-76. These results are sufficiently encouraging, together with the surface results and the alteration noted in the drilling, that further follow-up diamond drilling is warranted.

As reported in 2025, at Jerimum de Cima (JC) Cabral identified a fifth gold-in-oxide blanket, with trench CT050: 18 m at 1.9 g/t Au and a blanket footprint approximated at ~1,000 × 900 m; prior reconnaissance drilling included 39 m at 5.1 g/t Au in primary intrusive rock. Notable results are in hole RC0561, which intercepted 49 m at 2.0 g/t Au from 7 m, including 1 m at 57.0 g/t within saprolite; trench CT055 on the same section returned 66 m at 0.29 g/t. Results suggest an E–W zone ≥ 400 m long, open laterally and at depth, supporting the case for a JC oxide resource in future work.

Additional drilling will be required to test the various Jerimum targets to determine orientation as well as the true width, continuity, and size.

10.5 Diamond Drilling Procedures, Sampling Security, and Logging

- All core samples from the diamond drilling program were collected by company staff or dedicated contractors and delivered twice a day to Cabral Gold's core yard in Cuiú Cuiú.
- The core was logged, photographed, processed for density measurements, and sampled by dedicated staff.
- Cabral Gold's technical staff recorded core recovery and verified the meterage marks recorded by the drill contractor.
- A project geologist logged lithology, alteration, mineralogy, structures and marked the core samples.
- Core was photographed in a wet and dry state, generally after sampling details had been marked on the core. Select examples of the saprolite profile were photographed again after cutting.
- Drill cores are cut lengthwise according to sample limits defined by the geologists.
- Cut core was weighed (the weight of individual samples was recorded on scales and included in the database).
- Data from the core logging was entered into a database (Microsoft Access).
- Individual sample bags are sealed with coded zip ties, and stored in supervised facilities until dispatch, either by air or road freight to Itaituba. From Itaituba, the shipments are sent to sample preparation facilities at SGS Geosol Laboratories in Belo Horizonte or Parauapebas.
- The logged core is stored in secure, well-labelled racks.
- Aspects of the logging procedure are carried over from historical Magellan practices.
- Cabral Gold selectively takes supplementary chargeability and resistivity readings with a KT-20 Terraplus instrument.

10.6 RC Sampling Procedure

- Samples from Cabral Gold's self-managed RC program were delivered daily by staff to Cabral Gold core yard in Cuiú Cuiú. Prepared samples were zip-tied, weighed, and stored for dispatch via couriers either by air or road freight to Itaituba, and from Itaituba to sample preparation facilities at SGS Geosol Laboratories in Belo Horizonte or Parauapebas.
- The contract rig was a Foremost Prospector W750 RC drill rig that is capable of drilling holes to a maximum of 400 m depth in good conditions, equipped with a compressor and booster. Samples exit the cyclone and pass through a Metzke Riffle Splitter to obtain individual split samples of representing 1 m intervals. The Metzke Riffle Splitter is cleaned with compressed air with each meter of advance. One-meter interval samples were submitted for analysis where they showed evidence of veining or hydrothermal alteration. Samples in unaltered wall-rock

zones were composited from 2 m split intervals, with the 1 m split from the Metzke Riffle Splitter stored on site for re-analysis if necessary.

- Cabral Gold purchased a track-mounted, ASV Scout ST-50, MPP Hornet RC drill rig equipped with two compressors and a booster. The self-managed rig was dedicated to reconnaissance testing of new regional, previously undrilled targets. Samples were collected in 1 m intervals, weighed, and split through a Jones Riffle Splitter or cone and quartered. The 1 m interval samples were submitted for analysis, where they showed evidence of veining or hydrothermal alteration. Samples in unaltered wall-rock zones were composited from 2 to 4 m intervals, with the 1 m split temporarily held for re-analysis if necessary.
- Sample quality was monitored; if sample integrity could not be maintained (excessive water flow or contamination from caving ground in saprolite/overburden), the hole was terminated and a separate hole was drilled to form a "fence" or a scissor hole on section to test for structures where the position is not well constrained. Fences of holes are similarly drilled when the rig reaches point of refusal to advance at reasonable rates in hard basement.
- Magnetic susceptibility readings were taken of each meter sample. Samples were scanned with ultraviolet light, with some prospects known to have an association with the tungsten mineral scheelite in associated structures. Samples with scheelite were submitted for multi-element analysis.
- A record of each individual sample is maintained in chip trays (one pre-sieved, the other representing the coarse fraction post-sieving).
- Logging sheets record sample intervals, the weight of each recovered interval per meter of advance, the mass of the split sample, submitted to the laboratory, the sample condition, the date and the supervising geologist.

10.7 Conclusions

In the QP's opinion, the drilling methods, core logging, and sampling procedures employed in the exploration of the Cuiú Cuiú Project meet industry standards. He also thinks that the drill planning and execution were done in accordance with the prospect's potential and the most accurate geological interpretation.

The QP has not found any drilling, sampling, or recovery factors that could materially impact the accuracy and reliability of the sample results.

11 SAMPLE PREPARATION, ANALYSES, AND SECURITY

11.1 Sample Preparation and Analysis

All core samples from 2006 to 2008 drill programs were sent to the SGS Geosol Laboratórios Ltda, an ISO 9001:2000 and ISO 14001:2004 registered laboratory located in Vespasiano, Minas Gerais, Brazil. The core samples were prepared and analyzed, with each hole submitted as a separate batch. The process included weighing, drying, and crushing the samples to 2 mm (10#). A representative 200 g to 300 g portion of the crushed sample was taken and ground into a fine powder, with over 95% of the material passing through a 150-mesh sieve. The gold content was determined using fire assay on a 50 g sample. SGS Geosol has a quality control program in place, which includes standards, blanks, repeats, and duplicates to ensure accuracy and reliability.

Between 2009 and 2012, drill core samples were sent to Acme Analytical Laboratories S.A. (Acme) (now owned by Inspectorate), an ISO 9001-certified laboratory, for sample preparation conducted in Itaituba, Brazil and analysis in Santiago, Chile. The samples were weighed, dried, and crushed to 2 mm, after which a one-kilogram split was pulverized to a fineness of over 85% passing 200 mesh. The gold content was determined by fire assay using a 50 g sample. Acme maintained a quality control program which included standards, blanks, repeats, and duplicates to ensure analytical accuracy.

The SGS Geosol and Acme laboratories are independent commercial assay laboratories with no affiliation to Magellan or Cabral Gold.

Since acquiring the Project, Cabral Gold has sent drill program samples to SGS Geosol's laboratories in Parauapebas, Pará, and Vespasiano, Minas Gerais, Brazil. Additionally, Cabral Gold uses the ALS laboratory as the secondary laboratory for check assays, which also operates in Parauapebas and Vespasiano.

ALS Brasil Ltda. is an independent laboratory with no affiliation to Cabral Gold. It adheres to international analytical standards and complies with ISO/IEC 17025 protocols. ALS has its own quality control program, separate from Cabral Gold's, which includes the use of standards, blanks, repeats, and duplicates. Analytical results from both SGS Geosol and ALS are sent to Cabral Gold's exploration department via email.

Since 2019, all drill hole samples have been cut on site, with half of the drill core sent to SGS Geosol for analysis. RC samples are dried and quartered on site, with one-quarter sent to SGS Geosol.

The preparation and analysis procedures at SGS Geosol are as follows:

- Sample Preparation (PRP102_E): Samples are oven-dried at 105°C and crushed to 75% passing through a 3-mm sieve. The samples are then homogenized, quartered (using Jones quartering), and a 250 g to 300 g sample is pulverized in a steel mill to achieve 95% passing through a 150 mesh.
- Gold Analysis (FAA505): A 50 g fire assay standard fusion method with an atomic absorption spectroscopy (AAS) finish. The detection limit is between 5 ppb and 10,000 ppb Au.

- Gold Analysis (FAASCR_150): Metallic screen fire assay technique with an AAS finish used for samples with predicted or confirmed high-grade gold.
- Multi-element Analysis (ICP40B): Multi-acid digestion with inductively coupled plasma optical emission spectrometry (ICP-OES) for 36 chemical elements. Occasionally used for pathfinder and lithological review.

In the QP's opinion, the sample preparation and analytical procedures meet industry standards and are acceptable for the purposes of Mineral Resource estimation.

11.2 Sample Security and Storage

At Cabral Gold's camp facilities, half of the drill core is cut, labelled, and separated into batches. These batches are then transported to Itaituba by Cabral Gold staff using a private airplane. In Itaituba, the samples are checked again by the Cabral Gold team.

From Itaituba, the samples are transported by road to SGS Geosol in Parauapebas, Pará, via a contractor, where they undergo another round of verification. A representative from Cabral Gold accompanies the samples throughout the entire transport process to ensure their integrity.

11.3 Quality Assurance and Quality Control

QA/QC programs are designed to prevent or detect contamination and to quantify key aspects of assay performance, including analytical precision (repeatability) and accuracy. They also help assess the overall variability introduced by the sampling and assaying process itself. Quality assurance (QA) refers to the set of systematic controls and pre-established measures that guarantee assays achieve an acceptable standard of quality, precision, and accuracy, supporting their use in a resource estimate. Quality control (QC) refers to the operational techniques and procedures used to ensure that an adequate level of quality is maintained during collection, preparation, and assaying of samples from exploration and infill drilling programs.

In the QP's opinion, the QA/QC program, as designed and implemented by Cabral Gold, is adequate and the assay results within the database are suitable for use in a Mineral Resource estimate.

11.3.1 Magellan

In 2009 (hole CC_47_09), the QA/QC program included the insertion of two standards, two blanks and one duplicate for every 50 samples. Before that (from hole CC_01_06 to CC_46_09), two standards and two blanks were inserted for every 50 samples.

Magellan used external analytical standards developed by Rocklabs Ltd. (Rocklabs), in New Zealand. These standards, packaged in sealed foil bags containing 50 g of material, were inserted into sample batches. SGS Geosol and Acme laboratories included external standards and blanks in each batch of samples as part of their standard laboratory procedures.

At the time the core samples were bagged, duplicate, certified reference material (CRM), and blank samples were inserted into the sample sequence with the normal core samples to monitor sampling variances, laboratory precision and accuracy, and to identify problems caused by poor sampling, preparation and other assaying practices, possible sample contamination, and other parameters.

All assay results were received electronically from the laboratories along with assay certificates in paper form, which were mailed separately. These data were added to the database as results became available and were subject to internal monitoring.

The QP reviewed the results of the QA/QC analyses and found no evidence of systematic bias or other issues that would compromise the reliability of the diamond-drill core assay results.

In the 2006 program, drill hole logging was performed manually with information entered into Excel spreadsheets for importing into MS-Access, used as the database software.

QA/QC results, up to July 2024, were analyzed by previous QPs and found adequate (previous Technical Reports, 2024 and 2022). These graphs and conclusions will not be repeated in this section. The same QP responsible for this section was also responsible for the corresponding section (Sample preparation, analysis and Security) at the 2024 Techcnical report, where a complete review of the previous QAQC data was accomplished. This QP states that the conclusions drawn from the information studied in the referred report are still current: “The QP is of the opinion that the dataset exhibits a reasonable level of precision and accuracy for gold mineralization, on the characteristics of the Cuiú Cuiú deposit. It is adequate for Mineral Resources evaluation and subsequent economic analysis.”

11.3.2 Cabral Gold

11.3.2.1 QA/QC Protocols

The QA/QC program is managed by the Cabral Gold’s geology department, and all samples are analyzed in external laboratories.

The control samples used are the same for all targets, and are inserted according to a predefined schedule, which specifies the following insertion rates:

- CRM: one in each 20 samples, i.e., sample IDs ending in 1 (e.g., 1, 21, 41).
- Blanks: one in each 40 samples, i.e., sample IDs ending in 1 (e.g., 31, 71, 111).
- Field duplicates: one in each 20 samples, without a fixed end number.
- Pulp duplicates: not regular submission.
- Check assay: not regular submission.

QA/QC summaries are prepared on a monthly basis by the geologist in charge of QA/QC and the database. Table 11-1 summarizes the QA/QC samples and their insertion rates from July 2021 to September 2024.

Table 11-1: QA/QC Summary 2021–2025

Sample Type	2021		2022		2023		2024		2025	
	No.	Insertion Rate	No.	Insertion Rate	No.	Insertion Rate	No.	Insertion Rate	No.	Insertion Rate
Regular Samples	13513	-	15676	-	4146	-	9450	-	8006	-
Blanks	106	0.78%	126	0.80%	59	1.42%	229	2.42%	344	4.29%
Field Duplicates	18	0.13%	169	1.09%	184	4.44%	221	2.33%	339	4.23%
CRMs	352	2.60%	378	2.41%	89	2.15%	113	1.19%	170	2.12%

11.3.2.2 Certified Reference Material

CRM results from regular submission are used to identify issues with specific sample batches, such as mixed samples and biases associated with the assay laboratory (SGS Geosol). Cabral Gold has used seven CRMs sourced from Rocklabs, ranging between 0.125 g/t Au and 8.461 g/t Au. Table 11-2 shows the expected values, assay technique, and the standard deviation (SD) for all the CRMs used in the current QA/QC workflow.

Table 11-2: Values and Ranges of Selected Gold CRM

Name of CRM	Average grade Au g/t	Standard Deviation	95% Interval	Assay Technique	Supplier	Grade Represent
HiSilK2	3.474	0.087	0.034	Fire Assay	Rocklabs	High grade
OxB130	0.125	0.006	0.002	Fire Assay	Rocklabs	Low grade
OxH82	1.278	0.029	0.010	Fire Assay	Rocklabs	Average grade
OxH163	1.313	0.026	0.008	Fire Assay	Rocklabs	Average grade
SE114	0.634	0.016	0.005	Fire Assay	Rocklabs	Low grade
SL51	5.909	0.136	0.047	Fire Assay	Rocklabs	High grade
SN106	8.461	0.155	0.047	Fire Assay	Rocklabs	High grade

CRM results are plotted by Cabral Gold's staff in control charts every time new assays are received. Every three months, a complete analysis, including necessary actions in case of failures, is carried out. Cabral Gold uses three standard deviations (3SD) from the expected gold value as the failure limit and 2SD to less than 3SD from the expected gold value as the warning limit. In case of failure, all of the other control samples in the batch are reviewed. Following these checks, the geology staff can request re- analysis of the five samples before and after the CRM.

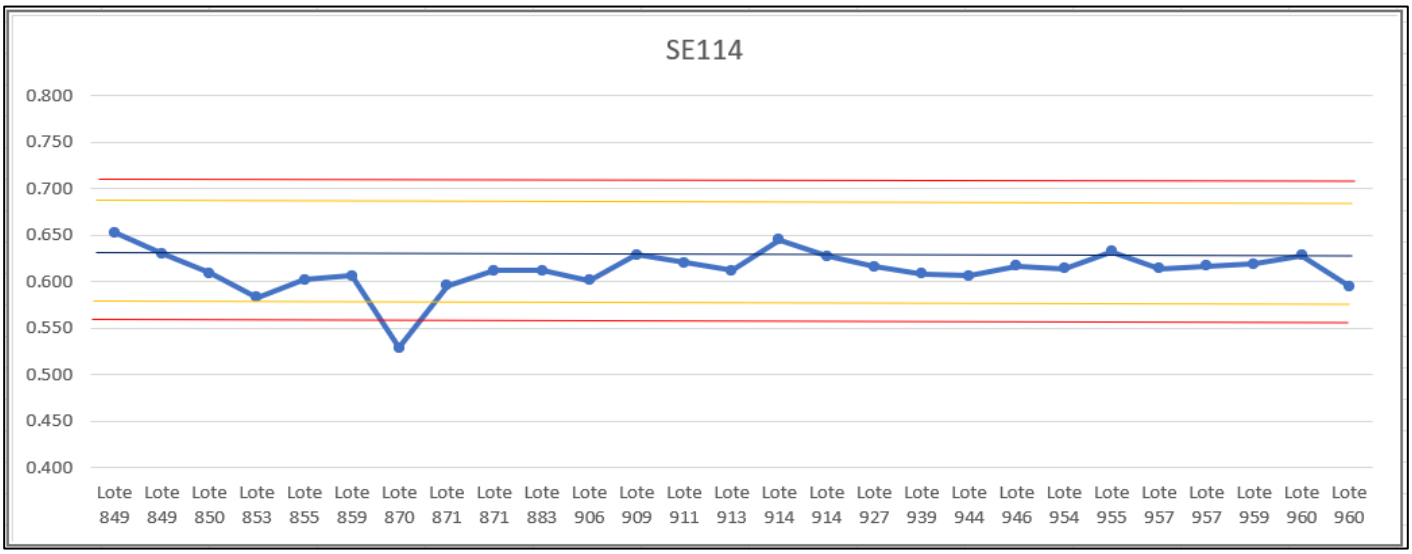
QA/QC results, up to July 2024, were analyzed by previous QPs and found adequate (previous Technical Reports, 2024 and 2022). The same QP responsible for this section, was also responsible for the corresponding section (Sample preparation, analysis and Security) at the 2024 Technical report, where a complete review of the previous QAQC data was accomplished. This QP states that the conclusions drawn from the information studied at the referred report are still current: "The QP is of the opinion that the dataset exhibits a reasonable level of precision and accuracy for gold

mineralization, on the characteristics of the Cuiú Cuiú deposit. It is adequate for Mineral Resources evaluation and subsequent economic analysis."

The QP reviewed the CRM and other quality control samples submitted from July 2024 to July 2025. The graphs and conclusions of this study are presented in this section.

Results from the SE114 CRM (Figure 11-1) indicate good and consistent laboratory precision and accuracy. It is a CRM used to identify low-grade values.

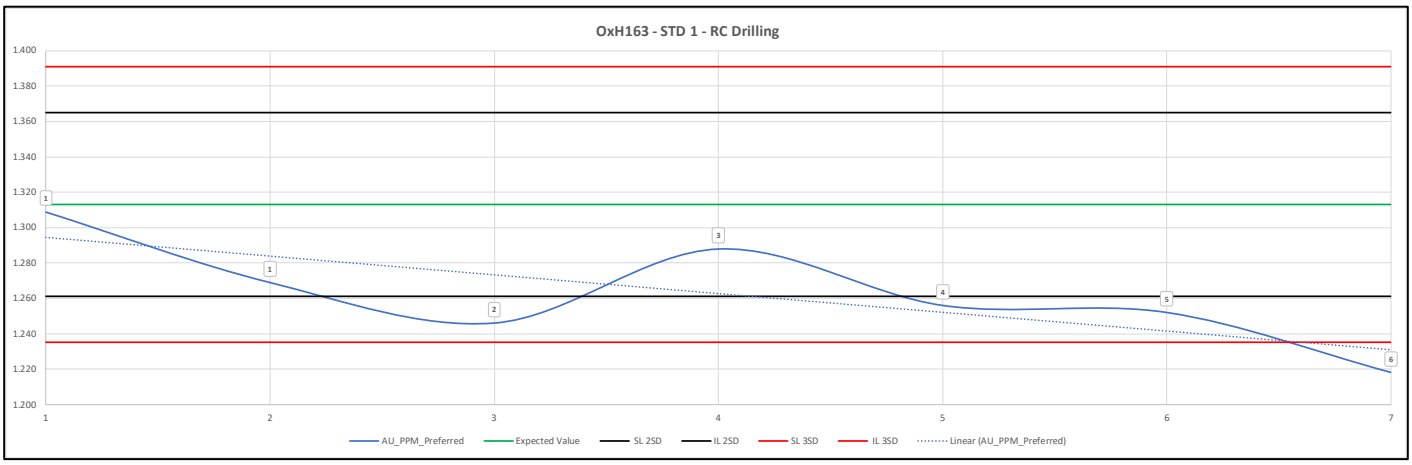
Figure 11-1: Control Chart of SE114 CRM



Source: Cabral Gold, 2025.

The OxH163 control chart (Figure 11-2) presents results from this average-grade CRM with a certified value of 1.313 g/t Au.

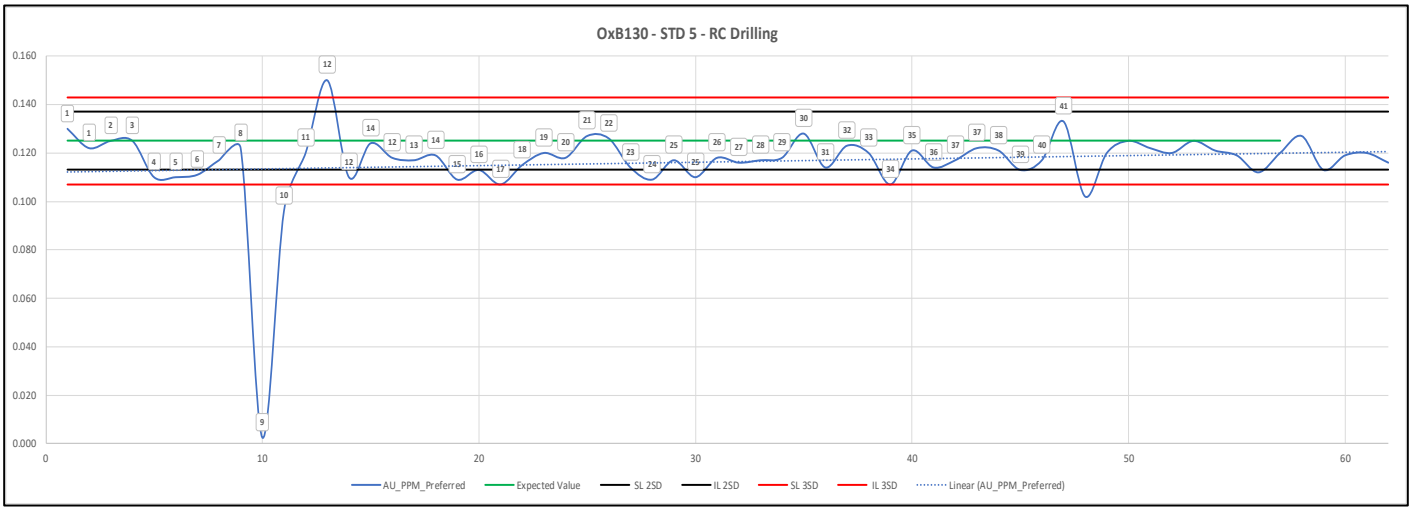
Figure 11-2: Control Chart OxH163 CRM



Source: Cabral Gold, 2025.

To keep control of low grades, the standard used is the OxB130, with an average grade of 0.125. One sample showed no gold and triggered corrective action (Figure 11-3).

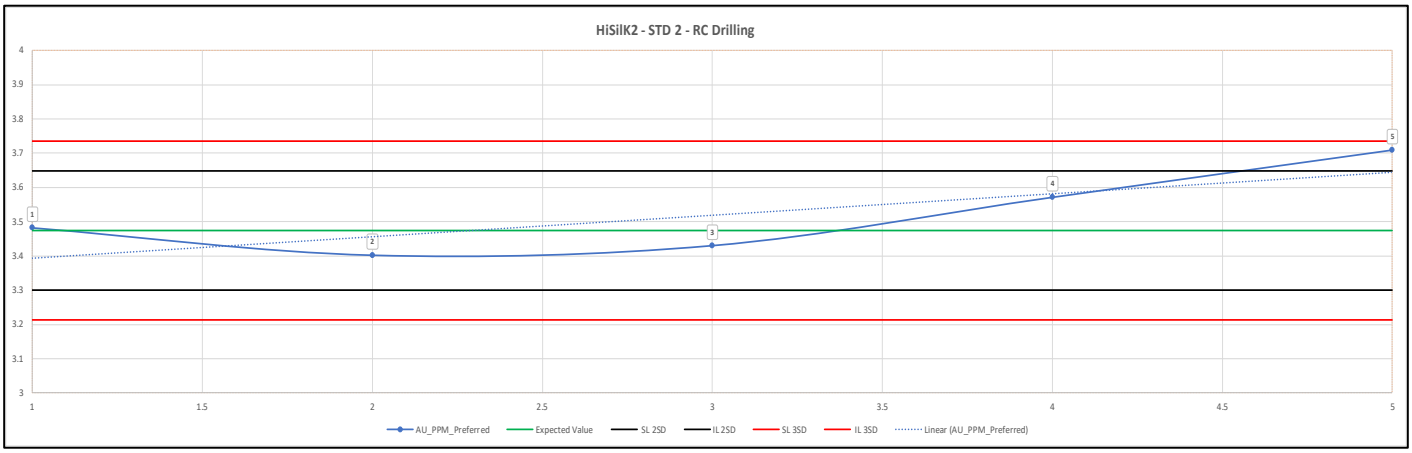
Figure 11-3: Control Chart of OxB130



Source: Cabral Gold, 2025.

The HiSilK2 control chart (Figure 11-4) represents one of the high-grade CRMs used in the Project, with 3.474 g/t Au, as a certified value.

Figure 11-4: Control Chart of HiSilK2 CRM



Source: Carbal Gold, 2025.

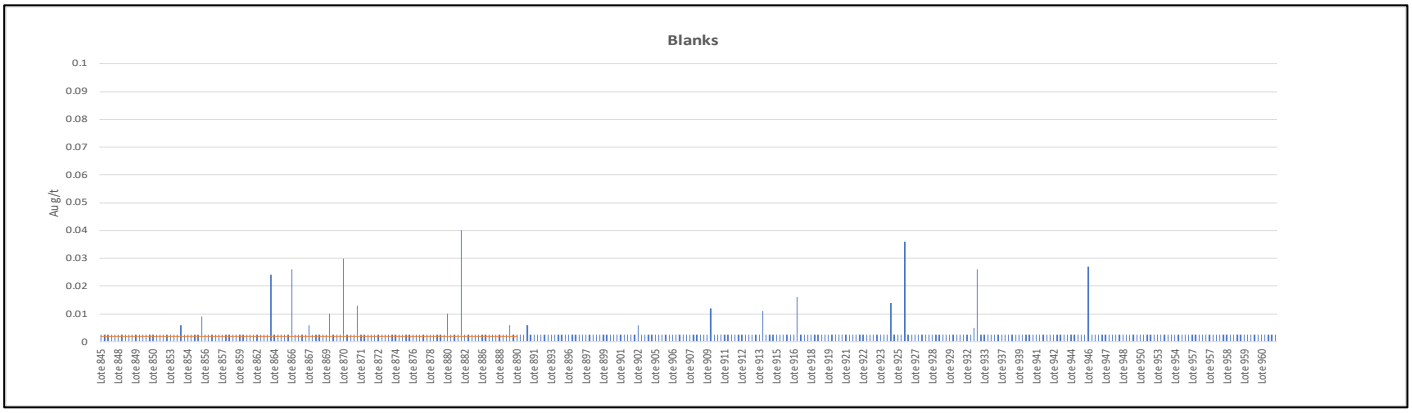
11.3.2.3 Blank Material

The regular submission of blank material is used to identify any contamination during the sample preparation due the inadequate cleaning of the equipment, as well as to identify sample numbering errors.

Since 2021, Cabral Gold staff have inserted a non-certified blank material, bought from a mine that produces industrial crushed rock in a region close to the Project. It consists of a granitic rock with high content of potassic feldspar. Cabral Gold geology staff analyzed many samples of this material at SGS Geosol, and the results show no gold content.

The QP believes that no significant episode of contamination was verified in the gold analysis for the Project since July 2025.

Figure 11-5: Sample Control Chart for Blank Samples



Source: Cabral Gold, 2025.

11.3.2.4 QP Conclusions and Recommendations

QA/QC results, up to July 2024, were analyzed and found adequate by the QP responsible for this section. This QP states that the conclusions drawn from the pre-July 2024 QA/QC information referred to in this report are still current. The QP is of the opinion that the current dataset as of 23 July 2025 exhibits a reasonable level of precision and accuracy for gold mineralization, on the characteristics of the Cuiú Cuiú deposit. It is adequate for Mineral Resources evaluation and subsequent economic analysis.

The QP recommends including pulp and reject duplicates in the QA/QC workflow in the future to enable assessment of the sample homogeneity and precision at different stages of the preparation process.

The QP recommends that the check assay control program continue, with the submission of approximately 5% of the original samples. These samples should be manually selected to ensure they are representative of the resource assay grade distribution and generally above ~0.1 g/t Au.

Precision is based on the resampling of quartered core field duplicates. There is clearly some variability in the amount of mineralization at the quartered core scale and the precision might improve if half-core samples are used for the field duplicates in the future.

The QP is of the opinion that the dataset exhibits a reasonable level of precision and accuracy for gold mineralization, based on the characteristics of the Cuiú Cuiú deposit. It is adequate for Mineral Resources evaluation and subsequent economic analysis.

12 DATA VERIFICATION

12.1 Legacy Data

12.1.1 Micon Verification

Micon conducted validation exercises as part of its 2021 Technical Report on both the Magellan and Cabral Gold data. These exercises included:

- Site visits to review and confirm findings by site geologists
- Drill collar database review
- Downhole survey review
- Geological data review to validate database entries against core photos and logs
- Assay data review to check for logical errors with attention to QA/QC data
- A thorough review of the density sampling program and density data versus sample depth

Micon (2021) concluded that the Cuiú Cuiú data and database were acceptable for use for Mineral Resource estimation. Micon noted that a majority of the issues addressed were related to holes drilled in 2011 and 2012. Errors identified by Micon during data validation were immediately addressed by Cabral Gold staff.

12.1.2 SLR Verification

SLR (SLR, 2022) reviewed the drill hole database for Cuiú Cuiú in Leapfrog software and conducted a standard review of import errors and visual checks such as:

- Intervals exceeding the maximum length of the drill hole
- Overlapping intervals

No significant errors were detected.

12.1.3 VMG Verification

VMG Consultoria e Soluções Ltda (VMG), represented by geologist Volodymyr Myadzel, conducted a visit to the Cuiú Cuiú Prospect area October 1 to 3, 2023, to verify the results of exploration activities and the routine processes for handling these results

(geological logging, sampling scheme, QA/QC, density measurements, and storage of materials and documentation). A standard database review was carried out using Micromine software. Additionally, 10% of the laboratory certificate data was cross-checked with the database records (Assay).

VMG performed the following independent data verification in the following three areas:

- validation of the drilling database
- validation of the QA/QC data (see Item 11)
- validation of the geological exploration procedure

VMG concluded that the company has adequately followed proper sample preparation, security and analytical procedures, and industry best practices have been applied regarding the collection of information and maintenance of the database and that all data were acceptable for use in the Mineral Resource estimation.

12.2 Verification Performed by the QP

W Dzick Geoconsultants, represented by Walter Dzick, conducted a visit to the Cuiú Cuiú Prospect area to verify the results of exploration activities and the routine processes for handling these results (geological logging, sampling scheme, QA/QC, density measurements, and storage of materials and documentation). A cursory database review was carried out during the site visit from May 29 to June 2, 2025.

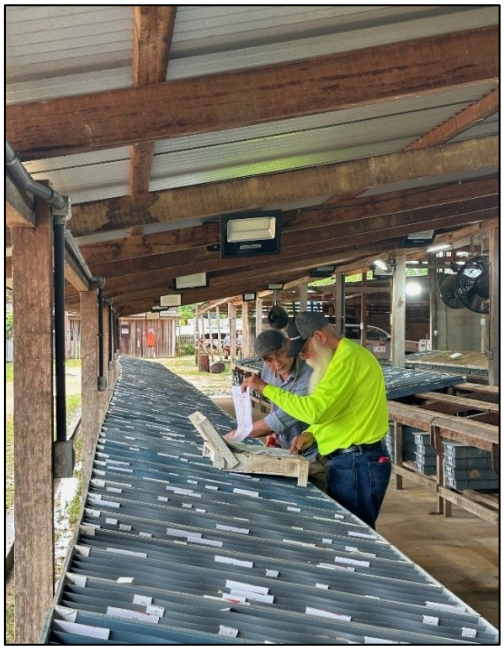
The purpose of the visit was to get to know the Project and verify the geological exploration work done in the field. The technical visit covered the core storage shack, the project area, and the mineralized zones in the field.

W. Dzick Geoconsultants performed the following independent data verification in the following three areas:

- verification of the drilling database
- verification of the QA/QC data (see Item 11)
- verification of the geological exploration procedure

The images below show photos taken during the site visit (Figure 12-1 and Figure 12-2).

Figure 12-1: Core Shed Visit – Technical Site Visit



Source: Cabral, 2025.

Figure 12-2: Project Site Visit



Source: Cabral, 2025.

All drillholes were clearly marked in the field with concrete plugs (Figure 12-3). Most of the concrete blocks do not have identification (drill hole number), which is related to the activity of illegal mining in this region. All drill holes were verified and surveyed following the drilling campaign by a surveyor using a GPS RTK.

Figure 12-3: Drill Hole Collar – Technical Site Visit



Source: W. Dzick Geoconsultants, 2025.

12.2.1 Databases

The database used for geological modeling includes topographical data, information from the drillhole database and data for each sampling interval (test values for each controlled variable, lithological descriptions and deviation measures when appropriate). This data was obtained by application of best industry practices and verified by a consistent QA/QC routine, which was applied not only to data but also to the methodology of work as a whole.

The main database used in this work can be accessed in file ***Database_CabralGold_20250408.accdb***, which consists of the following tables:

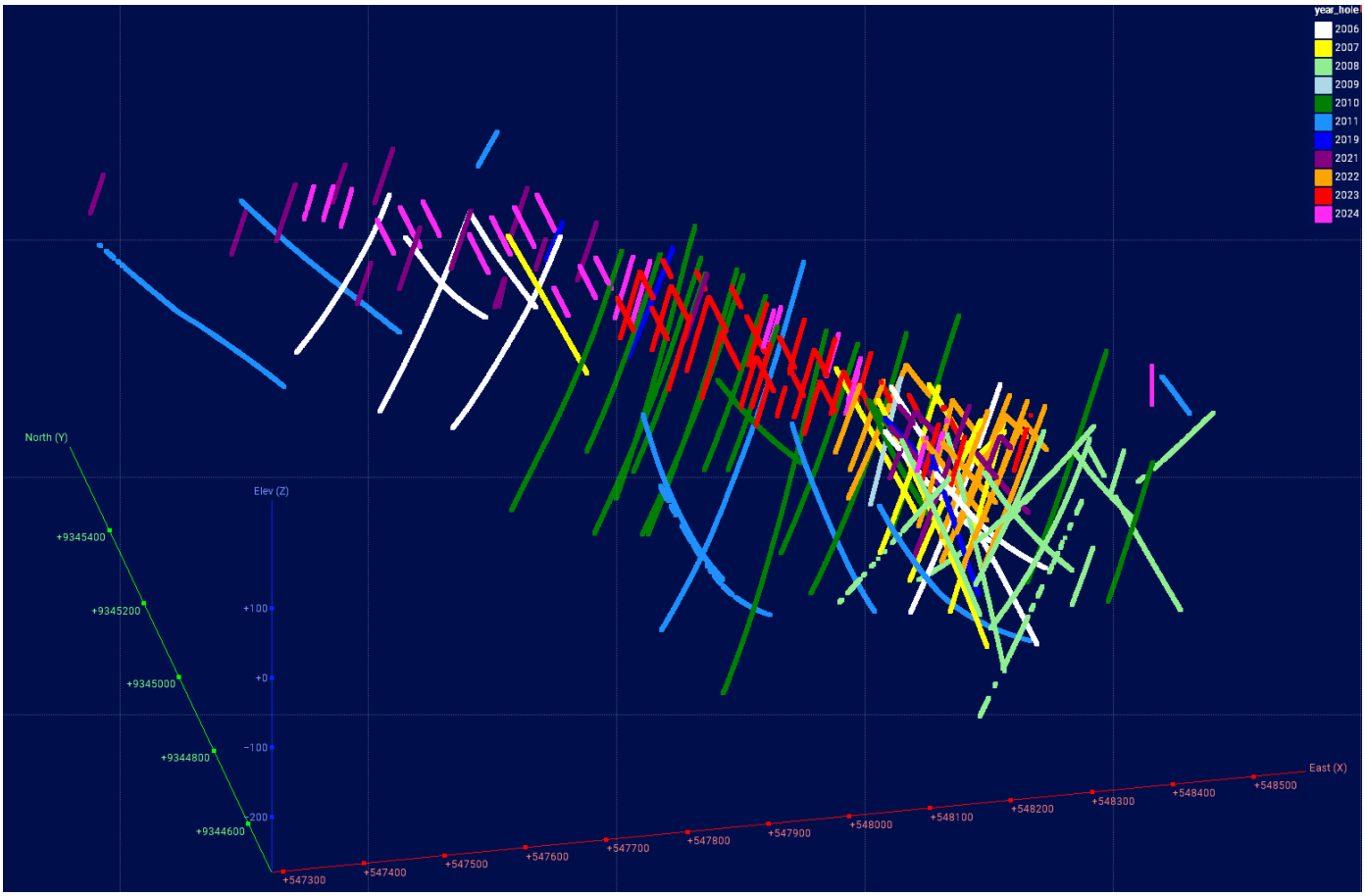
- Collar
- Survey
- Lithology
- Assay
- Core Recovery
- Density

In relation to the topographic surface, the data was given in a file in *.DXF format, **TOPO_DTM_CE.DXF**.

Cabral Gold provided separate files for all assay certificates in Excel and Adobe pdf format.

The drill holes of Central project are distributed regularly on a grid, with distances between holes that vary between 25 and 50 m. Figure 12-4 shows the year drill holes were drilled. Holes drilled in 2024 are represented in magenta and holes drilled in 2023 are represented in red.

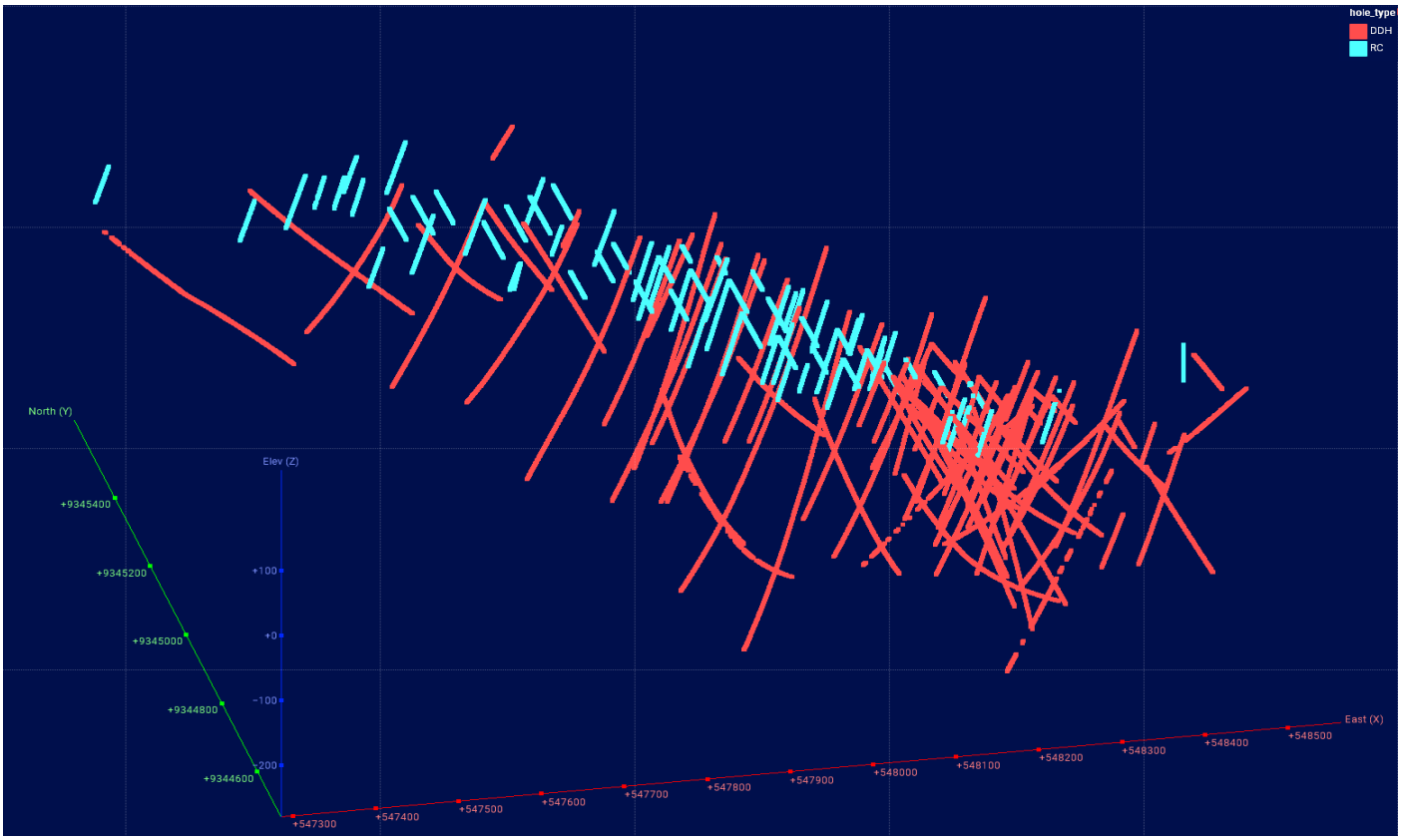
Figure 12-4: Central Drill Holes Colour Coded by Year Drilled



Source: W. Dzick Geoconsultants, 2025.

A total of 162 drill holes were used to estimate Central, consisting of RC and DDH drill holes. Figure 12-5 shows the drill hole types. Core holes (DDH) are represented in red and reverse circulation (RC) holes are represented in cyan. All 2024 drill holes were RC holes targeting Central North and Central deposits.

Figure 12-5: Drill Hole Types: Red DDH, Cyan RC



Source: W. Dzick Geoconsultants, 2025.

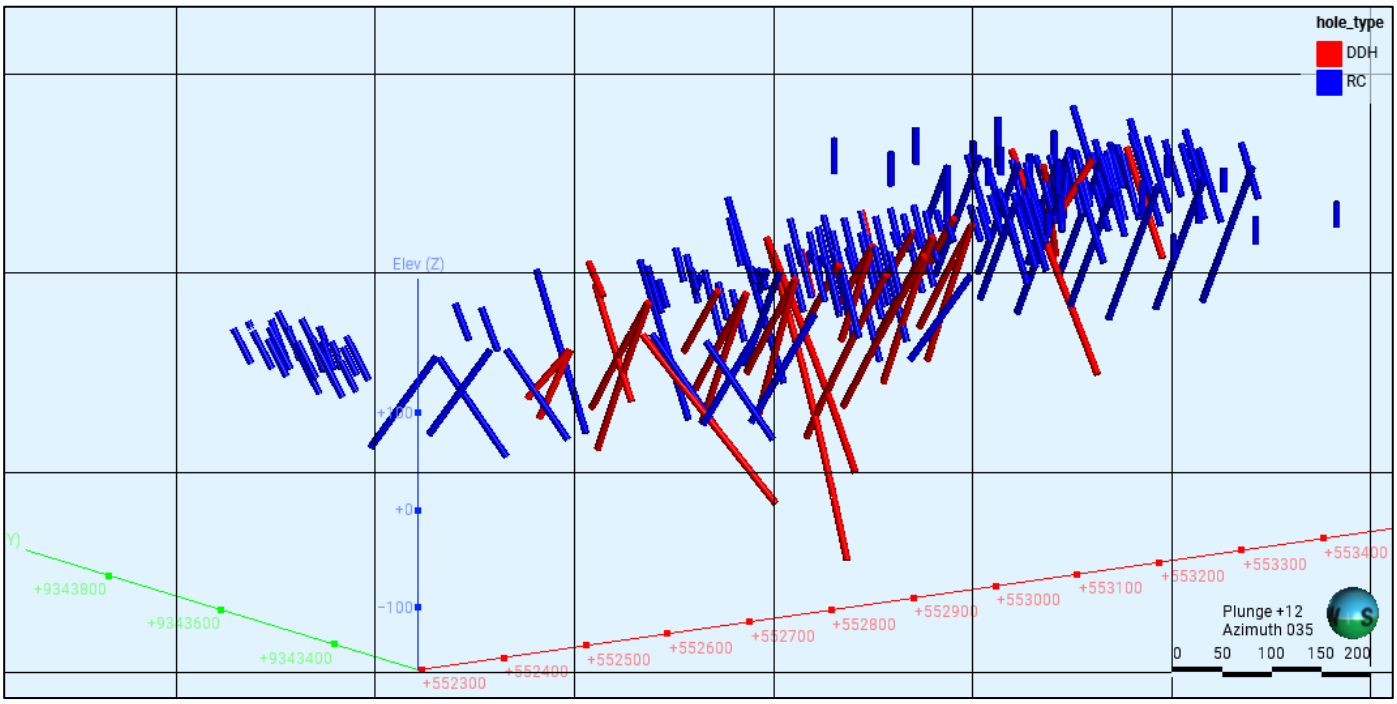
The analyzed gold and descriptive statistics are presented in Table 12-1.

Table 12-1: Gold Analysis for all Samples in the Database

Au_ppm_preffered	
Count	8,515
Mean	0.70
Stdev	2.80
Cv	4.01
Min	0.00
P10	0.03
P50	0.22
P90	1.33
Max	107.88

Source: Machichie Database.

Figure 12-6: Machichie Drill Holes Colour Coded by Drill Type



Source: W. Dzick Geoconsultants, 2025.

A total of 187 drill holes were used to estimate Machichie, consisting of RC and DDH drill holes. Figure 12-6 shows the drill hole types. Core holes (DDH) are represented in red and reverse circulation (RC) holes are represented in blue. All 2024 drill holes were RC holes targeting Machichie Main and Machichie Northeast areas.

12.2.2 Database Verification Using Leapfrog and Resource Modeling Solutions Platform software (RMSP)

The database was tested using specific processes to verify the existence of the errors listed below:

- The name of the drill hole is present in the collar file but is missing from the analytical database.
- The name of the drill hole is present in the analytical database but is absent in the collar file.
- The name of the drill hole appears repeated in the analytical database and in the collar file.
- The name of the drill hole does not appear in the collar file and in the analytical database.
- One or more coordinate notes are absent from the collar file.
- FROM or TO are not present in the analytical database.
- FROM>TO in the analytical database.

- Sampling intervals are not continuous in the analytical database (there are gaps between the logs).
- Sampling intervals overlap in the analytical database.
- The first sample does not correspond to 0 m in the analytical database.
- The azimuth is not in the range of 0-360 degrees.
- The dip is not in the range of 0-90 degrees.
- Azimuth or dip of the hole is missing.
- The total depth of the hole is shallower than the depth of the last sample.

Some minor errors were identified, mainly due to incorrectly entered intervals. The errors were checked with the Cuiú Cuiú Project geologist and the estimation database updated.

No direct database audit was performed at this time. A comprehensive database audit was recommended.

12.3 Comments on Data Verification

The location accuracy of a few drill holes was validated during the site visit using a handheld GPS unit. During the site visit it was confirmed that sampling was being conducted according to the protocols described in Section 11 above, and therefore data collected on drill samples to date is accurate.

Assay data used in the Mineral Resource model were spot checked and cross-checked against the original assay certificates after the data had been imported into the model.

12.4 Metallurgical Data

Metallurgical test data was verified through a review of previous studies and testwork reports and an analysis of the more recent results from the KCA 2024 and 2025 metallurgical testwork programs. Issues were identified with how the column leach tests were performed the 2022 Testwork program. These results were not used for any design purposes in this study. All metallurgical data was verified and is adequate for this Technical Report as required by NI 43-101 guidelines.

There have been no limitations on the author on his verification of any of the data presented in this report. The author's opinion is that all data presented in this report are adequate for the purposes Mineral Resource Estimation of this report and is presented so that it is not misleading.

13 MINERAL PROCESSING AND METALLURGICAL TESTING

Six major test work programs have been completed for the Cuiú Cuiú Project since 2011. A summary of these programs is provided Table 13-1 below.

Table 13-1: Metallurgical Testwork Summary

Year	Laboratory/Location	Testwork Performed
2011	Resource Development Inc. (RDi)/Denver-USA	Sample characterization, gravity and cyanide leach tests
2022	KCA/Reno-USA	Sample characterization, compacted permeability tests, bottle roll tests and column leach tests
2023	Testwork/Belo Horizonte-Brazil	Sample characterization, bottle roll tests, agglomeration and column leach tests
2024	Metso/Sorocaba-Brazil	Sample characterization, point load tests, abrasion tests, crushability and rod work index tests
2024	KCA/Reno-USA	Sample characterization, agglomeration, compacted permeability tests, bottle roll tests and column leach tests
2025	KCA/Reno-USA	Sample characterization, bottle roll tests, agglomeration, compacted permeability tests and column leach tests

13.1.1 Legacy Testwork

13.1.1.1 Metallurgical Testing – 2011

RDi completed a scoping-level metallurgical study on behalf of Magellan using mineralized samples from the Project in 2011 (Global Resources Engineering Ltd. (Global Resources), 2012). Preliminary bench-scale work was undertaken on four composite samples representing four different areas of the Project, described as:

- Composite 1: oxide mineralization from the Central zone.
- Composite 2: primary mineralization from the Central zone.
- Composite 3: oxide mineralization from the MG zone.
- Composite 4: primary mineralization from the MG zone.
- All samples assayed 1 g/t Au.

The results from this test program were presented in a 2012 report by RDi (Global Resources, 2012) and are summarized in this section. The program included:

- Evaluation of gravity concentrations at three different grind sizes
- Evaluation of carbon-in-leach (CIL) in 48-hour bottle rolls tests

The results showed that:

- Gravity concentration recoveries ranged from 13% to 59% gold
- CIL recoveries ranged from 90% to 97% gold

13.1.2 KCA 2022

In January 2022, approximately 500 kg of drill core (seven separate samples) from the MG deposit were selected to represent the predominant zones of the deposit over a range of grades. The samples were shipped to KCA in Reno, Nevada for a metallurgical testing program that included:

- Comprehensive assays
- Fine bottle roll leach tests
- Agglomeration and compacted permeability tests on a single coarse crushed sample
- Column leach testing on an agglomerated single composite sample

13.1.2.1 Head Analysis and Material Characterization

Head analyses and material characterization tests were performed on each of the individual samples and on the single composite sample including:

- gold and silver analyses by standard fire assay and wet chemical methods
- multi-element analyses including carbon, sulphur, and mercury analyses
- whole rock analysis
- cyanide shake tests to determine cyanide soluble gold and silver
- X-ray diffraction analysis and swelling clay analyses by FLSmidth Inc. of Midvale, Utah.

Head analyses for gold and silver were performed on each individual sample using standard fire assay methods. Each sample was assayed in duplicate, and the results were averaged to determine the head grade of the sample. The comparison of the two assays indicated variability in the results consistent with the presence of coarse gold. The results of the tests are presented in Table 13-2.

Table 13-2: Head Analysis of Individual Samples

KCA Sample No.	Description	Sample Type	Average Assay (g/t Au)	Average Assay (g/t Ag)
93701 A	Soils – high grade	1a	1.286	0.46
93702 A	Soils – low grade	1b	0.123	0.31
93703 A	Saprolite Colluvium – high grade	2a	1.389	5.06
93704 A	Saprolite Colluvium – low grade	2b	0.666	0.70
93705 A	Saprolite Basement – high grade	3a	2.308	4.97
93706 A	Saprolite Basement – low grade	3b	0.241	7.33
93707 A	Clay – one grade only	4	0.214	0.41

Portions of each of sample were combined to form a single composite sample, CAB-01, used for metallurgical testing. This composite was subjected to characterization studies, including head analyses with assays by size fraction, agglomeration testing, compacted permeability testing and column leach testing.

The metallurgical composite sample was analysed for gold and silver using a screen analysis and then assaying the individual screen fractions and combining the results to determine the overall gold and silver grades of the composite. This method is effective in cases where coarse gold is present. The resulting gold and silver grades are provided in Table 13-3.

Table 13-3: Cabral Gold Composite Sample Head Analysis by Screen Fractions

KCA Sample No.	Description	Calc. k_{80} Size (mm)	Weighted Avg. Head Assay (g/t Au)	Weighted Head Assay (g/t Ag)
93710 A	Composite	0.55	0.896	4.98

Multi-element analyses of the individual samples showed that the typical deleterious elements including copper, arsenic, and mercury were observed to be very low in these analyses. The highest cyanide soluble copper concentration is in the saprolite colluvium high grade. The carbon contained in the soils are the only potential preg-robbing materials.

13.1.2.2 Sample Analysis and Material Characterization

One issue is identified with the material that comprised the composite sample: the average assay grades from the composite samples were 33% lower than the calculated head grade determined after the column leach tests.

Visible gold is much more common in weathered veins at the surface than in drill core. Gold is also locally abundant in pan concentrates derived from crushed weathered vein material, wall rock, mineralized colluvium, and mineralized soil.

Nuggetty gold can be difficult to assess through traditional fire assay sampling, and grades obtained through drilling and analysis within the weathered profile could be subdued. A composite bulk sample of weathered and saprolite material from MG was subjected to column leach tests at the KCA facility in Nevada (KCA, 2022). The weighted average of individual assays determined for the bulk sample prior to the column tests by KCA were 0.896 g/t Au, yet the actual gold extracted from the column test was 0.974 g/t Au, and the remaining material from which the gold was extracted still assayed 0.214 g/t Au. Based on the extracted gold, and the grade of the remaining material, KCA determined the "Calculated Head Grade" of the bulk sample to be 1.188 g/t Au, indicating there was 33% more contained gold within the bulk sample than indicated by the prior fire assay sampling.

13.1.2.3 Bottle Roll Cyanidation Tests

Bottle roll cyanidation tests were performed on the individual samples. The samples were ground to P_{80} 75 µm and leached for 48 hours. The test results for gold are presented in Table 13-4. Gold extractions ranged from 91% to 97% except for the clay sample which yielded 81% Au extraction. Silver extractions were more variable, ranging from 18% to 95% with silver head grades ranging from 0.13 g/t Ag to 9.56 g/t Ag. The highest and lowest recoveries aligned with the highest and lowest head grades. Cyanide consumptions ranged from 0.06 kg/t to 0.78 kg/t NaCN while hydrated lime consumptions ranged from 2.5 kg/t to 6.5 kg/t Ca $(OH)_2$.

Table 13-4: Results of Bottle Roll Leach Tests for Gold

KCA Sample No.	Description	Calc. Head Grade (g/t Au)	Extraction (g/t Au)	Average Residue (g/t Au)	Extraction (% Au)	Reagent Consumptions (kg/t)	
						NaCN	$Ca(OH)_2$
93701 A	Soils – low grade	1.378	1.330	0.049	96	0.37	4.50
93702 A	Saprolite Colluvium – high grade	0.365	0.334	0.031	92	0.32	5.00
93703 A	Saprolite Colluvium – low grade	1.265	1.155	0.110	91	0.29	2.75
93704 A	Saprolite Basement – high grade	0.326	0.301	0.026	92	0.16	3.75
93705 A	Saprolite Basement – low grade	2.366	2.291	0.075	97	0.12	2.50
93706 A	Clay – one grade only	0.276	0.260	0.015	94	0.06	2.50
93707 A	Soils – low grade	0.229	0.187	0.043	81	0.78	6.50

13.1.2.4 Agglomeration and Compaction Testing

Preliminary agglomeration and compacted permeability tests were performed on the composite sample. The sample was crushed to 100% passing (P_{100}) 50 mm and subjected to screen analysis. The resulting size distribution showed a k_{80} of 0.55 mm and 64% passing (k_{64}) of 0.075 mm indicating a very fine sample.

Preliminary agglomeration tests were conducted with 8 kg/t, 12 kg/t, 16 kg/t and 20 kg/t cement additions to individual samples. Each sample was placed in a column with no compressive load, and a solution was passed through it to test permeability. Permeability tests were done on each sample at all cement levels under increasing loads.

Compacted permeability testing was conducted on material crushed to k_{100} 50 mm and agglomerated with 12 kg/t and 20 kg/t of cement. Separate tests were loaded into a column and subjected to loads equivalent to overall heap heights of 10 m and 20 m, assuming a density of 1.5 t/m^3. The results indicated that while the material passed the slump tests, it failed most flow tests. Tests with 12 kg/t cement passed the slump criteria but failed the flow criteria at both 10 m and 20 m lift heights. The test with 20 kg/t cement passed both the slump and flow criteria at a 10 m lift height, however, failed the flow test at a 20 m lift height. The subsequent column heap leach test was performed using 24.0 kg/t cement.

13.1.2.5 Column Testing

13.1.2.5.1 Compacted Permeability and Agglomeration Testing

For this testing, samples were agglomerated with various additions of cement. In the preliminary agglomeration testing, the agglomerated samples were placed in a column with no compressive load and then tested for permeability. In compaction testing, the agglomerated material was compacted in a column with a predetermined static load before permeability testing.

Agglomeration tests were conducted on 2 kg portions of samples crushed to k_{100} 50 mm, with cement additions of 8 kg/t, 12 kg/t, 16 kg/t and 20 kg/t applied to the samples.

13.1.2.5.2 Column Leach Test

A single column leach test was performed on the composite sample. The test was conducted in a 150 mm diameter column with approximately 55 kg of sample. The sample was crushed to -50 mm with a k_{80} of 0.55 mm. The sample was agglomerated with 24 kg/t cement prior to loading into the column. The test ran for over 70 days, with a cyanide concentration of 1.0 g/L NaCN maintained throughout.

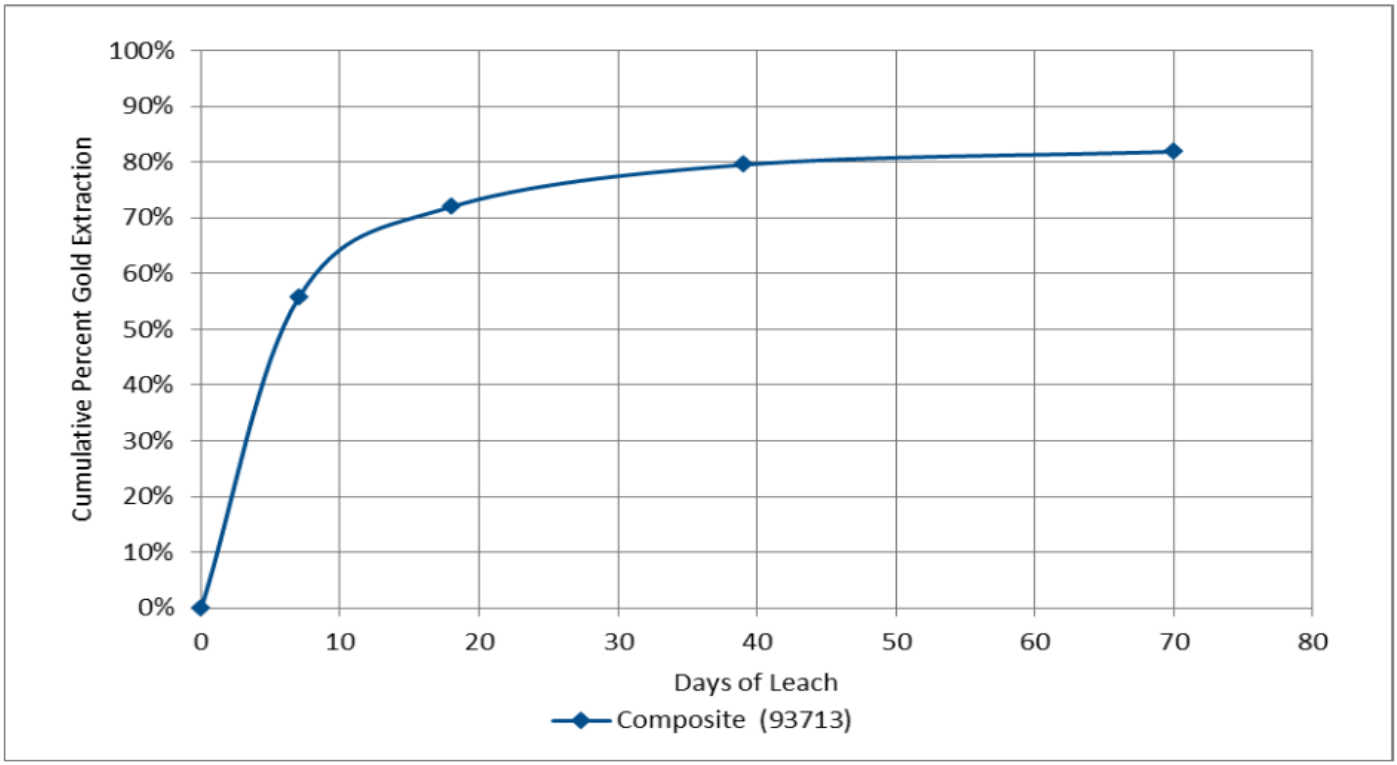
The calculated head grade based on tailings-screen analysis, screen-fraction assays, and leach solutions, was 1.19 g/t Au and 3.07 g/t Ag. The tailings assay based on screen-fraction assays, was 0.214 g/t Au and 1.03 g/t Ag. The resulting gold and silver recoveries were 82.0% and 66.45%, respectively. Cyanide consumption for the column test was 0.51 kg/t NaCN. No lime was required as the cement used in agglomeration maintained the required pH throughout leaching.

The column leach test results for gold and silver are presented in Table 13-5. The gold leach extraction curve shown in Figure 13-1 indicates rapid initial extraction rates, reaching 70% recovery at 15 days and 80% at 40 days, followed by declining recoveries, reaching 82% at 70 days, when the leach was stopped.

Table 13-5: 2022 KCA Column Leach Test Results

Description	Calc. Head Grade (g/t)		Weighted Leach Residue Grade (g/t) Extraction (%Au)		Extraction (%)	
	(Au)	(Ag)	(Au)	(Ag)	(Au)	(Ag)
Composite	1.19	3.07	0.214	1.03	82	66

Figure 13-1: Cumulative Percent Gold Extraction versus Leaching Time



Note: Ausenco, 2024.

13.1.3 Testwork 2023

In 2023, Testwork, in Belo Horizonte, Brazil, received six drill core composite samples from Cuiú Cuiú. Sample descriptions and types were provided and were reported to represent the oxide portion of the mineralized material from MG and Central deposits.

13.1.3.1 Sample Selection and Compositing

Samples were composited based on their physical location in the pits, as well as their expected grade, generating three different composite samples from each deposit.

- MATS – MG Alto Teor – Nível Superior
- Blend from drill holes MET012 (samples 80516 to 80560) and MET013 (samples from 80561 to 80574)
- MATI – MG Alto Teor – Nível Inferior
- From drill hole MET013 (samples 80595 to 80607)

- MBT – MG Baixo Teor – Superior
- From drill hole MET013 (samples 80575 to 80594)
- CATS – Central Alto Teor – Nível Superior
- Blend from drill holes MET010 (samples 80388 to 80420) and MET011 (samples from 80466 to 80481)
- CATI – Central Alto Teor – Nível Inferior
- From drill hole MET010 (samples 80445 to 80458)
- CBT – Central Baixo Teor – Superior
- Blend from drill holes MET010 (samples 80378 to 80387 and from 80421 to 80444) and MET011 (samples 80459 to 80465 and from 80482 to 80515).

Head analyses and material characterization tests were performed on each composite sample, including:

- Gold and silver analyses by standard fire assay and wet chemical methods
- Multi-element analyses
- Specific gravity and apparent density
- Natural moisture.

For gold assays, four different sample splits of each main composite were assayed.

In addition, bottle roll leach tests, agglomeration tests and column leach tests were conducted on each composite sample.

13.1.3.2 Head Analysis and Material Characterization

The composition of each composite sample is presented in Table 13-6.

Table 13-6: Multi-Element Head Analysis for Composite Samples

Element	Unit	CATS	CATI	CBT	MATS	MATI	MBT
Au	g/t	0.5	0.2	0.5	1.1	1.4	0.2
Ag	g/t	3.7	<0.5	2.1	0.7	0.6	1.0
Al	%	6.2	6.3	6.9	7.5	7.3	6.8
As	g/t	13.0	14.0	64.0	19.0	14.0	211.0
Ba	g/t	502.0	1003.0	713.0	1684.0	1605.0	767.0
Be	g/t	2.0	2.0	2.3	3.7	3.3	2.5
Bi	g/t	<5	<5	<5	<5	<5	<5
Ca	%	0.0	0.1	0.1	0.1	0.0	0.1
Cd	g/t	<0.5	<0.5	<0.5	<0.5	<0.5	0.5
Co	g/t	5.0	8.0	11.0	11.0	14.0	5.0
Cr	g/t	18.0	6.0	41.0	14.0	10.0	11.0
Cu	g/t	23.0	16.0	20.0	14.0	31.0	21.0
Fe	%	2.9	2.4	4.1	5.4	5.4	5.5
K	%	2.4	3.1	2.6	2.8	2.6	1.5
La	g/t	55.1	59.7	44.4	61.0	77.8	55.3
Li	g/t	12.0	5.0	8.0	20.0	14.0	10.0
Mg	%	0.2	0.3	0.4	0.4	0.3	0.1
Mn	g/t	296.0	424.0	750.0	489.0	682.0	210.0
Mo	g/t	<1	<1	<1	<1	2.0	1.0
Na	%	0.1	0.7	0.4	0.1	0.1	0.1
Ni	g/t	12.0	12.0	29.0	5.0	7.0	8.0
P	%	0.0	0.0	0.0	0.1	0.1	0.1
Pb	g/t	101.0	160.0	119.0	38.0	42.0	31.0
S	%	<0.01	<0.01	0.0	0.0	<0.01	0.0
Sb	g/t	<10	<10	<10	<10	<10	<10
Sc	g/t	6.8	5.2	9.3	11.3	12.2	10.2
Sn	g/t	<10	<10	<10	<10	<10	<10
Sr	g/t	10.6	63.2	47.3	81.7	118.9	87.7
Ti	%	0.2	0.2	0.2	0.4	0.5	0.5
V	g/t	30.0	28.0	39.0	98.0	109.0	97.0
W	g/t	<5	<5	<5	<5	<5	<5
Y	g/t	14.5	13.2	13.6	20.1	41.8	17.0
Zn	g/t	65.0	99.0	140.0	90.0	53.0	37.0
Zr	g/t	153.6	155.5	135.7	162.1	206.7	192.1

The typical deleterious elements, including copper and arsenic were observed to be very low in these analyses. Mercury was not analyzed.

Specific gravity and apparent densities were measured for each composite, as well as moisture content, as shown in Table 13-7.

Table 13-7: Composite Samples Characterization

Sample ID	Specific Gravity	Apparent Density, t/m^3	Moisture, %
MATS	2.62	1.01	17.7%
MATI	2.65	0.79	22.1%
MBT	2.53	0.75	17.1%
CATS	2.58	0.92	15.0%
CATI	2.69	1.12	18.7%
CBT	2.50	0.97	6.4%

Specific gravities varied from 2.50 to 2.69, while apparent density ranged from 0.75 to 1.12 t/m^3. High natural moisture content was identified for most of the samples, with values up to 22.1%. The high natural moisture content of the samples is typical for saprolites.

13.1.3.3 Bottle Roll Leach Tests

Bottle roll cyanidation tests were performed in duplicate for each one of the individual samples. The samples were ground to a k_{80} of 75 µm and leached for 24 hours. All the tests were run with a NaCN addition of 1.5 kg/t, at 50% solids and at a pH controlled between 10.5 to 11.0.

The results of the tests for gold are presented in Table 13-8. Gold extractions ranged from 86% to 98%. The lowest recoveries aligned with the lowest head grades. Cyanide consumptions ranged from 0.122 kg/t to 0.264 kg/t NaCN and hydrated lime consumptions ranged from 1.98 kg /t to 6.62 kg/t.

Table 13-8: Bottle Roll Leach Test Results – Au Extraction and Reagent Consumptions

Testwork Sample No.	Test ID	Calc Head (g/t Au)	Au Extraction (g /t Au)	Average Tails (g/t Au)	Au Extraction (%)	Leach Time (h)	Cyanide Cons. (kg/t NaCN)	Lime Addition (kg/t $Ca(OH)_2$)
MATS	LT1	1.14	1.12	0.0199	98.25%	24	0.247	4.55
	LT2	1.18	1.16	0.0201	98.30%	24	0.217	5.32
MATI	LT1	1.47	1.44	0.0334	97.73%	24	0.249	5.56
	LT2	1.51	1.47	0.0367	97.57%	24	0.264	6.19
MBT	LT1	0.18	0.16	0.0203	88.74%	24	0.177	6.58
	LT2	0.14	0.12	0.0196	86.02%	24	0.240	6.62
CATS	LT1	0.57	0.55	0.0200	96.49%	24	0.166	3.14
	LT2	0.79	0.77	0.0200	97.47%	24	0.148	2.67
CATI	LT1	0.35	0.33	0.0199	94.31%	24	0.249	1.98
	LT2	0.40	0.38	0.0199	95.02%	24	0.183	1.99
CBT	LT1	0.76	0.74	0.0198	97.39%	24	0.168	5.98
	LT2	0.96	0.94	0.0201	97.91%	24	0.122	6.02

13.1.3.4 Agglomeration and Column Leach Tests

Column leach tests were performed in duplicate on each one of the individual samples. The tests were conducted in 150 mm diameter by 1 m tall columns.

The samples were crushed to 100% passing 50 mm and leached for 40 days. The target irrigation rate was 10 L/h/m^2 and NaCN concentration on the irrigation solution, or barren solution, was controlled between 300-500 mg/L.

The samples were previously agglomerated with 10 kg/t of cement, using a 100 mg/L NaCN solution during the agglomeration process. The agglomeration methodology used in the program was not detailed in the test report provided.

The results of the tests for gold are presented in Table 13-9. Gold extractions ranged from 75% to 96%. The lowest recoveries were associated with the material from the Central Pit and were not 100% aligned with the head grade of the samples. Cyanide consumptions ranged from 0.78 kg/t to 1.28 kg/t NaCN and no hydrated lime was consumed due to the high amount of cement added during the agglomeration stage.

Material compaction was considerably higher for the MG samples, ranging from 12% to 21% slump. For the Central, compaction was much lower, ranging from 1% to 7% slump.

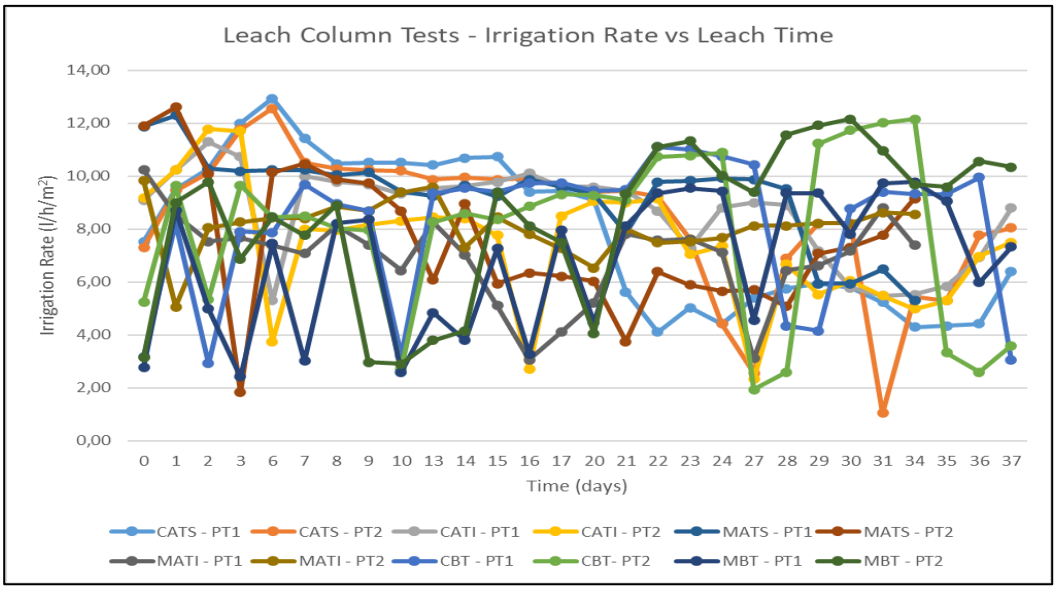
Final solution-to-ore ratios were high, varying from 6:1 to 11:1.

Table 13-9: Column Leach Test Results – Au Extraction and Reagent Consumptions

Testwork Sample No.	Test ID	Apparent Density (t/m³)	Slump (%)	Calc. Head Grade (g/t Au)	Leach Residue Grade (g/t Au)	Leach Extraction, (% Au)	Cyanide Consum, kg/t NaCN	Final Solution-to-Ore Ratio
MATS	PT1	1.01	15.8	1.25	0.063	94.95%	0.94	9.33
	PT2	1.00	17.3	1.27	0.043	96.60%	0.85	8.16
MATI	PT1	0.78	20.9	1.42	0.189	86.66%	1.09	9.31
	PT2	0.80	21.1	1.52	0.319	79.00%	1.18	10.59
MBT	PT1	0.74	12.4	0.20	0.020	89.91%	1.27	9.04
	PT2	0.75	16.0	0.20	0.020	90.21%	1.28	11.41
CATS	PT1	0.92	3.6	0.67	0.060	91.06%	0.80	8.62
	PT2	0.92	4.1	0.74	0.070	90.56%	0.78	8.93
CATI	PT1	1.14	1.6	0.53	0.099	81.28%	0.85	7.48
	PT2	1.11	3.0	0.43	0.106	75.35%	0.88	6.40
CBT	PT1	0.98	7.8	0.60	0.134	77.70%	0.95	8.30
	PT2	0.97	6.2	0.59	0.030	94.91%	0.91	8.16

Solution irrigation rates on all the column tests were highly variable and believed to be caused by plugging of the solution lines that feed the columns, as shown in Figure 13-2. The problem was compounded by using common solution pumps for several columns, which does not permit for control of solution flows to individual columns.

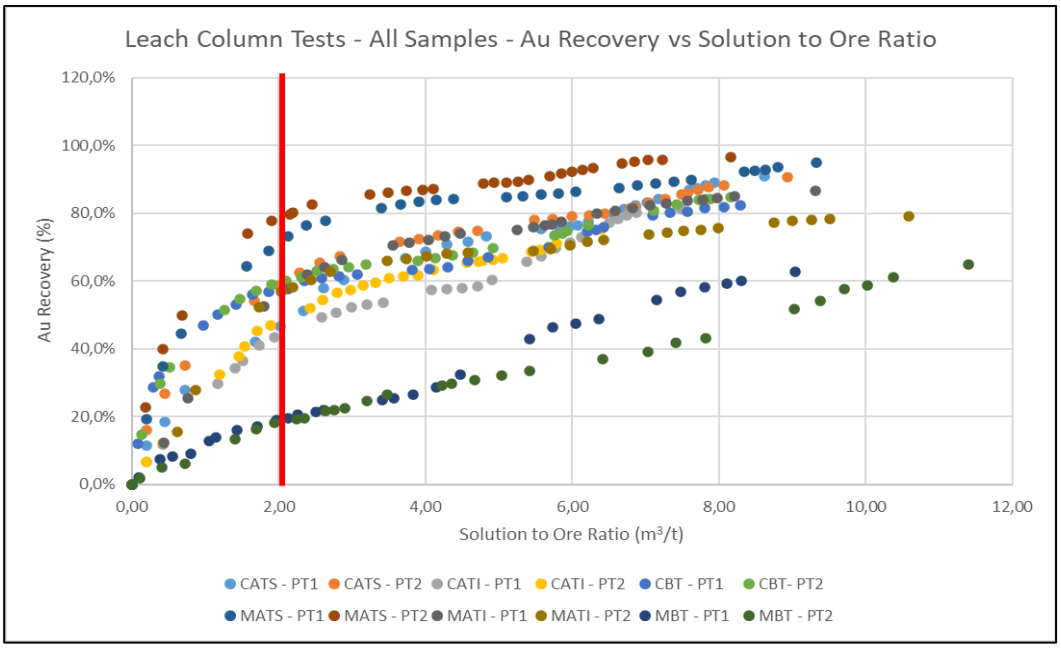
Figure 13-2: Testwork 2023 – Irrigation Rates Variation



Source: Testwork, 2023.

The total solution-to-ore ratio for the tests was higher than can be achieved at full scale. Recoveries at the completion of the column leach tests are overstated as a result. As shown in Figure 13-3, for a 2.0:1 solution-to-ore ratio, which would be representative of a on/off heap leach operation, Au recoveries ranged from 20% to 80% for the six samples tested.

Figure 13-3: Testwork 2023 – Au Recovery vs Solution-to-Ore Ratio



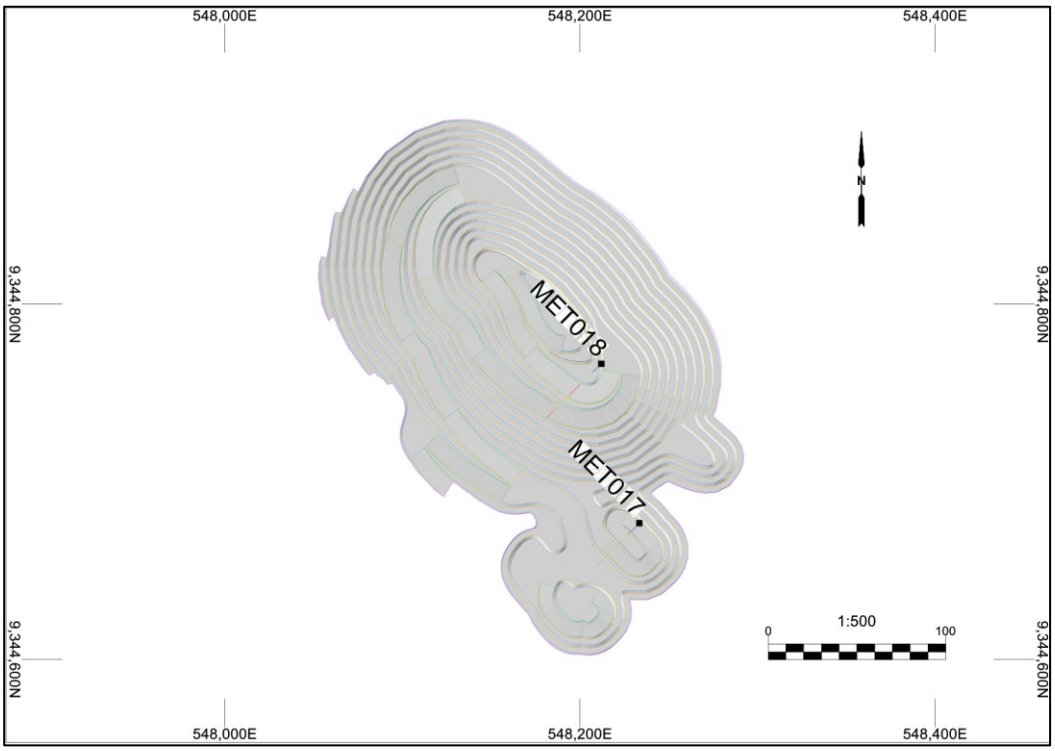
Source: Ausenco, 2024.

13.1.4 2024 Metallurgical Testing

13.1.4.1 2024 Metallurgical Testing Samples

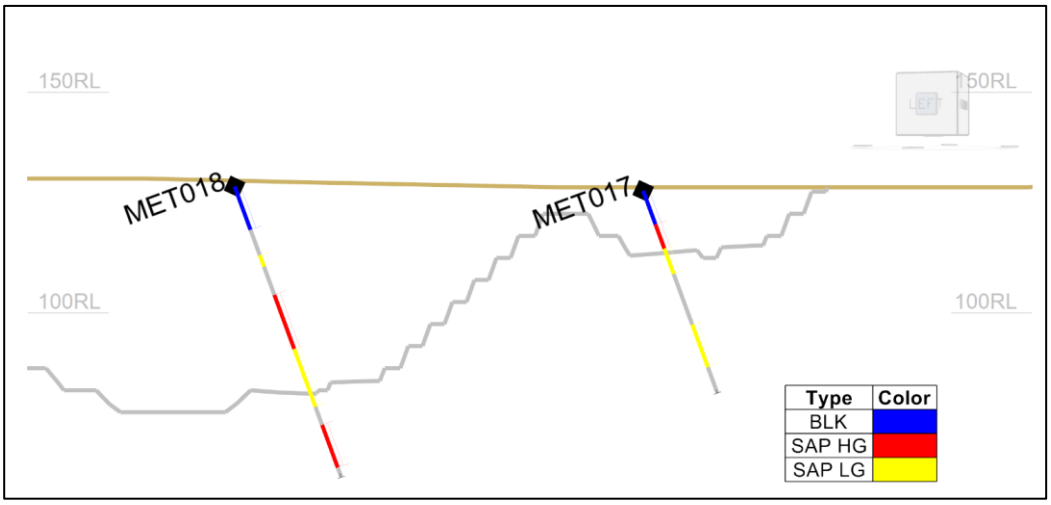
In 2024, five drill holes were completed to provide samples for testing programs at Metso and KCA. In total, two holes were drilled in Central and three in MG, for a total of five metallurgical drill holes. Plans and sections for each deposit are shown in Figure 13-8, Figure 13-9, Figure 13-10 and Figure 13-11 to show the locations of the metallurgical drill holes.

Figure 13-4: 2024 Metallurgical Samples Location – Central – Layout Plan



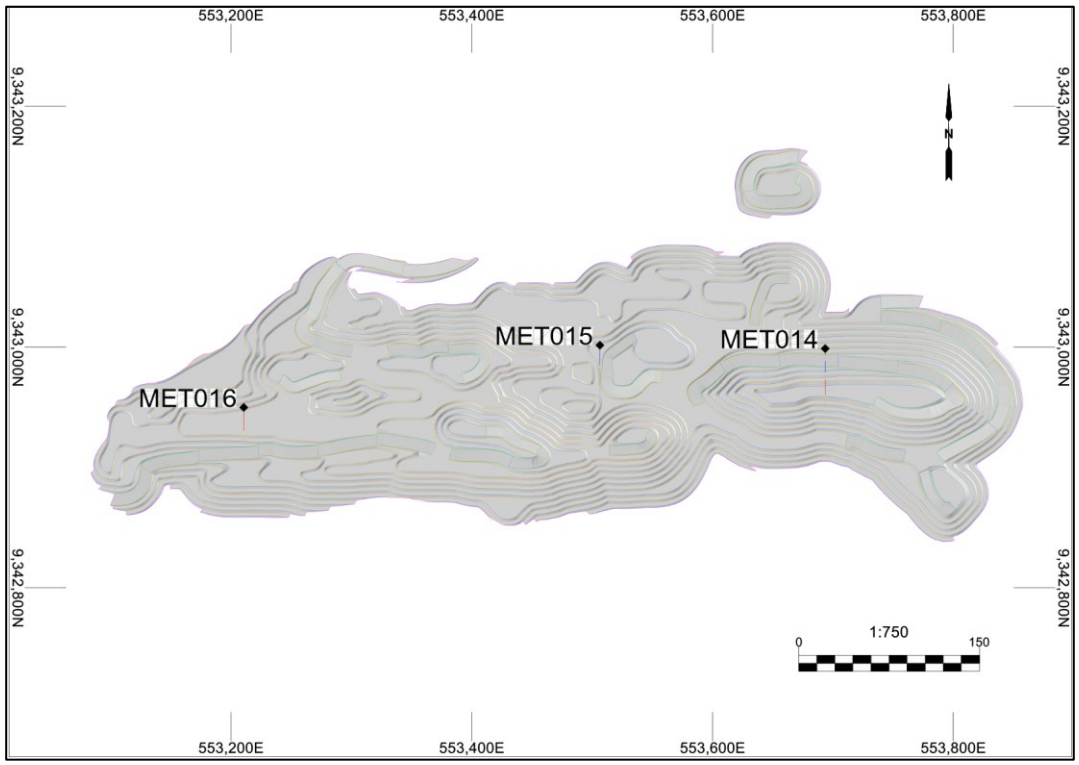
Source: Cabral Gold, 2024.

Figure 13-5: 2024 Metallurgical Samples Location – Central – Section



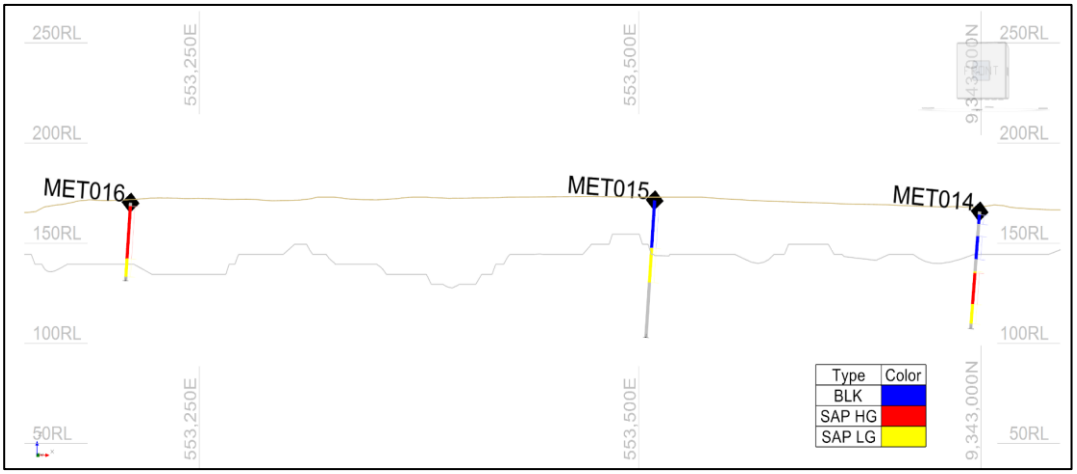
Source: Cabral Gold, 2024.

Figure 13-6: 2024 Metallurgical Samples Location – MG – Layout Plan



Source: Cabral Gold, 2024.

Figure 13-7: 2024 Metallurgical Samples Location – MG – Section



Source: Cabral Gold, 2024.

At the time the drill holes were planned, pit optimization work was not completed, resulting in some of the parts of drill holes being located outside of the optimized project pit shell. For the next phase of engineering, additional metallurgical testwork with new samples, which must be spatially distributed within the reserves and pit shell, is recommended.

13.1.5 Metso 2024

In 2024, Metso, in Sorocaba, Brazil, received over a 1000 kg of samples, representing 726 different drill core intervals from the MG and Central deposits. The objective was to prepare representative composites to be tested for point load tests (PLT), Bond and Macon abrasion tests, Macon crushability test and Bond rod mill work index, as well as bulk/apparent densities and particle size distribution.

13.1.5.1 Sample Selection and Compositing

Samples were selected based on their main lithology and spatial distribution within the deposit, targeting the most representative lithologies that will be mined and processed, which are called Blanket and saprolite for both MG and Central deposits.

For MG deposit, sample intervals from eleven different drill holes were used for generating samples for the PLT and crushability test programs, as shown in Table 13-10 and Table 13-11 below.

Table 13-10: MG Samples – Crushability Test Program

No.	Drill Hole ID	Length, (m)	Sample Weight, (Kg)	Number of Samples
1	MET014	21.30	54.7	22
2	MET014A	19.50	106.2	20
3	MET014B	20.00	112.2	20
4	MET014C	20.00	121..1	20
5	MET015	33.50	85.7	34
6	MET015A	10.00	53.9	10
7	MET015B	10.00	55.8	10
8	MET016	5.40	13.0	4
9	MET016A	5.40	28.8	4
10	MET016B	5.40	29.5	4
11	MET016C	20.40	1108	19
Total		**170,90**	**771.7**	**167**

Table 13-11: MG Samples – Point Load Test Program

No.	Drill Hole ID	Length, (m)	Sample Weight, (kg)	Number of Samples
1	MET014A	7.54	30.5	68
2	MET014B	6.59	27.9	61
3	MET014C	6.67	29.2	62
4	MET015A	5.06	22.6	48
5	MET015B	3.08	16.2	32
6	MET016A	3.69	20.5	40
7	MET016B	4.48	15.2	36
Total		**37.11**	**162.3**	**347**

For Central, sample intervals from nine different drill holes were used for generating samples for the PLT tests, which were then used for the crushability test programs, as shown in Table 13-12 below.

Table 13-12: Central Samples – Point Load Test and Crushability Test Programs

No.	Drill Hole ID	Length, (m)	Sample Weight, (kg)	Number of Samples
1	MET017A	2.27	12.7	22
2	MET017B	2.64	1.4	26
3	MET017C	2.04	12.5	21
4	MET017D	0.98	19.9	10
5	MET017E	1.80	11.4	19
6	MET017F	0.66	4.2	7
7	MET018A	5.32	27.5	53
8	MET018B	3.99	15.5	39
9	MET018C	1.50	7.8	15
Total		**21.20**	**112.9**	**212**

All these samples were them composited into four major composites:

1) MG – Blanket
2) MG – Saprolite
3) Central – Blanket
4) Central – Saprolite

Blanket material is the soil layer that overlies the saprolite horizons in both deposits.

13.1.5.2 Point Load Tests (PLT)

The objective of the PLT is to identify the compressive strength index of each lithology, which is used to predict other strength parameters, such as uniaxial compressive strength and unconfined compressive strength (UCS). The test measures the point load force (Is) of the sample, and to estimate the UCS value, a correlation factor is applied.

The results obtained for each sample are shown in Table 13-13 below.

Table 13-13: PLT Test Results

Sample	Is50		UCS, MPa
	Average	Standard Deviation	
MG - Blanket	0.06	0.01	1.51
MG - Saprolite	0.08	0.06	2.03
Central - Blanket	0.06	0.01	1.42
Central - Saprolite	0.01	0.01	0.29

The Is50 (Point Load Strength Index) and the UCS results for all four lithologies tested are low, indicating that the samples from both deposits are soft.

13.1.5.3 Comminution Tests

The objective of these tests is to predict the crushing behaviour by testing samples using Bond abrasion index tests, Metso Macon abrasion index and crushability tests and Bond rod mill work index tests.

The results obtained for each sample are shown in Table 13-14 below.

Table 13-14: Crushability Test Results

Sample	Bond Abrasion Index (g)	Macon Abrasion Index (g/t)	Macon Crushability (%)	Bond Rod Mill Work Index (kWh/st Imperial)	Bulk Density (t/m^3)	Specific Gravity
MG - Blanket	0.003	84	75.1%	< 6.00	1.05	2.16
MG - Saprolite	0.81	606	46.2%	12.15	1.43	2.48
Central - Blanket	0.008	46	95.8%	< 6.00	1.04	2.19
Central - Saprolite	0.030	434	87.2%	< 6.00	1.38	2.45

Test results indicate that the Blanket materials from Central and MG are non-abrasive, while the saprolite materials are slightly abrasive and moderate abrasive for Central and MG, respectively. Macon crushability test results indicate

that all samples are classified as “Very easy crushability,” with the exception of the MG saprolite sample, which is classified as “Easy crushability.”

Bond rod mill work index (RWi) results show that all samples are classified as Very soft with the exception of the MGs saprolite sample, which is classified as soft.

In general, samples from both MGs and Central deposits are soft, with the MG saprolite samples being more competent, but still classified as soft.

13.1.6 KCA 2024

In 2024, KCA, in Reno, Nevada, received sixty-five 15-gallon drums of core interval, 4.3 tonnes of samples, representing various drill core intervals from MG and Central deposits. The objective was to prepare representative composites based on their predominant lithology and grade for each deposit. The scope of this testwork program included head sample characterization, bottle roll leach tests, compacted permeability tests, column leach tests and detoxification tests.

The samples received were combined to generate six (6) separate composite samples; three (3) from the MG deposit and three (3) from the Central deposit. The composites were then photographed and assigned unique sample numbers (KCA Sample Nos. 93716 A through 93718 A and 93744 A through 93746 A). Each separate composite was prepared and utilized for metallurgical test work.

Portions of the material from each individual composite sample were prepared and utilized for head analyses, head screen analyses with assays by size fraction, bottle roll leach test work, compacted permeability test work and column leach test work. A description of the composite material is presented in Table 13-15.

Table 13-15: 2024 KCA Program Cuiú Cuiú Samples

KCA Sample No.	Description	Weight (kg)
93716 A	MG, Blanket	807.7
93717 A	MG, Saprolite - High Grade	776.3
93718 A	MG, Saprolite - Low Grade	766.3
93744 A	Central, Blanket	599.0
93745 A	Central, Saprolite - High Grade	665.6
93746 A	Central, Saprolite - Low Grade	699.1
Total		**4314.0**

An additional composite sample was generated for compacted permeability test work. The Cabral Gold Compaction Composite (KCA Sample No. 93742 A) was comprised of 34.7% MG, Saprolite – High Grade material (1.471 g Au/t) and 65.3% MG, Saprolite – Low Grade Material (0.443 g Au/t) to give an estimated grade of 0.8 g Au/t. A portion of the

composite was assayed for gold and silver content. Portions of the remaining material were utilized for compacted permeability test work.

13.1.6.1 Sample Analysis and Material Characterization

Portions of each composite were pulverized and analysed for gold and silver by standard fire assay and wet chemistry methods. These samples were also assayed semi-quantitatively for an additional series of elements and for whole rock constituents. In addition, samples were assayed by quantitative methods for carbon, sulphur and mercury. Cyanide shake testing and preg-robbing shake tests were also conducted on a portion of the pulverized samples.

A portion of the pulverized head material was submitted to the Center for Advanced Materials Processing (CAMP) at Montana Technological University (Montana Tech) in Butte, Montana for modal minerology and mineral characterization, XRD and CEC.

In addition to the composite sample analyses, portions were also utilized for size-by-size assays.

The results of the head analyses for gold and silver are presented in Table 13-16 and Table 13-17.

Table 13-16: 2024 KCA Program Au Head Assays

KCA Sample No.	Description	Assays (g/t Au)					
		Assay 1	Assay 2	Assay 3	Assay 4	Assay 5	Average
93716 A	MG, Blanket	0.408	0.363	0.326	0.339	0.353	0.358
93717 A	MG, Saprolite - High Grade	1.347	1.207	1.594	1.594	1.611	1.471
93718 A	MG, Saprolite - Low Grade	0.478	0.405	0.432	0.432	0.470	0.443
93742 A	MG, Saprolite - Composite	0.945	1.034	1.109	1.111	1.173	1.074
93744 A	Central, Blanket	0.391	0.398	0.322	0.391	0.387	0.378
93745 A	Central, Saprolite - High Grade	1.291	1.361	1.454	1.454	1.193	1.351
93746 A	Central, Saprolite - Low Grade	0.747	0.312	0.382	0.435	0.357	0.447

Table 13-17: 2024 KCA Program Ag Head Assays

KCA Sample No.	Description	Assays (g/t Au)					
		Assay 1	Assay 2	Assay 3	Assay 4	Assay 5	Average
93716 A	MG, Blanket	0.44	0.26	0.26	0.26	0.26	0.29
93717 A	MG, Saprolite - High Grade	1.20	0.79	1.20	1.20	1.20	1.12
93718 A	MG, Saprolite - Low Grade	0.89	0.79	1.20	1.20	0.79	0.97
93742 A	MG, Saprolite - Composite	1.32	0.72	0.72	0.72	0.67	0.83
93744 A	Central, Blanket	0.60	0.62	0.62	0.79	0.62	0.65
93745 A	Central, Saprolite - High Grade	0.26	0.62	0.79	0.79	0.26	0.54
93746 A	Central, Saprolite - Low Grade	0.26	0.62	0.26	0.26	0.62	0.40

Head analyses for Carbon, Sulphur, Mercury and Copper were also completed, as shown in Table 13-18 and Table 13-19. The samples are devoid of sulphides, a potential cause of cyanide consumption or locking of gold. Mercury concentrations in several of the samples tested are sufficiently high that mercury capture and abatement equipment may be required in the ADR Plant. Additional testing with a more accurate analytical method is required for additional evaluation.

Table 13-18: 2024 KCA Program Carbon and Sulphur Head Assays

KCA Sample No.	Description	Total Carbon (%)	Organic Carbon (%)	Inorganic Carbon (%)	Total Sulphur (%)	Sulphide Sulphur (%)	Sulphate Sulphur (%)
93716 A	MG, Blanket	0.21	0.18	0.03	0.06	0.02	0.04
93717 A	MG, Saprolite - High Grade	0.04	<0.01	0.04	0.01	<0.01	0.01
93718 A	MG, Saprolite - Low Grade	0.01	<0.01	0.01	0.01	<0.01	0.01
93744 A	Central, Blanket	0.22	0.22	<0.01	0.01	<0.01	0.01
93745 A	Central, Saprolite - High Grade	0.03	0.03	<0.01	0.03	0.01	0.02
93746 A	Central, Saprolite - Low Grade	0.03	0.03	<0.01	<0.01	<0.01	<0.01

Table 13-19: 2024 KCA Samples Copper and Mercury Assays

KCA Sample No.	Description	Total Mercury (g/t)	Total Copper (g/t)	Cyanide Soluble Copper (%)	Cyanide Soluble Copper (g/t)
93716 A	MG, Blanket	1.2	21	5%	1
93717 A	MG, Saprolite - High Grade	0.81	42	8%	3.18
93718 A	MG, Saprolite - Low Grade	0.07	27	6%	1.6
93744 A	Central, Blanket	0.69	17	20%	3.34
93745 A	Central, Saprolite - High Grade	0.4	24	16%	3.86
93746 A	Central, Saprolite - Low Grade	0.37	22	5%	1.2

Multi-element analyses were also completed at ALS for As, Ca, Cr, Fe, Mn, Ni, Pb and Zn, as shown in Table 13-20. Arsenic concentrations are low and will not present issues in recovery.

Table 13-20: 2024 KCA Samples Additional Metals Assays

KCA Sample No.	Description	As (g/t)	Ca (%)	Cr (g/t)	Fe (%)	Mn (g/t)	Ni (g/t)	Pb (g/t)	Zn (g/t)
93716 A	MG, Blanket	<50	<0.5	100	7.80%	100	<50	50	<50
93717 A	MG, Saprolite - High Grade	<51	<0.6	100	6.60%	1000	<50	<50	70
93718 A	MG, Saprolite - Low Grade	<52	<0.7	100	5.70%	900	<50	<50	90
93744 A	Central, Blanket	<53	<0.8	200	4%	300	<50	140	80
93745 A	Central, Saprolite - High Grade	<54	<0.9	200	2.60%	300	<50	160	150
93746 A	Central, Saprolite - Low Grade	<55	<0.10	200	3.40%	1100	<50	170	150

13.1.6.2 Cyanide Shake Tests

Cyanide shake tests were conducted utilizing portions of the pulverized head samples using KCA's standard procedure. These tests provided preliminary indications of cyanide soluble Au and Ag extractions.

The results of individual cyanide shake tests are presented in Table 13-21.

Table 13-21: 2024 KCA Cyanide Shake Test Results

KCA Sample No.	Description	HG Au (g/t)	HG Ag (g/t)	pH	Au Final tails (g/t)	Ag Final tails (g/t)	Au Extraction (%)	Ag Extraction (%)
93716 A	MG, Blanket	0.408	0.44	9.6	0.090	0.26	78%	42%
93716 A	MG, Blanket	0.363	0.26	9.6	0.044	0.08	88%	69%
93717 A	MG, Saprolite - High Grade	1.347	1.20	9.6	0.148	0.82	89%	32%
93717 A	MG, Saprolite - High Grade	1.207	0.79	9.6	0.012	0.41	99%	48%
93718 A	MG, Saprolite - Low Grade	0.478	0.89	11.1	0.076	0.33	84%	63%
93718 A	MG, Saprolite - Low Grade	0.405	0.79	11.1	0.004	0.25	99%	68%
93744 A	Central, Blanket	0.391	0.60	9.5	0.070	0.20	82%	67%
93744 A	Central, Blanket	0.398	0.62	9.5	0.080	0.22	80%	65%
93745 A	Central, Saprolite - High Grade	1.291	0.26	9.8	0.491	0.48	62%	-
93745 A	Central, Saprolite - High Grade	1.361	0.62	9.8	0.463	0.12	66%	81%
93746 A	Central, Saprolite - Low Grade	0.747	0.26	9.7	0.471	0.36	37%	-
93746 A	Central, Saprolite - Low Grade	0.312	0.62	9.7	0.031	0.24	90%	61%

Results show good extractions for the MG samples, with higher extractions aligned with higher feed grades, ranging from 78% to 99%. For the Central samples, extractions were lower, varying from 37% to 90%. Central high-grade samples presented an average Au extraction of 64%, while MG high grade samples averaged 94%. Silver extractions ranged from 32% to 81%, and in two samples the leach reside grades were higher than the head grades, resulting in no silver extractions.

13.1.6.3 Preg-robbing Tests

To determine the preg-robbing characteristics of the material, additional shake tests were conducted. For preg-robbing tests, pulverized portions of head material were leached by the same method as the initial shake tests with the addition of a known quantity (spike) of gold in solution. Preg-robbing tendency was then determined by comparing the spiked shake test extraction and the original shake test extraction, as shown below:

$$\%\ Preg - Robbing = \left[1 - \left(\frac{[Au]_{Spiked\ Ore} - [Au]_{Unspiked\ Ore}}{[Au]_{Spike} - 0_{Blank}}\right)\right] \times 100\%$$

If the percent preg-robbing is equal to or greater than 10%, KCA considers the material to have preg-robbing tendencies.

The results of preg-rob shake tests are presented in Table 13-22.

Table 13-22: 2024 KCA Preg-Robbing Test Results

KCA Sample No.	Description	Spike Au (mg/L)	Blank Au (mg/L)	Spiked Leach Au (mg/L)	Direct Au (mg/L)	Preg-Robbing (%)
93716 A	MG, Blanket	1.00	0.00	1.16	0.16	0%
93717 A	MG, Saprolite - High Grade	1.00	0.00	1.60	0.60	0%
93718 A	MG, Saprolite - Low Grade	1.00	0.00	1.20	0.20	0%
93744 A	Central, Blanket	1.00	0.00	1.16	0.16	0%
93745 A	Central, Saprolite - High Grade	1.00	0.00	1.40	0.40	0%
93746 A	Central, Saprolite - Low Grade	1.00	0.00	1.14	0.14	0%

No presence of preg-robbing was identified in the samples tested.

13.1.6.4 Bottle Roll Leach Tests

Coarse and fine bottle roll leach tests were completed on each of the six composite samples. The head material for each separate composite sample was stage crushed to a target size of 100% passing 50 mm. A portion of the stage crushed material was utilized for a coarse bottle roll leach test.

Additionally, a 4.0 kg portion of the stage crushed material for each separate composite was pulverized to a target size of P_{80} passing 0.075 mm. A 2 kg portion of the pulverized material was utilized for bottle roll leach test work. The remaining pulverized material was utilized for a head screen analysis with assays by size fraction.

The coarse bottle roll leach test procedure is outlined in the following:

- A 10 kg split of crushed material (target -50 mm) was placed into a 25 L carboy and slurried with 15 L of tap water.
- The pH of the slurry was adjusted, as required, to 10.5 to 11.0 with hydrated lime.
- Sodium cyanide was added to the slurry to a target concentration of 1.0 g/L sodium cyanide.
- Intermittent rolling (one minute/hour) throughout the duration of the test.
- The leach solution was checked periodically during the first day of leaching and every 24 hours for the 14-day leach period for pH, dissolved oxygen (DO), NaCN, Au, Ag and Cu.

- Additional hydrated lime and sodium cyanide were added after each sample period, if required, to adjust the slurry to the target levels.
- After completion of the leach test, the slurry was filtered, washed and dried. Samples were screened and then the pulverized sample was submitted for gold and silver analyses.

The fine bottle roll test procedure is outlined in the following:

- One 2-kg split of pulverized material was placed into a 15-L carboy and slurried with 3 L of tap water.
- The pH of the slurry was adjusted, as required, to 10.5 to 11.0 with hydrated lime.
- Sodium cyanide was added to the slurry to a target concentration of 1.0 g/L sodium cyanide. The bottle was then placed onto a set of laboratory rolls. Bottles were rolled continuously for the duration of the test.
- The leach solution was checked at 2, 6, 24 and 36 hours for pH, dissolved oxygen (DO), NaCN, Au, Ag and Cu.
- Additional hydrated lime and sodium cyanide were added after each sample period, if required, to maintain the target pH and concentrations respectively.
- After completion of the test, the slurry was filtered, washed and dried. Samples were screened and then submitted for gold and silver analyses.

The gold and silver extraction results of all bottle roll leach tests are summarized in Table 13-23 and Table 13-24, respectively.

Table 13-23: 2024 KCA Bottle Roll Leach Test Au Results

KCA Sample No.	Description	Target k_{80} (mm)	Description	Target P_{80} (mm)	Au Extracted (%)		Au Tails (g/t)	Leach Time (h)	NaCN Cons. (kg/t)	$Ca(OH)_2$ Addition (kg/t)
					Assay	Calc.				
93716 A	MG, Blanket	50	0.030	0.358	0.349	98%	0.01	36	0.26	6.50
93716 A	MG, Blanket	0.075	0.022	0.520	0.495	96%	0.02	36	0.52	5.00
93717 A	MG, Saprolite - High Grade	50	1.33	1.471	1.625	85%	0.24	336	0.12	3.50
93717 A	MG, Saprolite - High Grade	0.075	0.042	1.543	1.638	98%	0.03	36	0.14	3.50
93718 A	MG, Saprolite - Low Grade	50	0.79	0.443	0.771	82%	0.14	336	0.12	4.00
93718 A	MG, Saprolite - Low Grade	0.075	0.014	0.397	0.405	99%				
93744 A	Central, Blanket	50	0.45	0.378	0.650	94%	0.04	336	0.32	3.50
93744 A	Central, Blanket	0.075	0.033	0.474	0.511	98%	0.01	36	1.34	4.00
93745 A	Central, Saprolite - High Grade	50	6.39	1.351	0.019	47%	0.01	336	0.06	1.50
93745 A	Central, Saprolite - High Grade	0.075	0.040	1.100	0.012	99%	0.00	36	0.30	2.50

KCA Sample No.	Description	Target k_{80} (mm)	Description	Target P_{80} (mm)	Au Extracted (%)		Au Tails (g/t)	Leach Time (h)	NaCN Cons. (kg/t)	$Ca(OH)_2$ Addition (kg/t)
					Assay	Calc.				
93746 A	Central, Saprolite - Low Grade	50	3.69	0.447	0.415	60%	0.17	336	0.07	2.00
93746 A	Central, Saprolite - Low Grade	0.075	0.032	0.508	0.594	98%	0.01	36	0.28	2.50

Gold extractions ranged from 47% to 98% on the coarse bottle rolls tests, while varying from 96 to 99% on the fine bottle roll tests. Cyanide consumption varied from 0.06 kg/t to 1.34 kg/t, being considerably higher on the fine bottle roll tests. Lime additions varied from 1.50 to 6.5 kg/t.

It is important to note that all of the coarse bottle roll tests had a target P_{80} of 50 mm, but the actual k_{80}'s were much finer. Some samples presented k_{80}'s < 0.100 mm without grinding, indicating the ore is naturally fine in the deposits, primarily MG. Coarser k_{80}s were identified for Central saprolite samples, which resulted in lower recoveries.

In general, recoveries were higher at finer particle sizes distributions.

Table 13-24: 2024 KCA Bottle Roll Leach Test Ag Results

KCA Sample No.	Description	Target k_{80} (mm)	Tails k_{80} (mm)	Head Grade (g/t Au)	Au Extracted (%)		Au Tails (g/t)	Leach Time (h)	NaCN Cons. (kg/t)	$Ca(OH)_2$ Addition (kg/t)
					Assay	Calc.				
93716 A	MG, Blanket	50	0.030	0.290	0.470	20%	0.38	336	0.26	6.50
93716 A	MG, Blanket	0.075	0.022	0.300	0.340	25%	0.26	36	0.52	5.00
93717 A	MG, Saprolite - High Grade	50	1.33	1.120	0.730	42%	0.42	336	0.12	3.50
93717 A	MG, Saprolite - High Grade	0.075	0.042	0.490	0.610	58%	0.26	36	0.14	3.50
93718 A	MG, Saprolite - Low Grade	50	0.79	0.970	0.830	62%	0.32	336	0.12	4.00
93718 A	MG, Saprolite - Low Grade	0.075	0.014	0.690	0.680	62%	0.26	36	0.28	4.00
93744 A	Central, Blanket	50	0.45	0.650	0.450	39%	0.27	336	0.32	3.50
93744 A	Central, Blanket	0.075	0.033	0.260	0.690	52%	0.33	36	1.34	4.00
93745 A	Central, Saprolite - High Grade	50	6.39	0.540	0.890	53%	0.42	336	0.06	1.50
93745 A	Central, Saprolite - High Grade	0.075	0.040	0.780	1.190	78%	0.26	36	0.30	2.50

Silver extractions ranged from 20% to 62% on the coarse bottle rolls tests, while varying from 25 to 78% on the fine bottle roll tests.

In general, recoveries were higher at finer particle size distributions.

13.1.6.5 Compacted Permeability Tests

Compacted permeability testing was conducted for each composite l stage crushed to 100% passing 50 mm.

The purpose of the compacted permeability test work was to examine the permeability of the crushed material under compaction loading equivalent to heap heights of 5, 10, 15, 20, 25, 30, 35 and 40 m of equivalent heap heights.

For the test work, the material was agglomerated with various amounts of cement, ranging from 10 to 35 kg/t, and cured for 72 hours. The agglomerated samples were then compacted in a column with a predetermined static load and tested for solution permeability.

Agglomerated samples were placed in steel column or cell for testing. Staged axial (vertical) loading of the test material was utilized to simulate the increased pressure obtained to simulate heap stacking.

At the top and at the base of the column were drainage layers. The load was applied to the agglomerated sample utilizing a perforated steel plate of a known diameter. The diameter of the plate was such that the plate moved freely within the walls of the column.

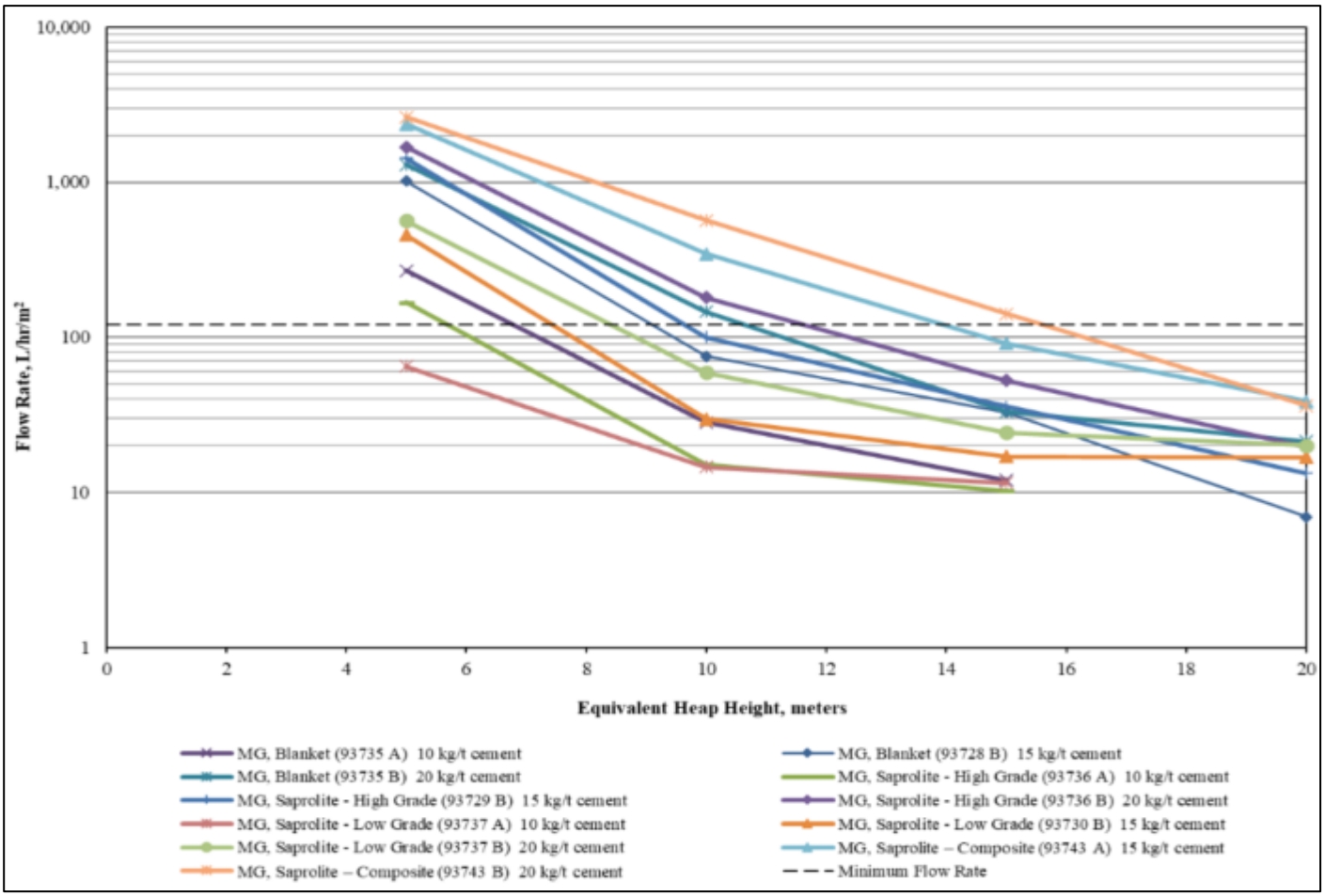
While the load was maintained, solution was applied to the top of the test cell at an equivalent rate of 10 L/h/m^2 for 4 hours. The out flow at the bottom of the cell and off the top of the test charge were measured separately every 10 minutes. At the end of the solution application the column was drained, and the drained volume measured. The overall moisture content of the final charge was measured and reported.

KCA uses a pass and fail criteria to validate the test conditions:

- In KCA's compacted permeability tests, a slump of over 15% is generally an indication of failure. Also examined is the consistency of results with regards to slump. For instance, a lower slump with higher cement levels could be expected, which will allow for trending of slump as a function of cement addition.
- A typical heap leach solution application rate of 10 to 12 L/h/m^2 is utilized when examining the agglomeration data. When examining results from this type of agglomeration test, a measured flow of ten times (10X) the heap design rate is considered a "pass." A measured flow less than 10X the heap design flow is not necessarily a failure. If there are enough tests with enough consistency between tests, and all other points indicate a "pass," and then sometimes a test will pass with less than the 10X flow. However, a test will not likely pass at 1X and probably not at 4X.
- In examining the agglomerated pellet breakdown, about 10% is marginally acceptable and anything higher is a failure.
- Solution color and clarity typically is an indicator of agglomerate failure and fines migration. This information is utilized in coordination with both slump as well as agglomerated pellet Breakdown to determine if the test passes.

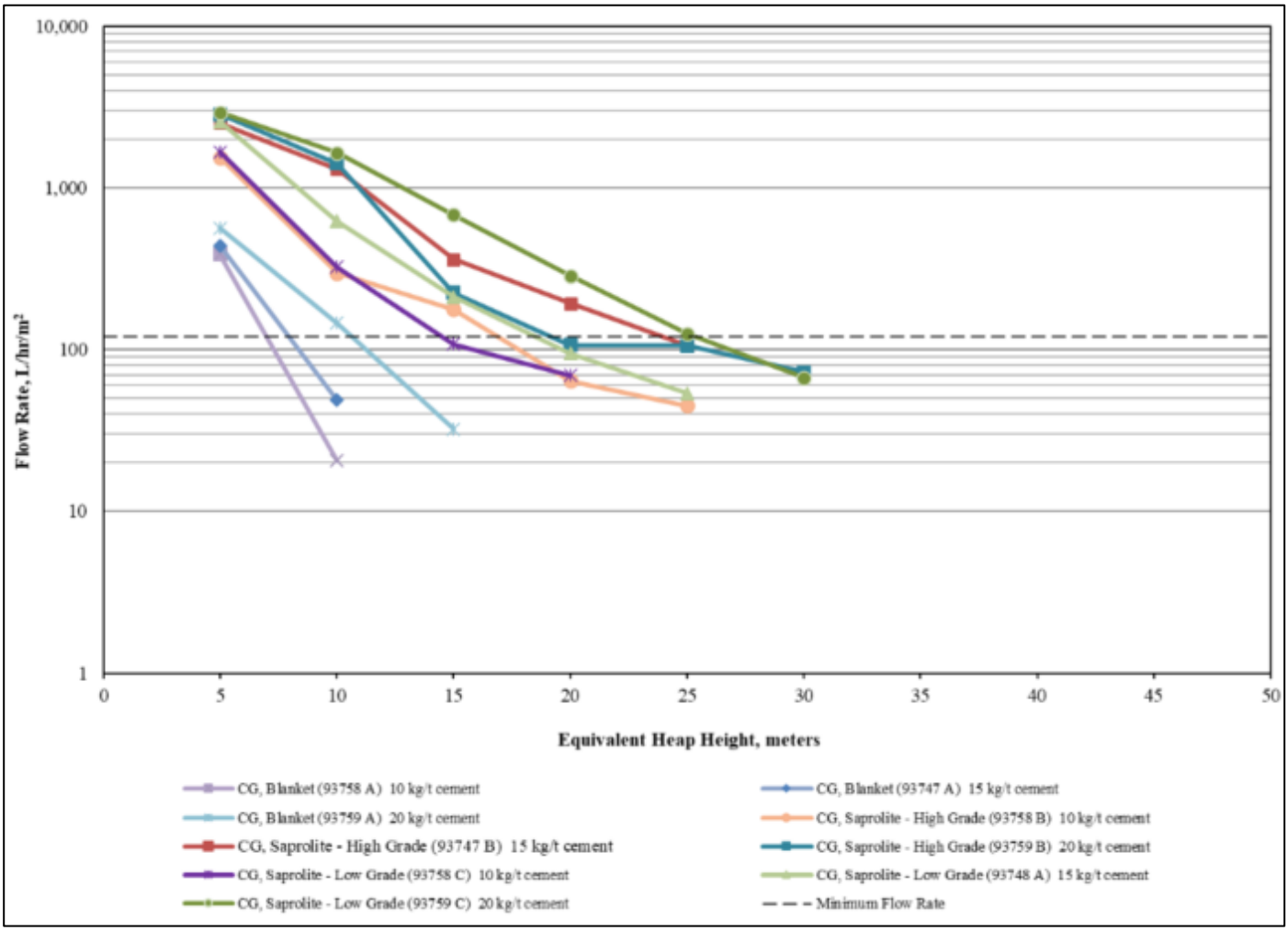
The tests results with regards to flow are shown below in Figure 13-8 and Figure 13-9, where the dots above the dotted line indicate the samples that passed the tests, while the samples that are below the dotted line failed the tests with regards to flowrate.

Figure 13-8: 2024 KCA Hydraulic Conductivity Test Results – MG Samples



Source: KCA, 2024.

Figure 13-9: 2024 KCA Hydraulic Conductivity Test Results – Central Samples



Source: KCA, 2024.

The MG, Blanket sample and the MG, Saprolite – Low Grade sample agglomerated with 10 kg/t of cement failed at all equivalent heap heights tested. The sample agglomerated with 15, 20 and 35 kg/t of cement passed at equivalent heap heights of 5 m but failed at all additional loads due to insufficient solution flow rate and/or excessive slump of the material.

The MG, Saprolite – High Grade sample agglomerated with 10 and 15 kg/t of cement passed at equivalent heap heights of 5 m but failed at all additional loads. The sample agglomerated with 20 kg/t of cement passed at equivalent heap heights of 5 and 10 m but failed at all additional loads and the material agglomerated with 35 kg/t of cement passed at equivalent heap heights of 5, 10 and 15 m, but failed at all additional loads due to insufficient solution flow rate and/or excessive slump of the material.

The MG, Saprolite Composite sample agglomerated with 15 and 20 kg/t of cement passed at equivalent heap heights of 5 m but failed at all additional loads due to insufficient solution flow rate and/or excessive slump of the material.

The Central, Blanket sample agglomerated with 10, 15 and 20 kg/t of cement passed at equivalent heap heights of 5 m but failed at all additional loads due to insufficient solution flow rate and/or excessive slump of the material.

The Central, Saprolite – High Grade sample agglomerated with 10 and 15 kg/t of cement passed at equivalent heap heights of 5 m but failed at all additional loads. The material agglomerated with 20 kg/t of cement passed at equivalent heap heights of 5 and 10 m but failed at all additional loads due to insufficient solution flow rate and/or excessive slump of the material.

The Central, Saprolite – Low Grade sample agglomerated with 10 and 15 kg/t of cement passed at equivalent heap heights of 5 and 10 m but failed at all additional loads. The material agglomerated with 20 kg/t of cement passed at equivalent heap heights of 5, 10 and 15 m, but failed at all additional loads due to insufficient solution flow rate and/or excessive slump of the material.

13.1.6.6 Column Leach Tests

Column leach tests were conducted utilizing material crushed to 100% passing 50 mm and agglomerated with 15 to 20 kg/t of cement. During testing, the material was leached for 68 to 112 days with a sodium cyanide solution.

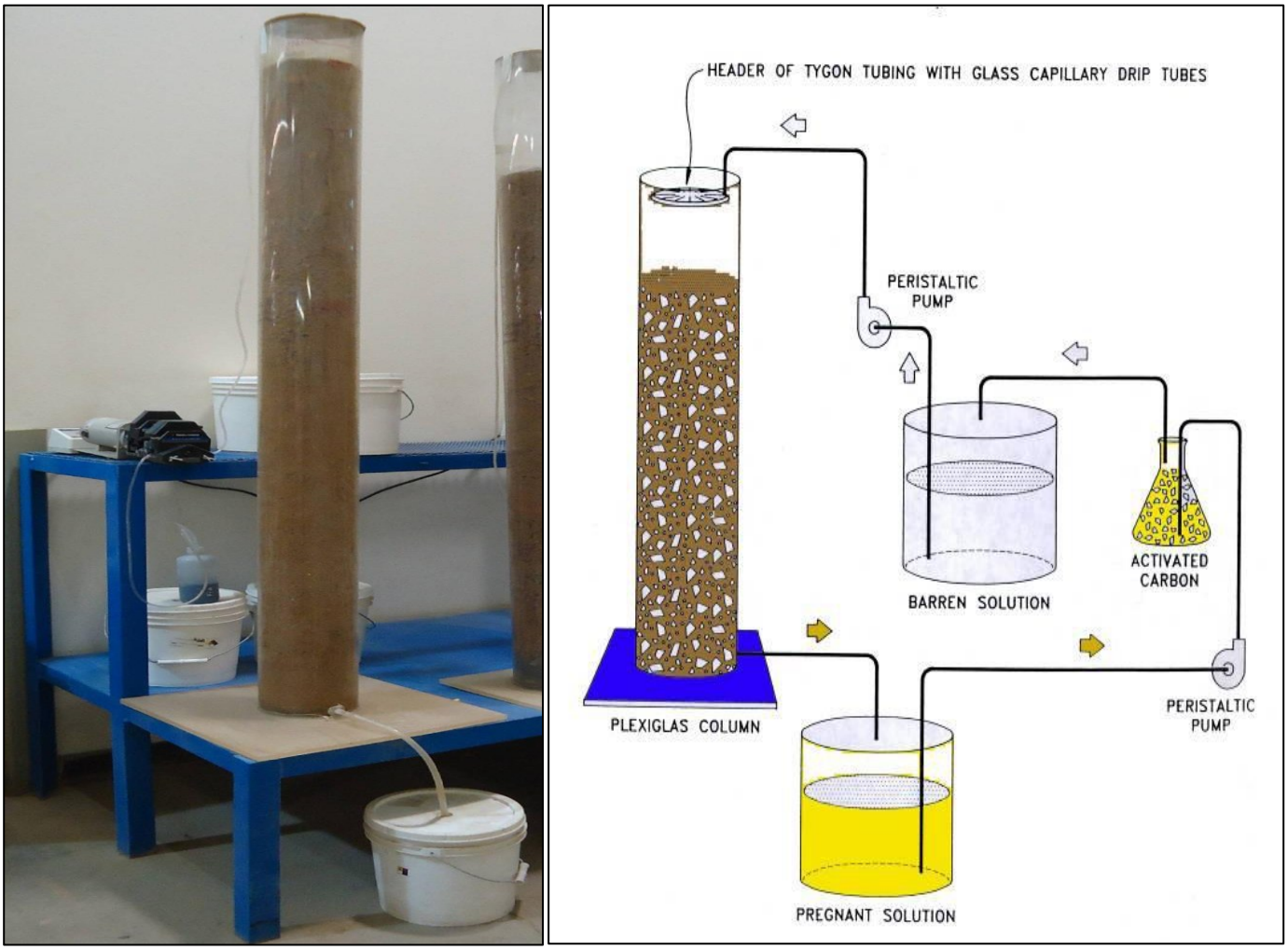
The initial leach solution for each column test contained 1.0 g/L NaCN. The cyanide strength of the on-flow solution was maintained at a target level of 0.5 g/L NaCN. Protective alkalinity in the test was maintained by the initial addition of cement during column setup. The leach solution was monitored to ensure that the required pH range was maintained throughout testing.

A peristaltic pump was used to maintain the solution flow at an equivalent to 10 to 12 L/h/m^2 application rate.

Pregnant leach solution (PLS) flows by gravity from each leach column and was collected in a PLS tank. PLS solution was checked each cycle for pH, NaCN, Au and Ag. Copper was checked periodically. The solution was then passed through a bottle of granular activated carbon over a period of 24 hours to extract the gold and silver in solution. After passing through the bottle of activated carbon, the solution was re-assayed for pH, NaCN, Au and Ag. Sodium cyanide was then added, if necessary, to maintain the solution at target concentration. The leach solution was then recycled to the material for another 24-hour leach period. Two (2) batches of leach solution were used so that while one batch was applied to each column, the other was run through carbon.

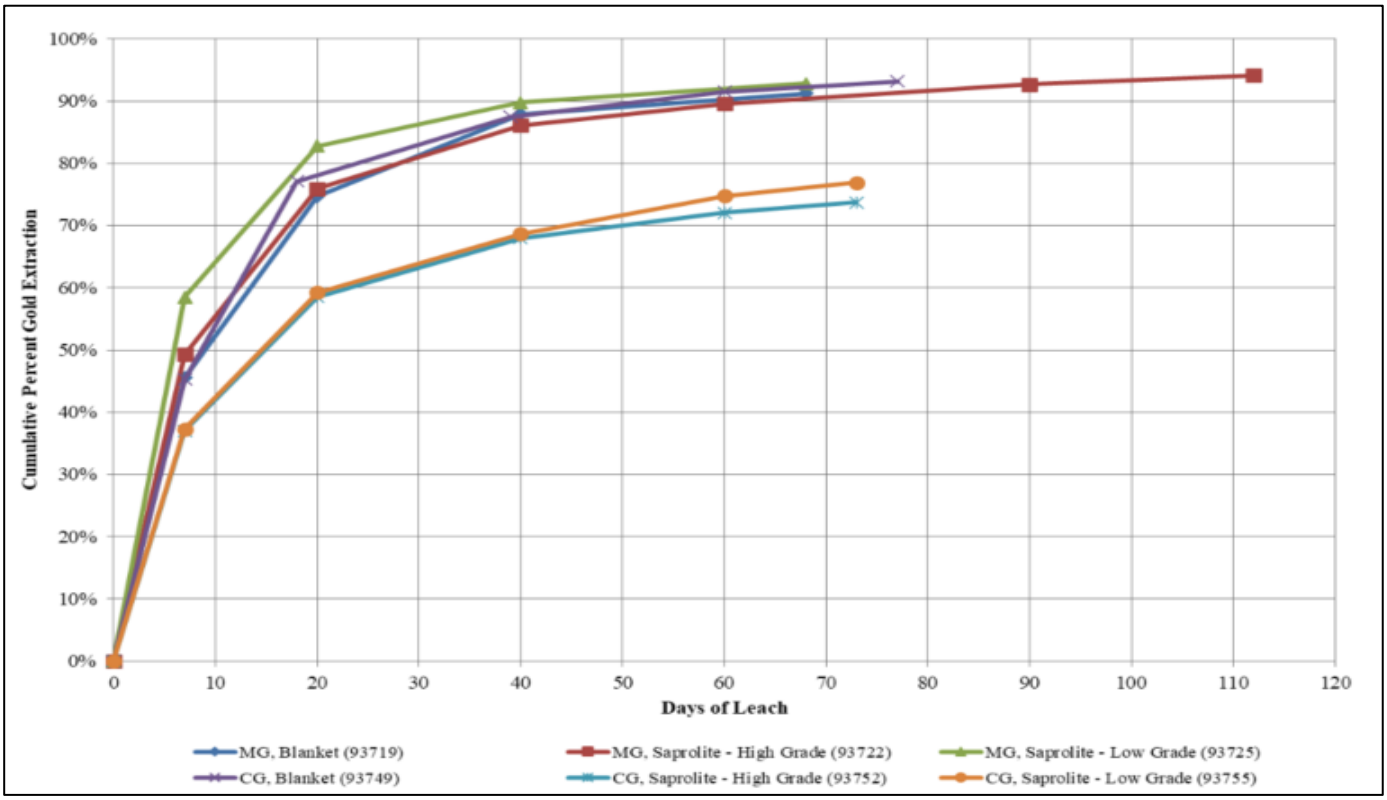
The columns tests were conducted in plexiglass cylinders with a diameter of 200 mm and a height of five meters, as shown in Figure 13-10.

Figure 13-10: Column Leach Test Apparatus



Source: KCA, 2024.

Figure 13-11: 2024 KCA Column Leach Test Results, Au



Source: KCA, 2024.

Table 13-25: 2024 KCA Column Leach Test Results, Au

KCA Sample No.	Description	Calculated Head (g/t Au)	Tails Grade (g/t Au)	Leach Extraction (% Au)	Calc. Tail k_{80} (mm)	Days of Leach	Solution to Ore Ratio	NaCN Cons. (kg/t)	Addition Cement, (kg/t)
93716 A	MG, Blanket	0.547	0.048	91	0.19	68	2.78	0.49	20.1
93717 A	MG, Saprolite - High Grade	1.630	0.096	94	2.33	112	4.11	0.35	18.7
93718 A	MG, Saprolite - Low Grade	0.623	0.045	93	1.28	68	2.78	0.3	19.6
93744 A	Central, Blanket	0.614	0.042	93	0.57	77	3.30	0.45	19.8
93745 A	Central, Saprolite - High Grade	0.990	0.260	74	15.16	73	2.65	0.25	15.5
93746 A	Central, Saprolite - Low Grade	0.489	0.113	77	18.62	73	2.74	0.27	14.8

Table 13-26: 2024 KCA Column Leach Test Results, Ag

KCA Sample No.	Description	Calculated Head (g/t Ag)	Tails Grade (g/t Ag)	Leach Extraction (% Ag)	Calc. Tail k_{80} (mm)	Days of Leach	Solution to Ore Ratio	NaCN Cons. (kg/t)	Addition Cement, (kg/t)
93716 A	MG, Blanket	0.480	0.38	21	0.19	68	2.78	0.49	20.1
93717 A	MG, Saprolite - High Grade	0.920	0.6	35	2.33	112	4.11	0.35	18.7
93718 A	MG, Saprolite - Low Grade	0.910	0.44	52	1.28	68	2.78	0.3	19.6
93744 A	Central, Blanket	0.520	0.33	37	0.57	77	3.30	0.45	19.8
93745 A	Central, Saprolite - High Grade	0.810	0.35	57	15.16	73	2.65	0.25	15.5
93746 A	Central, Saprolite - Low Grade	0.700	0.4	43	18.62	73	2.74	0.27	14.8

Gold extractions ranged from 74% to 94% based on calculated head grades, which ranged from 0.489 to 1.630 g/t. Sodium cyanide consumptions ranged from 0.25 to 0.49 kg/t. The samples utilized in leaching were agglomerated with 14.8 to 20.1 kg/t of cement.

The MG, Blanket, high grade and low-grade Saprolite materials had gold extractions of 91%, 94% and 93%, respectively. Extractions were based on calculated head grades of 0.547, 1.630 and 0.623 g/t. The sodium cyanide consumptions were 0.49, 0.35 and 0.30 kg/t. The samples utilized in leaching were agglomerated with 20.1, 18.7 and 19.6 kg/t of cement, respectively.

The Central, Blanket, high grade and low-grade saprolite materials had gold extractions of 93%, 74% and 77%, respectively. Extractions were based on calculated head grades of 0.614, 0.990 and 0.489 g/t. The sodium cyanide consumptions were 0.45, 0.25 and 0.27 kg/t. The samples utilized in leaching were agglomerated with 19.8, 15.5 and 14.8 kg/t of cement, respectively.

Tests were run for between 68 days and 112 days, equivalent to solution-to-ore application rates of 2.65:1 and 4.11:1. The MG Saprolite High-grade column leach test was extended as the leach kinetic curve showed that the recovery was still increasing as the other tests were nearing completion.

The height of sample in each column was measured before and after leaching. This height was utilized to calculate the "slump" during leaching as well as to calculate the final apparent bulk density for the material in the column. The percent slump of a column gives an indication of potential permeability problems in production heaps. KCA typically classifies slumps larger than 10% as high.

The height, slump and final apparent bulk density from the column leach tests are presented in Table 13-27. None of the slumps measured are considered problematic based on KCA's criteria. The apparent bulk densities are low, largely influenced by the fine nature of the soils and saprolites.

Table 13-27: 2024 KCA Column Tests Percent Slump and Final Apparent Bulk Density

KCA Sample No.	KCA Test No.	Description	Initial Height (m)	Final Height (m)	Slump (%)	Final Apparent Bulk Density (t/m³)
93716 A	93719	MG, Blanket	5.185	5.175	0.2%	0.939
93717 A	93722	MG, Saprolite - High Grade	4.680	4.651	0.6%	1.207
93718 A	93725	MG, Saprolite - Low Grade	4.750	4.688	1.3%	1.060
93744 A	93749	Central, Blanket	4.572	4.540	0.7%	1.055
93745 A	93752	Central, Saprolite - High Grade	4.464	4.429	0.8%	1.286
93746 A	93755	Central, Saprolite - Low Grade	4.420	4.337	1.9%	1.250

At the conclusion of leaching, drain down tests were conducted on the column. The procedure utilized for the drain down test was as follows:

- A known volume of solution was continuously recycled through the column for 24 hours. The rate of application to the column was held between 10 and 12 L/h/m^2.
- Following the 24-hour solution application period, the bottom collection bucket (recycling/effluent) was removed.
- The solution draining from the column was collected over the next 96 hours. The drain down solution was weighed every 24 hours.

After allowing the columns to drain, the columns were unloaded and the tailings material from each separate column was prepared for assays and final moisture content.

Table 13-28 below shows the drain down information and residual moisture content for each composite. These values are used for design purposes, including heap leach water balances.

Table 13-28: 2024 KCA Column Tests Drain Down and Residual Moisture

KCA Sample No.	KCA Test No.	Description	Drain Down, L/t of water				Retained Solution, L/t
			24 hour	48 hour	72 hour	96 hour	
93716 A	93719	MG, Blanket	16.9	18.7	19.7	20.7	353.0
93717 A	93722	MG, Saprolite - High Grade	21.7	24.8	26.3	27.4	171.2
93718 A	93725	MG, Saprolite - Low Grade	21.6	25	277	28.7	253.3
93744 A	93749	Central, Blanket	19.7	22.5	24.2	25.2	251.1
93745 A	93752	Central, Saprolite - High Grade	25.2	28.3	29.8	30.7	155.6
93746 A	93755	Central, Saprolite - Low Grade	25.1	27.7	28.9	29.7	174.1

13.1.7 KCA 2025 Program

The 2025 KCA program focused on samples from the Machichie deposit to support their inclusion of this deposit in resources and reserves. There was insufficient drill core to provide samples for the program. Trenching was used to sample the near surface deposit to provide samples for this program. Four trenches were cut to provide the required samples:

- CT0051 Saprolite
- CT0052 Saprolite
- CT0053 Blanket
- CT0054 Saprolite

High grade quartz veins were observed in trenches CT0051 and CT0054. These veins were separated from the samples and tested separately for screened metallics assays and bottle rolls leach tests. These samples were not included in the column testing program.

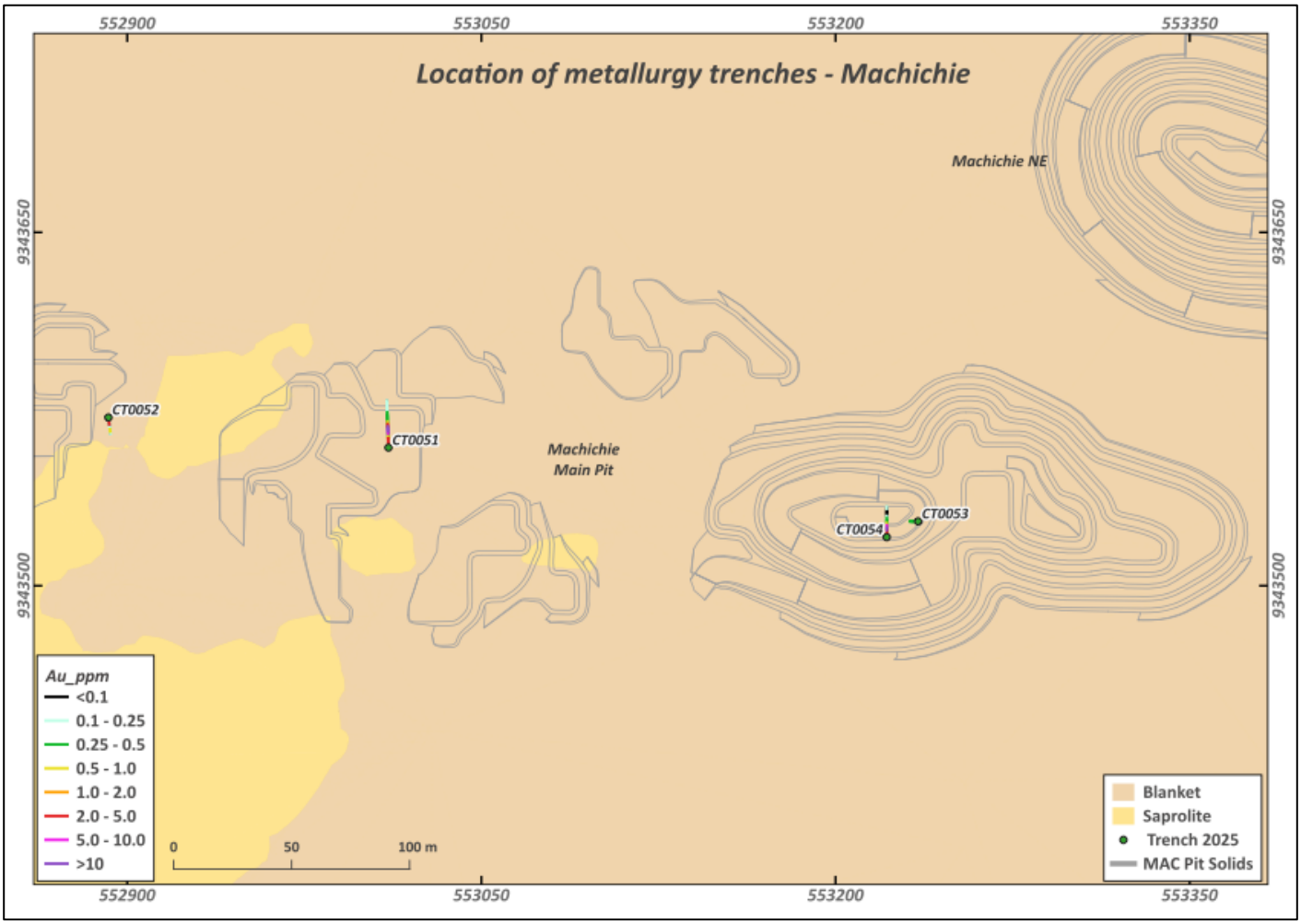
On February 2025, KCA, in Reno, Nevada, received four (4) pallets containing a total of eleven (11) small blue plastic barrels. The barrels contained a total of thirty-eight (38) large poly bags of trench material representing nineteen (19) individual samples from the Machichie deposit. This material was described as Population CbG1.

On March 2025, KCA received an additional five (5) pallets containing a total of thirteen (13) small blue plastic barrels labeled 1 through 13. The barrels contained a total of forty-three (43) large poly bags of trench material representing twenty-three (23) individual samples from the Machichie deposit. This material was described as Population CbG2.

Five (5) of the received samples were considered as high-grade material and were maintained separately. The remaining material was utilized to generate a composite sample from each surface trench (CT0051, CT0052, CT0053 and CT0054).

The sample trenches are shown in Plan view and sections for each deposit are shown in Figure 13-12.

Figure 13-12: Trench Locations Metallurgical Samples Location – Machichie – Layout Plan



Source: KCA, 2025.

The individual high-grade samples and the four (4) trench composites were prepared individually and utilized for head analyses, head screen analyses with assays by size fraction, bottle roll leach test work, and/or column leach test work. A description of the composite material is presented in Table 13-29.

Table 13-29: Description of Machichie Samples for 2025 KCA Program

KCA Sample No.	Population	Description	Weight (kg)
102001 A	CbG1	CT0051 Saprolite	198.44
102002 A	CbG1	CT0052 Saprolite	277.66
102006 A	CbG2	CT0053 Blanketl	477.22
102007 A	CbG2	CT0054 Saprolite	117.82
102008 A	CbG1	CT0051 Saprolite - High Grade	30.07
102009 A	CbG1	CT0052 Saprolite - High Grade	29.97
102010 A	CbG1	CT0053 Saprolite - High Grade	30.09
102011 A	CbG2	CT0054 Saprolite - High Grade	10.75
102012 A	CbG2	CT0054 Saprolite - High Grade	10.68
Total			**1182.70**

13.1.7.1 Sample Analysis

Portions of each of the five (5) individual high-grade samples were prepared for direct head assays for gold and silver.

Portions of each of the four (4) individual composite samples were prepared for metallic screen analyses, direct head assays, and head screen analysis with assays by size fraction. Analyses for gold and silver were completed by standard fire assay and wet chemistry methods. Samples were also assayed semi-quantitatively for an additional series of elements and for whole rock constituents. In addition to these semiquantitative analyses, head material was assayed by quantitative methods for carbon, sulfur and mercury. Cyanide shake tests, as well as preg-robbing testing was conducted on portions of the pulverized head material.

A pulverized portion of the sample was submitted to FLSmidth, Inc. (FLS) in Midvale, Utah for x-ray diffraction analyses (XRD) and swelling clay analyses (CEC).

The results of the head analyses for gold and silver for the high-grade samples are presented in Table 13-30.

Table 13-30: 2025 KCA High Grade Samples Au and Ag Assays

KCA Sample No.	Description	Assays (g/t)	
		Au	Ag
102008 A	CT0051 Saprolite	7.66	1.67
102009 A	CT0051 Saprolite	39.5	16.5
102010 A	CT0051 Saprolite	14.8	2.28
102011 A	CT0054 Saprolite	14.3	3.72
102012 A	CT0054 Saprolite	9.7	0.89

Head analyses for gold and silver were conducted on the samples used for the balance of the program. Assays were determined using screened metallics. A summary of the head analyses for gold and silver are presented in Table 13-31.

Table 13-31: 2025 KCA Samples Au and Ag Assays Summary

KCA Sample No.	Description	Sample Assays	
		Au	Ag
102001 A	CT0051 Saprolite	1.38	0.26
102002 A	CT0052 Saprolite	0.86	0.26
102006 A	CT0053 Blanket	0.47	0.36
102007 A	CT00054 Saprolite	0.79	1.62

Head analyses for Carbon, Sulphur, Mercury and Copper were also completed, as shown in Table 13-32 and Table 13-33. The samples are devoid of sulphides, a potential cause of cyanide consumption or locking of gold. Mercury concentrations in several of the samples tested are sufficiently high that mercury capture and abatement equipment will be required in the ADR Plant.

Table 13-32: 2025 KCA Samples Carbon and Sulphur Head Assays

KCA Sample No.	Description	Total Carbon (%)	Organic Carbon (%)	Inorganic Carbon (%)	Total Sulphur (%)	Sulphide Sulphur (%)	Sulphate Sulphur (%)
102001 A	CT0051Saprolite	0.09	0.08	0.01	0.03	<0.01	0.03
102002 A	CT0052 Saprolite	0.07	0.06	0.01	0.02	<0.01	0.02
102006 A	CT0053Balnket	0.24	0.24	<0.01	0.05	<0.01	0.05
102007 A	CT0053 Saprolite	0.07	0.05	0.02	0.05	0.01	0.04

Table 13-33: 2025 KCA Samples Mercury and Copper Head Assays

KCA Sample No.	Description	Total Mercury (g/t)	Total Copper (g/t)	Cyanide Soluble Copper (%)	Cyanide Soluble Copper (g/t)
102001 A	CT0051 Saprolite	0.48	122	5%	5.50
102002 A	CT0053 Saprolite	0.59	142	6%	9.10
102006 A	CT0053 Blanket	1.80	70	11%	7.58
102007 A	CT00054 Saprolite	0.67	99	4%	3.91

Multi-element analyses were also completed at ALS for As, Ca, Cr, Fe, Mn, Ni, Pb and Zn, as shown in Table 13-34.

Table 13-34: 2025 KCA Samples Multi-Element Assays

KCA Sample No.	Description	As (g/t)	Ca (%)	Cr (g/t)	Fe (%)	Mn (g/t)	Ni (g/t)	Pb (g/t)	Zn (g/t)
102001 A	CT0051 Saprolite	<2	0.01	69	5.85	296	12	38	47
102002 A	CT0052 Saprolite	<2	0.02	62	4.76	386	8	69	61
102006 A	CT0053 Blanket	<2	0.01	35	6.47	213	119	29	44
102007 A	CT0054 Saprolite	<2	0.02	63	7.38	658	15	73	40

13.1.7.2 Cyanide Shake Tests

Cyanide shake tests were conducted utilizing portions of the pulverized head samples using KCA's standard procedure. These tests provided preliminary indications of cyanide soluble Au and Ag extractions. Tests were completed in duplicate.

The results of individual cyanide shake tests are presented in Table 13-35.

Table 13-35: 2025 KCA Cyanide Shake Test Results

KCA Sample No.	Description	Head Grade Au (g/t)	Head Grade Ag (g/t)	pH	Au Final tails (g/t)	Ag Final tails (g/t)	Au Extraction (%)	Ag Extraction (%)
102001 A	CT0051 Saprolite	1.379	0.26	9.8	2.060	0.40	<100%	<100%
		1.379	0.26	9.8	2.000	0.38	<100%	<100%
102002 A	CT0052 Saprolite	0.861	0.26	9.7	1.220	0.40	<100%	<100%
		0/861	0.26	9.7	1.280	0.40	<100%	<100%
102006 A	CT0053 Blanket	0.474	0.79	9.5	0.220	0.02	46%	3%
		0.474	0.26	9.5	0.240	0.02	51%	8%
102007 A	CT0054 Saprolite	0.791	0.52	9.6	0.720	0.18	91%	35%
		0.791	0.79	9.6	0.600	0.18	76%	23%

Samples from trenches CT0051 and CT0052 in saprolite showed 100% Au and Ag extractions. Samples from trench CT0053 in blanket showed lower extractions for both Au and Ag at 47% and 8% respectively. There are no obvious reasons for the low extractions from CT0053. Samples from trench CT0054 in saprolite showed good extractions averaging 84% Au and 29% Ag.

13.1.7.3 Preg-robbing Tests

KCA's preg-robing test procedure is described in Section 13.1.6.3. If the percent preg-robbing is equal to or greater than 10%, KCA considers the sample to have preg-robbing tendencies.

The results of preg-rob shake tests are presented in Table 13-36.

Table 13-36: Preg-robbing Test Results

KCA Sample No.	Description	Head Assay (g/t)	Spike Au (mg/L)	Spiked Leach Au (mg/L)	Direct Au (mg/L)	Preg-Robbing (%)
102001 A	CT0051 Saprolite	1.38	1.00	1.85	1.03	18%
		1.38	1.00	1.81	1.00	19%
102002 A	CT0052 Saprolite	0.86	1.00	1.60	0.61	1%
		0.86	1.00	1.64	0.64	0%
102006 A	CT0053 Blanket	0.47	1.00	1.10	0.11	1%
		0.47	1.00	1.10	0.12	2%
102007 A	CT0054 Saprolite	0.79	1.00	1.36	0.36	0%
		0.79	1.00	1.30	0.30	0%

Samples from trench CT0051 show potential preg-robbing as they exceed the KCA threshold of 10%. All other samples show no tendency for preg-robbing. There was no evidence of preg robbing in the subsequent bottle rolls or column leach tests.

13.1.7.4 Bottle Roll Leach Test

Fine milled and coarse crushed bottle roll leach tests were completed on each composite sample. The KCA bottle rolls leach test procedure is described in Section 13.1.6.4.

The gold and silver extraction results of all bottle roll leach tests are summarized in Table 13-37 and Table 13-38, respectively.

Table 13-37: Bottle Roll Leach Test Au Results

KCA Sample No.	Description	Target P_{80} (mm)	Tails k_{80} (mm)	Head Grade (g/t Au)	Au Extracted (%)		Au Tails (g/t)	Leach Time (h)	NaCN Cons. (kg/t)	$Ca(OH)_2$ Addition (kg/t)
					Assay	Calc.				
102001 A	CT0051 Saprolite	25	5.50	0.902	0.731	81%	0.171	336	0.18	5.00
		0.106	0.06	0.875	0.852	97%	0.023	36	0.93	5.50
102002 A	CT0052 Saprolite	25	9.09	0.767	0.610	80%	0.157	336	0.12	3.00
		0.106	0.07	0.854	0.823	96%	0.031	36	0.22	4.50
102006 A	CT0053 Blanket	25	0.05	0.352	0.305	87%	0.047	336	0.26	7.00
		0.106	<0.04	0.336	0.320	95%	0.016	36	0.43	7.50
102007 A	CT0054 Saprolite	25	1.00	0.766	0.636	83%	0.130	336	0.31	5.00
		0.106	<0.04	0.907	0.883	97%	0.024	36	0.28	6.50
102008 A	CT0051 Saprolite High Grade	25	4.20	6.337	5.075	80%	1.262	336	0.12	4.00
102009 A	CT0051 Saprolite High Grade	25	4.50	55.018	35.898	65%	19.120	336	0.12	4.00
102010 A	CT0051 Saprolite High Grade	25	4.10	29.407	18.699	64%	10.708	336	0.18	5.00
102011 A	CT0054 Saprolite High Grade	25	0.67	15.230	14.566	96%	0.664	336	0.15	3.00
102012 A	CT0054 Saprolite High Grade	25	0.15	7.258	6.740	93%	0.518	336	0.20	5.00

Gold extractions for the low-grade samples ranged from 81% to 87% in the coarse bottle rolls tests, while varying from 95% to 99% on the fine bottle roll tests. The coarse bottle roll tests had high extractions, considering the crush size. Cyanide consumption varied from 0.18 kg/t to 0.93 kg/t, being higher on the fine bottle roll tests. Lime additions varied from 3.0 to 7.5 kg/t.

The high-grade vein samples were evaluated with coarse bottle rolls leach tests to observe if there may be any impacts on their extraction characteristics in a heap leach environment as there was insufficient sample to do column leach tests. Gold extractions for the high-grade samples ranged from 64% to 96%, with the highest extractions from the two of the three CT0051 saprolite samples. There may be reduced extractions with the processing of high-grade vein production. Further evaluation is recommended. Cyanide and lime consumptions were in line with the low-grade sample leach tests.

It is important to note that all of the coarse bottle roll tests had a target crush size k_{80} of 50 mm, but the actual k_{80}'s were much finer. Some samples presented k_{80} < 0.100 mm without grinding, indicating the ore is naturally fine in the deposits, primarily MG. Coarser k_{80}s were identified for Central saprolite samples, which resulted in lower recoveries.

In general, recoveries were higher at finer particle sizes distributions.

Table 13-38: 2025 KCA Bottle Roll Leach Test Ag Results

KCA Sample No.	Description	Target P_{80} (mm)	Tails k_{80} (mm)	Head Grade (g/t Au)	Au Extracted (%)		Au Tails (g/t)	Leach Time (h)	NaCN Cons. (kg/t)	$Ca(OH)_2$ Addition (kg/t)
					Assay	Calc.				
102001 A	CT0051 Saprolite	25	5.50	0.902	0.731	81%	0.171	336	0.18	5.00
		0.106	0.06	0.875	0.852	97%	0.023	36	0.93	5.50
102002 A	CT0052 Saprolite	25	9.09	0.767	0.610	80%	0.157	336	0.12	3.00
		0.106	0.07	0.854	0.823	96%	0.031	36	0.22	4.50
102006 A	CT0053 Blanket	25	0.05	0.352	0.305	87%	0.047	336	0.26	7.00
		0.106	<0.04	0.336	0.320	95%	0.016	36	0.43	7.50
102007 A	CT0054 Saprolite	25	1.00	0.766	0.636	83%	0.130	336	0.31	5.00
		0.106	<0.04	0.907	0.883	97%	0.024	36	0.28	6.50
102008 A	CT0051 Saprolite High Grade	25	4.20	6.337	5.075	80%	1.262	336	0.12	4.00
102009 A	CT0052 Saprolite High Grade	25	4.50	55.018	35.898	65%	19.120	336	0.12	4.00
102010 A	CT0053 Saprolite High Grade	25	4.10	29.407	18.699	64%	10.708	336	0.18	5.00
102011 A	CT0054 Saprolite High Grade	25	0.67	15.230	14.566	96%	0.664	336	0.15	3.00
102012 A	CT0054 Saprolite High Grade	25	0.15	7.258	6.740	93%	0.518	336	0.20	5.00

Silver extractions for the low-grade samples ranged from 23% to 38% on the coarse bottle rolls tests, while varying from 23% to 54% on the fine bottle roll tests.

Silver extractions for the high-grade samples 62% to 86% for the high-grade samples. Extractions were superior for the high-grade compared to the low-grade samples at the -25 m crush size.

In general, recoveries were higher at finer particle size distributions. Silver extractions were lower than the gold exractions for the sample samples.

13.1.7.5 Compacted Permeability Tests

The purpose of the compacted permeability test work was to examine the permeability of the crushed material under compaction loading equivalent to heap heights of 5 and 10 meters of overall heap height. The procedure used is described in Section 13.1.6.5 summary of the compacted permeability test results is shown in Table 13-39.

Table 13-39: 2025 KCA Compacted Permeability Test Results

Sample No.	Description	Crush size (mm)	Calc. P_{80} (mm)	Cement Added (g/t)	Effec. Height (m)	Flow Rate (L/h/m²)	Flow Result (Pass / Fail)	Sat Perm (cm/s)	% Pellet Breakdown	% Slump	Slump Result (Pass/ Fail)	Overall (Pass/ Fail)
102001 A	CT0051 Saprolite	25	9	15	10	1,550	Pass	0.043	<5%	10%	Pass	Pass
102002 A	CT0052 Saprolite	25	11.7	15	10	3,104	Pass	0.086	<5%	2%	Pass	Pass
102006 A	CT0053 Blanket	25	0.33	10	5	49	Fail	0.001	-	16%	Fail	Fail
102006 A	CT0053 Blanket	25	0.33	15	5	209	Pass	0.006	-	18%	Fail	Fail
102006 A	CT0053 Blanket	25	0.33	15	10	25	Fail	0.001	>25%	14%	Pass	Fail
102007 A	CT0054 Saprolite	25	1.05	15	10	519	Pass	0.014	5%	6%	Pass	Pass

Saprolite samples from trenches CT0051, CT0052 and CT0054 all passed the tests applying KCA criteria, with the capability to support 10 m lifts. The soil sample from trench CT0053 passed flow requirements but failed on slump with 15 kg/t cement addition at 5 m equivalent lift. The sample failed on both criteria at 10 m equivalent lift height with 15 kg/t cement addition.

13.1.7.6 Column Leach Tests

Column leach tests were conducted utilizing material crushed to 100% passing 25 mm. The material was agglomerated with cement prior to being loaded into the columns. During testing, the samples were leached for 22 to 35 days with dilute sodium cyanide solution.

The initial leach solution for each column test contained 1.0 g/L NaCN. The cyanide strength of the on-flow solution was maintained at a target level of 0.5 g/L NaCN. Protective alkalinity in the test was maintained by the initial addition of cement during column setup. The leach solution was monitored to ensure that the required pH range was maintained throughout testing.

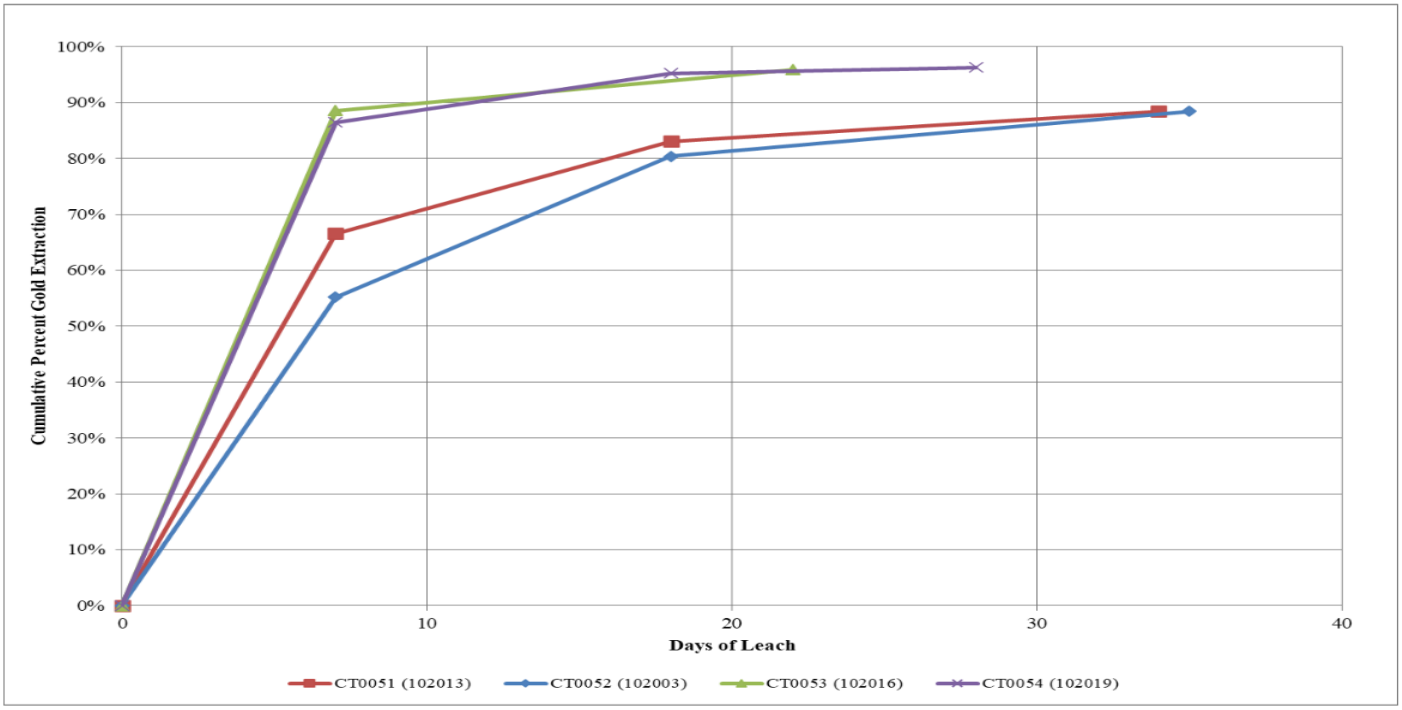
A peristaltic pump was used to maintain the solution flow at an equivalent to 10 to 12 L/h/m^2 solution application rate.

Pregnant leach solution (PLS) flows by gravity from each leach column and was collected in a PLS tank. PLS solution was checked each cycle for pH, NaCN, Au and Ag. Copper was checked periodically. The solution was then passed through a bottle of granular activated carbon over a period of 24 hours to extract the gold and silver in solution. After passing through the bottle of activated carbon, the solution was re-assayed for pH, NaCN, Au and Ag. Sodium cyanide was then added, if necessary, to maintain the solution at target concentration. The leach solution was then recycled to

the material for another 24-hour leach period. Two (2) batches of leach solution were used so that while one batch was applied to each column, the other was run through carbon.

The columns tests were conducted in plexiglass cylinders with a diameter of 200 mm and a height of 5 m, as shown in Figure 13-13.

Figure 13-13: Column Leach Test Results, Au



Source: KCA, 2025.

Table 13-40: Column Leach Test Results, Au

KCA Sample No.	Description	Calculated Head (g/t Au)	Tails Grade (g/t Au)	Leach Extraction (% Au)	Calc. Tail k_{80} (mm)	Days of Leach	NaCN Cons. (kg/t)	Addition Cement, (kg/t)
102001 A	Machichie, Saprolite	0.974	0.113	88%	9.0	34	0.39	15.12
102002 A	Machichie, Saprolite	0.822	0.095	88%	11.7	35	0.33	14.72
102006 A	Machichie, Soil	0.364	0.015	96%	0.3	22	0.49	14.59
102007 A	Machichie, Saprolite	0.754	0.028	96%	1.1	28	0.41	14.69

Table 13-41: Column Leach Test Results, Ag

KCA Sample No.	Description	Calculated Head (g/t Ag)	Tails Grade (g/t Ag)	Leach Extraction (% Ag)	Calc. Tail k_{80} (mm)	Days of Leach	NaCN Cons. (kg/t)	Addition Cement, (kg/t)
102001 A	Machichie, Saprolite	0.39	0.26	33%	9.0	34	0.39	15.12
102002 A	Machichie, Saprolite	0.48	0.26	46%	11.7	35	0.33	14.72
102006 A	Machichie, Soil	0.32	0.26	19%	0.3	22	0.49	14.59
102007 A	Machichie, Saprolite	0.41	0.26	36%	1.1	28	0.41	14.69

Gold extractions ranged from 88% to 96% based on calculated head grades, which ranged from 0.364 to 0.974 g/t. Sodium cyanide consumptions ranged from 0.33 to 0.49 kg/t. The samples utilized in leaching were agglomerated with 14.6 to 15.1 kg/t of cement.

Based upon KCA's experience with mostly clean non-reactive ores, cyanide consumption in production heaps would be only 25 to 33 percent of the laboratory column test consumptions.

Tests were run for between 22 days and 35 days, equivalent to solution-to-ore application rates of 2.87:1 and 3.46:1. These ratios are considered fairly rapid and align with the results from the 2024 KCA program.

The height of sample in each column was measured before and after leaching. This height was utilized to calculate the "slump" during leaching as well as to calculate the final apparent bulk density for the material in the column. The percent slump of a column gives an indication of potential permeability problems in production heaps. KCA typically classifies slumps larger than 10% as high.

The height, slump and final apparent bulk density from the column leach tests are presented in Table 13-27. None of the slumps measured are considered problematic based on KCA's criteria. The apparent bulk densities are low, largely influenced by the fine nature of the saprolite and blanket mineralization.

Table 13-42: Percent Slump and Final Apparent Bulk Density

KCA Sample No.	Description	Initial Height (m)	Final Height (m)	Slump (%)	Final Apparent Bulk Density (t/m^3)
102001 A	Machichie, Saprolite	2.292	2.251	1.8%	1.029
102002 A	Machichie, Saprolite	2.278	2.216	2.7%	1.118
102006 A	Machichie, Soil	2.232	2.224	0.4%	0.866
102007 A	Machichie, Saprolite	2.259	2.238	0.9%	0.854

At the conclusion of leaching, drain down tests were conducted on the column. The procedure utilized for the drain down test was as follows:

- A known volume of solution was continuously recycled through the column for 24 hours. The rate of application to the column was held between 10 and 12 L/h/m^2.
- Following the 24-hour solution application period, the bottom collection bucket (recycling/effluent) was removed.
- The solution draining from the column was collected over the next 96 hours. The drain down solution was weighed every 24 hours.

After allowing the columns to drain, the columns were unloaded and the tailings material from each separate column was prepared for assays and final moisture content.

Table 13-28 below shows the drain down information and residual moisture content for each composite. These values are used for design purposes, including heap leach water balances.

Table 13-43: Drain Down and Residual Moisture

KCA Sample No.	Description	Drain Down, L/t of water				Retained Solution, L/t
		24 hour	48 hour	72 hour	96 hour	
102001 A	Machichie, Saprolite	28.2	32.7	35.0	36.4	239.2
102002 A	Machichie, Saprolite	21.5	23.9	25.2	25.4	190.1
102006 A	Machichie, Soil	41.3	48.4	51.8	54.3	341.7
102007 A	Machichie, Saprolite	28.7	34.7	38.2	40.4	320.1

13.2 Metallurgical Variability

The metallurgical test work programs to date have included composite samples from each deposit, appropriate for studies up to the pre-feasibility project stage. Grade variability has been addressed to a limited extent. Future metallurgical test work programs will address spatial variability, metallurgical domains, as well as overall optimizations (recovery, consumption, permeability).

13.3 Deleterious Elements

The test work programs that have been developed for the Cuiú Cuiú Project have identified that mercury occur at deleterious concentrations, requiring mercury capture and abatement equipment in the ADR Plant. No other deleterious elements have been identified.

13.4 Recovery Estimates

Recovery estimates were developed based only on the KCA 2024 and 2025 testwork programs, considering a 60-day leaching period, which corresponds to a solution: ore ratio of 2.4:1, which is the actual design of the plan. A 1.0% discount was applied to the test recoveries to account for process losses, as shown in Table 13-44. Silver is not included in the mine plan and production schedules. Silver recovery models are not provided as a result.

Table 13-44: Final Recovery Estimated per Deposit and Lithology

Resource	Column Extraction Au, %	Process Losses Au, %	Discounted Recovery Au, %
MG Blanket	89.0	1.0	88.0
MG Saprolite	91.5	1.0	90.5
Central Blanket	92.0	1.0	91.0
Central Saprolite	73.5	1.0	72.5
Machichie	89.0	1.0	88.0

14 MINERAL RESOURCE ESTIMATES

14.1 Overview

The Cuiú Cuiú Project Mineral Resource Estimate comprises three deposits: Central, Machichie, and Moreira Gomez (MG). Resource estimates were updated at Central and Machichie based on new drilling information obtained in 2025. The Mineral Resource Estimate for the MG deposit was not updated as there was no new drilling or model changes. Mineral resources that are not mineral reserves do not have demonstrated economic viability.

Table 14-1: Summary of Mineral Resource Estimates (Effective date: July 23, 2025)

Cut-off Grade	Inferred Resources			Indicated Resources		
0.1 g/t Au	Tonnes	Grade (g/t)	Ounces Au	Tonnes	Grade (g/t)	Ounces Au
MG (4)	3,142,921	0.223	22,508	8,857,901	0.477	135,855
Central	941,636	0.448	13,558	3,364,519	0.520	56,204
Machichie	714,188	0.540	12.403	1,334,744	0.562	24,123

Note:

1. All estimates of Mineral Resources have been prepared in accordance with National Instrument 43-101 Standards of Disclosure for Mineral Projects (“NI 43-101”).
2. The effective date is July 23, 2025.
3. The independent and qualified persons (“QPs”) for the mineral resource estimates as defined by NI 43-101 is Walter A. Dzick (P.Geo.) Principal Geological Consultant of W. Dzick Geosconsultants (for Machichie and Central).
4. MG resources are quoted from 2024 NI 43-101 Technical Report & Pre-feasibility Study, effective date of October 9, 2024.
5. Central and Machichie resources were estimated within pit shells using $2600 gold price and a 0.1 g/t Au cut-off grade.
6. Mineral resources that are not mineral reserves do not have demonstrated economic viability.
7. This table does not include resources in the primary zone or in the PDM target.
8. Numbers may not add due to rounding.

14.2 Mineral Resource Estimate - Central

14.2.1 Introduction

W. Dzick Geoconsultants has estimated Indicated and Inferred Mineral Resources for the oxide zones of the Central deposit within the Cuiú Cuiú Project, in accordance with the CIM guidelines (CIM 2014) which have been adopted as part of NI 43-101. The Central deposit Mineral Resource Estimate presented in this report is effective as of July 23, 2025.

The Mineral Resource Estimate was developed by a combined effort of the Cabral geology staff and W. Dzick Geoconsultants in Vancouver, BC. The resource model was created using Resource Modeling Solutions Platform (RMSP) software.

This section was prepared by W. Dzick the Qualified Person representing W. Dzick Geoconsultants, in Vancouver, BC, and a Registered Professional with the EGBC. Mr. Dzick has been involved in all aspects of gold resource modeling database management, geological modeling, resource estimation, mining production and reconciliation for more than 30 years. He has the necessary experience to be the Qualified Person for the Central deposit resource estimates. The results of this model update were presented by W. Dzick Geoconsultants to Cabral Gold during web meetings. The QP visited the Cuiú Cuiú Project site from May 29 to June 2, 2025.

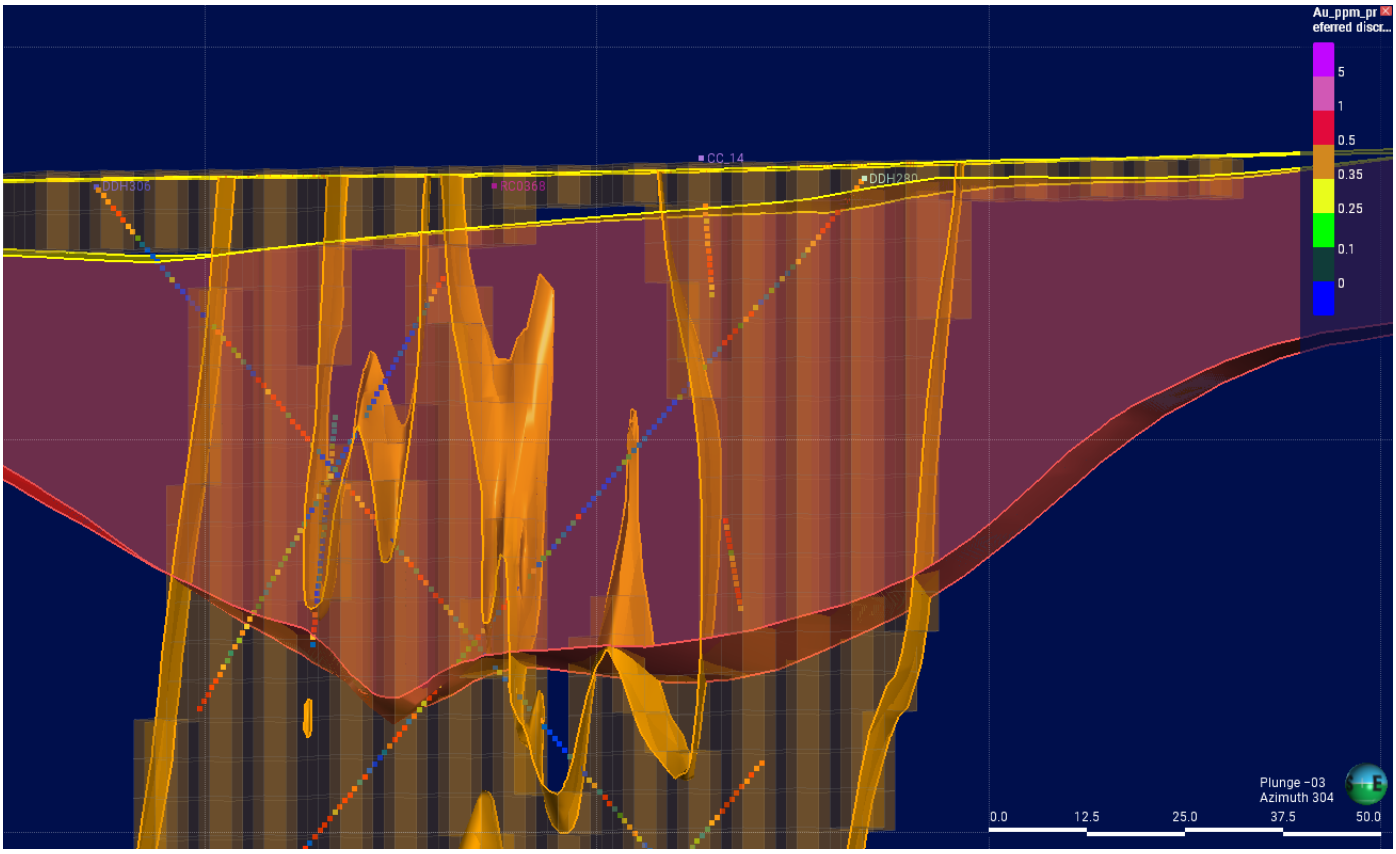
In the opinion of this QP, the knowledge of deposit settings, lithology, structural features, and the resource estimation methods employed are sufficient to support pre-feasibility mining studies.

14.2.2 Interpretation

The geological interpretation used in the resource model was developed by Cabral Gold. Diamond (DD) drilling and reverse circulation (RC) drilling data formed the basis for interpretation of geological and gold mineralization zones. Wireframes were generated in Leapfrog software.

The geological features that affect mineralization at Central, such as alteration features, structural features, quartz and sulphide concentration impact on mineralization, and the importance of breccia zones, are well documented in reports. However, the current model only uses oxidation boundaries, in the form of contacts between the Blanket and saprolites, as controls to mineralization. The saprolites end where the Primary, unoxidized, mineralization begins at depth. Gold mineralization in the saprolite was defined by a solid generated using a cut-off of 0.1 g/t. The Blanket domain was not limited by a gold shape. Mineralization in the Saprolite domain is subvertical whereas mineralization in the Blanket domain tends to be more flat lying. Figure 14-1 shows a cross-section displaying the Blanket in yellow, the saprolite in red, composites, and orange blocks displaying the 0.1 g/t gold shape limiting the estimation within the saprolites.

Figure 14-1: Cross-section Showing the Mineralized 0.1 g/t Gold Shape, Blanket (yellow) and Saprolite (red)



Source: W. Dzick Geoconsultants, 2025.

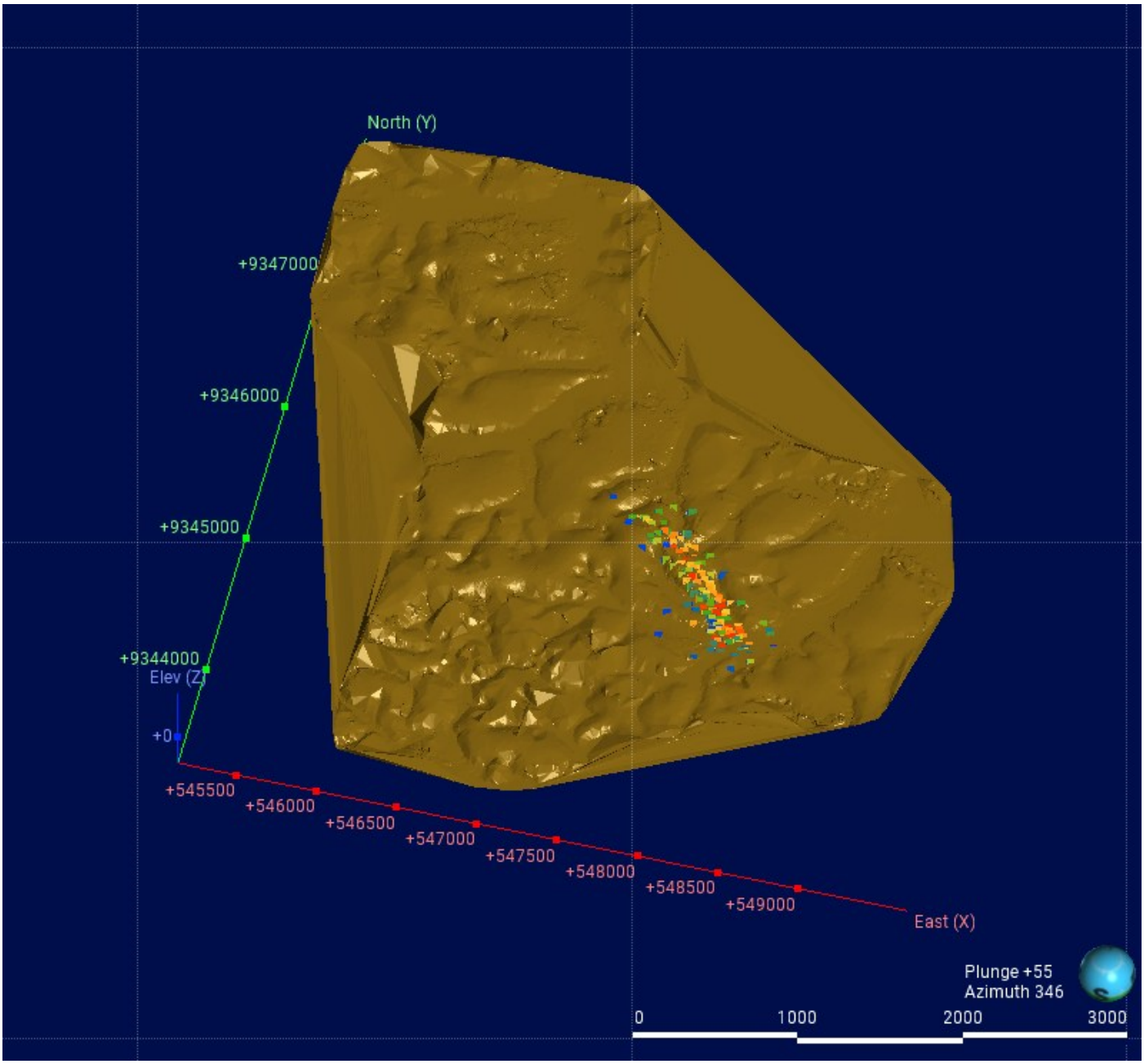
14.2.3 Triangulation

The triangulation may be divided into closed wireframes representing mineralized zones and surface models (representing topography). All digital files were provided by Cabral Gold.

14.2.3.1 Topography

The topographic surface provided by Cabral Gold is illustrated in Figure 14-2.

Figure 14-2: Surface Digital Topographic Base – 3D View for Central

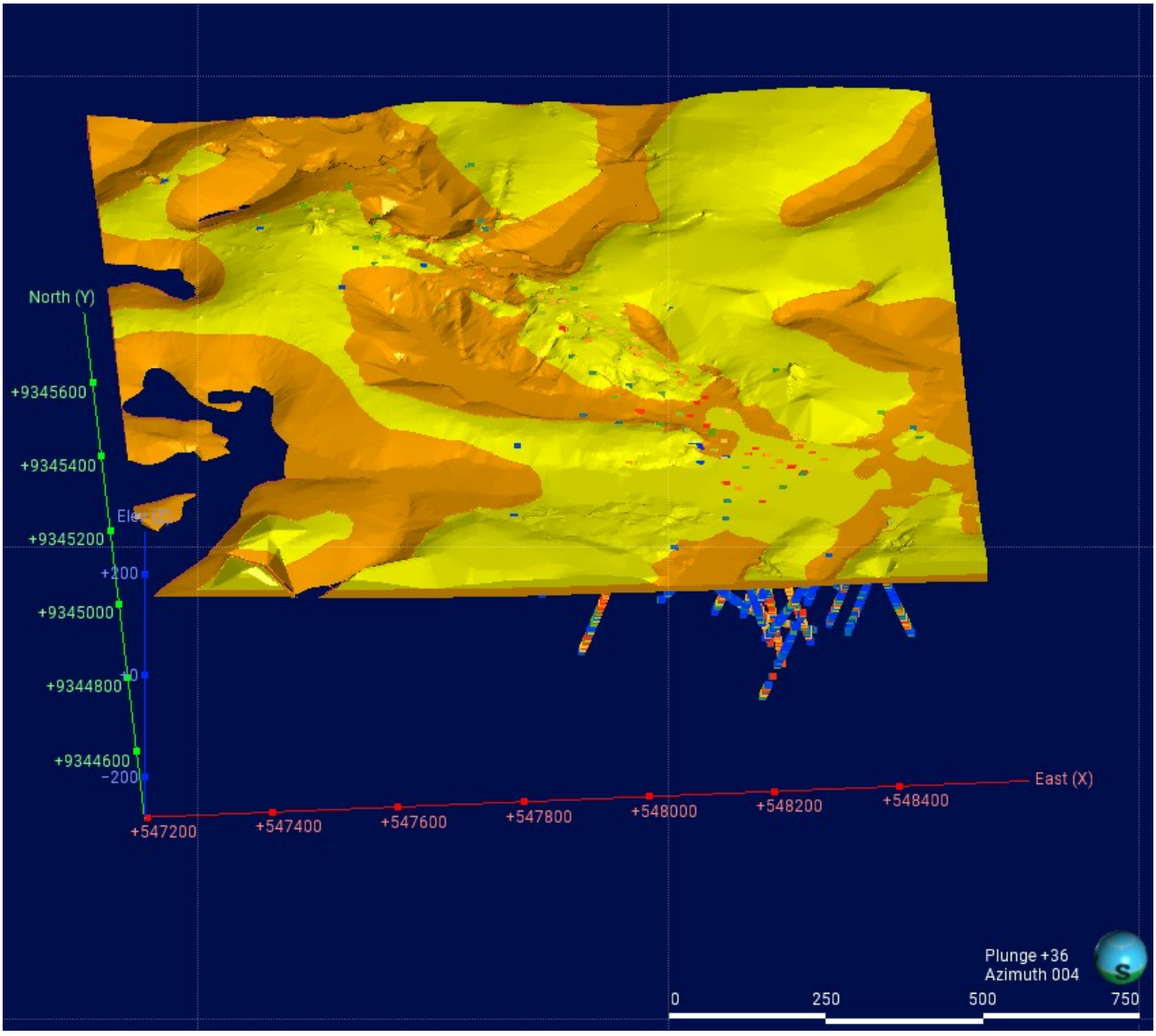


Source: W. Dzick Geoconsultants, 2025.

14.2.3.2 Domain Wireframes

Wireframes for the Blanket, saprolites, and 0.1 g/t gold envelope were provided by Cabral Gold. Figure 14.2 shows the extent of the modeling zone, displaying Blanket (yellow) and saprolite (orange). The drill hole surface expressions are also noticeable.

Figure 14-3: Blanket (Yellow) and Saprolite (orange) Surface Expression

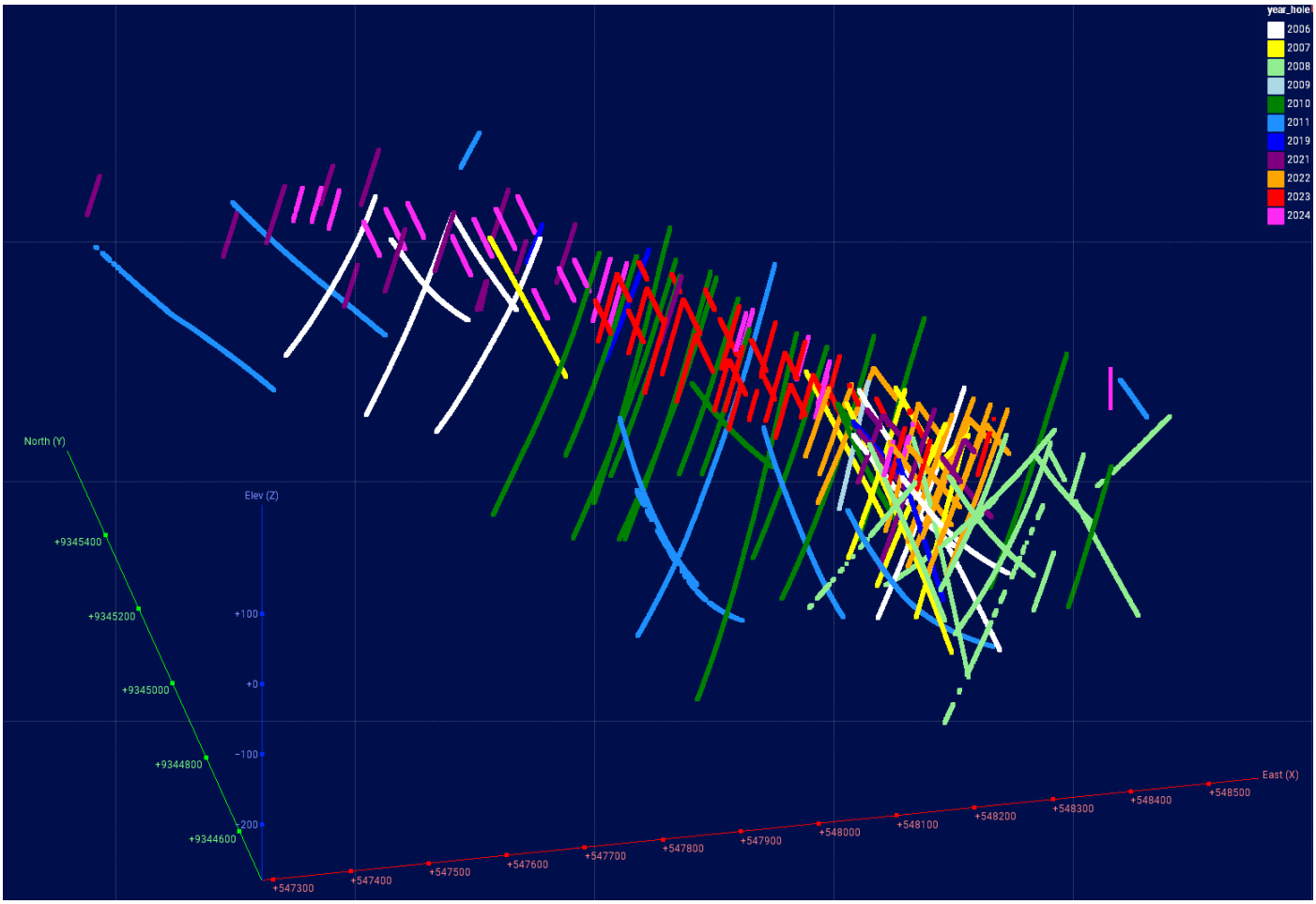


Source: W. Dzick Geoconsultants, 2025.

14.2.4 Data Selection

Figure 14-4 shows the year drill holes were drilled. Holes drilled in 2024 are represented in magenta and holes drilled in 2023 are represented in red.

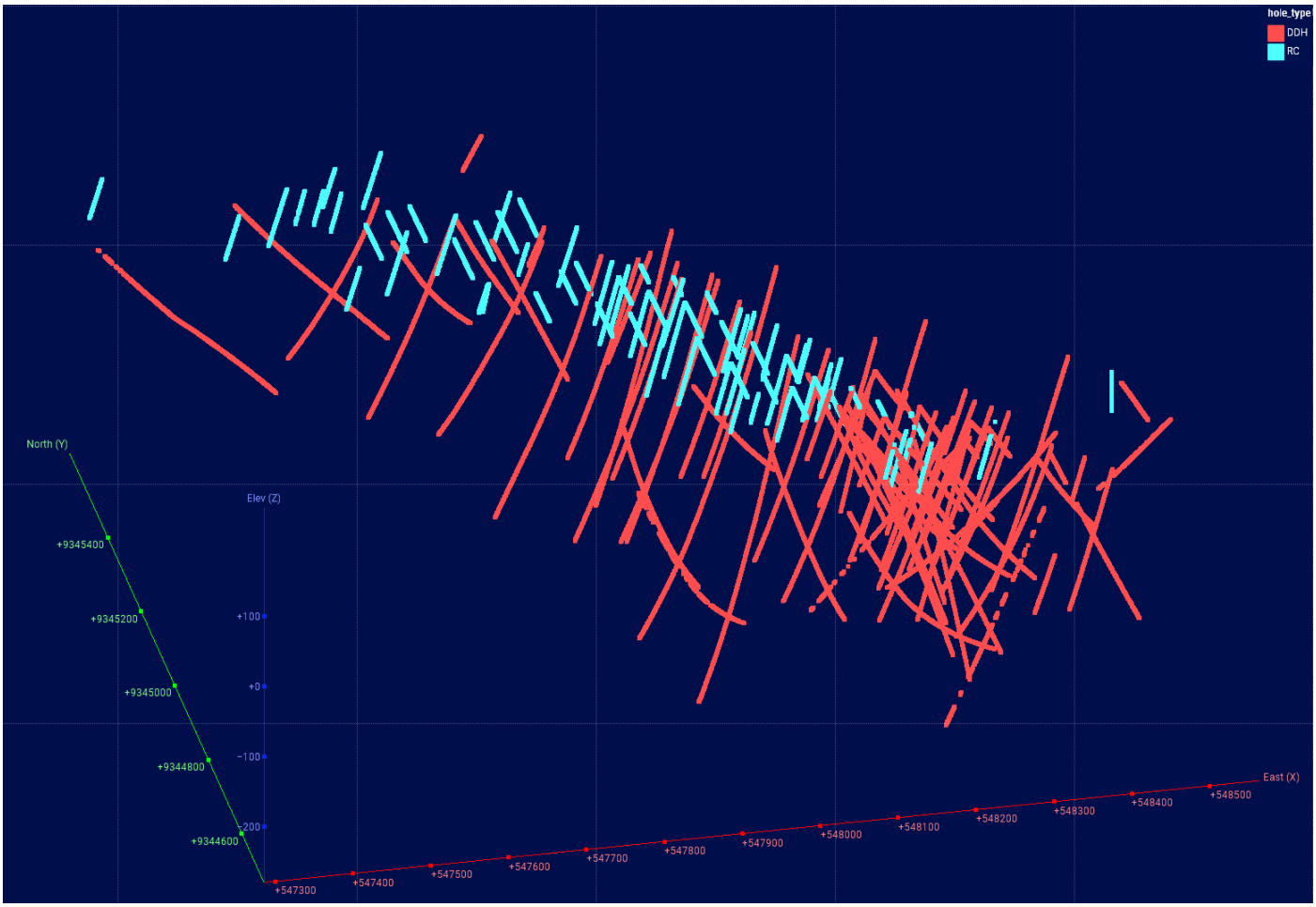
Figure 14-4: Drill Holes Color Coded by Year Drilled



Source: W. Dzick Geoconsultants, 2025.

A total of 162 drill holes were used to estimate Central, consisting of RC and DDH drill holes. Figure 14-5 shows the drill hole types. Core holes (DDH) are represented in red and reverse circulation (RC) holes are represented in cyan. All 2024 drill holes were RC holes targeting Central North and Central deposits.

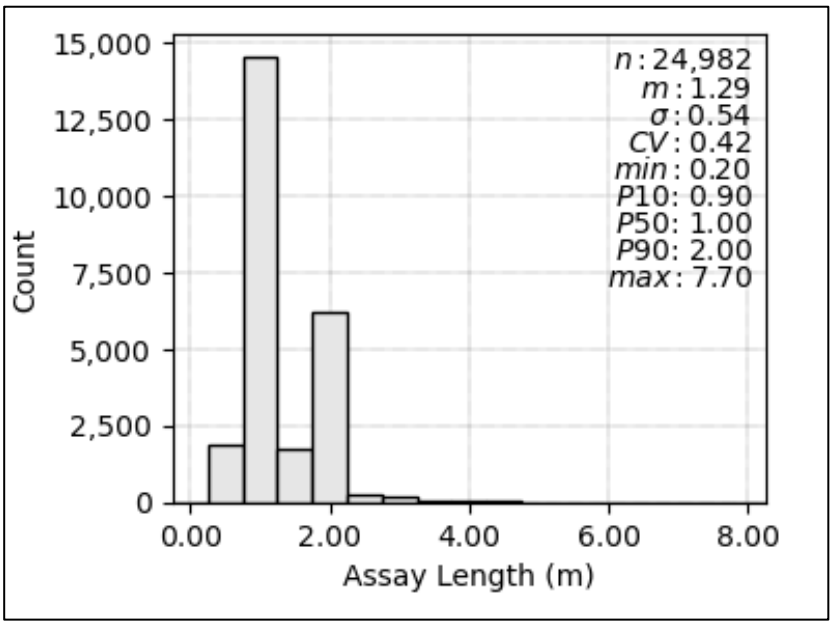
Figure 14-5: Drill Hole Types: Red – Diamond Drill Hole (DDH); Cyan – Reverse Circulation (RC)



Source: W. Dzick Geoconsultants, 2025.

To ensure that the samples used for interpolation had the same weight in terms of size, an analysis was completed to determine the size of the composites. Most of the Central assays have lengths with the mean of 1.29 m. Analysis of the mineralized zone samples indicates that approximately 80% of the samples have a length of 1 m. Figure 14.9 shows the distribution of the assay lengths.

Figure 14-6: Central Assay Length Histogram (m)



Source: W. Dzick Geoconsultants, 2025.

Composites were generated based on the database frozen as of April 8, 2025. The nominal composite length was 1 m. Composite intervals started at the collar of the drill hole and continued downwards, in the direction of drilling. Each composite was tagged with the estimation domain in which it occurs.

14.2.5 Statistical Analysis

Exploratory data analysis (EDA) is the application of statistical tools to elucidate characteristics of the data such as the shape of the relative frequency distribution and cumulative frequency distributions, as shown on histograms and probability plots, and basic statistics such as the mean, standard deviation, coefficient of variation, etc.

The coefficient of variation (CV) is the standard deviation divided by the mean. This is a useful tool to measure the dispersion of a distribution. A coefficient of variation which is less than 1 generally depicts syngenetic deposits. A CV of 1 to 2 is typical of hydrothermal processes. Presence of “bonanza” high-grade shoots, veins, etc. may cause the CV to reach 3. Where the coefficient of variation is greater than 3, mixture of two or more distinct ore-forming processes (or mineralization events) can often be identified.

Table 14-2 lists the univariate statistics for Au_ppm_preferred, the gold variable used in the resource model. The average gold value in all composites is 0.70 g/t. The coefficient of variation (CV) is very high at 4.01. The highest composite has gold at 107.88 g/t.

Table 14-2: Gold Global Univariate Statistics

Au_ppm_preffered	
Count	8,515
Mean	0.70
Stdev	2.80
Cv	4.01
Min	0.00
P10	0.03
P50	0.22
P90	1.33
max	107.88

Two estimation domains were considered for resource estimation on the oxide portion of the Central deposit:

- Unconformable sub-horizontal blanket mineralization ("Blanket")
- In situ weathered and saprolitized basement rocks ("Saprolite")

Table 14-3 shows the univariate statistics by domain. Blanket domain 100, saprolite domain 200.

Table 14-3: Gold Univariate Statistics by Domain (g/t)

	100	200
Count	659	7,451
Mean	0.27	0.26
Stdev	0.43	1.42
Cv	1.63	5.47
min	0.00	0.00
P10	0.01	0.00
P50	0.13	0.04
P90	0.61	0.49
max	4.05	63.10

14.2.5.1 Outlier Treatment

When frequency distributions are skewed, a small number of high-grade samples occur in the tail of the distribution. These samples are often scattered through the deposit and are not restricted to spatially identifiable or continuous zones. Grade estimation techniques that use linear interpolation (weighted average) techniques can be adversely affected by high sample values. When these methods are used, the inclusion of a high-grade sample will have a greater

influence on the estimate than a lower-grade sample. This can lead to an over projection of grade into the resource model, especially where there are relatively few sample data to support the block being estimated. In such circumstances, W. Dzick Geoconsultants considers it prudent to restrict the influence of the higher-grade material to avoid a local bias in the resource model. Capping is one technique that can be used to restrict the influence of high-grade values in the resource model.

Each composite was tagged with the estimation domain in which it occurs. Estimation domains were defined based on rock type/alteration and a 0.1 g/t gold envelope used to constrain estimates in the saprolite. Blanket mineralization was not limited by the gold envelope.

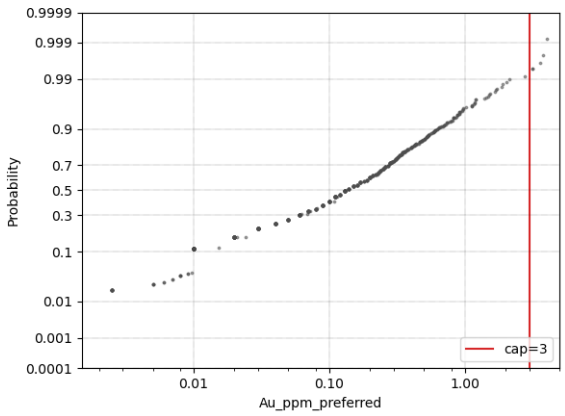
Domain codes were assigned to the domains and will be found throughout this report. The domains and corresponding codes are:

- Blanket – Domain 100
- Saprolites – Domain 200

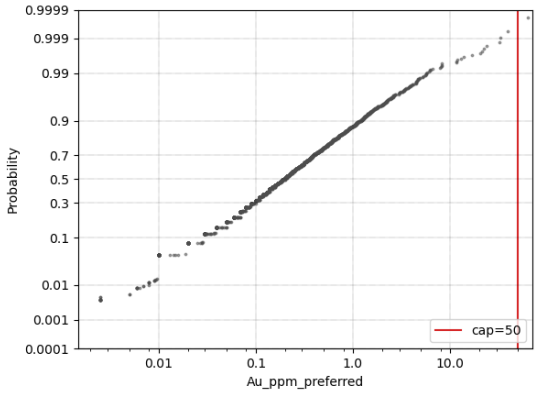
Top cuts were defined using histograms and probability plots in each individual gold zone. Figure 14-7 shows the capping thresholds by domain: domain 100 (Blanket) caped at 3 g/t and domain 200 (saprolite) capped at 50 g/t.

Figure 14-7: Gold Capping by Domain

Domain 100



Domain 100



Domain 200

Domain 200

Source: W. Dzick Geoconsultants, 2025.

Metal reduction by capping was estimated by comparing the capped resource model to the uncapped model for gold estimates. The metal reduced in the Indicated resources is 0.75%, in the Inferred resources is 0.14%, and the Indicated and Inferred resources combined is 0.49%.

14.2.6 Geostatistical Analysis

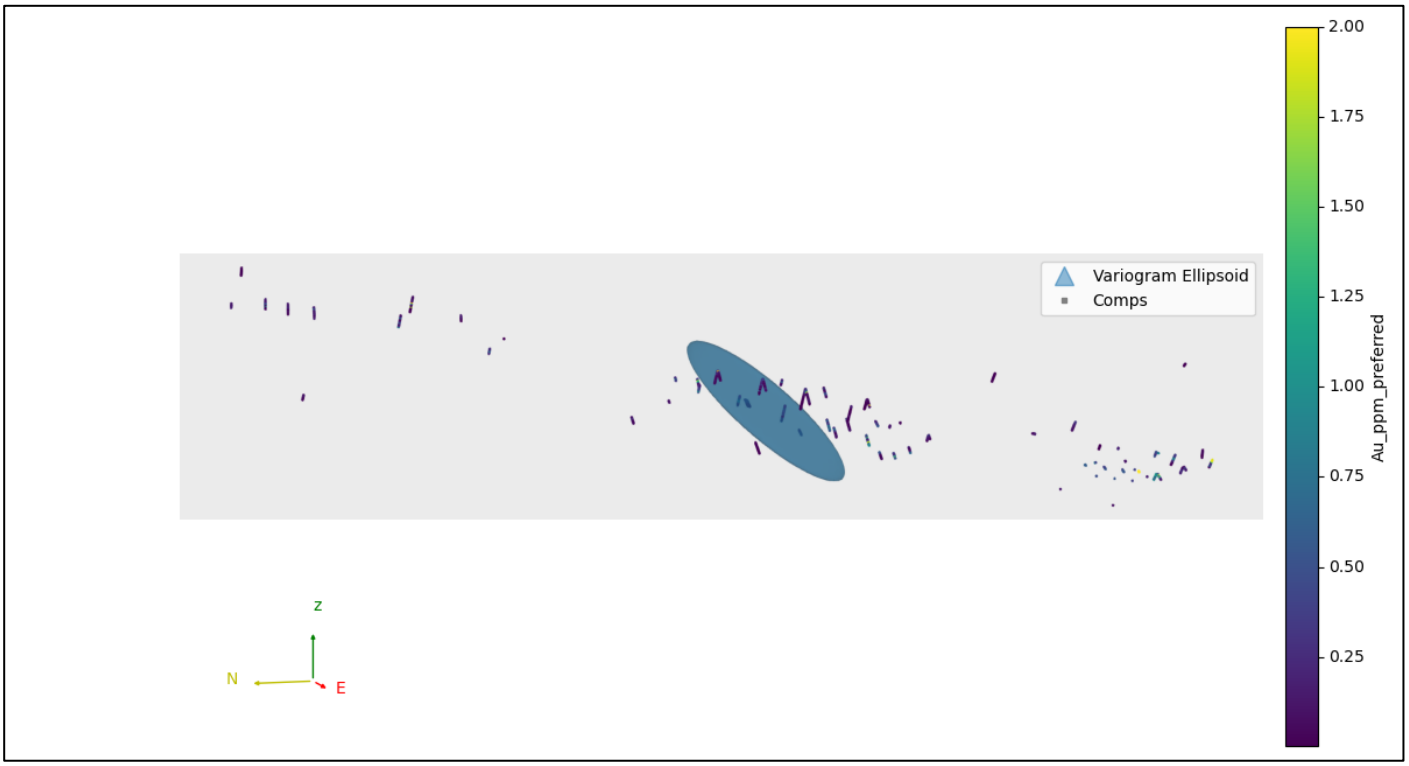
Ordinary kriging (OK) was used to model gold and inverse distance squared (ID2) was used to model specific gravity.

14.2.6.1 Spatial Analyses – Gold Variography

Gold variograms were ran for each domain. The search ellipsoid for domain 100 is shown in Figure 14-8. The fit variograms for domain 100 are shown in Source: W. Dzick Geoconsultants, 2025.

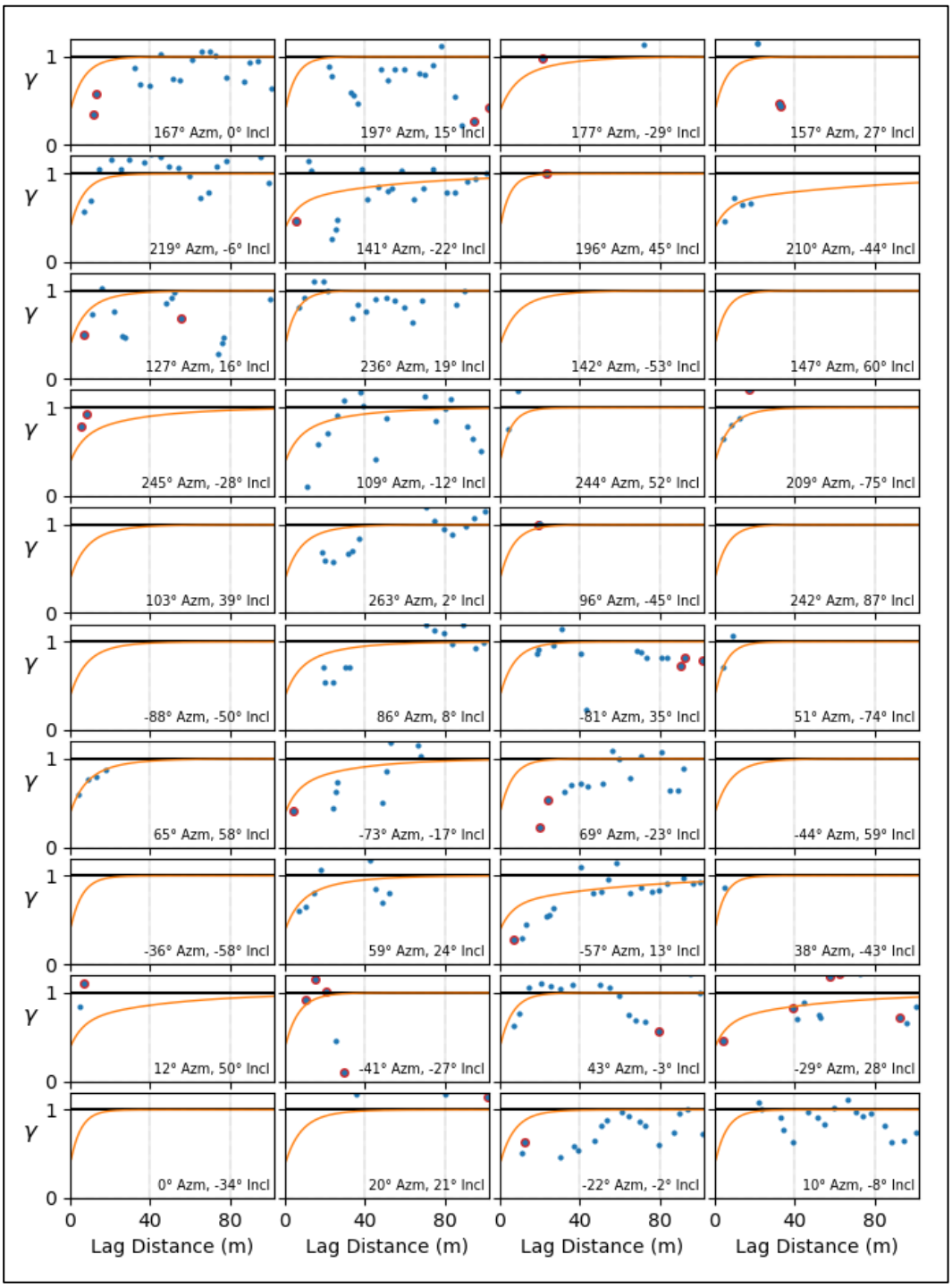
Figure 14-9. Although the variograms are not well behaved, the model appears to fit the current geological understanding for strike and dip for this domain as confirmed by the search ellipsoid. The search is relatively flat along the main plan of continuity of the Blanket mineralization.

Figure 14-8: Domain 100 Search Ellipsoid



Source: W. Dzick Geoconsultants, 2025.

Figure 14-9: Gold 1m Composite Fit Variograms, Domain 100



Source: W. Dzick Geoconsultants, 2025.

Variogram parameters for domain 100 are listed in Table 14-3, where Angle1, Angle2, Angle3 correspond to the rotation angles of the vertical (Z), minor (X), and major (Y) orthogonal axes, respectively.

The rotation angles 1, 2, and 3 refer to the rotation convention used by the software used to develop the resource model (Resource Modeling Solutions Platform – RMSP). RMSP rotation convention for representing search ellipsoids and other orientations in 3D considers three rotations about the vertical (Z), minor (X), and major (Y) orthogonal axes, in this order.

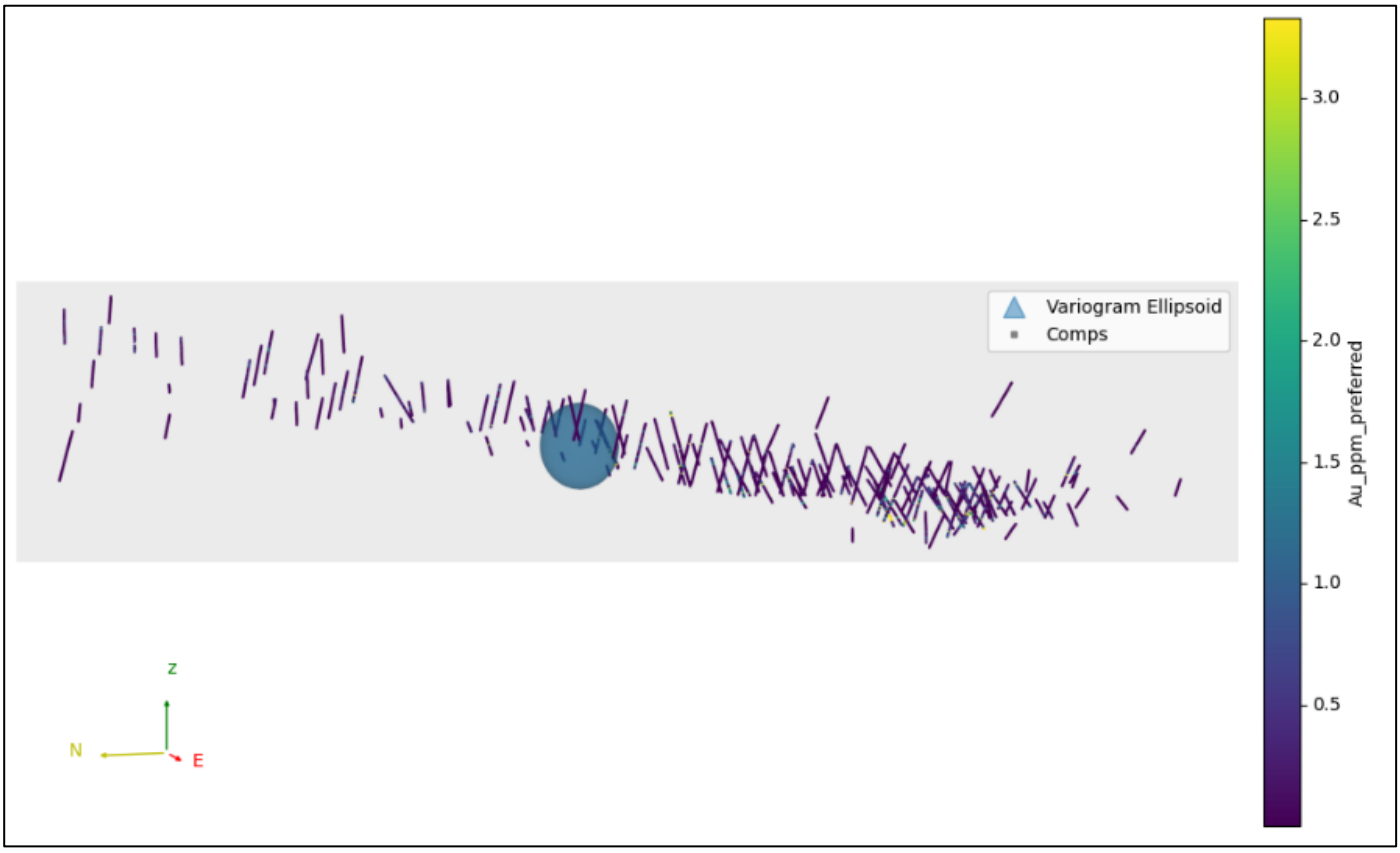
Table 14-4: Gold Variogram Parameters for Domain 100

Fitted Variogram Model for Vein 100:			
	Nugget	Structure 1	Structure 2
Contribution (g/t)	0.383	0.294	0.323
Model Shape		exponential	exponential
Angle 1		190.8	190.8
Angle 2		-44.9	-44.9
Angle 3		8.1	8.1
Range 1		19.2	300.0
Range 2		18.2	194.0
Range 3		15.0	15.0

Source: W. Dzick Geoconsultants, 2025.

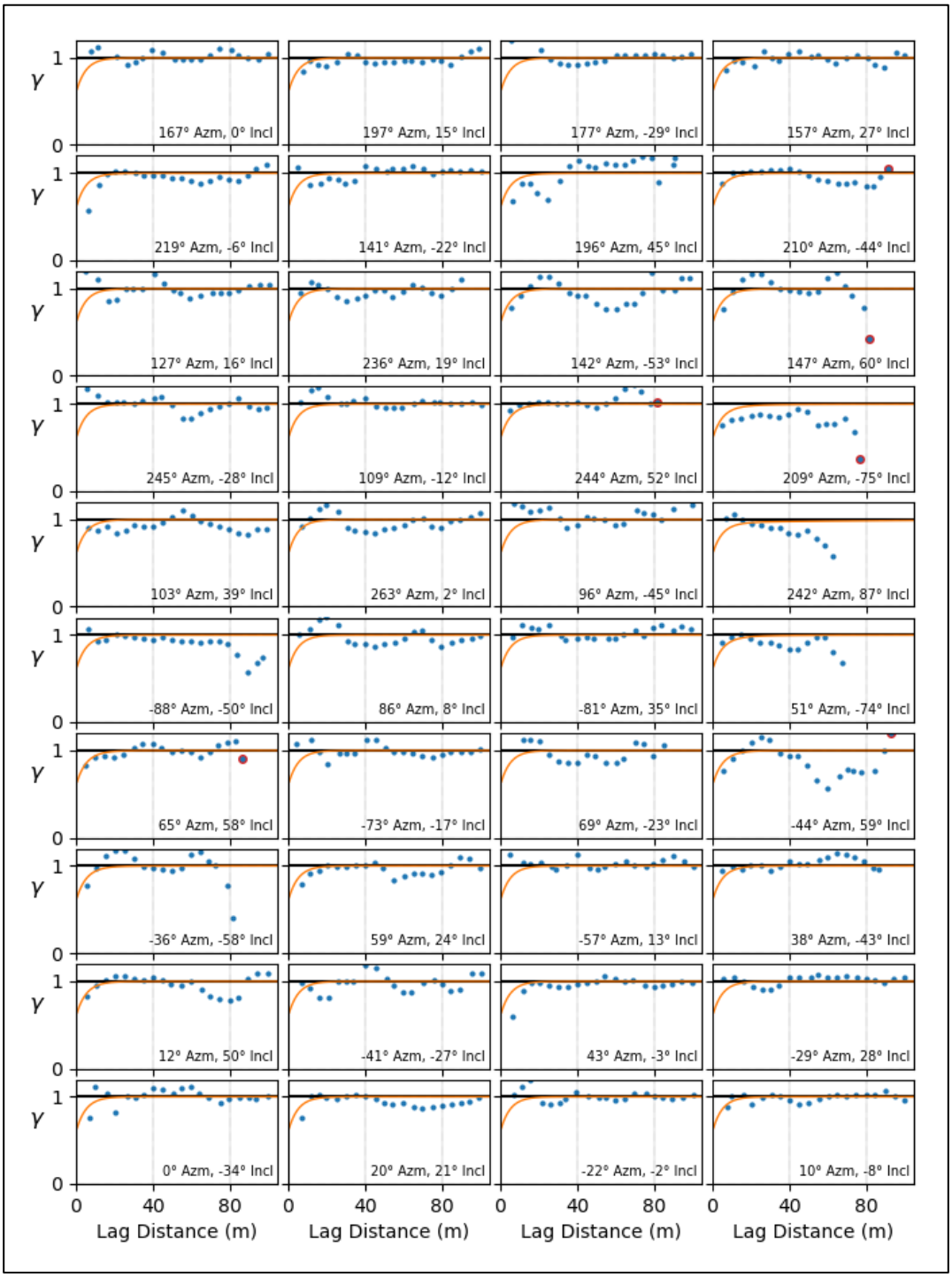
Domain 200 shows better variograms. Figure 14-13 shows the domain 200 search ellipsoid as derived by the gold variograms. The search ellipsoid has a sharp dip, almost isotropic search along the main dip direction, and narrow search across domain 200. The search ellipsoid resembles a disc turned on its side. The fit variograms for domain 200 are shown in Table 14-3. Table 14-4 shows the variogram parameters for domain 200.

Figure 14-10: Domain 200 Search Ellipsoid



Source: W. Dzick Geoconsultants, 2025.

Figure 14-11: Gold 1 m Composite Fit Variograms, Domain 200



Source: W. Dzick Geoconsultants, 2025.

Table 14-5: Gold Variogram Parameters for Domain 200

Fitted Variogram Model for Vein 200:			
	Nugget	Structure 1	Structure 2
Contribution	0.600	0.362	0.038
Model Shape		exponential	exponential
Angle 1		19.3	19.3
Angle 2		-89.2	-89.2
Angle 3		-6.8	-6.8
Range 1		15.0	300.0
Range 2		15.0	15.0
Range 3		15.0	15.0

14.2.6.2 Grade Interpolation and Mineral Resource Classification

14.2.6.2.1 Surface Features

The Central deposit region is one of the most affected regions by artisanal mining in the Cuiú Cuiú project area. All drainage basins have been worked over multiple episodes, with artisanal workers extracting near-surface, free-digging mineralized basement saprolite, and Blanket mineralization. Good grade control practices will be required to ensure that mine plans are achieved.

14.2.6.2.2 Geological Model

Geological information available for the resource model includes the extent of the Blanket and saprolite domains and 0.1 g/t gold envelope used to delimit mineralization within the saprolite domain. Drill hole logging exists about other geological features, but three-dimensional models of these features are not currently available. Geological modeling efforts are planned to incorporate this information into the resource model.

14.2.7 Block Model Construction

14.2.7.1 Model Extents

The Central resource model origin and extents are listed in Table 14-6. The model origin is based on block centroids. The model is not rotated. The model was sub-blocked and smaller blocks varying in size from 1, 2, 3, 4, and 5 m sides were created. The final model was re-blocked to 5x5x5 m.

Table 14-6: Central Resource Model Origin - Centroid

	No. Blocks	Centroid	Block Size	Subgrid Sizes
Easting	269	547,197.50	5	1, 2, 3, 4, 5 m
Northing	260	9,344,423.50	5	1, 2, 3, 4, 5 m
Elevation	105	-277.5	5	1, 2, 3, 4, 5 m

14.2.7.2 Model Coding

The main variables coded in the resource model are:

- Au_ppm_preferred_OK – ordinary kriged gold model, capped
- indinf - indicated/inferred – resource classification
  - Indicated blocks need at least 3 drill holes, 3 composites, within 35 m of the block being estimated
    - Indicated Code 2
  - Inferred blocks need at least 2 drill holes, 2 composites, within 75 m of the block being estimated
    - Inferred Code 3
- group - estimation domains
  - Blanket Code 100
  - Saprolite Code 200
- sg_dry_ID2 – specific gravity (SG) estimated using inverse of the distance squared (ID2) estimation method.

14.2.7.3 Block Model Grade Estimation

Gold grades were estimated using the parameters listed in Table 14-7 on a sub-blocked model. Angle1, Angle2, Angle3 correspond to the rotation angles of the vertical (Z), minor (X), and major (Y) orthogonal axes, respectively.

Estimates on subblocks are made based on parent block size estimates. Contact between domains is hard.

Table 14-7: Gold Ordinary Kriging Parameters

Domains			
		100	**200**
Angles	Vertical Z	190	20
	Minor X	-45	-90
	Major Y	8	-7
Ranges	Y	200	150
	X	200	50
	Z	100	75
Min. Comps	-	5	5
Max. Comps	-	50	50
Max. Comps DHID	-	5	5

14.6.2.3.4 Estimation Domains

The Central deposit is composed of three distinct gold-bearing units, from top to bottom:

- Unconformable sub-horizontal Blanket mineralization
- In-situ weathered and saprolitized basement rocks
- Unweathered basement mineralized rocks that are highly altered and brecciated

The oxidized portion of the Central deposit is the Blanket and the saprolite domains. The contact between the blanket and the saprolite has been modeled in three dimensions. The lower portion of the saprolite contact, with the intrusive rocks, was also modeled. This portion of the report deals with oxidized Blanket and saprolite zones.

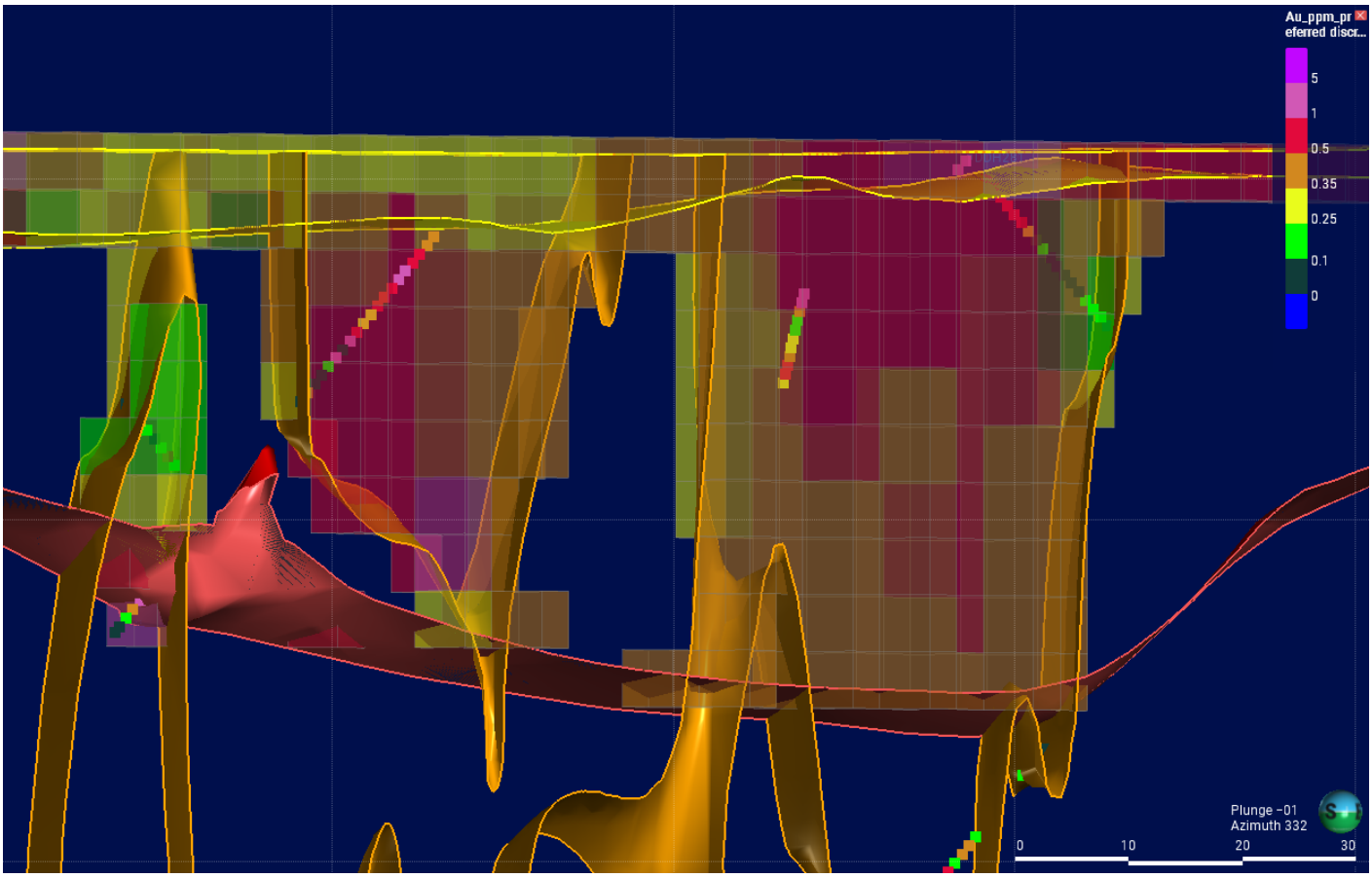
14.2.7.4 Interpolation Methods

Ordinary kriging (OK) was used to estimate gold. Inverse distance squared (ID2) was used to estimate specific gravity. The model was sub-blocked and smaller blocks varying in size from 1, 2, 3, 4, and 5 m sides were created. The final model was re-blocked to 5x5x5 m. Nearest neighbor (NN) estimates were used to validate the model.

14.2.7.5 Search Strategy

Search orientation was based on variography. Blanket has the same search distance for the X and Y planes (200 m), but 100 m in the Z direction. Saprolites have the greatest continuity along the Y direction (150 m), but very short ranges in the X and Z directions, 50 and 75 m, respectively (Table 14-7). Figure 14-12 shows a cross-section through Blanket (yellow), saprolite (red), gold block model, and composites.

Figure 14-12: Cross-section Showing Gold Model, Composites, and Domains



Source: W. Dzick Geoconsultants, 2025.

14.2.8 Model Validation

The kriged gold model was checked for global and local bias. Global bias is a systematic error that affects the entire dataset or model, leading to an overestimation or underestimation of the resource. It is the difference between the expected (mean) value of the resource estimate and the true value of the resource. Global bias may be caused by several factors including sampling bias, data processing, estimation method used, and model assumptions.

Local bias is check by swath plots, where we compare the nearest neighbor to the kriged estimate. The purpose is to interrogate the grade estimate on a localized basis and determine how robust the estimation plan is to local variations in composite sample location, quantity of composite samples, or grade. The block model is divided into easting, northing, and elevation “swaths” orthogonal to the coordinate system. The average grade of both the kriged and the nearest neighbor estimates in each swath, and in each direction is then calculated. The composite grades used in the estimate are also compared to the estimated grades.

14.2.8.1 Global Bias

Global bias is calculated by comparing the kriged estimates, by domain, to a simple NN estimate. The NN estimate is a proxy for the declustered composites used for kriging. The choice of composite length used in the NN calculation is important and affects global bias results. Global bias greater than 5% is considered elevated.

Table 14-8 lists global bias checks for Au_ppm_preferred for Indicated resources only. Validation is usually carried out using the blocks estimated with higher confidence as defined by the resource classification. Indicated resources is where interpolation of grades occurs, as opposed to the areas classified as Inferred, which usually have grade extrapolation.

Domain 100 shows no global bias. Domain 200 shows -2% global bias showing that the kriged gold grades in the Indicated resources are on average -2% lower grade compared to the NN model. All domains are below recommended threshold of 5%.

Table 14-8: Global Bias by Domains

	NN		OK		Difference NN/OK	
	100	200	100	200	100	200
count	15,608	25,280	15,608	25,280		
mean	0.29	0.52	0.29	0.51	0.00%	-1.96%
stdev	0.25	1.08	0.16	0.41		
cv	0.86	2.06	0.55	0.81		
min	0	0.01	0.03	0.08		
P10	0.03	0.07	0.14	0.22		
P50	0.22	0.27	0.25	0.42		
P90	0.66	1.13	0.51	0.83		
max	1	15	2.04	16.19		

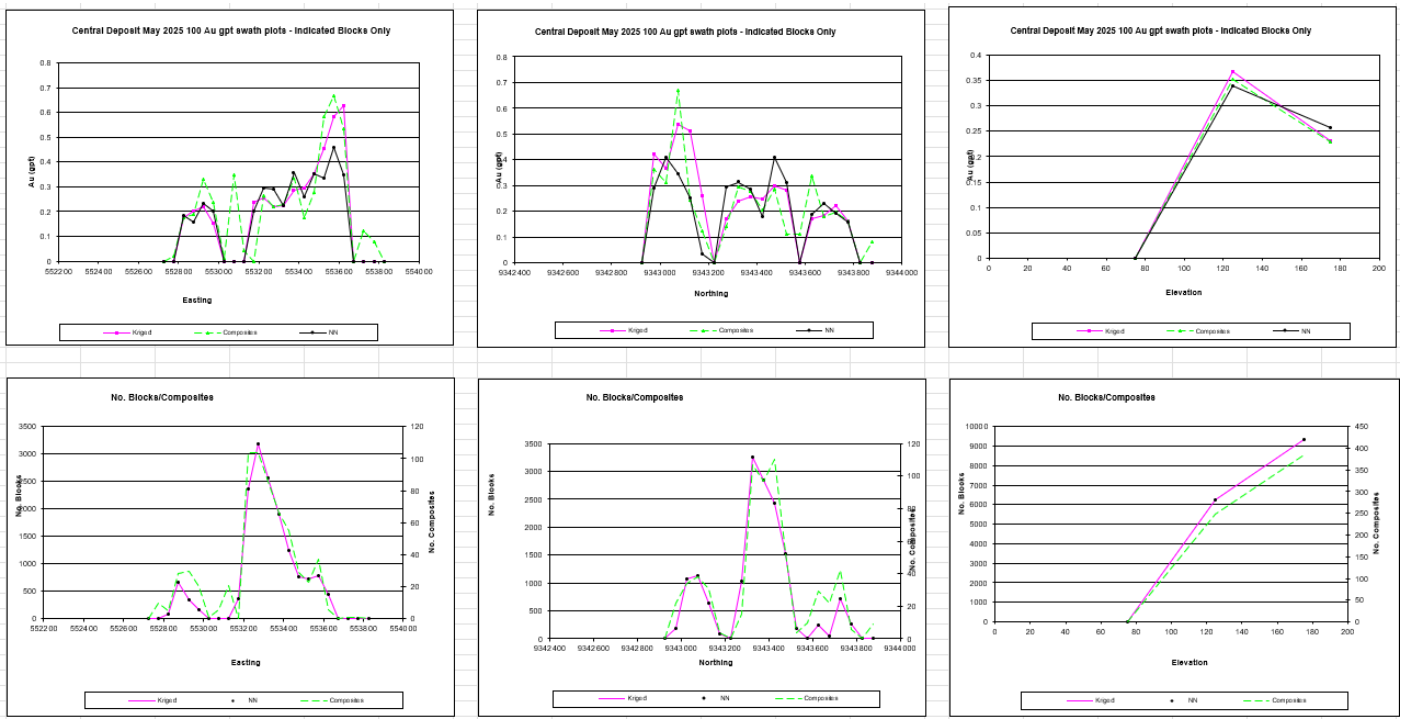
14.2.8.2 Swath Plots – Local Bias Check

Figure 14-13 and Source: W. Dzick Geoconsultants, 2025.

Figure 14-14 show gold swath plots. Each plot shows swaths for easting, northing, and elevation in the upper three plots comparing grade estimates. Each chart shows kriged values in magenta, nearest neighbor estimates in black, and composites in green. Block estimates are for Indicated blocks only. The bottom charts show the number of blocks and composites in each swath direction.

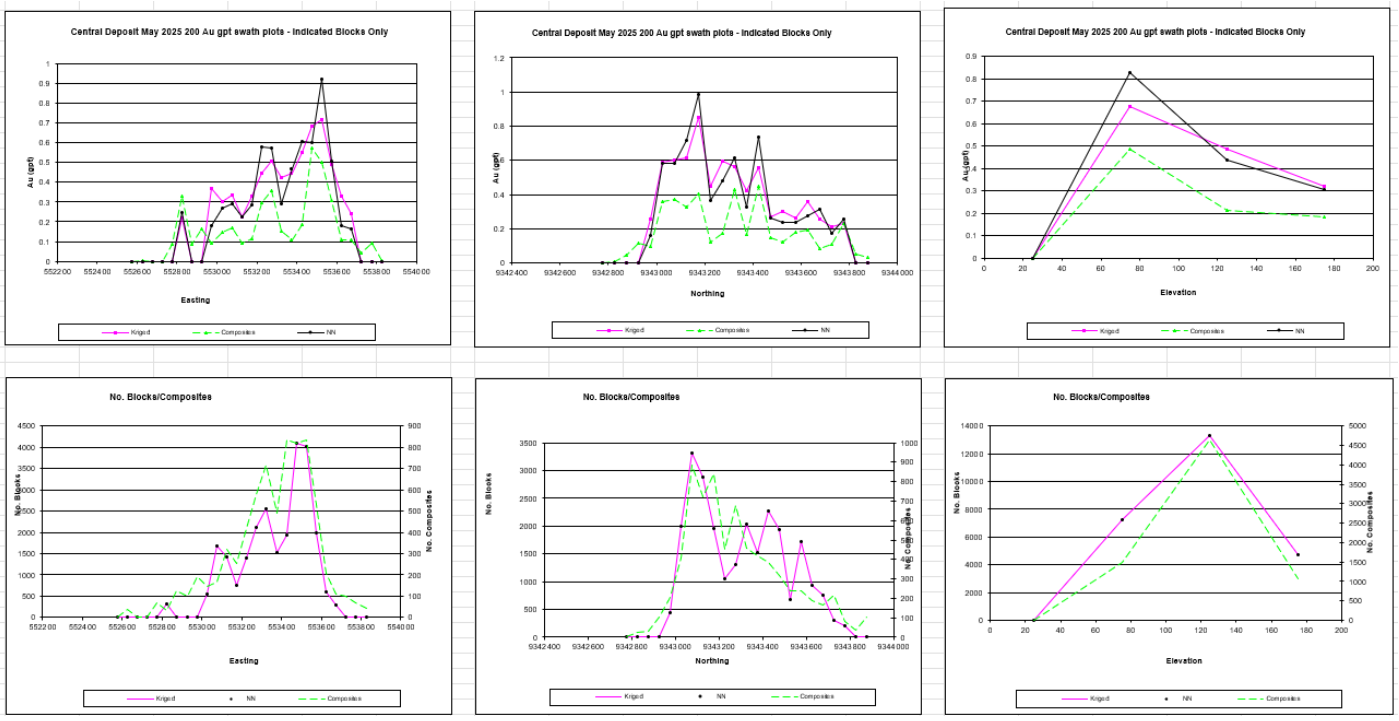
Domain 100 shows reasonable correspondence between kriged and nearest neighbor estimates for the easting, except for when there is a relatively small number of composites and blocks being estimated (553,600). Similar situation is seen in the northing swaths. Domain 200 shows no signs of strong local bias in the swath plots.

Figure 14-13: Central Domain 100 Swath plots for Gold Estimates



Source: W. Dzick Geoconsultants, 2025.

Figure 14-14: Central Domain 200 Swath Plots for Gold Estimates



Source: W. Dzick Geoconsultants, 2025.

For a block to be classified as Indicated it must be estimated using data from at least three drill holes, with a minimum of three individual composites, and located within a maximum distance of 35 meters from the informing data. This approach ensures that there is sufficient spatial data to demonstrate continuity and minimize uncertainty, with the requirement of three holes being particularly important for confirming the persistence of mineralization across multiple locations.

Blocks estimated using two drill holes and two composites, and within 75 meters of the drill holes, are classified as Inferred. This lower threshold reflects greater uncertainty and a reduced level of confidence in geological continuity. The distinction between Indicated and Inferred resources is thus closely linked to the density of sampling and the ability to demonstrate continuity, with the use of three drill holes serving as a critical criterion for elevating resource confidence from Inferred to Indicated. Table 14-9 lists the resource classification criteria.

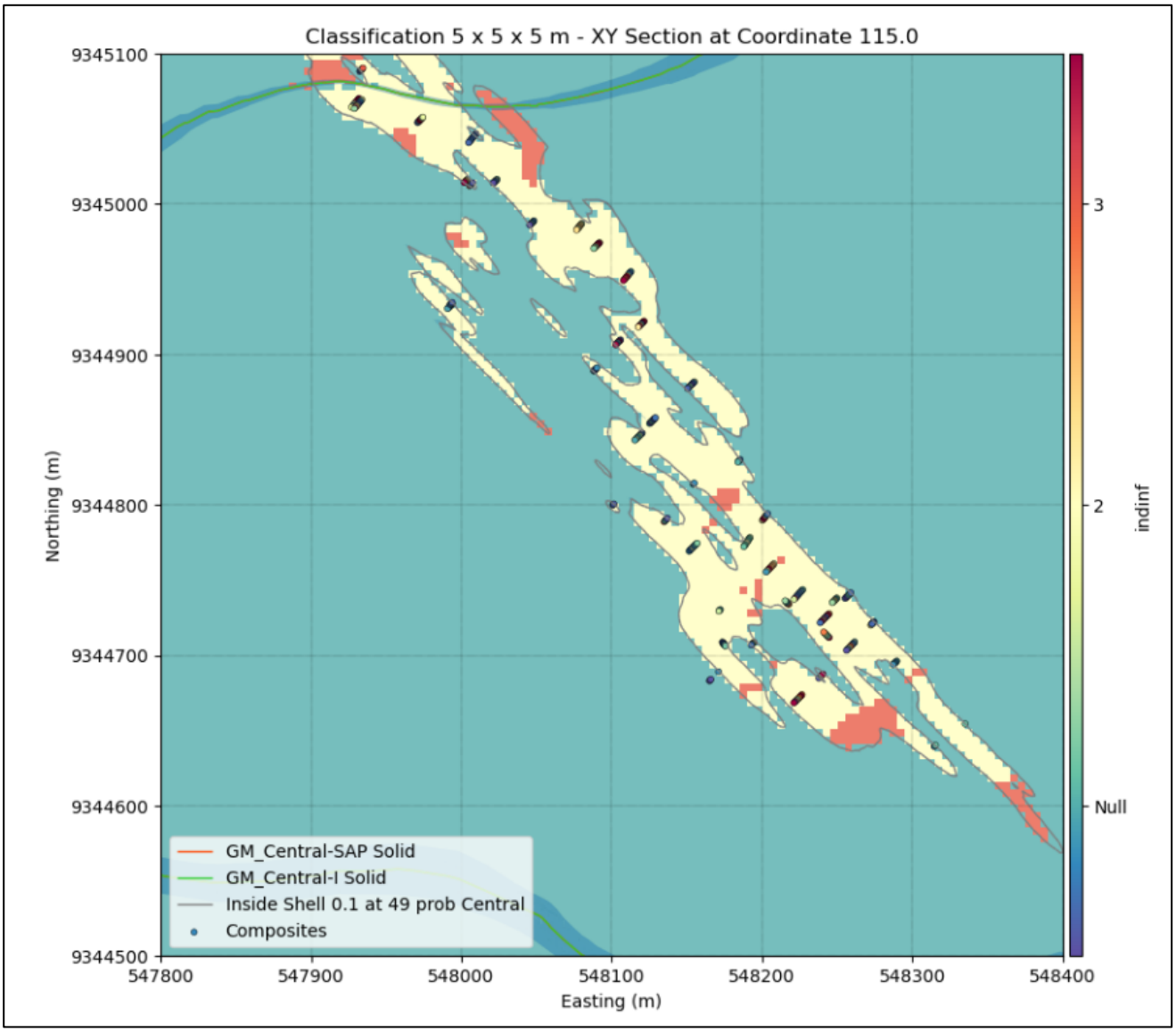
Table 14-9: Resource Classification Criteria

Indicated	Inferred
3 holes	2 holes
3 composites	2 composites
35 m	75 m

shows resource classification map and the outline of the 0.1 g/t gold envelope. The color code is Indicated resources are represented in yellow, Inferred resources in red. The maps is a plan (115 elevation) view Using the criteria described above, most blocks within the gold envelope are classified as Indicated resources.

Figure 14-15 shows resource classification map and the outline of the 0.1 g/t gold envelope. The color code is Indicated resources are represented in yellow, Inferred resources in red. The maps is a plan (115 elevation) view Using the criteria described above, most blocks within the gold envelope are classified as Indicated resources.

Figure 14-15: Resource Classification – Yellow for Indicated, Red for Inferred



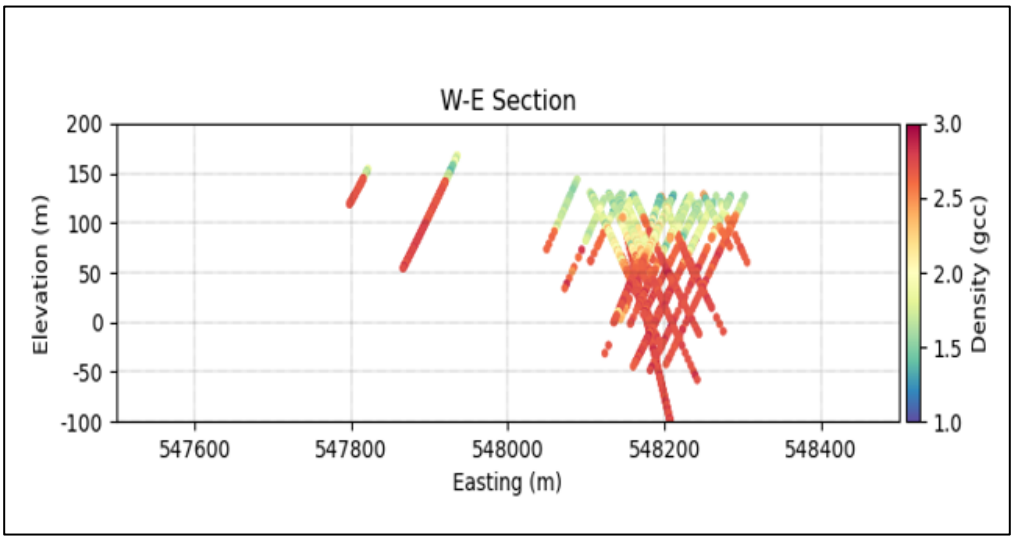
Source: W. Dzick Geoconsultants, 2025.

14.2.9 Density Model

Specific gravity (SG) estimation followed a similar path to the gold estimation. Exploratory data analysis (EDA) was completed on the SG_dry dataset. The EDA confirmed the SG domain definition like gold domains for estimation. Inverse distance to the second power (ID2) was used to estimate SG as the variography proved inconclusive.

Figure 14-16 shows a cross-section with SG displayed down hole on 1 m composites. SG values vary by domain and increase in value with depth with the primary having the highest SG and Blanket the lowest.

Figure 14-16: West-East Cross-section Showing Specific Gravity



Source: W. Dzick Geoconsultants, 2025.

Table 14-10 shows the univariate statistics for specific gravity by domain. Domain 100 average SG is 1.73 and domain 200 is 1.83. The highest SG composite is in domain 200 at 2.62.

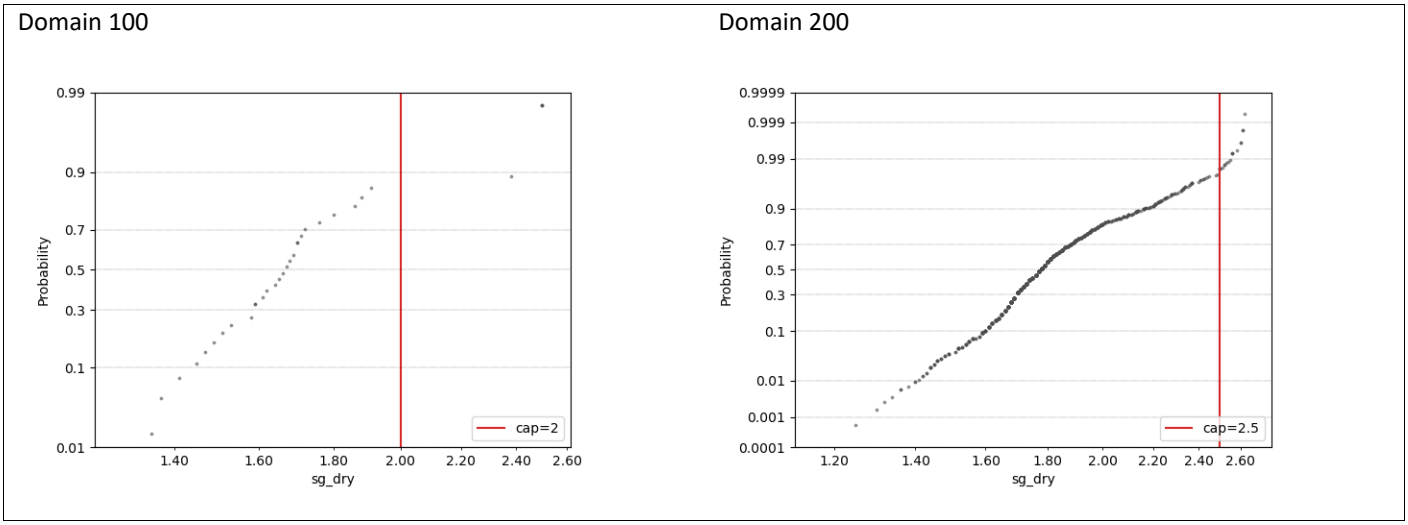
Table 14-10: Specific Gravity Univariate Statistics

	100	200
Count	32	899
Mean	1.73	1.83
Stdev	0.31	0.23
CV	0.18	0.13
Min	1.35	1.25
P10	1.44	1.60
P50	1.67	1.78
P90	2.42	2.17
Max	2.50	2.62

14.2.9.1 Density Capping

Figure 14-17 shows the capping thresholds by domain: domain 100 caped at 2, domain 200 capped at 2.5.

Figure 14-17: SG Capping by Domain



Source: W. Dzick Geoconsultants, 2025.

Specific gravity (SG) was estimated using inverse distance squared (ID2). Estimation parameters are listed in Table 14.10. All search angles were set to zero and an isotropic search range of 200 m was applied.

Table 14-11: SG ID2 Parameters

		Domains		
		100	**200**	**300**
Angles	X	0	0	0
	Y	0	0	0
	Z	0	0	0
Ranges	X	200	200	200
	Y	200	200	200
	Z	200	200	200
Min. Comps		**5**	**5**	**5**
Max. Comps		**50**	**50**	**50**
Max. Comps DHID		**5**	**5**	**5**

14.2.10 Results of the Resource Evaluation

W. Dzick Geoconsulants has estimated Indicated and Inferred Mineral Resources for the oxide portion of the Cuiú Cuiú Central Project in accordance with the CIM guidelines (CIM 2014) which have been adopted as part of NI 43-101.

The CIM Definition Standards on Mineral Resources and Mineral Reserves require that an estimated Mineral Resource must have reasonable prospects for eventual economic extraction. The Mineral Resource estimate discussed herein has been constrained by reasonable potential mining open pit design parameters, using economic and technical assumptions appropriate for an open-pit mining scenario.

Pit shells were derived from work performed by Deswik to estimate material in the block model with reasonable prospects for eventual economic extraction. Pit shells were developed by considering regular blocks measuring 5m x 5m x 5m on constraining boundaries. The main input assumptions are summarized in Section 15. Table 14-12 lists the parameters used to generate the Central mining cone.

Table 14-12: Central Resource Pit Parameters

Assumption	Unit	Mineral Resources
Gold Price	US$/oz	2,600
Refining Charge	US$/oz	30
Royalties	%	4.0%
Mining Cost	US$/t	3.50
Fuel Cost	US$/L	1.30
Processing Cost	US$/t	10.00
G&A	US$/t	1.5
Metallurgical Recovery MG, MAC	%	85%
Metallurgical Recovery CN	%	75%
Mining Recovery	%	100%
Dilution	%	0%
Overall Slope Angle	%	40%
Resource Classification		Indicated and Inferred
Ore Type		All

Resource categories and cut-off grades of the deposit in the resource estimate stated herein on the requirement of “reasonable prospects for eventual economic extraction,” assuming an open-pit mining method production scenario. The potential mining open-pit shell used to generate the number below is preliminary and conceptual in nature. The engineering work, including mining cone generation was done by Deswik.

Mineral resource figures based on the ordinary kriging (OK) method, with blocks reblocked to 5x5x5 m as calculated by Deswik are presented in Table 14-13.

Table 14-13: Central Resource Pit Shell, $2600 Au/oz

			CN 2025 Model Pit Shell		
Type	**Class**	**Cut-off**	**Tonnes**	**Au (g/t)**	**Au (oz)**
Blanket	Indicated	0.10	767,664	0.304	7,507
	Inferred	0.10	307,868	0.365	3,614
	Total	**0.10**	**1,075,533**	**0.322**	**11,121**
Saprolite	Indicated	0.10	2,596,854	0.583	48,697
	Inferred	0.10	633,768	0.488	9,945
	Total	**0.10**	**3,230,622**	**0.565**	**58,642**
SAP + BLK	Indicated	0.10	3,364,519	0.520	56,204
	Inferred	0.10	941,636	0.448	13,558
	Total	**0.10**	**4,306,155**	**0.504**	**69,763**

14.3 Mineral Resource Estimate - Machichie

14.3.1 Introduction

The Mineral Resource estimate for Cuiu Cuiu Oxide Project, Machichie deposit, has been updated by the QP Walter A. Dzick, P. Geo. with W. Dzick Geoconsultants based on the addition of 41 drillholes completed between July 2024 and March 30, 2025, along with an updated geological interpretation. The cut-off date for the assay database is March 25, 2025. The effective date of this Mineral Resource estimate is July 23, 2025. This update supersedes the Mineral Resource Model of October 2024 (Cuiu Cuiu Project, 2024).

The site visit was carried out by independent qualified person (QP), Walter Allan Dzick MBA P Geo of W_Dzick Geoconsultants, from April 27 to April 28, 2025. While at the Project, the QP visited the Machichie exploration target described in this Technical Report, as well as the core shed, diamond- and RC-drilling sites, sample facilities (cutting saw, quality assurance and quality control (QA/QC) sample insertion, packing, and sample identification), density laboratory, and the office. Core from several typical diamond-drill holes was reviewed to assess the quality of drilling, core recovery, and sampling, as well as to view the lithologic, alteration, and structural controls of the mineralization. Cabral Gold's exploration practices and results were also reviewed. W_Dzick Geoconsultants had full access to electronic data and previous reports compiled by Cabral Gold and its consultants.

Mineralization domains are defined by lithology, grade continuity, structural information, and the current understanding of the mineralization. The mineralized wireframes were initially prepared by W Dzick Geoconsultants using Leapfrog software package and reviewed by Cabral Gold geologists. Block model estimates based on the geologic interpretation for Machichie were completed using Leapfrog EDGE software package using the inverse distance squared (ID2) interpolation algorithm in two passes, with the second pass using a progressively larger search ellipses and more flexible neighbourhood parameters.

Mineral Resources were classified in accordance with the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Definition Standards for Mineral Resources and Mineral Reserves (CIM (2014) definitions) and were determined using

CIM Estimation of Mineral Resources & Mineral Reserves Best Practice Guidelines, adopted by the CIM Council on November 29, 2019 (CIM 2019).

The resource estimate was made in accordance with the standards accepted by the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) for measured, indicated, and inferred resources in accordance with the NI 43-101 Standards for Disclosure of Mineral Projects.

14.3.2 Project Limits

The minimum and maximum centroids for the Machichie block model are listed in Table 14-14. The model has not been rotated.

Table 14-14: Machichie Block Model Parameters

Direction	Minimum Centroid	Maximum Centroid	Increment
Easting	552215	553585	5
Northing	9243240	9344040	5
Elevation	-165	200	5

14.3.3 Drill Hole Compositing

The assays used in the resource estimation were composited to a two-meter length. The statistics from the raw data to the composited is provided in Table 14-15.

14.3.4 Spatial Analysis – Variography

Variogram analysis was performed but due to sample density issues no definitive variography was interpreted. The variograms obtained were deemed not useful for estimation purposes. An inverse Distance estimator was ultimately used for the estimation.

14.3.5 Digital Data

14.3.5.1 Topography

Topography was provided by Cabral with a LIDAR data updated in 2024. This topography was then adjusted to conform with the very accurate surveys of drill hole collars where available.

14.3.5.2 Geologic Data

All geologic data is provided by Cabral Gold including maps, templates and drillhole logs both digital and paper.

14.3.5.3 Land Ownership

W. Dzick Geoconsultants are unaware of any issues with the surface and mineral rights that may impact this resource model in any way.

14.3.5.4 Any Surface Features

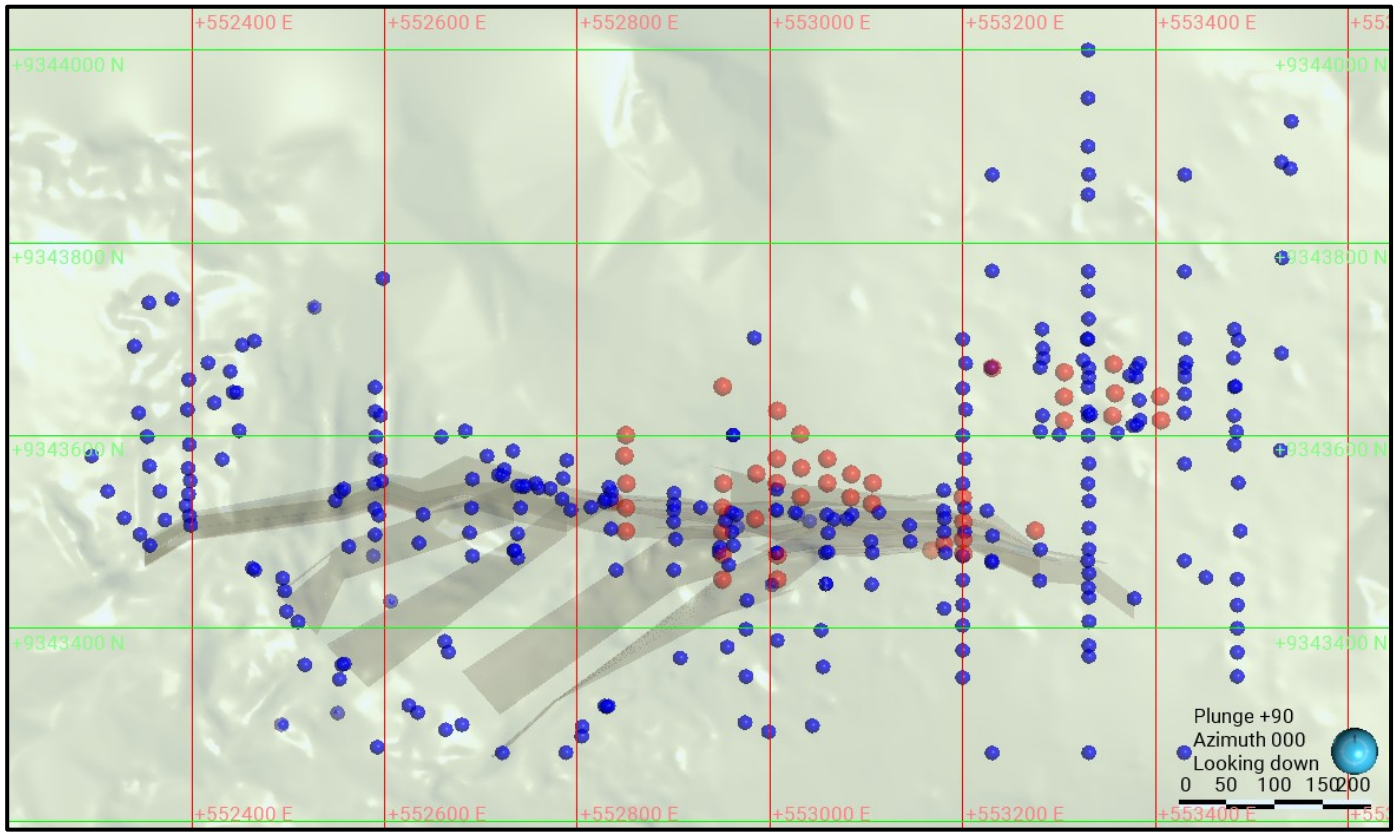
A small river runs through the western side of Machichie and there are several areas of garimpeiro mine workings; however, these accounted for in the up-to-date topography and therefore do not affect the resource modeling. W_Dzick Geoconsultants are unaware of any other workings, rivers or lakes that may impact this resource model in any way.

14.3.6 Geological Model

Cabral Gold provided the geological interpretation for this resource model. The Machichie deposit has two weathered layers which comprise the Oxide Zone, from the surface to bottom: Blanket and Saprolite. Underlying the Saprolite is a multi-phased granodiorite intrusive with several cross-cutting mafic and aplitic dykes. This lower intrusive zone, referred to as the Primary Zone or simply Intrusive, is typically non-weathered (except at the very top), unoxidized, and contains variable amounts of sulfide. This primary zone has different metallurgical characteristics and is not included in this resource model. This resource model focuses on the Oxide Zone only.

Cabral Gold also provided a structural interpretation consisting of deformation zones in the Primary and overlying Saprolite Zones. The deformation zones are generally orientated east-west with several structures branching off and striking to the southwest. All the structural zones are interpreted as steeply dipping between 80 and 90 degrees, though there are likely smaller sub-vertical to sub-horizontal ancillary structures.

Figure 14-18: Played View Machichie Structural Interpretation

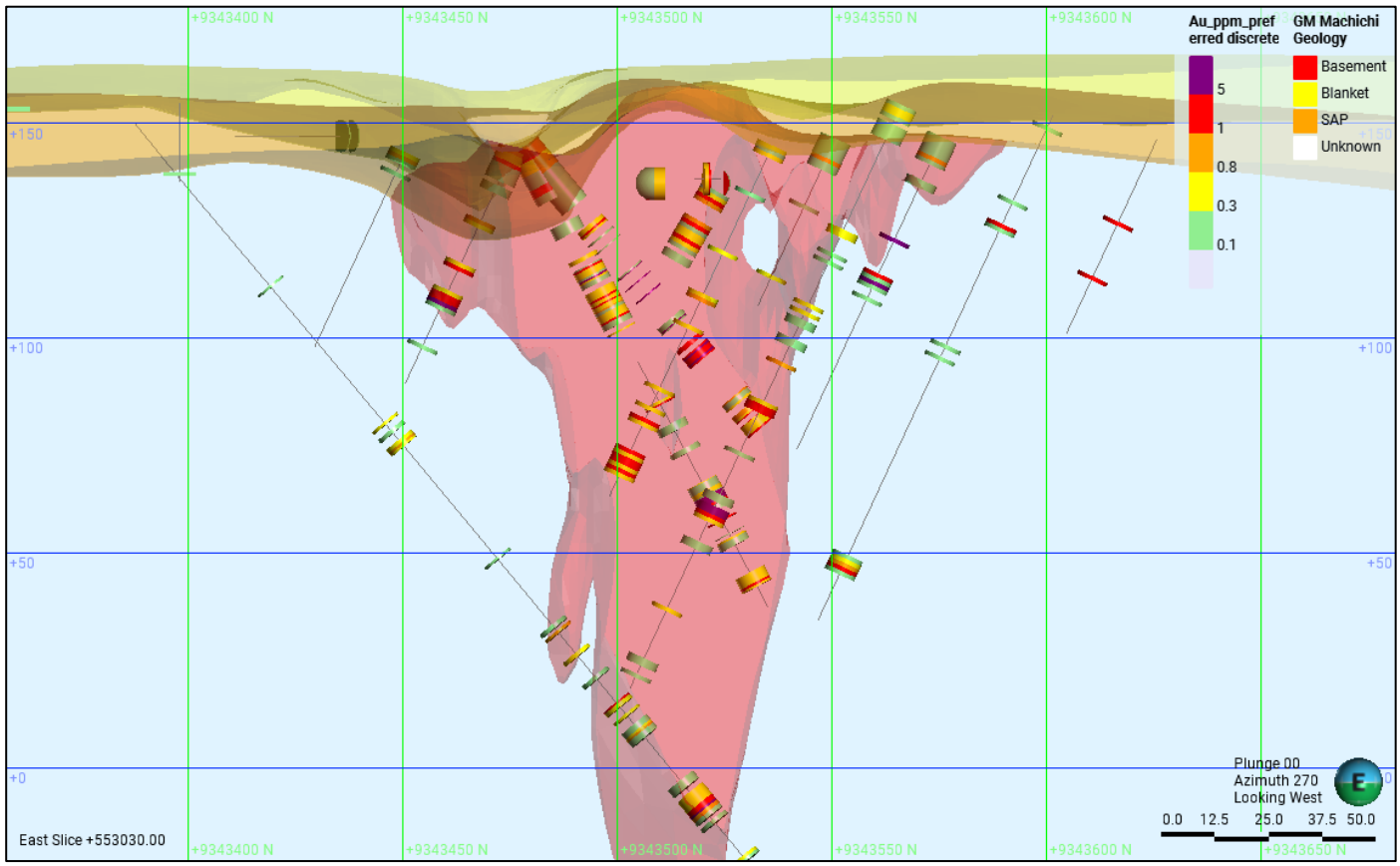


Source: W. Dzick Geoconsultants, 2025.

The uppermost Blanket zone consists of a series of relatively flat-lying unconsolidated to poorly consolidated Miocene to Quaternary sediments including lake bed clays, transported alluvial and colluvial sand and gravel deposits, as well as the recent garimpeiro placer workings.

A typical section is seen in Figure 14-19 with alluvium (Blanket) underlain by saprolite (SAP) over the basement lithology.

Figure 14-19: Section 553030E ±25m



Source: W. Dzick Geoconsultants, 2025.

Similar to the Primary (Intrusive “Basement”) Zone the Saprolite mineralized zone tends to have sub-vertical mineralization associated with brecciated structural zones. Mineralization takes on a more horizontal component in some of the uppermost areas likely due to physical and chemical weathering processes coupled with raising and lowering of the water table. As such, the gold zones used in this model are primarily sub-vertical and drawn broadly to allow for this sub-horizontal component.

Mineralization in the Blanket Zone follows a more sub-horizontal distribution conforming to geology. Due to the variable nature of the sediments, the gold distribution can be highly variable.

14.3.6.1 Gold Zones

The interpreted three-dimensional (3D) wireframe models of the gold mineralization have been created using the assay values from all sample types, structural information, lithologic information and the current understanding of the mineralization type. Lithologic wireframes of the Machichie deposit were created by W_Dzick Geoconsultants in collaboration with Cabral Gold staff through section interpretations using ®LeapFrog 2024.1.3 software packages. The wireframing process consisted of preparing individual wireframes for each lithologic mineralized domain. For each lithologic interpreted zone, the lithology, 3D continuity, and direction were considered, as well as the weathering zones. No numerical modelling of cut-off or minimum thickness was used.

14.3.7 Drill Hole Assay Database and Statistics

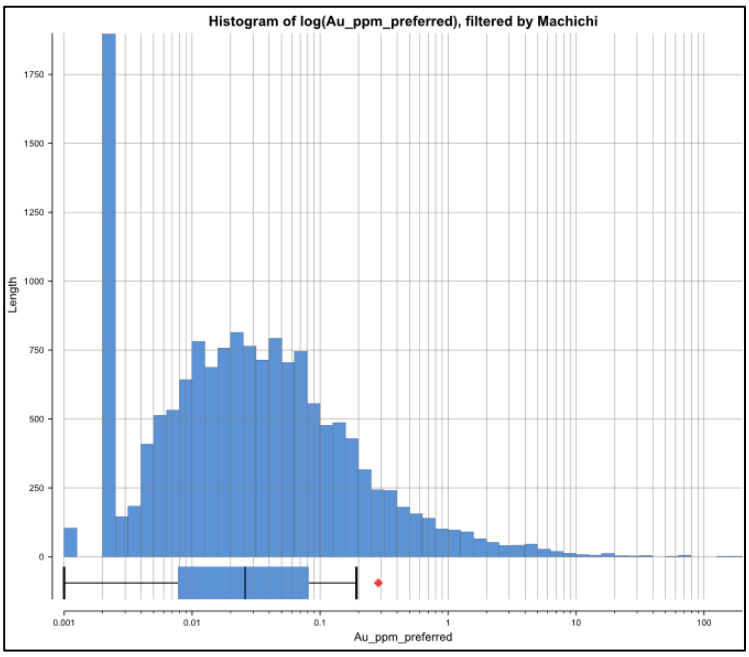
Cabral Gold maintains an internal database in MS Access which is used to store and manage all drilling, sampling, and geophysical information in digital format. The dataset utilized for the resource estimate at Machichie consisted of 187 diamond (DDH) and reverse circulation (RC) drillholes, as well as other various samples listed in (Table 14-15). Only the DDH, RC, CT and CH samples were utilized for the estimate; however, power auger (PA) and vertical channels (VCH, essentially a small shaft) were used to help the interpretation of geology and gold zones. The cut-off date for the database is March 25, 2025 and the datum is SAD 69-21S. The QP has evaluated the drillhole database and found it suitable for use in the Resource Estimate.

Table 14-15: Machichie Drill hole Type and Count

Hole Series Description	Hole Series Description	Count
CH	Channel Samples	36
CT	Trench Channel Sample	25
DDH	Diamond-Drill Holes	31
RC	Reverse-Circulation Drill	156
VCH	Vertical Channel	3
PA	Power Auger Holes	79
TRC	Trench other	29
TOTAL	ALL TYPES	334

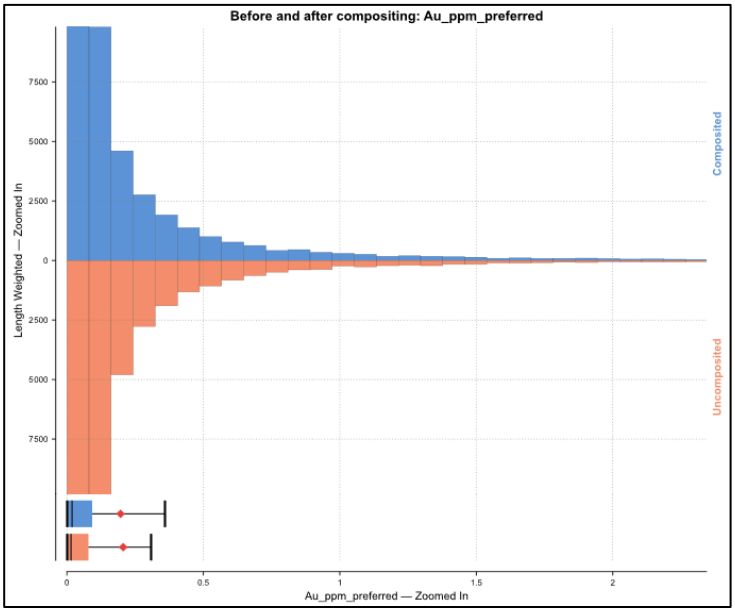
The Machichie data extracted and used in the estimation consisted of 12,806 samples and 7,747 2-meter composites. Sample statistics are seen below in Figure 14-20, Figure 14-21 and Figure 14-26.

Figure 14-20: Histogram of Composited Data



Source: W. Dzick Geoconsultants, 2025.

Figure 14-21: Composite Global Comparison Statistics Machichie



Source: W. Dzick Geoconsultants, 2025.

Table 14-16: Composite Global Comparison EDA Statistics Machichie

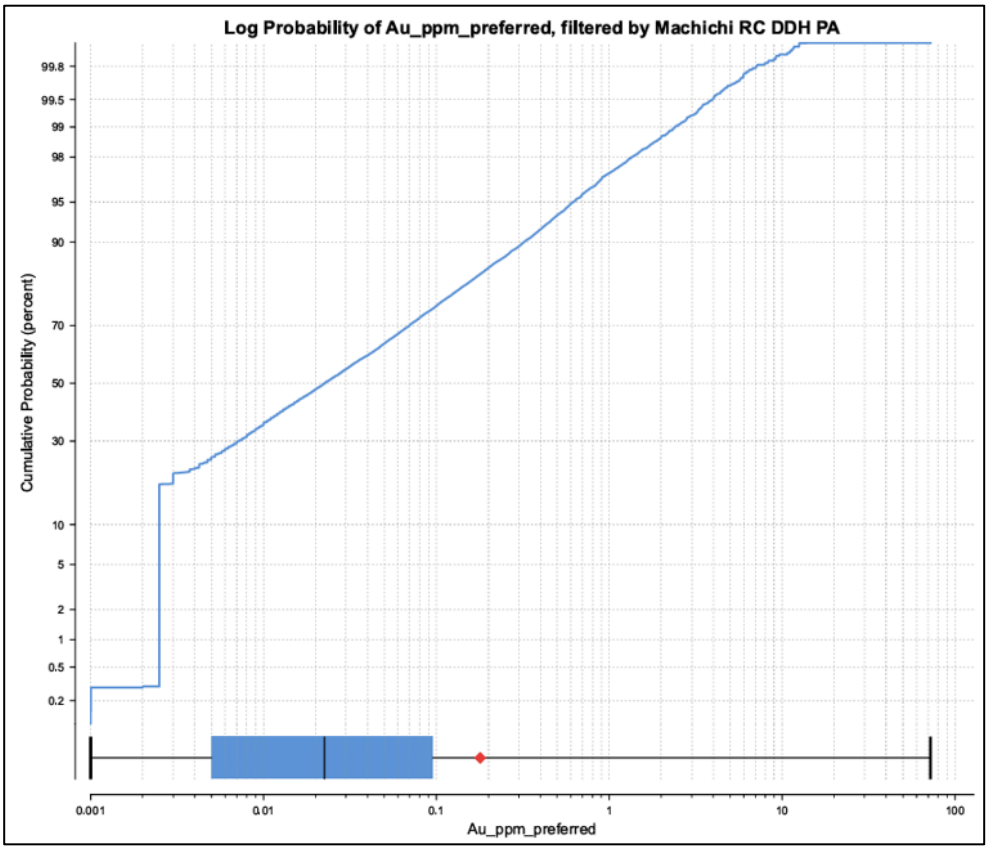
	Composited	Uncomposited
Count	52,517	90,586
Length	101,579.3	115,857.3
Mean	0.1966	0.206183
Stdev	1.64129	2.65288
CV	8.34838	12.8667
Variance	2.69385	7.03778
Minimum	0.001	0.001
Q1	0.00355	0.0025
Q2	0.019	0.015
Q3	0.0925	0.079
Maximum	190.552	401.968

The exploratory data analysis strongly suggests the Au mineralization at Machichie has a skewed distribution common in a deposit with a high nugget effect. This is also seen in the high CV (Coefficient of Variation) value evident even after compositing. The high nugget effect and high CV conform clearly with what is noted in drill core, RC cuttings, and trenches: the lithology, alteration, and structure at Machichie are quite variable and erratic, as are the distribution of gold grades.

14.3.8 High Grade Outlier Treatment

Top cutting (or grade capping) was applied to control the effects of erratic, higher grade outlier assays. Top cutting analysis was done by interpretation of the probability distribution function plot. A slight break in the sample population is noted at the 10 g/t assay value. The curve seems to deflect at this break point. The estimate assay composites were capped at 10 g/t Au.

Figure 14-22: Top Cut pdf plot



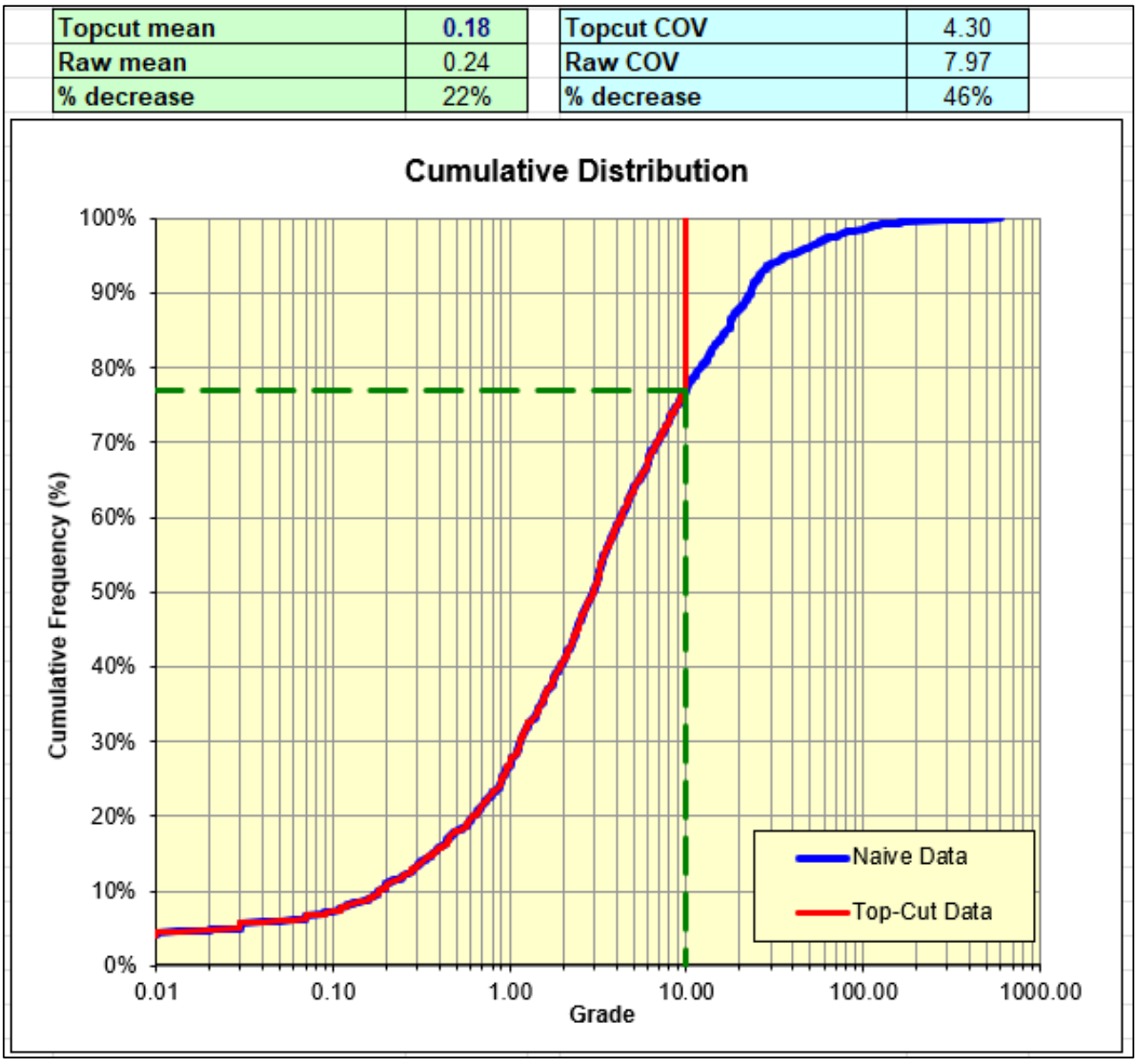
Source: W. Dzick Geoconsultants, 2025.

The top cut assigned was further verified by a rank ordering analysis (Table 14-15) and (Figure 14-23) looking at the percentage increase between samples. When rank ordered a large jump is seen between 9 am 11 g/t Au. The data suggests a top cap of 10.0 g/t Au is acceptable for this estimate and the 10.0 g/t Au cap was applied to the composited data.

Table 14-17: Rank Ordering Disintegration Point Data

Au_ppm	Rank	Percentile	% step	Disintegration
9.2235	6110	0.9967374	0%	
9.2415	6111	0.9969005	21%	Data disintegration point
11.2175	6112	0.9970636	12%	
12.5345	6113	0.9972268	0%	

Figure 14-23: Rank Ordering Disintergration Plot



Source: W. Dzick Geoconsultants, 2025.

14.3.9 Declustering

Analysis of and declustering was completed and used in the estimation using LeapFrog software 2024.

14.3.10 Block Model Construction

14.3.10.1 Model Extents

The minimum and maximum centroids are listed in Table 14-18. The model has not been rotated.

Table 14-18: Machichie Block Model Parameters

Direction	Minimum Centroid	Maximum Centroid	Increment
Easting	552215	553585	5
Northing	9243240	9344040	5
Elevation	-165	200	5

14.3.11 Model Coding

The block model was coded for the three lithological units, basement, saprolite and blanket. Density was assigned per lithologic unit in Table 14-19.

14.3.12 Bulk Density

The density at Machichie was assigned by lithologic type based on extensive sampling by Cabral Gold. The density assignments are shown in Table 14-19 below.

Table 14-19: Machichie Block Model Density Assignments

Lithology	Density (g/cm^3)
Blanket (alluvium)	1.59
SAP (Saprolite)	1.74

14.3.13 Block Model Grade Estimation

14.3.13.1 Estimation Domains

The block model Au grades were estimated into two domain shapes, Blanket and Saprolite.

14.3.13.2 Interpolation Methods

The block model estimates for Machichie were completed in LeapFrog Edge software using the inverse distance squared (ID2) interpolation algorithm in two passes, with the second pass using a slightly larger search ellipse and more flexible sample count parameters.

14.3.13.3 Estimation Parameters

14.3.14 Model Validation

The database validation consisted of three stages. Initially, the drilling logs and survey and collar tables are merged manually into one spreadsheet and validation routines are performed to identify gaps, overlaps, coordinate issues, negative and null values, and depth errors. After that, the tables are imported into MS Access and new validation routines are performed, but this time to also check for duplicate information. The last step includes automated validation routines carried out in the ®LeapFrog 2024.1.3 software packages, as well as final visual validation.

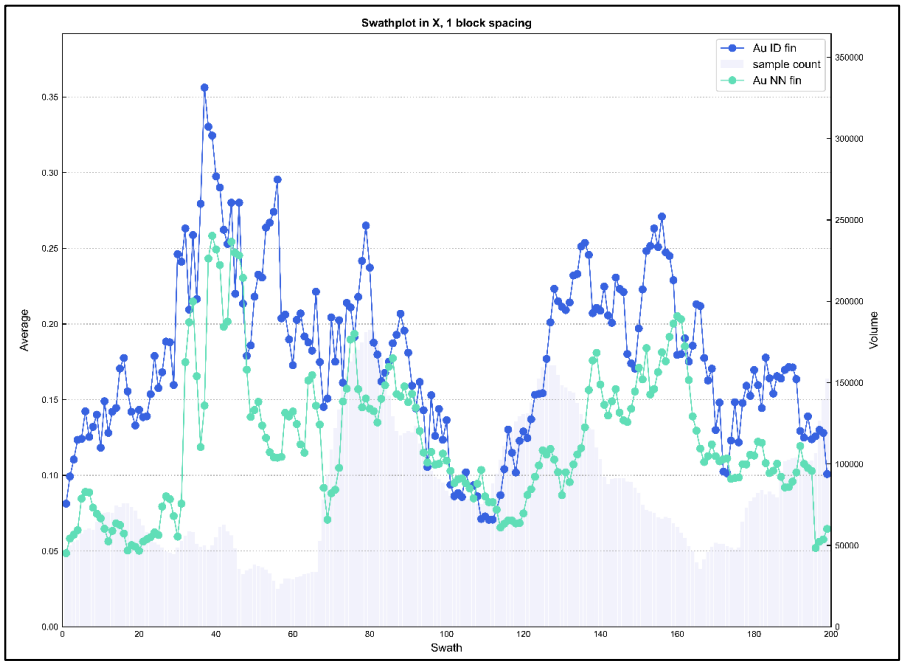
W. Dzick Geoconsultants validated the Machichie resource model by:

- Comparison of top cut input grades with tonnage weighted output grades
- Visual Inspection of the model against the input composites
- Comparison of moving window input and output statistics (swath plot).

14.3.14.1 Swath Plots

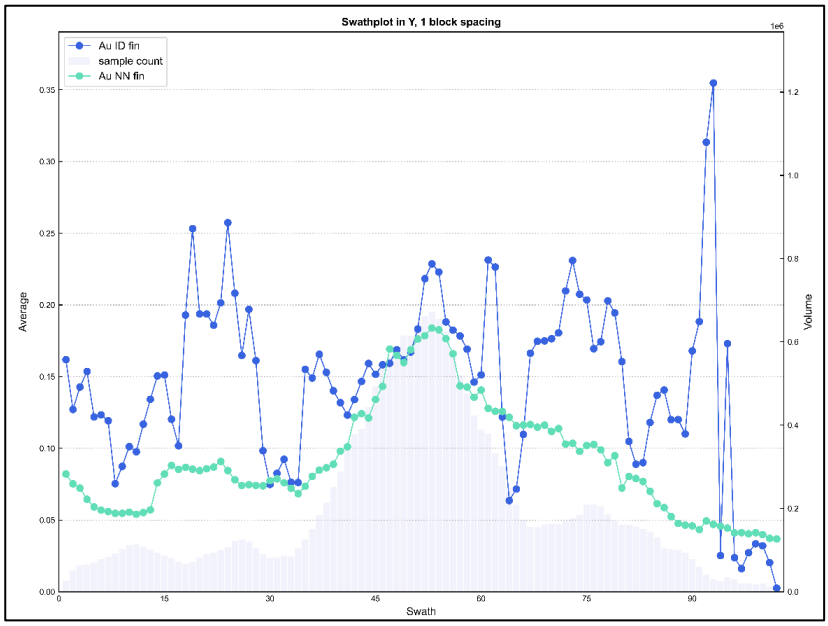
Validation of the estimate for Machichie was done by both visual inspection and query of the block model and swath plots. The swath plots show a reasonable comparison between the nearest neighbor and ID2 estimate.

Figure 14-24: Swoth Plot X



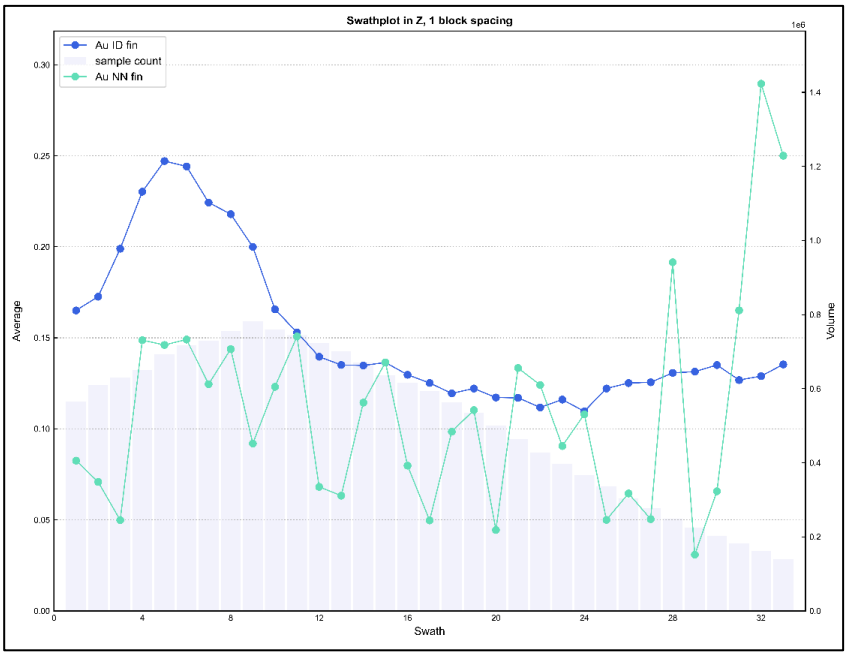
Source: W. Dzick Geoconsultants, 2025.

Figure 14-25: Swath Plot Y



Source: W. Dzick Geoconsultants, 2025.

Figure 14-26: Swath Plot Z



Source: W. Dzick Geoconsultants, 2025.

14.3.15 Resource Classification

Definitions for Mineral Resource Classifications used in this Technical Report are consistent with those defined by CIM (2014) and adopted by NI 43-101. A classification category of Inferred was assigned to the Mineral Resources based on the understanding of the mineralization, data density, and drill-hole spacing. The average distance for a block estimate was used for classification. Blocks with at least 2 drill holes and a minimum of 4 composites with an average distance of 30 meters or less were classified as Indicated. All other blocks within the 0.1 g/t Au shape were classified as Inferred. Based on the spacing of the drillholes the QP considers this classification reasonable for the Machichie deposit.

A classification category of Inferred and Indicated was assigned to Mineral Resources based on the understanding of the mineralization, data density, and drill-hole spacing. Machichie resources were classified as Inferred where insufficient drill hole data density to support a better definition of the mineralized zones and the subsequent lower level of confidence in the understanding of the mineralization had been observed. The classification of Indicated has been assigned to the Machichie Resource Model where sufficient drill hole data density and mineralization continuity has adequately been demonstrated.

14.3.16 Mineral Resource reporting

The W_Dzick Geoconsultants QP reviewed database consistency and QA/QC results, as well as the mineralized lithologic wireframes. W_Dzick Geoconsultants QP is of the opinion that the Mineral Resource estimate is appropriate for the style of the mineralization. The QP is not aware of any environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other relevant factors that could materially affect the Mineral Resource estimate.

The CIM Definition Standards on Mineral Resources and Mineral Reserves require that an estimated Mineral Resource must have reasonable prospects for eventual economic extraction. The Mineral Resource estimate discussed herein has been constrained by reasonable potential mining open pit design parameters, using economic and technical assumptions appropriate for an open-pit mining scenario.

Pit shells were derived from work performed by Deswik to estimate material in the block model with reasonable prospects for eventual economic extraction. Pit shells were developed by considering regular blocks measuring 5 m x 5 m x 5 m on constraining boundaries. Table 14.1 lists the results of the resource estimate within the pit shells and the parameters used.

Table 14-20: March 31, 2025 Machichie Mineral Resources reported at a cut-off grade of 0.1 g/t Au within the pit shell*

Category	Area	Tonnage (kt)	Grade (g/t Au)	Contained Gold (koz)
Total Inferred		714	0.540	12.4
Total Indicated		1,335	0.562	24.1
Grand Total All Classifications		2,049	0.554	36.5

Notes: Mineral Resources are inclusive of Mineral Reserves. Tonnes and ounces have been rounded, and this may have resulted in minor discrepancies.

Table 14-21: Mining Costs Machichie Resource Pit Shell Parameters

Assumption	Unit	Mineral Resources
Gold Price	US$/oz	2,600
Refining Charge	US$/oz	30
Royalties	%	4.0%
Mining Cost	US$/t	3.50
Fuel Cost	US$/L	1.30
Processing Cost	US$/t	10.00
G&A	US$/t	1.5
Metallurgical Recovery MG, MAC	%	85%
Metallurgical Recovery CN	%	75%
Mining Recovery	%	100%
Dilution	%	0%
Overall slope angle	%	40°
Resource Classification		Indicated and Inferred
Ore Type		All

14.3.16.1 Comparison to Historical Models

Constrained within the US$2,600 pit shell, the MRE has increased from 2024 to 2025 for tonnage and ounces, while the grade remained the same. The main difference for the expansion is the increase in drillhole density, which has led to the changes in classification. The recent drilling was largely comprised of infill type drillholes, the result of which is a conversion of the initial Inferred resource to Indicated classification.

Table 14-22: Comparison of Resources in 2025 and 2024 Machichie Models (0.1 g/t Au Cut-off Grade)

2025 Machichie Model				
Class	**Type**	**Tonnes**	**Au (g/t)**	**Au (oz)**
IND	Q	818,651	0.43	11,367
	SAP	719,273	0.73	16,783
	Total	1,537,924	0.57	28,150
INF	Q	459,908	0.49	7,273
	SAP	362,790	0.62	7,185
	Total	822,698	0.55	14,458
Total	**Q**	**1,278,559**	**0.45**	**18,639**
	SAP	**1,082,063**	**0.69**	**23,969**
	Total	**2,360,621**	**0.56**	**42,608**

2024 Machichie Model				
Class	**Type**	**Tonnes**	**Au (g/t)**	**Au (oz)**
IND	Q	-	-	-
	SAP	-	-	-
	Total	-	-	-
INF	Q	571,200	0.468	8,590
	SAP	440,400	0.673	9,529
	Total	1,011,600	0.557	18,120
Total	**Q**	**571,200**	**0.468**	**8,590**
	SAP	**440,400**	**0.673**	**9,529**
	Total	**1,011,600**	**0.557**	**18,120**

14.3.17 Risks & Factors that may affect the Mineral Resource

W. Dzick Geoconsultants is unaware of any factors that may affect this Resource Estimate.

14.4 Mineral Resource Estimate – Moreira Gomes (MG)

14.4.1 Introduction

The Mineral Resource Estimate for the MG (Moreira Gomez) deposit was not updated or recalculated as there was no new drilling or model changes. This study uses the Mineral Resource Estimate completed by Dr. Volodymyr Myadzel of **VMG Consultoria e Soluções Ltda. (VMG) documented** in the 2024 Cuiú Cuiú Project 43-101 Technical Report and Pre-feasibility Study Ausenco 2024 (Ausenco, 2024) and summarized below.

VMG Consultoria e Soluções Ltda. (VMG) estimated Indicated and Inferred Mineral Resources for the Oxide zone of the MG deposit within the Cuiú Cuiú Project in accordance with the CIM guidelines (CIM 2014) which have been adopted as part of NI 43-101. VGM did not estimate resources within the underlying primary zone as this is not part of the current Oxide Project.

The following databases were used in building the geological model and for geological resource estimation: BD_Cabralgold_MG.accdb for the Moreira Gomes Target, which was "closed" as of November 29, 2023. The geological modeling and resource estimation focused on modern sedimentary deposits and the oxidation zone of sulphide mineralization (saprolites).

This section describes the methodology and devices used in evaluating resources for ANM Permit Nos. 850.615/2004 and 850.047/2005 for the gold deposit at the Cuiú Cuiú property, located in the Cuiú Cuiú District, in Pará, Brazil.

The Mineral Resource Estimates were generated by Dr. Volodymyr Myadzel, Principal Geological Consultant of VMG Consultoria e Soluções Ltda., in Belo Horizonte, Brazil. Dr. Myadzel is independent of the issuer of this report and applied all the tests described in Section 1.5 of the NI 43-101 Form.

The Mineral Resource Estimates reported in this section were carried out using the CIM Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines and resources have been classified under the 2014 Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Definition Standards for Mineral Resources and Mineral Reserves. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

The effective date of this estimate is the receipt date of the latest data on the resource estimate, which is October 9, 2024.

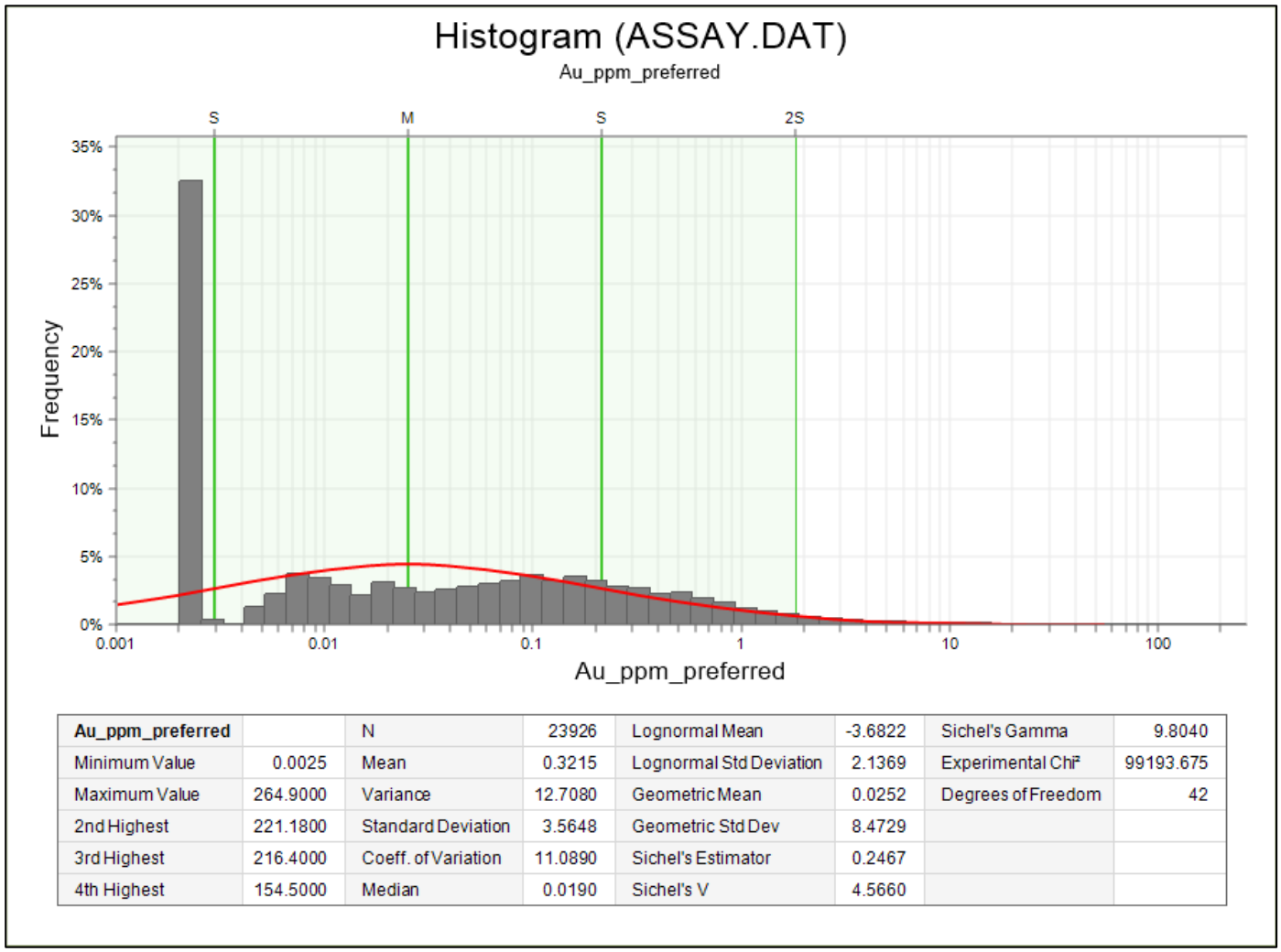
14.4.2 Statistical Analysis

This report used a traditional statistical analysis to perform the following tasks:

- Assess the need to separate populations, if there is more than one population.
- Evaluate the effect of population mixing.
- Determine the grade distribution.

The statistical analysis was performed on Au (ppm) samples grouped throughout the data matrix (Figure 14-27 and Figure 14-28). Further analyses were then performed on samples within the mineralized zone (see Figure 14-29).

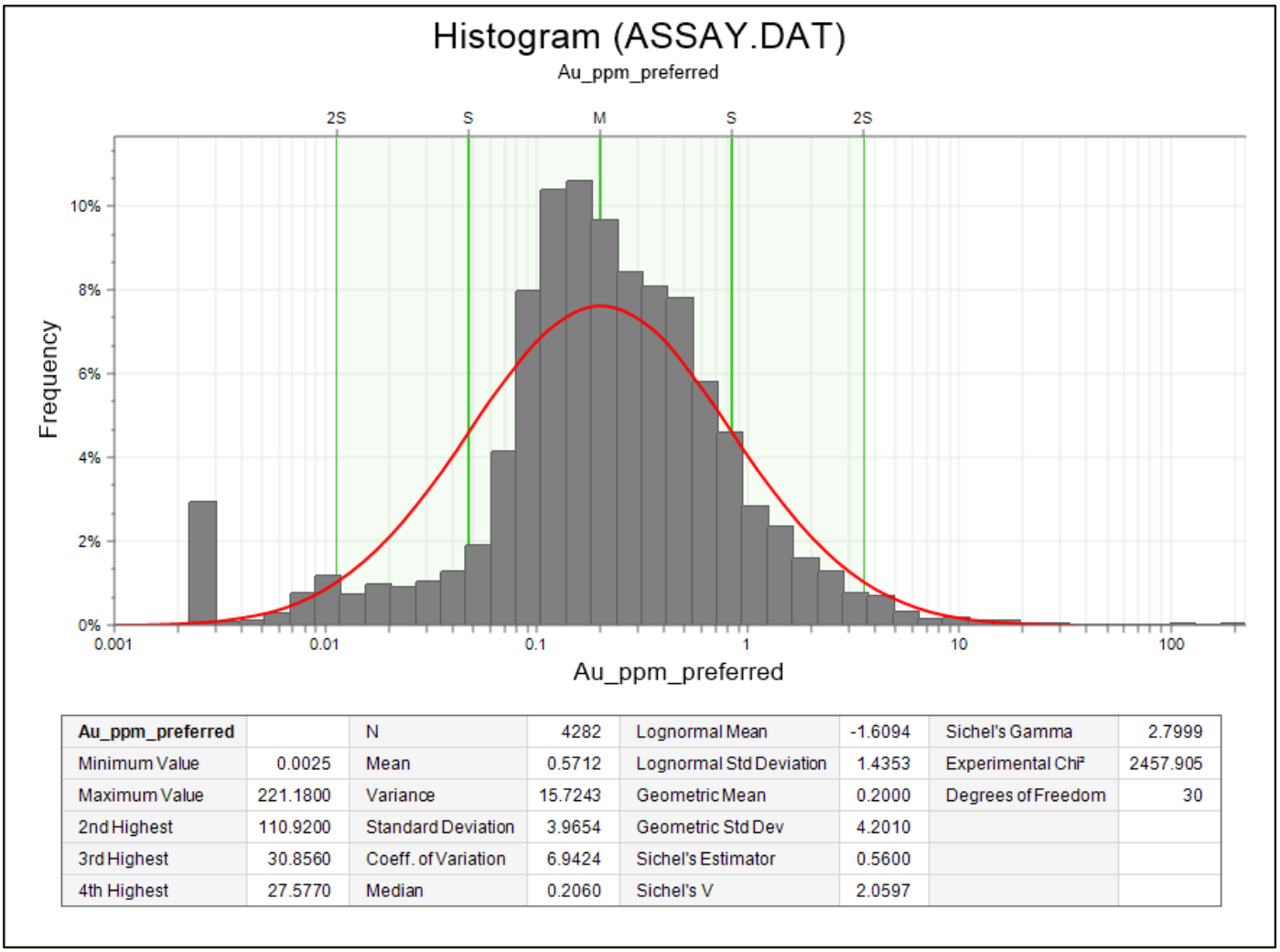
Figure 14-27: Histogram of Au (ppm) Grade Distribution for all Samples MG Target



Au_ppm_preferred		N	23926	Lognormal Mean	-3.6822	Sichel's Gamma	9.8040
Minimum Value	0.0025	Mean	0.3215	Lognormal Std Deviation	2.1369	Experimental Chi²	99193.675
Maximum Value	264.9000	Variance	12.7080	Geometric Mean	0.0252	Degrees of Freedom	42
2nd Highest	221.1800	Standard Deviation	3.5648	Geometric Std Dev	8.4729		
3rd Highest	216.4000	Coeff. of Variation	11.0890	Sichel's Estimator	0.2467		
4th Highest	154.5000	Median	0.0190	Sichel's V	4.5660		

Source: VMG, 2024.

Figure 14-28: Histogram of Au (ppm) Grade Distribution for Samples Inside the Saprolite and Blanket Mineralization Zone, MG Target



Au_ppm_preferred		N	4282	Lognormal Mean	-1.6094	Sichel's Gamma	2.7999
Minimum Value	0.0025	Mean	0.5712	Lognormal Std Deviation	1.4353	Experimental Chi²	2457.905
Maximum Value	221.1800	Variance	15.7243	Geometric Mean	0.2000	Degrees of Freedom	30
2nd Highest	110.9200	Standard Deviation	3.9654	Geometric Std Dev	4.2010		
3rd Highest	30.8560	Coeff. of Variation	6.9424	Sichel's Estimator	0.5600		
4th Highest	27.5770	Median	0.2060	Sichel's V	2.0597		

Source: VMG, 2024.

14.4.3 Interpretation

The geological interpretation was developed by VMG Consultoria using the 3D software Micromine. Diamond (DD) drilling and RC drilling data were used as the basis for interpretation of geological and gold mineralization zones. Wireframes were generated in 2D cross-sections first, then connected in 3D using the Micromine software.

At MG two geological zones were interpreted: eluvial/colluvial cover or Blanket Zone and underlain by a Saprolite Zone. The geological interpretation was performed in two steps. The first step involved interpretation of 39 vertical cross-sections while the second step validated the interpretation using horizontal sections (plans). All strings were

extrapolated above the topographic surface to ensure that there were no voids then cut to the topographic surface. All zones were then closed in a 3D model.

Gold mineralized zones were defined within each geological zone based on grade using three cut-off levels: 0.10 ppm, 0.35 ppm, and 1.00 ppm gold. Mineralization in the Saprolite Zone is subvertical whereas mineralization in the Blanket Zone tends to be more flat-lying.

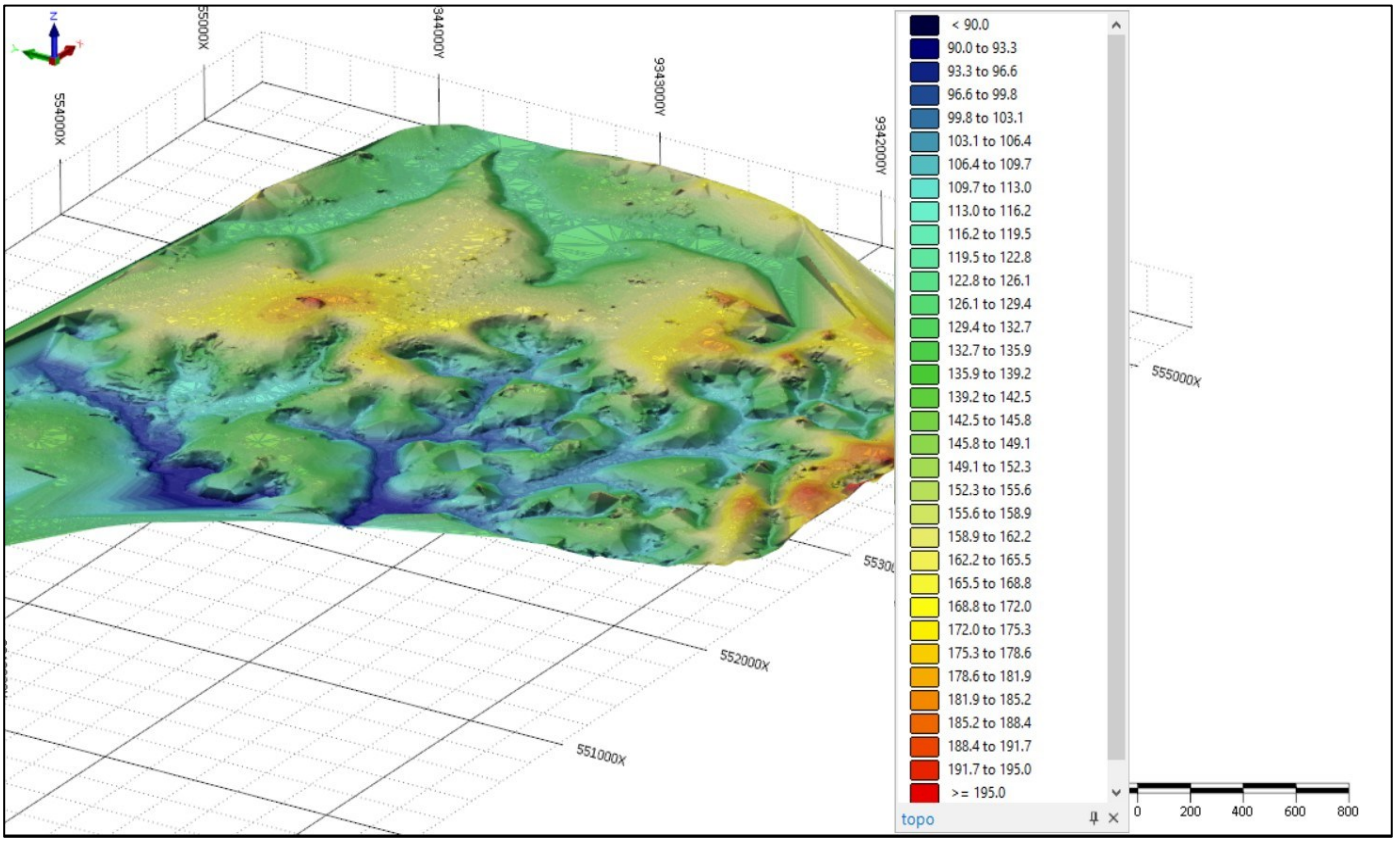
14.4.4 Triangulation

The triangulation may be divided into closed wireframes (representing mineralized zones) and surface models (representing topography and alteration zones).

14.4.4.1 Topography

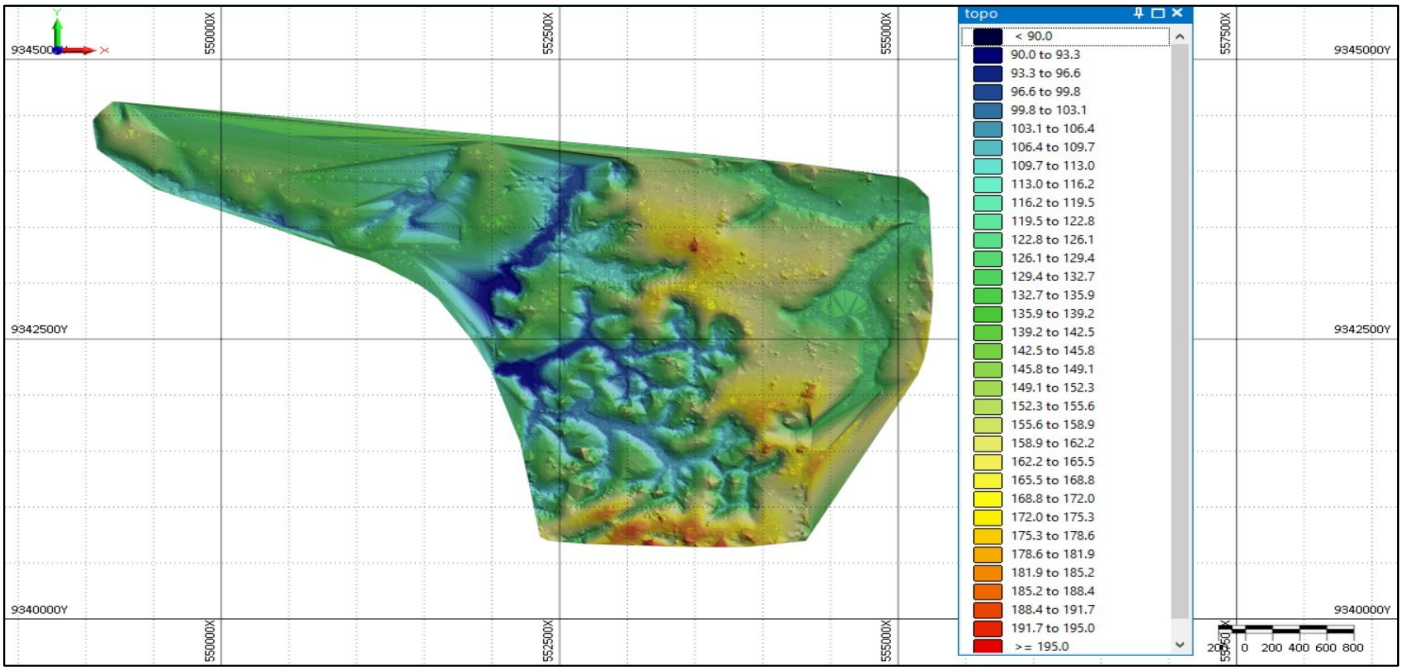
String data files ***.STR** were used to Construct a Digital Surface Model (DSM), resulting in the topographic surface illustrated from Figure 14-29 to Figure 14-30.

Figure 14-29: Surface Digital Topographic Base – 3D View, MG Target



Source: VMG, 2024.

Figure 14-30: Surface Digital Topographic Base – Plan View, MG Target



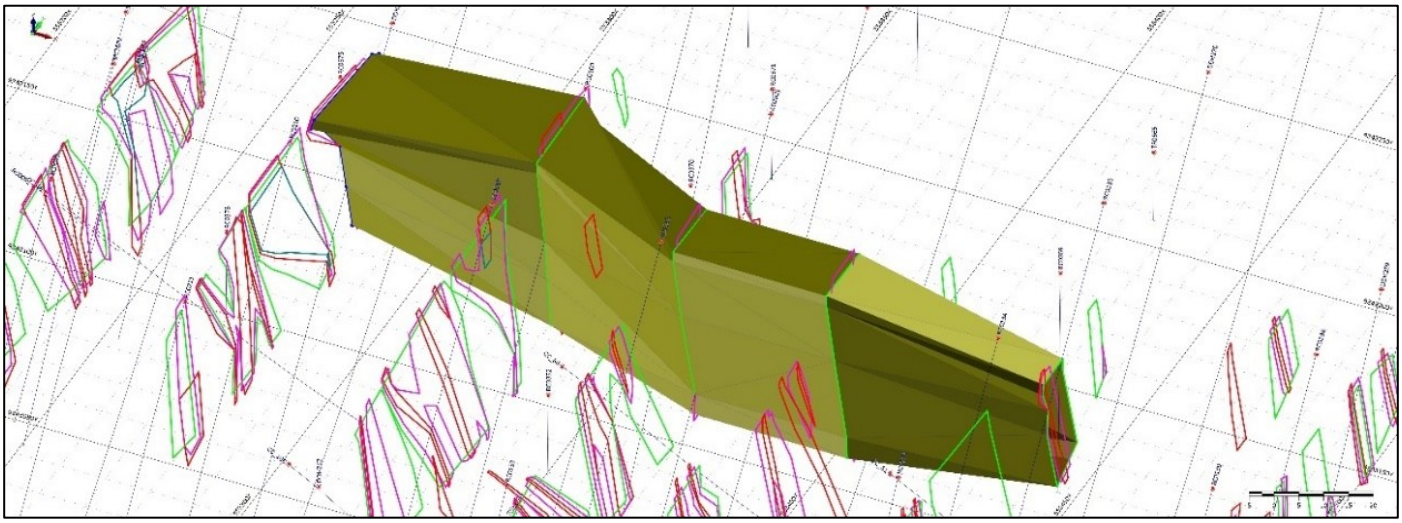
Source: VMG, 2024.

14.4.4.2 Wireframe Closed

The strings were used in the interpretation model to generate a continuous three-dimensional triangulated mesh for each of the mineralized zones. The strings of the sections are shown on the screen, consequently, intertwine with strings interpretation of subsequent sections (Figure 14-31).

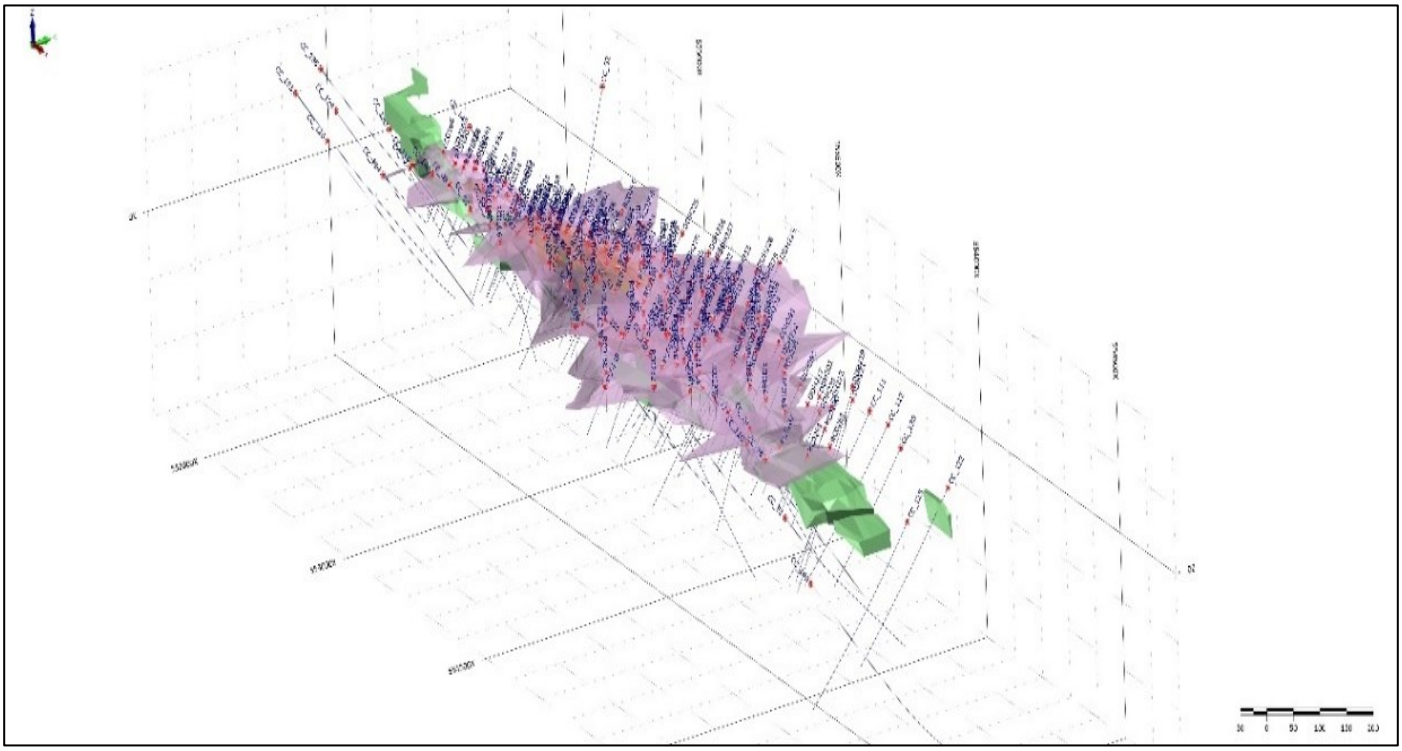
The interpretation of the mineralized zones was extrapolated above topography. Triangulation of the extrapolated mineralized zones occurred where the solids were cut by the topographic surface. This procedure was used to ensure the continuity of the mineralized zones to the topography without loss of volume and mass. In Figure 14-32 shows the results of triangulation of all mineralized zones cut by the topographic surface.

Figure 14-31: Triangulation of Mineralized Zones, MG Target



Source: VMG, 2024.

Figure 14-32: Triangulation of the Mineralized Zones Cut by Topographic Surface. View all Mineralized Zones in the Area, MG Target



Source: VMG, 2024.

14.4.5 Data Selection

The selection of drillhole data is a standard certification procedure. It is essential that the correct samples are used in classical statistical analysis, geostatistics, and the grade interpolation process. Coding based on the ore body wireframes was applied to select the samples from the drill holes.

To ensure that the samples used for interpolation had the same weight in terms of size, an analysis was completed to determine the size of the composites. The analysis revealed that sample lengths for the MG Target range from 0.50 to 5.00 m, with a mean of 1.13 m.

An analysis of the mineralized zone samples indicates that approximately 80% of the samples have a length of 1 m.

Accordingly, the length of 1 m was adopted for the composite samples, converting all the samples to this uniform length. The process of creating the composite intervals started at the collar of the drill hole and continued downwards, in the direction of drilling. Intervals shorter than 0.60 m were excluded. The statistical analyses results of the composited samples are presented in Table 14-23.

Table 14-23: Results of Statistical Analysis Performed

Element	Number of samples	Minimum	Maximum	Mean	Median	Variance	Standard deviation
Samples composited MG Target							
Au ppm	4830	0.0025	166.0500	0.4933	0.2020	6.736682	2.595512

14.4.6 Capping

As part of the resource modeling process, the QP performed a capping analysis to assess the location and distribution of the outliers and higher-grade samples throughout the deposits and gold zones. Top cuts were defined using histograms and probability plots in each individual gold zone.

Table 14-24 summarizes the capping and their justifications, based on wireframes at different cut-off grades for MG Target. The recommended capping ranges from 5 g/t to 30 g/t, and in several instances where grades are low and data is limited, no capping is advised.

Table 14-24: Capping by Orebody, MG Target

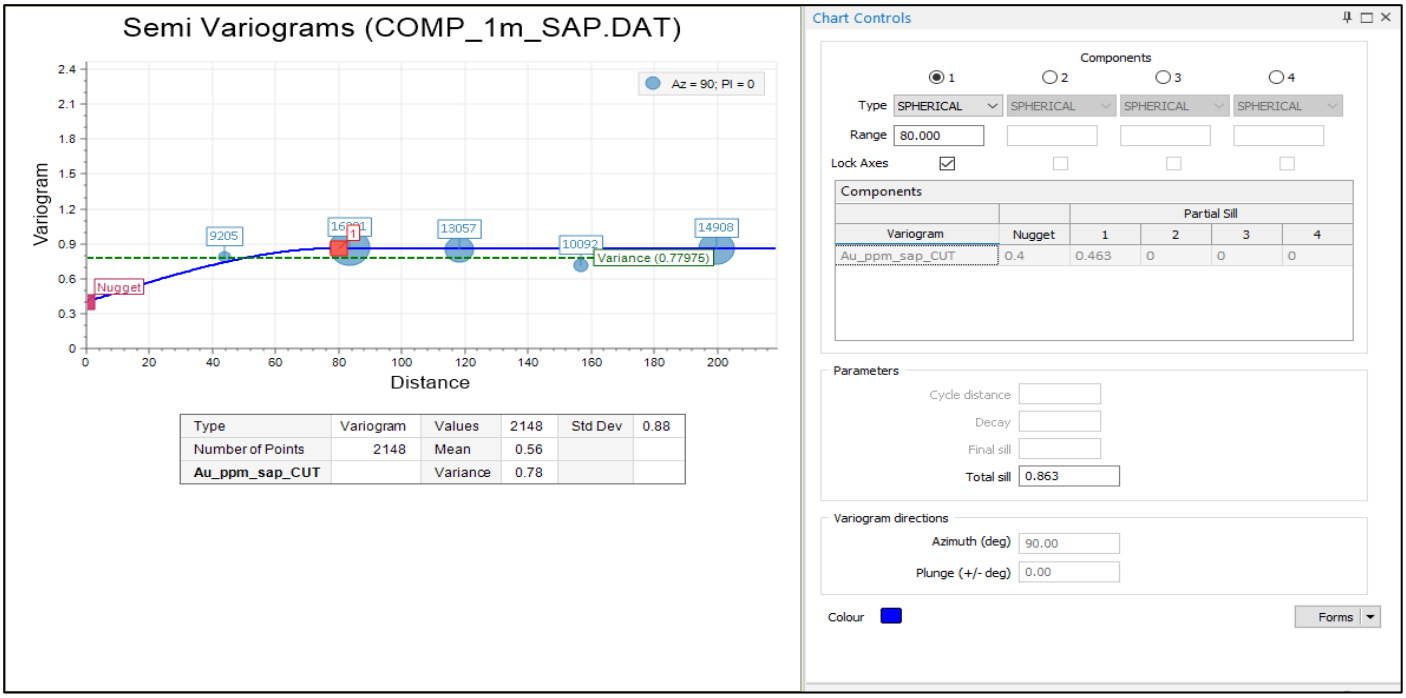
Orebody	N° of Samples	Min	Max	Samples Capped	Capping
Blanket					
Blanket All	2337	0.326	15.295	2	6.0
Blanket HG (0.35 g/t)	830	0.593	14.514	1	6.0
Central Domain -Zone 1					
CD-Zone 1 All (0.1)	531	0.527	8.211	0	10.0
CD-Zone 1 HG & Bonanza (0.35)	250	0.925	8.211	0	10.0
CD-Zone 1 Bonanza (1.0)	114	1.460	8.211	0	10.0
Central Domain-Zone 1A					
CD-Zone 1A All (0.1)	346	0.810	21.817	1	15.0
CD-Zone 1A HG & Bonanza (0.35)	197	1.300	21.817	1	15.0
CD-Zone 1A Bonanza (1.0)	93	2.176	21.817	1	15.0
Central Domain - Zone 2					
CD-Zone 2 All (0.1)	549	0.957	27.577	2	15.0
CD-Zone 2 HG & Bonanza (0.35)	289	1.635	27.577	2	15.0
CD-Zone 2 Bonanza (1.0)	154	2.609	27.577	2	15.0
Central Domain - Zone 2HW					
CD-Zone 2HW All (0.1)	57	3.711	166.050	1	30.0
CD-Zone 2HW HG & Bonanza (0.35)	38	5.459	166.050	1	30.0
CD-Zone 2HW Bonanza (1.0)	20	9.741	166.050	1	30.0
Central Domain - Zone 3					
CD-Zone 3 All (0.1)	169	0.477	5.659	0	10.0
CD-Zone 3 HG & Bonanza (0.35)	75	0.838	5.659	0	10.0
CD-Zone 3 Bonanza (1.0)	27	1.565	5.659	0	10.0
Central Domain - Zone 104 Footwall					
CD-Zone 104 All (0.1)	55	0.650	3.546	0	10.0
CD-Zone 104 Bonanza (1.0)	24	1.305	3.546	0	10.0
Central Domain - Zone Other Footwall					
CD-Zone FW All (0.1)	59	0.231	2.509	0	10.0
CD-Zone FW Bonanza (1.0)	1	1.157	1.157	0	10.0
Central Domain - Zone Other Hanging Wall					
CD-Zone HW All (0.1)	19	0.332	1.782	0	10.0
CD-Zone HW Bonanza (1.0)	3	1.177	1.782	0	10.0
East Zone					
EZ All (0.1)	204	0.155	9.314	1	5.0
EZ HG	5	3.264	9.314	1	5.0
Far West Zone					
FW All (0.1)	33	0.048	0.362	0	10.0

14.4.7 Geostatistical Analysis

Geostatistical studies were carried out for the entire mineralized zone. The file of the 1-m composite sample was used for the construction of the Semi Variograms. Semi Variograms were made on the analysis of the gold (Au ppm). The following figures (Figure 14-33 to Figure 14-35) illustrate the semi Variograms generated for the gold (Au ppm).

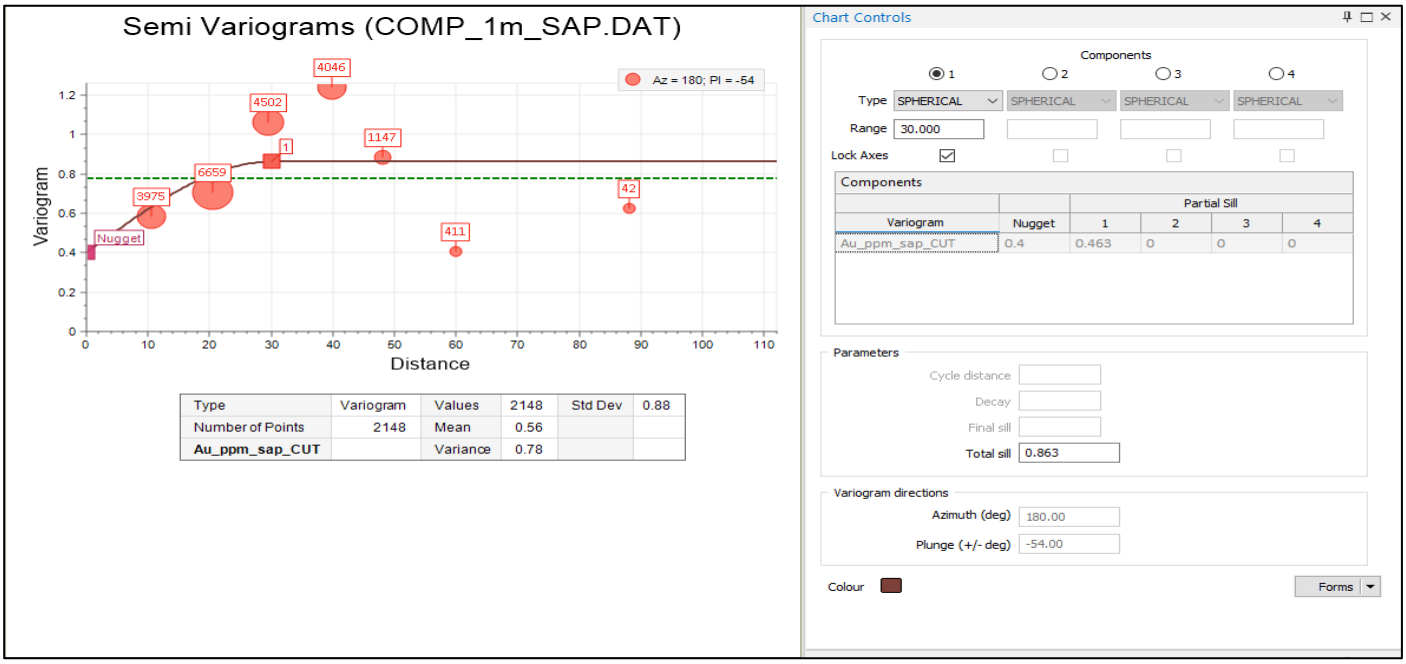
In order to verify the variograms, the cross-validation process was used, which presented a low value for the statistical error of data interpolation. The cross-validation verification result for the gold (Au ppm) is presented in Table 1. A linear dependence diagram between the data of the composite samples file and the estimate of the grade obtained by the Cross-Validation process was also constructed. The results for the Au ppm are shown in Figure 14-36.

Figure 14-33: First Axis to Au (ppm), MG Target



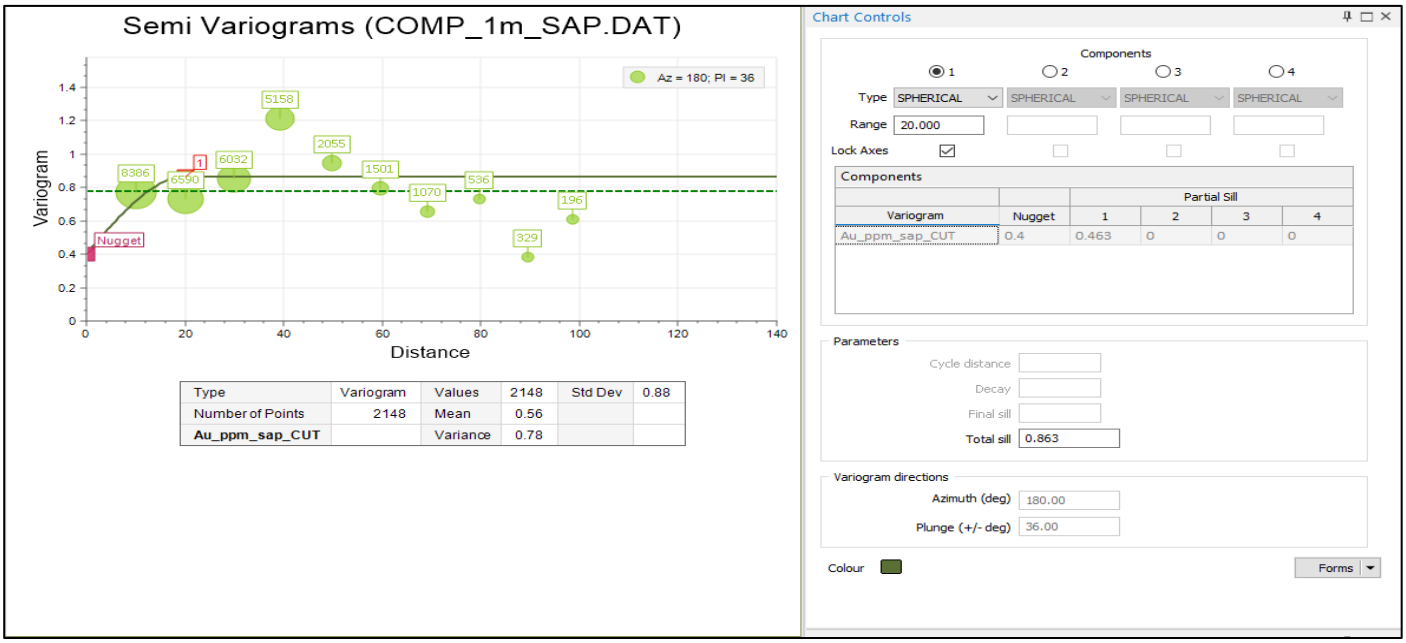
Source: VMG, 2024.

Figure 14-34: Second Axis to Au (ppm), MG Target



Source: VMG, 2024.

Figure 14-35: Third Axis to Au (ppm), MG Target



Source: VMG, 2024.

Table 14-25: Cross-Validation Verification Results for Au (ppm), MG Target

Analysis varb	Au_ppm			
Transformation	None			
Number of points	2148		**Mean**	**Std Dev**
Raw Data		Au_ppm_preferred	0.709857945	3.830281398
Standard error		STD_ERROR	0.711733873	0.027120957
Estimate		ESTIMATE	0.705122977	1.449283510
Residual		RESIDUAL	0.004734968	3.949696881
Error statistic		ERROR_STAT	0.006099138	5.529943165

Figure 14-36: Linear Diagram of Dependence Between Composite Samples Data and Au Grade (Ppm) Estimates, MG Target

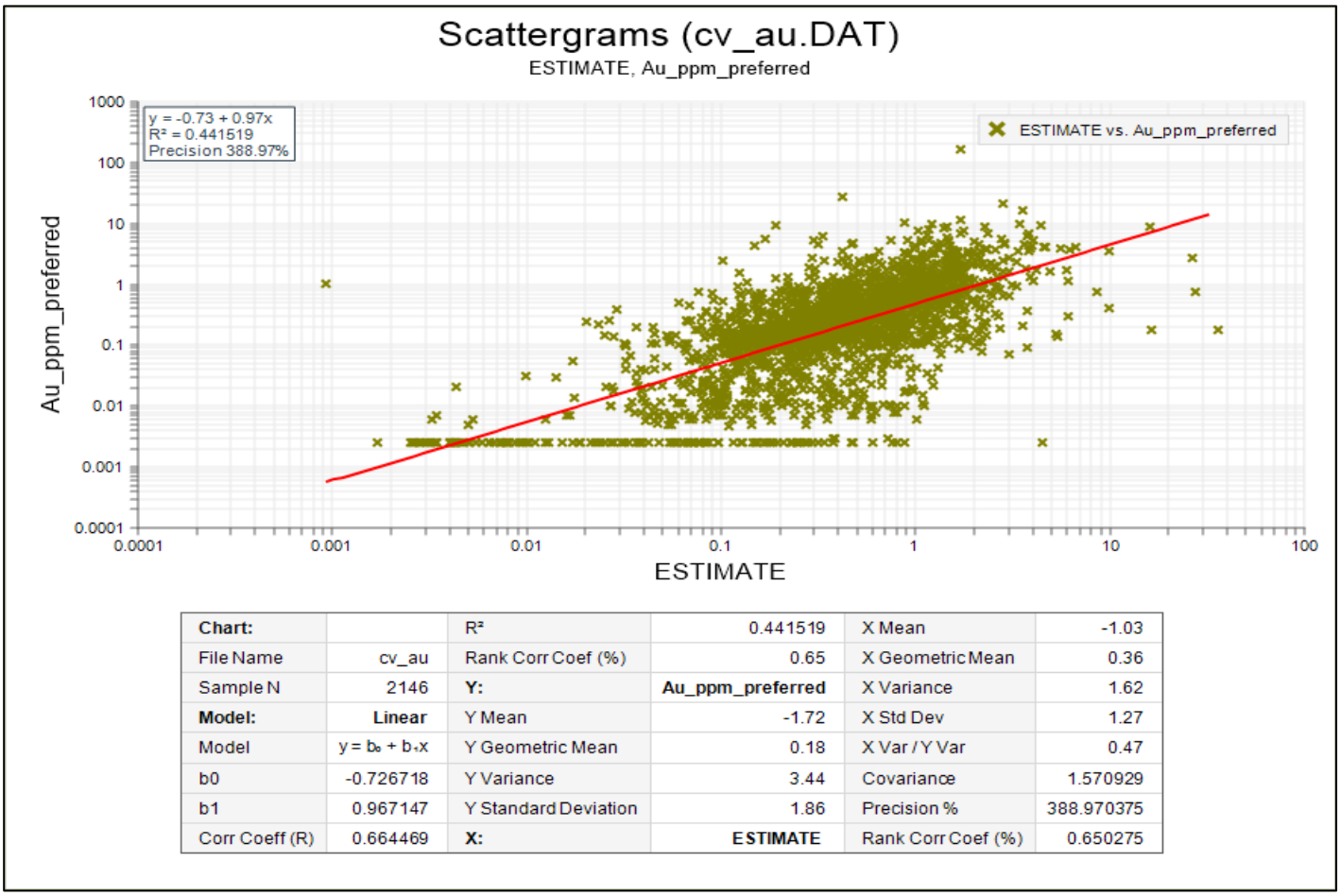


Chart:		R²	0.441519	X Mean	-1.03
File Name	cv_au	Rank Corr Coef (%)	0.65	X Geometric Mean	0.36
Sample N	2146	**Y:**	**Au_ppm_preferred**	X Variance	1.62
Model:	**Linear**	Y Mean	-1.72	X Std Dev	1.27
Model	$y = b_0 + b_1x$	Y Geometric Mean	0.18	X Var / Y Var	0.47
b0	-0.726718	Y Variance	3.44	Covariance	1.570929
b1	0.967147	Y Standard Deviation	1.86	Precision %	388.970375
Corr Coeff (R)	0.664469	**X:**	**ESTIMATE**	Rank Corr Coef (%)	0.650275

Source: VMG, 2024.

The cross-validation process was conducted without restrictions on the number of drill holes and samples within the search ellipse, regular grades were also used, without applying capping. Satisfactory results were obtained, with a correlation coefficient between actual and estimated gold grades of 0.66 for MG deposit.

14.4.8 Grade Interpolation and Mineral Resource Classification

14.4.8.1 Modelling

The block model was generated from the discretization of the three-dimensional solids into blocks of defined dimensions. The parameters of the blocks are listed below, in Table 14-26.

The process of discretization of the solid included the sub-blocking process. Initially, the model was filled with blocks measuring 10 (X) by 10 (Y) by 5 (Z) meters, which were divided into subunits of smaller size, with a factor for size subdivision of 10 by 10 by 5 in contact with the surrounding three-dimensional solids.

As a result, at the limit with solids, the size of the blocks became 1.0 (X) by 1.0 (Y) by 1.0 (Z) meters. The initial size of the blocks was chosen based on the morphology of the orebodies and the size of the exploration grid at 1/4 of the main grid.

The solid was used to create a block model within the mineralized geological body. This solid was used to encode the respective blocks. The digital model of the topographic surface was used to limit the block models by the vertical axis. The blocks were generated with faces parallel to the North/South and East/West axes.

Table 14-26: Block Model Parameters, MG Target

Directions	Minimum	Maximum	Block Size (m)	Minimum sub-block size (m)	Number of primary blocks
East	552300	554700	10	1.00	241
North	9342500	9343400	10	1.00	91
RL - Elevation	82	192	5	1.00	23

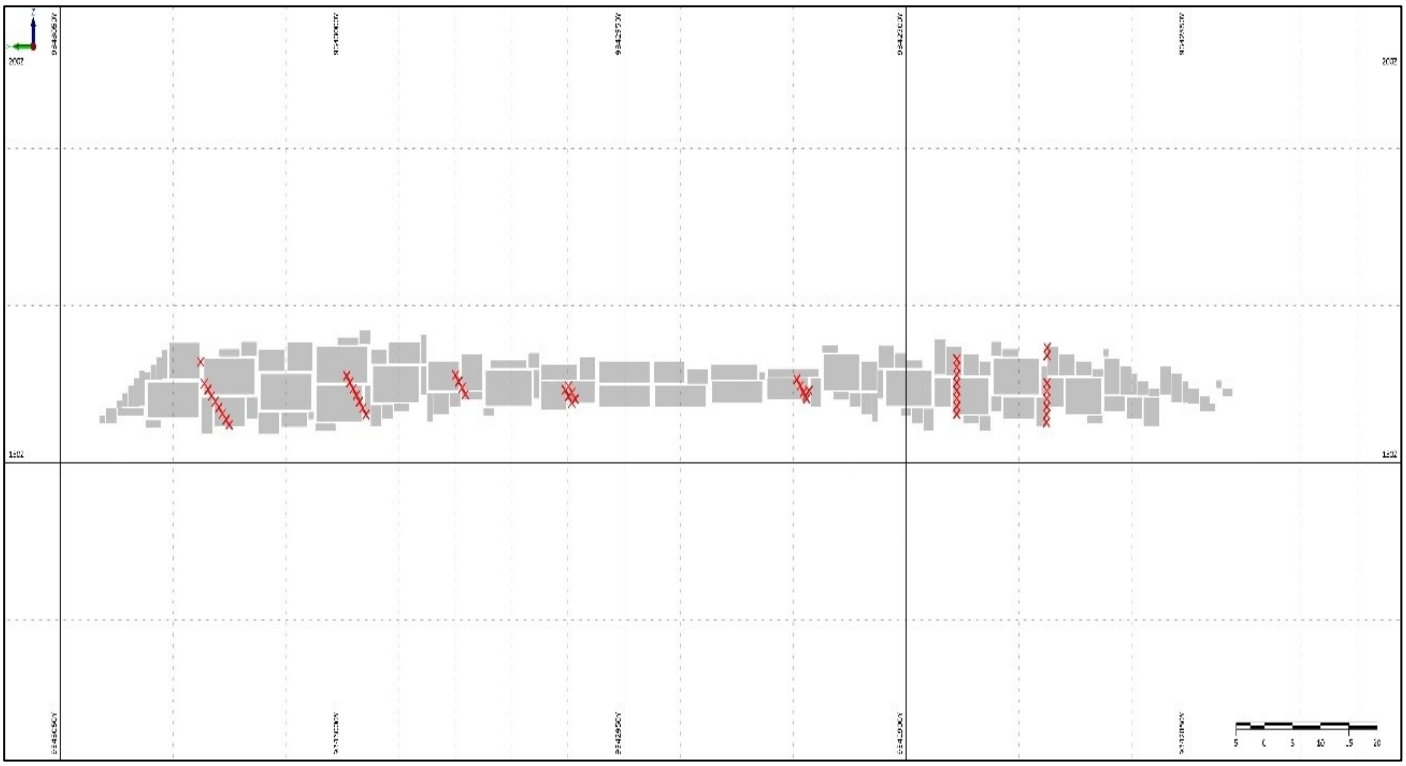
14.4.8.2 Flattening Blanket

Due to the fact that Blanket mineralisation zones have a tabular shape that follows the changes in the terrain, it was necessary to flatten out the mineralisation zones to perform the resource estimation of the Cuiú Cuiú deposit. The flattening process simplifies the grade interpolation and geostatistical analysis.

To flatten out the mineralisation zones, the Micromine “Flattening” function was used. For the Cuiú Cuiú deposit, a decision was made to apply the “Flatten to a center line with”. This allowed for the flattening out of the base and the top of the mineralisation zones.

The flattening function created a new set of RL_F coordinates for each block. The flattened model was displayed on the screen with the corresponding 3D grid to visually check for any errors, Figure 14-37.

Figure 14-37: Block Model of Blanket and Samples Composited of Regolith with Flattening, MG Target



Source: VMG, 2024.

14.4.8.3 Grade Interpolation

Gold (Au ppm) was interpolated into the empty block model using Ordinary Kriging (OK), Inverse Distance Weighting with weight 2 (IDW2) and Inverse Distance Weighting with weight 3 (IDW3) methods. The parameters for all three methods were consistent and are described below.

The grade estimation was performed in five consecutive steps (rounds), using different sizes of search radii, criteria for number of composite samples, and the number of drill holes.

The parameters of the search ellipse were defined through geostatistical analysis. The search ellipsoid was divided into four sectors, and the search radii were determined based on the variogram ranges. The orientation of the search ellipsoid and the dimensions of the axes for the interpolated elements are described in Table 14-27 and Table 14-28. The parameters of the search ellipse radii and interpolation parameters for each step (round) of the grade estimation are provided in Table 14-27.

Table 14-27: Direction of the Search Ellipsoid Axes for Au (ppm)

Element	Type Rock	First axis azimuth	First axis dip	Second axis dip
MG Target				
Au (ppm)	Saprolite	90	0	-54
Au (ppm)	Blanket	90	0	0

Table 14-28: Size of the Search Ellipse Axes for Au (ppm)

Element	Axis	Length (m)
MG Target		
Au (ppm)	1	80
	2	30
	3	20

Table 14-29: Search Radius and Interpolation Parameters for Au (ppm) and Interpolation Methods

Round	Search ellipse size factor	Minimum composites	Maximum composites	Minimum hole number
1	0.667	3	12	2
2	1	2	12	2
3	2	2	12	1
4	3	1	12	1
5	100	1	12	1

The blocks for each zone of the mineralized body were interpolated using only composite samples belonging to the corresponding part of the mineralized body, meaning that waste samples were not used. During interpolation, the discretization process for each block was evaluated using the X, Y axes with a factor of 4, and Z axes with a factor of 2. This makes it possible to evaluate each block in thirty-two (32) positions and assign to the center of the block an average of these evaluations. This enhances the precision of the grade estimation in each block.

The limitations for each sector of the search ellipse included the maximum number of points allowed per sector and the minimum total number of points required for interpolation. The minimum number of points varied based on the size of the ellipse, ranging from 1 to 3. The maximum total number of samples used in the interpolation was 12.

14.4.8.4 Density Values for The Block Model

The database for the MG Target contains 7,122 density measurements.

Following the geological interpretation, 666 values were included in the Blanket wireframe and 256 values into the saprolite part wireframes for the MG Target.

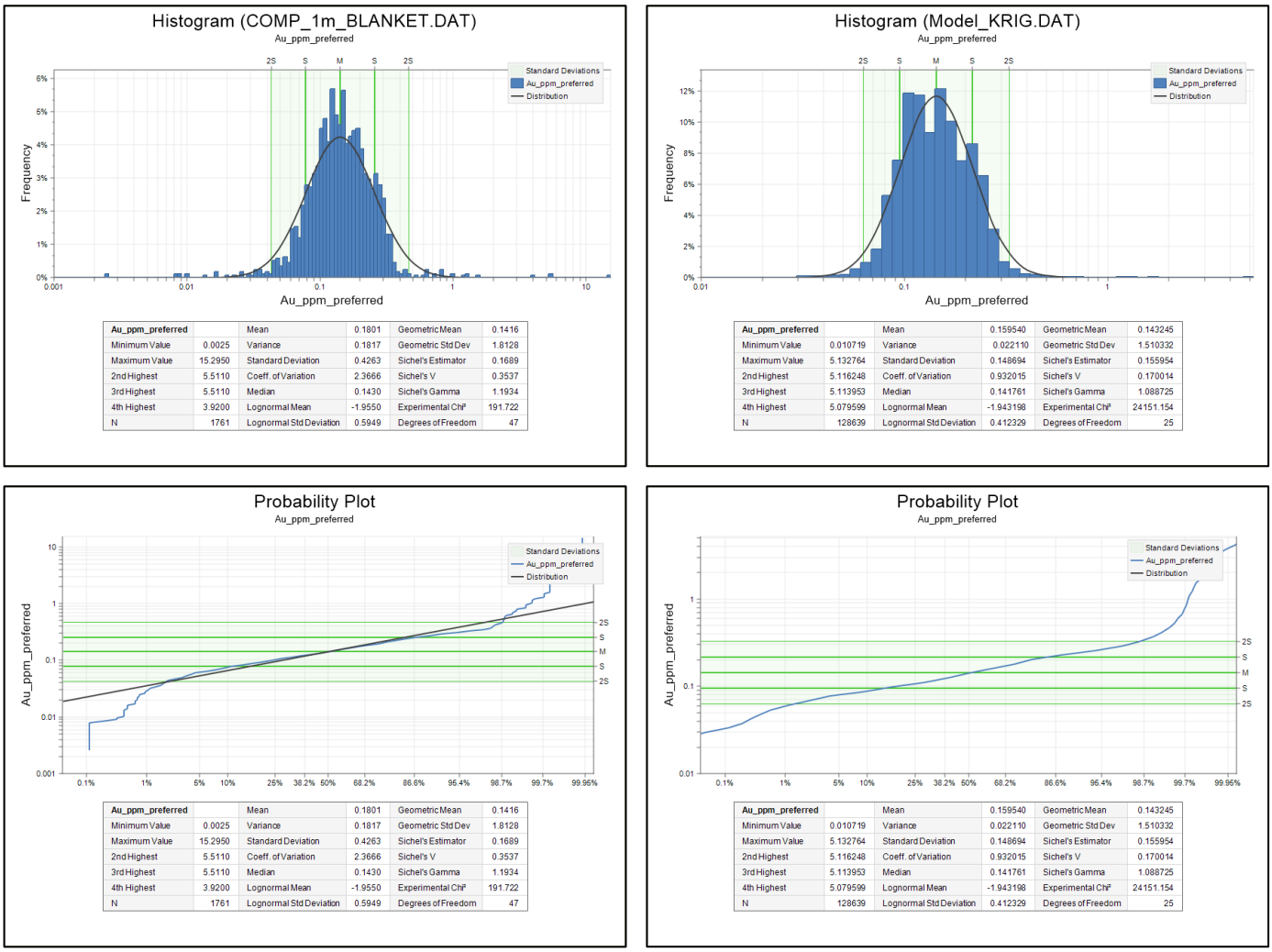
The quantity and distribution of rock density data facilitates the interpolation of density values into the block model. For the saprolite part of the mineralization zone, this method maintains the trend of increasing rock density with depth, rather than relying on average density values for the lithotype.

Density values were interpolated into the block model from the provided density database using the Inverse Distance Weighting method with a power of 2 (IDW2). As a result, each block is assigned an estimated density value in the fields sg_natural and sg_dry.

14.4.8.5 Block Model Validation

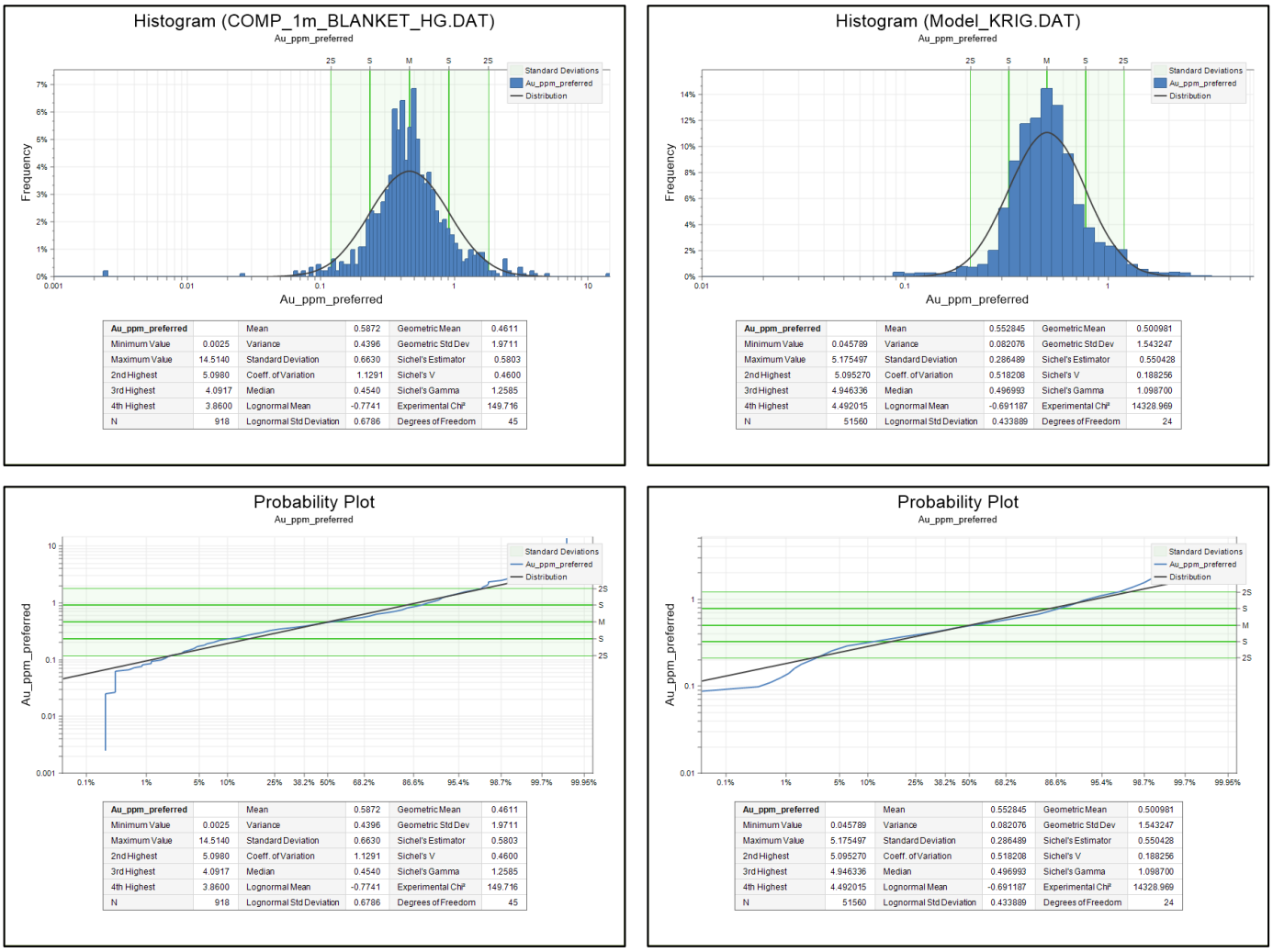
The block model with interpolated grades was subject to visual and statistical verification. Histograms and probability graphs of the interpolated grades were created, and these were then compared to the histograms and probability graphs of the composite samples. The histograms and graphs for both the interpolated grades and composite samples were found to be similar, although the block model histograms were smoother than the composite histograms. These comparisons validated the accuracy and consistency of the constructed block model. The comparison histograms and probability plots are illustrated in Figure 14-38 to Figure 14-42.

Figure 14-38: Histogram and Graph of the Probability of Distribution of Au (ppm) in Composite Samples (left) and Block Model Interpolated by the Ordinary Kriging Method (right), Blanket, MG Target



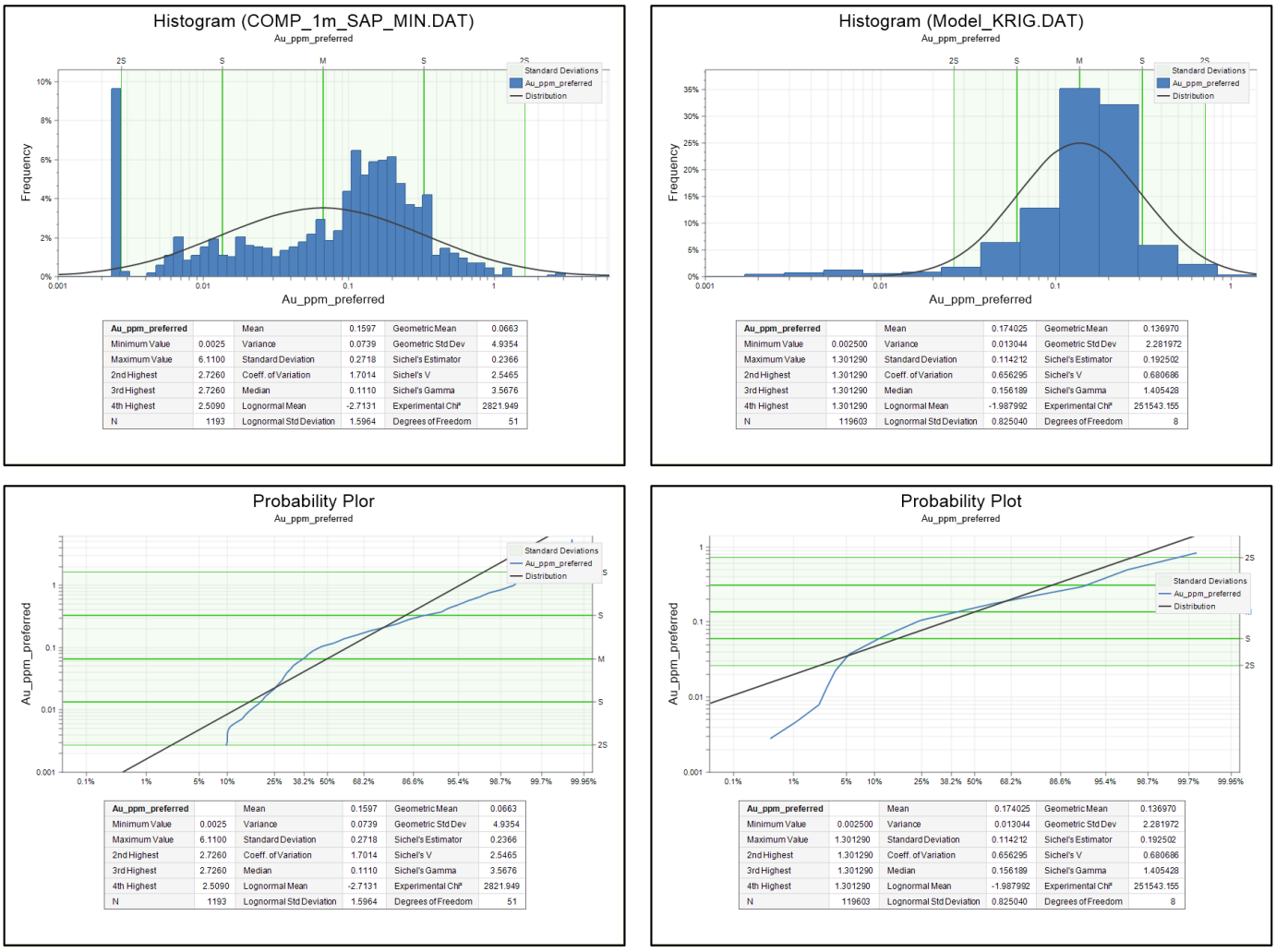
Source: VMG, 2024.

Figure 14-39: Histogram and Graph of the Probability of Distribution of Au (ppm) in Composite Samples (left) and Block Model Interpolated by the Ordinary Kriging Method (right), Blanket High-Grade, MG Target



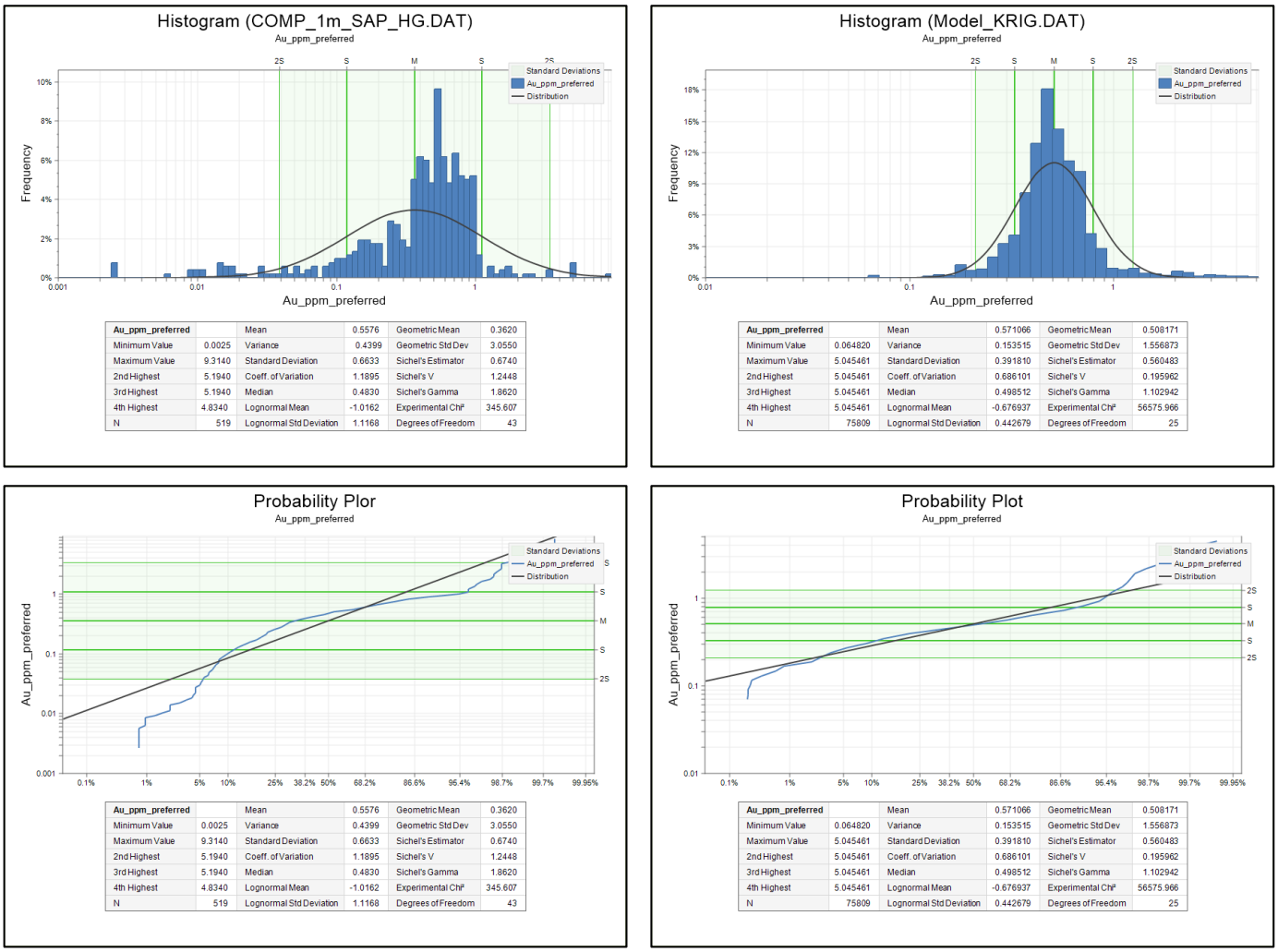
Source: VMG, 2024.

Figure 14-40: Histogram and graph of the probability of distribution of Au (ppm) in composite samples (left) and block model interpolated by the Ordinary Kriging method (right), Saprolite mineralization, MG Target



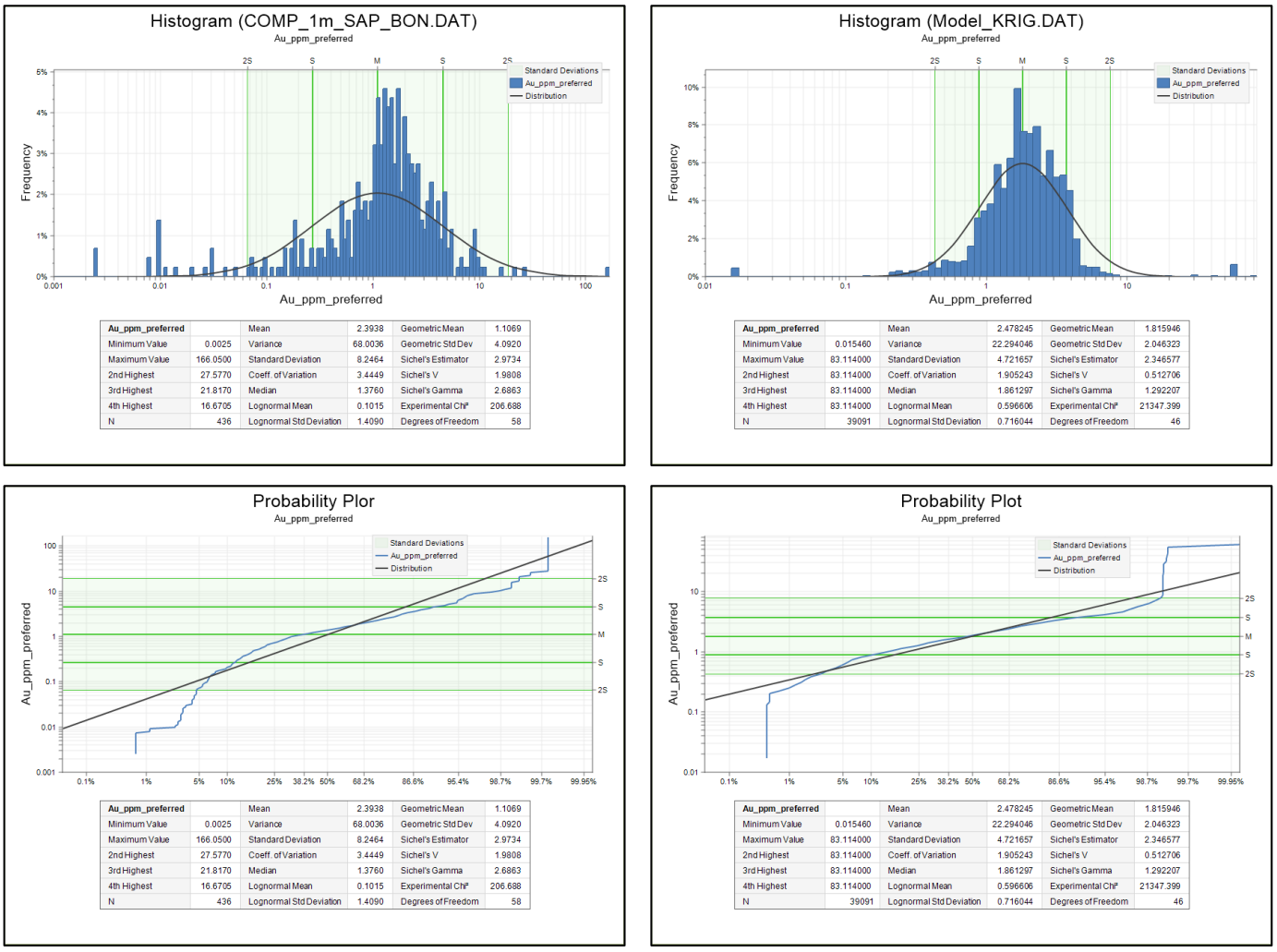
Source: VMG, 2024.

Figure 14-41: Histogram and Graph of the Probability of Distribution of Au (ppm) in Composite Samples (left) and Block Model Interpolated by the Ordinary Kriging method (right), Saprolite High-Grade, MG Target



Source: VMG, 2024.

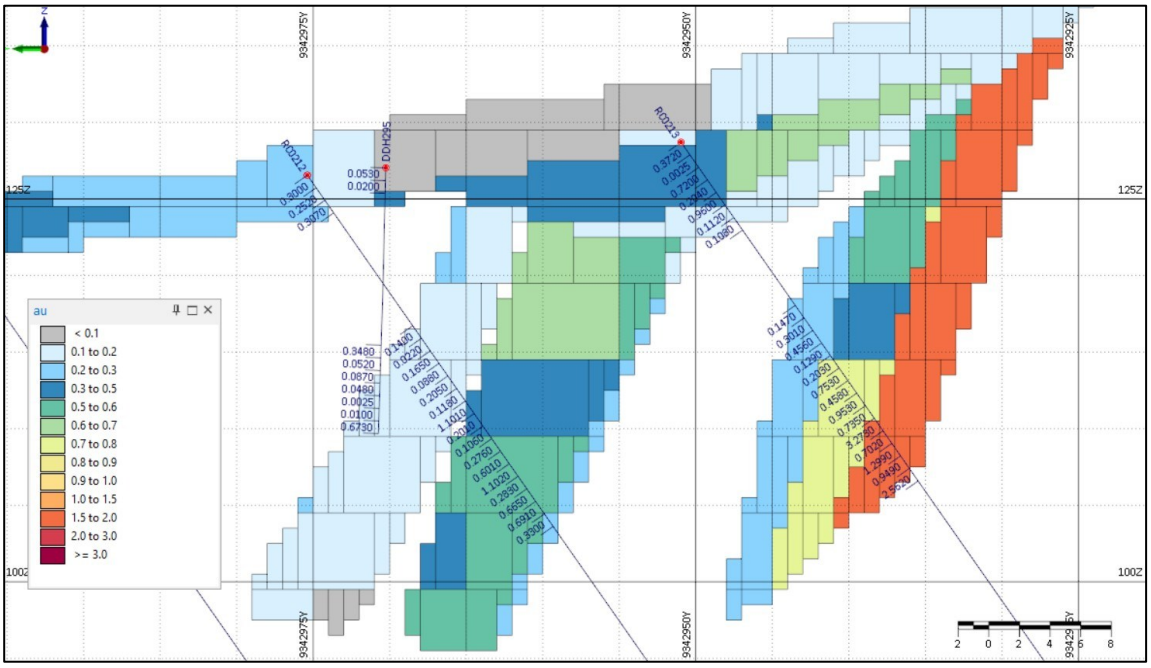
Figure 14-42: Histogram and Graph of the Probability Of Distribution of Au (ppm) in Composite Samples (left) and Block Model Interpolated by the Ordinary Kriging Method (right), Saprolite Bonanza, MG Target



Source: VMG, 2024.

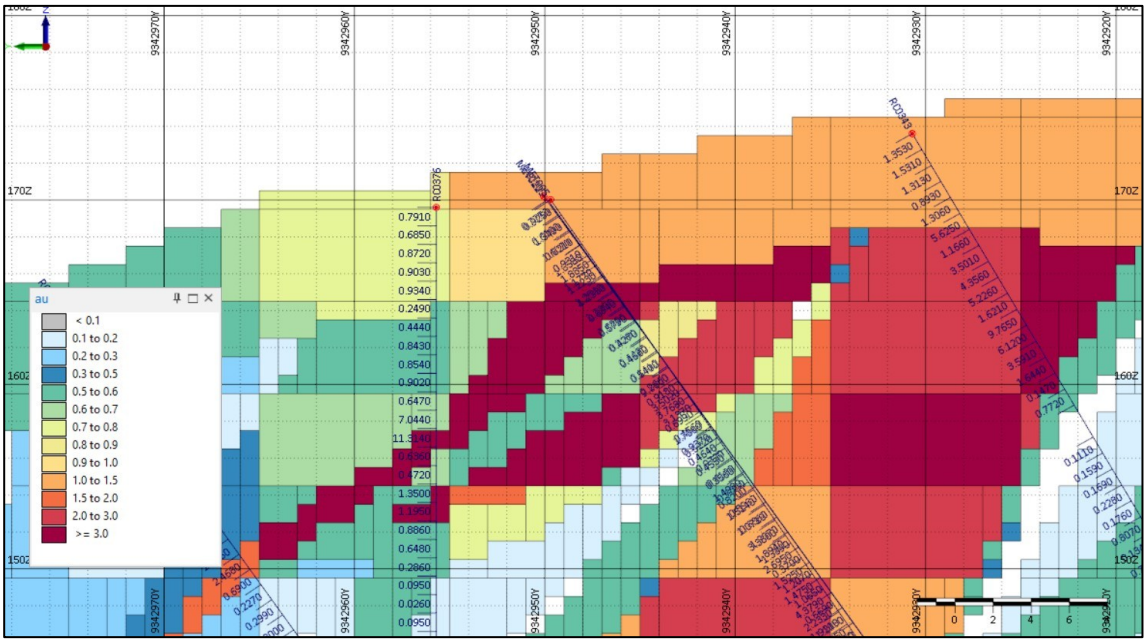
In addition, the interpolated grades were visually compared to the actual sample grades. A comparison between the actual samples and interpolated grades shows an approximate relation, indicating the precision of the estimated grades in the block model. Several sections were created to display the block model grades and the grades along the drill holes. The visual comparison is illustrated in Figure 14-43 to Figure 14-45.

Figure 14-43: Au (ppm) Visualization with Block Model - Section 05, MG Target



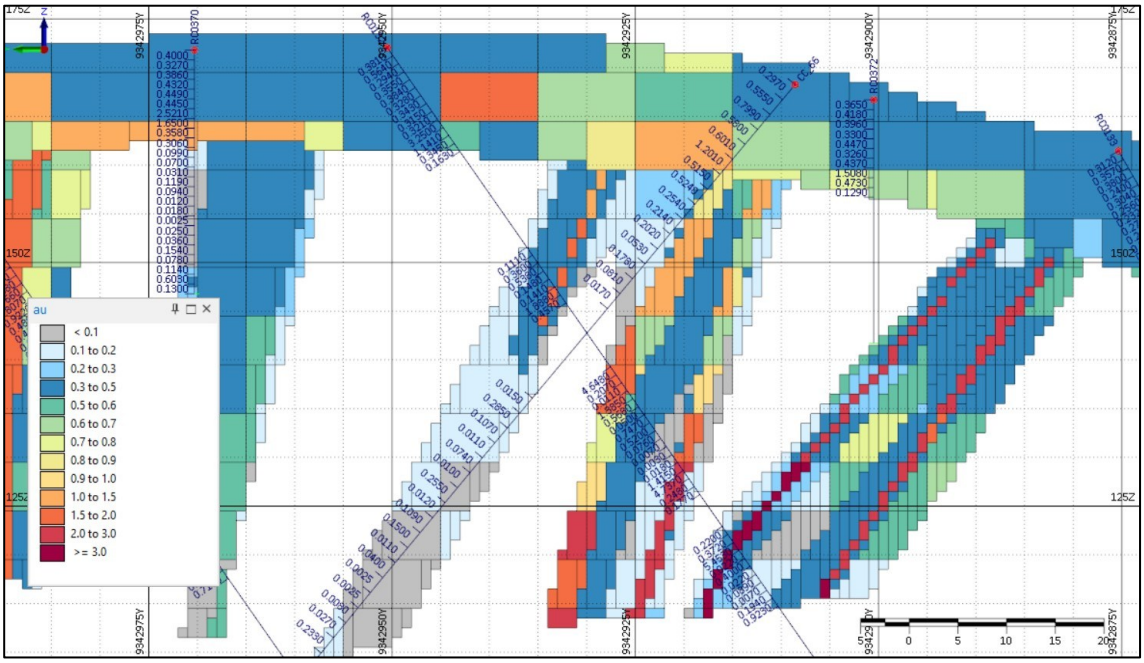
Source: VMG, 2024.

Figure 14-44: Au (ppm) Visualization with Block Model – Section 10, MG Target



Source: VMG, 2024.

Figure 14-45: Au (ppm) Visualization with Block Model – Section 1, MG Target



Source: VMG, 2024.

The average grade of the gold (Au ppm) from the model was compared with the average grade of the chemical variable from the sampling interval file for all elements interpolated by the three used methods. The comparison showed a very satisfactory result.

A comparison was made between a provisional polygonal estimation using the "interval" weighting method and the interpolation data by the Kriging, IDW3 and IDW2 methods for orebodie. This comparison is presented in Table 14-30. The average difference between the average grades of Au (ppm) for all interpolation methods, in relative percentages, is lower than 3.7% and the difference between the volumes of the solid and of the block model is less than 0.04%. These results confirm the good convergence and high reliability of the estimated block model data. The analysis for the Au (ppm) with application of capping (Au_capping) was also satisfactory. A difference in the average grades of Au (ppm) between solids and the block model estimated by Kriging 4.2% (relative percent), is expected and satisfactory.

Table 14-30: Data Comparison Between Different Estimation Methods for Au (ppm)

Estimation Method	Volume (m^3)	Au (ppm)	Au_capping (ppm)
MG Target			
Block Model (IDW3) Blanket	5768365.00	0.2726	0.2657
Block Model (IDW2) Blanket	5768365.00	0.2722	0.2655
Relative difference %	***0.00***	***0.1351***	***0.0817***
Block Model (Krig) Saprolite	3694609.00	0.4000	0.3791
Block Model (IDW3) Saprolite	3694609.00	0.3855	0.3744
Relative difference %	***0.00***	***3.6208***	***1.2453***
Block Model (IDW3) Blanket	5768365.00	0.2726	
Solid Blanket	5753540.32	0.2829	
Relative difference %	***-0.25***	***3.63***	
Block Model (Krig) Saprolite	3694609.00	0.4000	
Solid Saprolite	3696448.91	0.4179	
Relative difference %	***0.04***	***4.2885***	

To assess the impact of the nugget effect on the geological resource estimation, the results of the interpolated grades were compared both with and without capping. The results of this comparison are shown in Table 14-31. For gold, the relative percentage difference is 5.2%, indicating a significant influence of the high-grade samples on the geological resource estimation.

Table 14-31: Resource Calculation Comparison with and without Capping for Gold, Saprolite Rock Type

Au ppm ppm	Au_Capping ppm	Relative Def. Au-Au_Capping %
MG Target		
0,4000	0,3791	5,21

14.4.8.6 Mineral Resource Classification

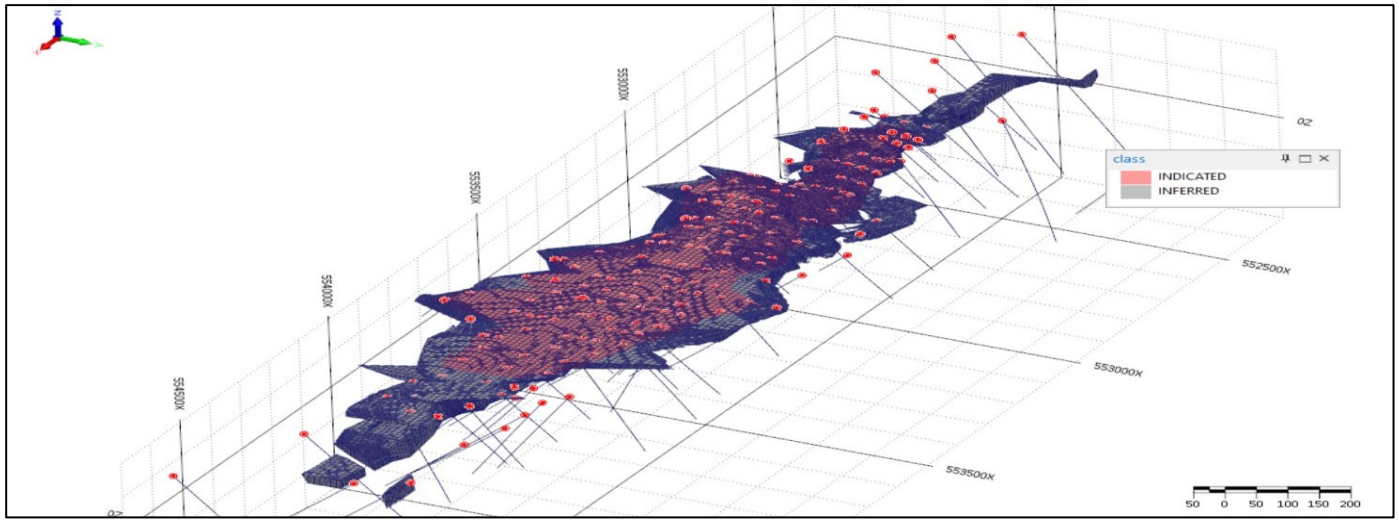
The classification of resources was carried out in accordance with NI43-101. The resources were classified as Indicated and Inferred based on the reliability of the various rounds and data used for the interpolation of the block model. Solids were created and used to stamp the inner blocks to each of these reliability zones.

For the Indicated Resource, a solid that encompasses the blocks that were stamped in the second round of interpolation and based on the regular drilling grid was created. At MG Target, the Indicated Resource solid for saprolite was 50*25 m, and for Blanket 50*25 m.

The other blocks were classified as Inferred Resource.

The three-dimensional visualization of the block model with the spatial distribution of the resource classes is shown in Figure 14-46.

Figure 14-46: Resources Classified as Indicated and Inferred, MG Target



Source: VMG, 2024.

14.4.9 Results of the Resource Evaluation

VMG have estimated Indicated and Inferred Mineral Resources for the oxide portion of the Cuiú Cuiú Prospect in accordance with the CIM guidelines (CIM 2014) which have been adopted as part of NI 43-101.

The CIM Definition Standards on Mineral Resources and Mineral Reserves require that an estimated Mineral Resource must have reasonable prospects for eventual economic extraction. The Mineral Resource estimate discussed herein has been constrained by reasonable potential mining open pit design parameters, using economic and technical assumptions appropriate for an open-pit mining scenario. The potential mining open-pit shells described below are preliminary and conceptual in nature.

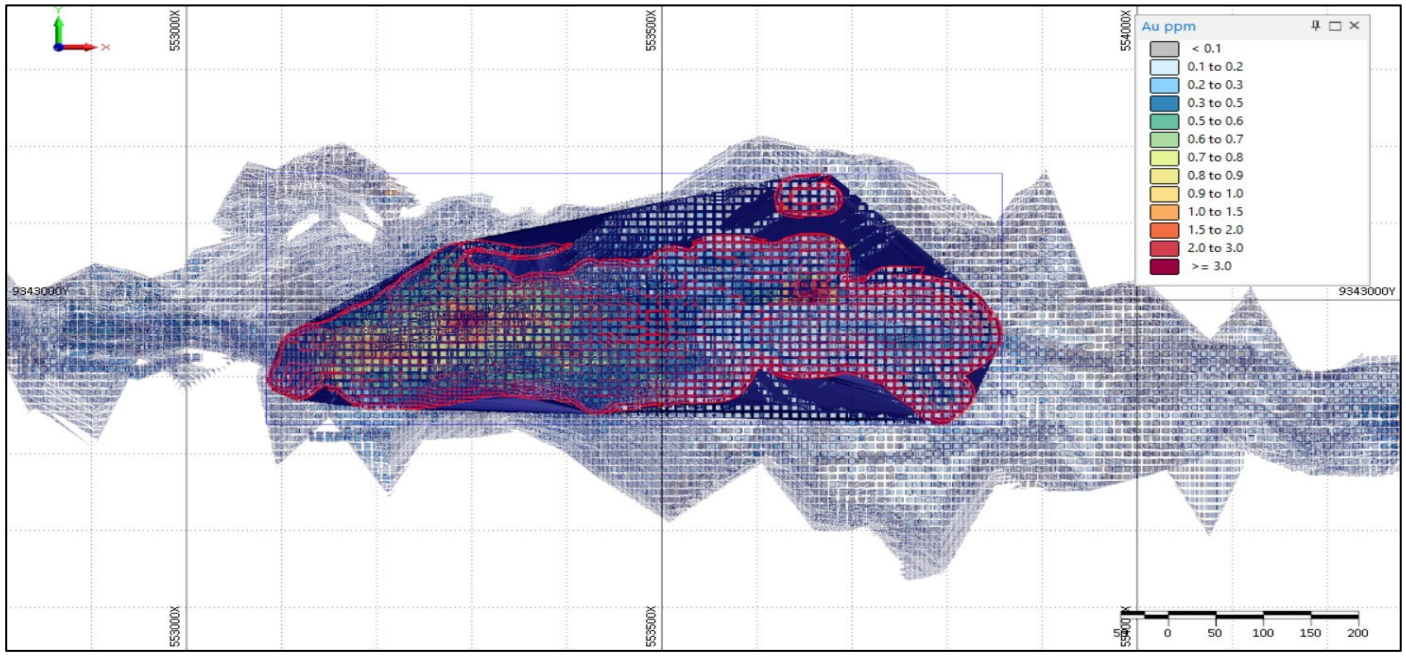
VMG has based the resource categories and cut-off grades of the deposit in the resource estimate stated herein on the requirement of "reasonable prospects for eventual economic extraction," assuming an open-pit mining method production scenario. Dr. Myadzel believes this is warranted for the deposit given the following:

- Long-term gold price based on a 3-year rolling average annual trailing average
- Exchange rate for US$ to R$ based on the 2024 average of 5.7
- Mining dilution factor – 5%

- Mining recovery – 95%
- All MG ore types reported high gold extraction rates, all in excess of 90% based on the metallurgical testing described in Section 13 of this report
- Operating costs (mining, processing, G&A) have been considered
- The scale of the deposit
- The near-surface Mineral Resource with 100% of the reported resource tones within 200 m of the surface
- The disseminated and continuous nature of gold mineralization making the deposit amenable to low-cost bulk mining open-pit methods
- Average infrastructure including power provided by a diesel generator bank, water, roads, a 1,000-meter-long unpaved airstrip, resulting in relatively efficient capital and operating cost requirements.

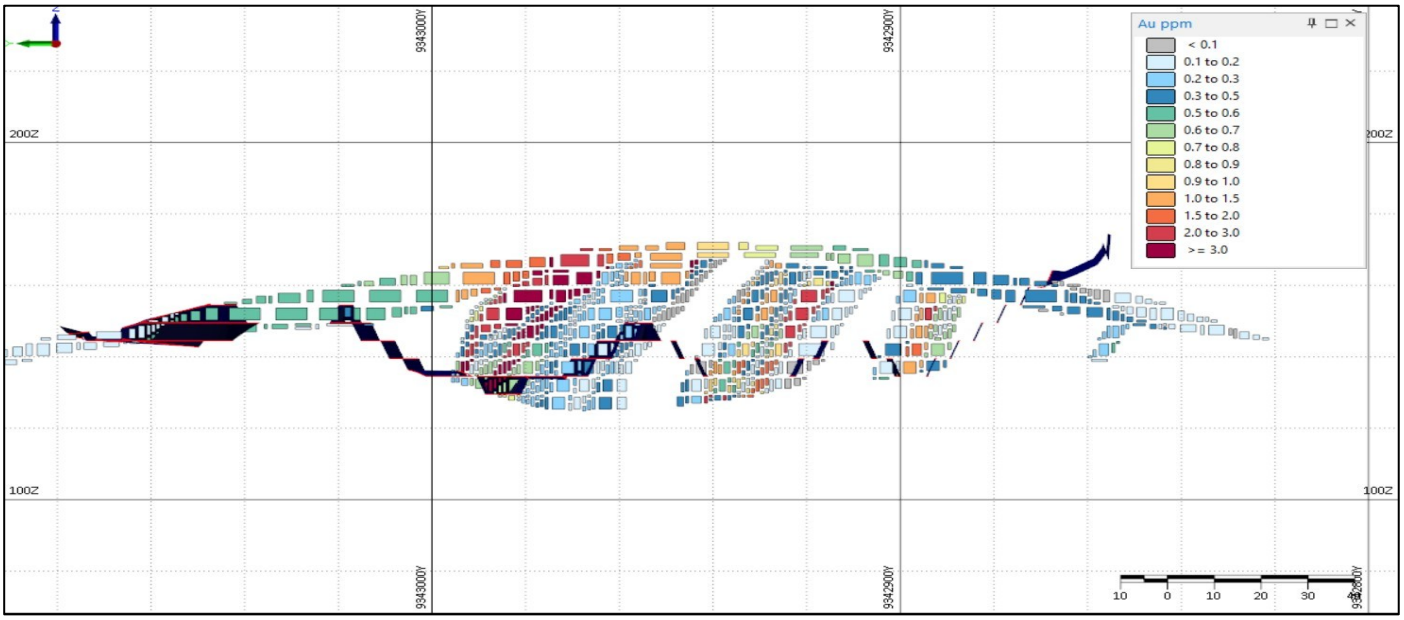
Pit shells were derived from Deswik using Deswik.CAD software (version 2024.1) to estimate material in the block model with reasonable prospects for eventual economic extraction. Pit shells were developed by considering regular blocks measuring 10m x 10m x 5m on constraining boundaries. The overall pit slope angle was judged to be 32.8-45°. The main input assumptions are summarized in Table 15-1 of Section 15. A plan view and section view of the assumed pit constraints are illustrated in Figure 14-47 and Figure 14-48, respectively.

Figure 14-47: Pit Constraining Surface around Estimated Block Model (Maria Gomes Target) – Plan View



Source: VMG, 2024.

Figure 14-48: Pit Constraining Surface around Estimated Block Model (Maria Gomes Target) – Section View Looking East



Source: VMG, 2024.

The results of the evaluation of resources, based on the block model interpolated by the Ordinary Kriging (OK) method, of gold mineralization of the Cuiú Cuiú Prospect are presented in Table 14-29.

To determine the influence of the nugget effect on the geological resource estimation, the results of the calculation for interpolated grades with and without capping were compared. For gold, the difference in relative percentage is 0.1 to 8% with average 3%, which shows the not high influence of the high-grade samples in the geological resource estimation. The resource estimation presented with application of capping and without application, Table 14-32.

Table 14-32: Geological Resources Calculated by the Ordinary Kriging (OK) Method, with Classification of the Gold. Resources for a Dry Basis, MG Target

Cut-Off	Class	Type	Volume	Tonnes	Density	Au	M_Au	Au_Capping	M_Au_Capping
Au (ppm)			m^3	t	(t / m^3)	ppm	oz	ppm	oz
0.1	Indicated	BLANKET	3,969,135	5,973,354	1.50	0.34	65,288	0.33	63,774
		SAPROLITE	1,635,830	2,884,546	1.76	0.76	70,565	0.71	66,107
	Inferred	BLANKET	885,565	1,374,089	1.55	0.17	7,454	0.16	7,034
		SAPROLITE	921,458	1,768,831	1.92	0.26	15,053	0.26	14,845

Note:
Au – Average gold grade without application of capping.
M_Au – Resource estimation without application of capping.
Au_Capping – Average gold grade with application of capping.
M_Au_Capping – Resource estimation with application of capping.

14.5 Risks and Factors that may affect the Mineral Resource Estimate

Mineral Resource estimation involves a degree of uncertainty and risk. The primary risks are associated with gold price fluctuations, increases in operating costs, or increases in important operating consumables costs such as fuel. Other potential risks could include mining factors such as pit wall stability, mining dilution and processing factors such as recovery estimates. Political factors such as changes to mining laws, tax structures, or government policies, could potentially affect the Mineral Resource estimates, as could environmental factors such as changes to regulations or permits. Cabral Gold has attempted to mitigate the technical factors related to mining and process operations through detailed technical analyses. As well, the Company has followed applicable legal, political, and environmental regulations and procedures to ensure proper operations can proceed.

While certain factors may present risk, these also present potential opportunities. Higher gold prices or lower operational costs would present a huge opportunity to the Project and thus the overall resources. Increased operational efficiencies would likewise present an opportunity to increase resources, as would positive changes in the legal, political, or environmental arena.

15 MINERAL RESERVE ESTIMATES

15.1 Introduction

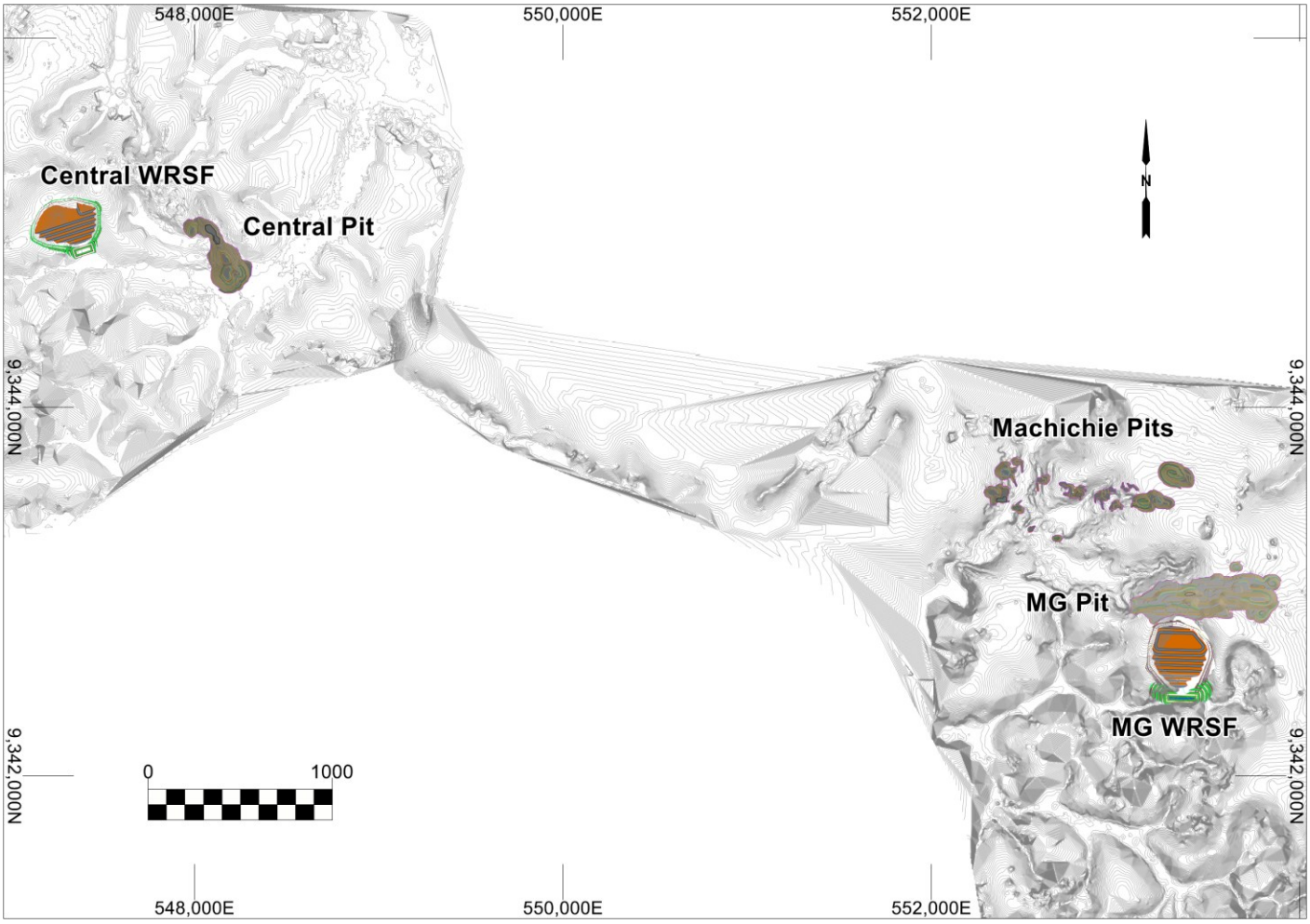
The Mineral Reserve estimate for the Cuiú Cuiú Project deposit was reported using the 2014 CIM Definition Standards.

Mineral Reserves suitable for open pit mining methods were estimated through a comprehensive optimization process, utilizing Indicated Mineral Resources from the block model provided by VMG Consultoria e Soluções Ltda, and Dzick Geoconsultants. All inferred blocks were considered as waste. These Mineral Reserves are defined within detailed engineered pit designs and a life-of-mine (LOM) plan that is based on the optimized pit shells. Reserves within these engineered pits were calculated using cut-off grades (COG) specific to each rock type, considering a gold price of US$2,220/oz with an exchange rate of R$5.75/US$1.0, with refining costs included. The Mineral Reserves are located across three main zones: Moreira Gomes (MG), Machichie and Central. Probable Mineral Reserves, as of the effective date of July 23, 2025, are estimated to be 6,178 kt at 0.65 g/t Au.

Two on-site Waste Rock Storage Facilities (WRSFs) will serve the open pits: the MG WRSF will receive material from both the MG and Machichie pits, while the Central WRSF will be dedicated to the Central pit. These facilities are designated as the MG Waste Rock Storage Facility (MG WRSF) and the Central Waste Rock Storage Facility (Central WRSF). Cabral Gold holds surface rights across the project area and has secured the environmental installation license (LI) for all necessary pit-related structures considering a small operation (300 kt/a). An update of the environmental impact assessment (EIA) report was submitted in January 2025 considering the large plant capacity (1.0 Mt/a). The current open-pit mine has an expected operational lifespan of six years and two months.

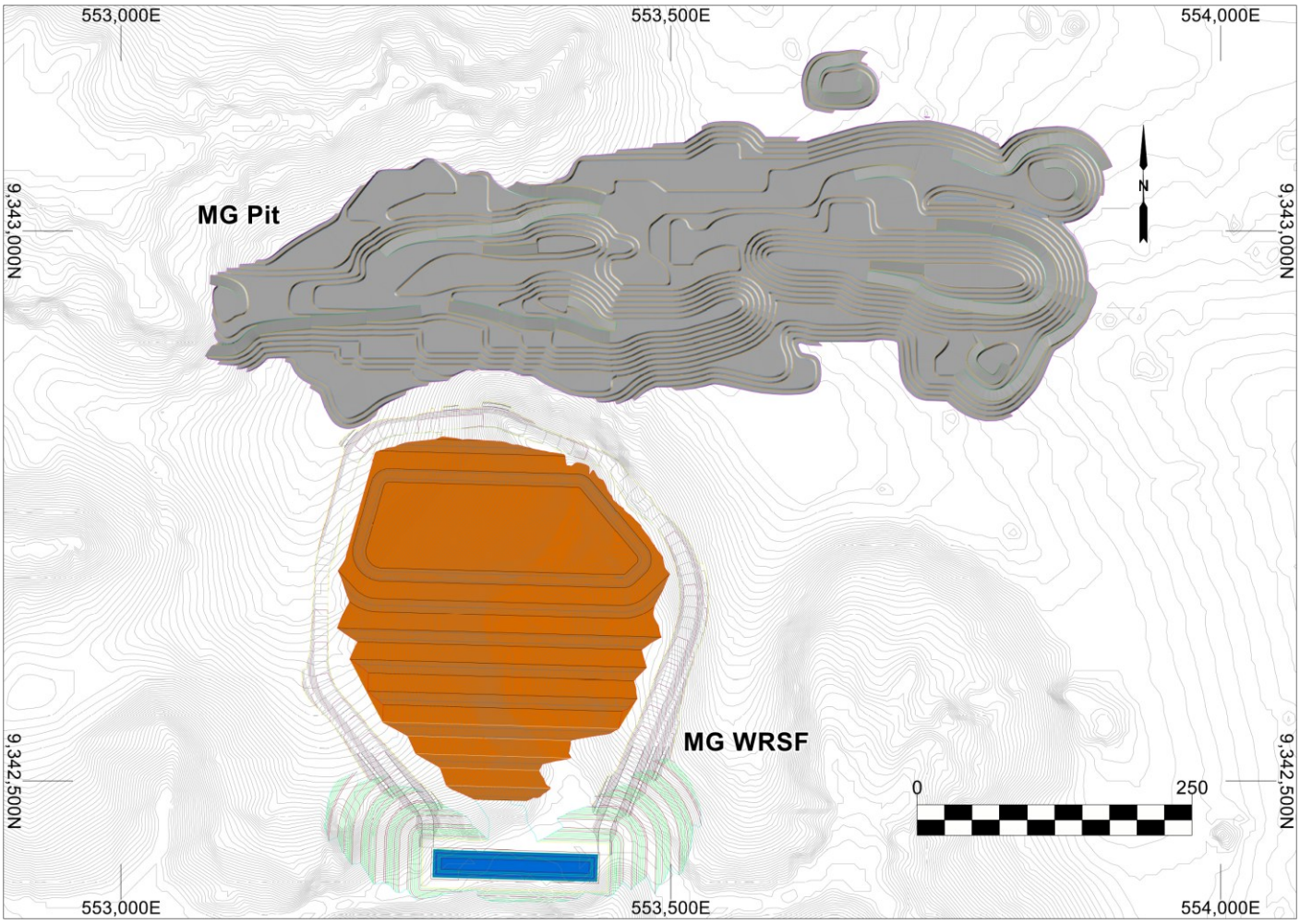
Figure 15-1 presents the proposed site layout plan, detailing all pits and WRSFs, while Figure 15-2, Figure 15-3and Figure 15-4 provide detailed layouts for the MG, Machichie, and Central pits, respectively.

Figure 15-1: General Site Layout



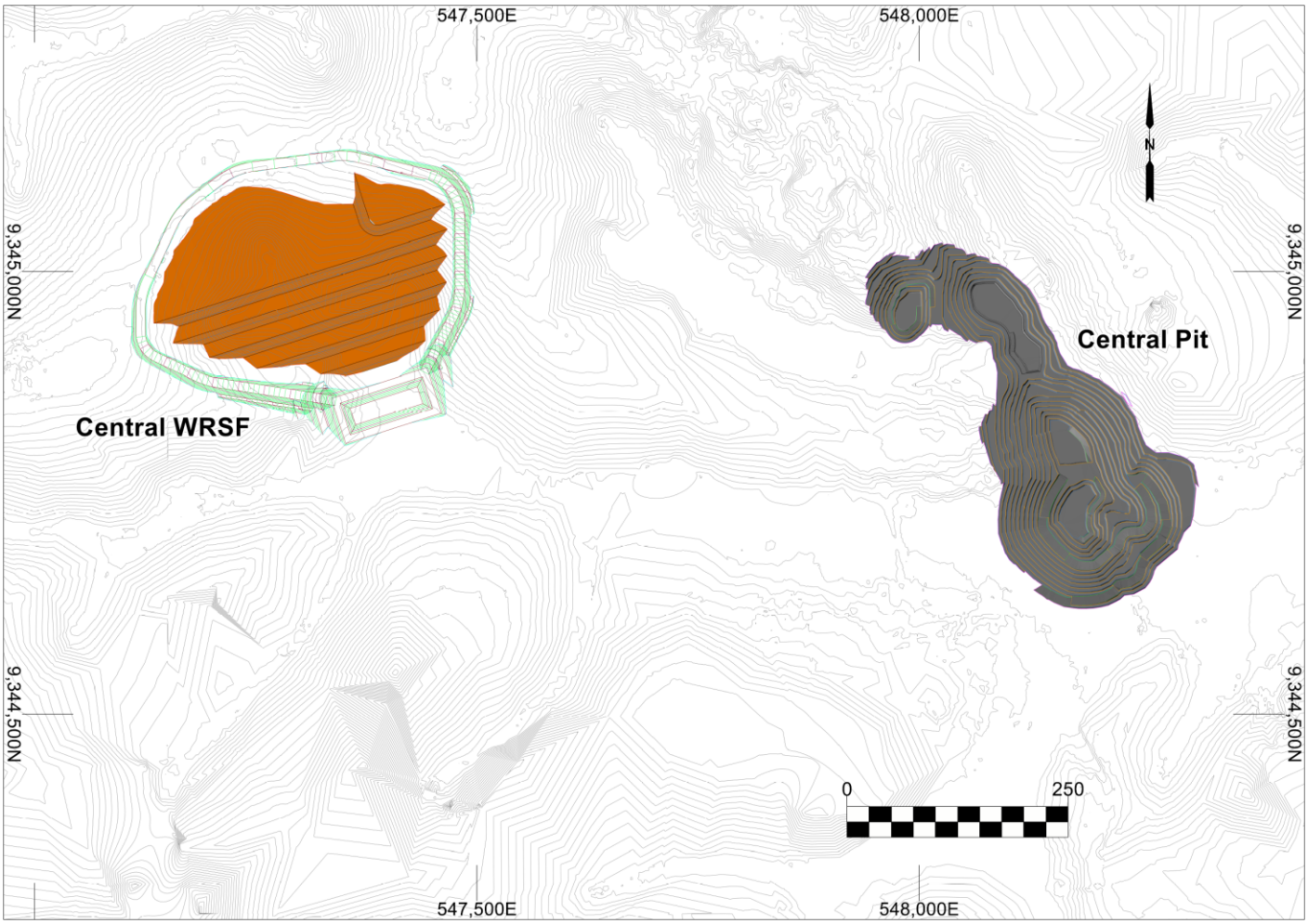
Source: Deswik, 2025.

Figure 15-2: MG Site Layout



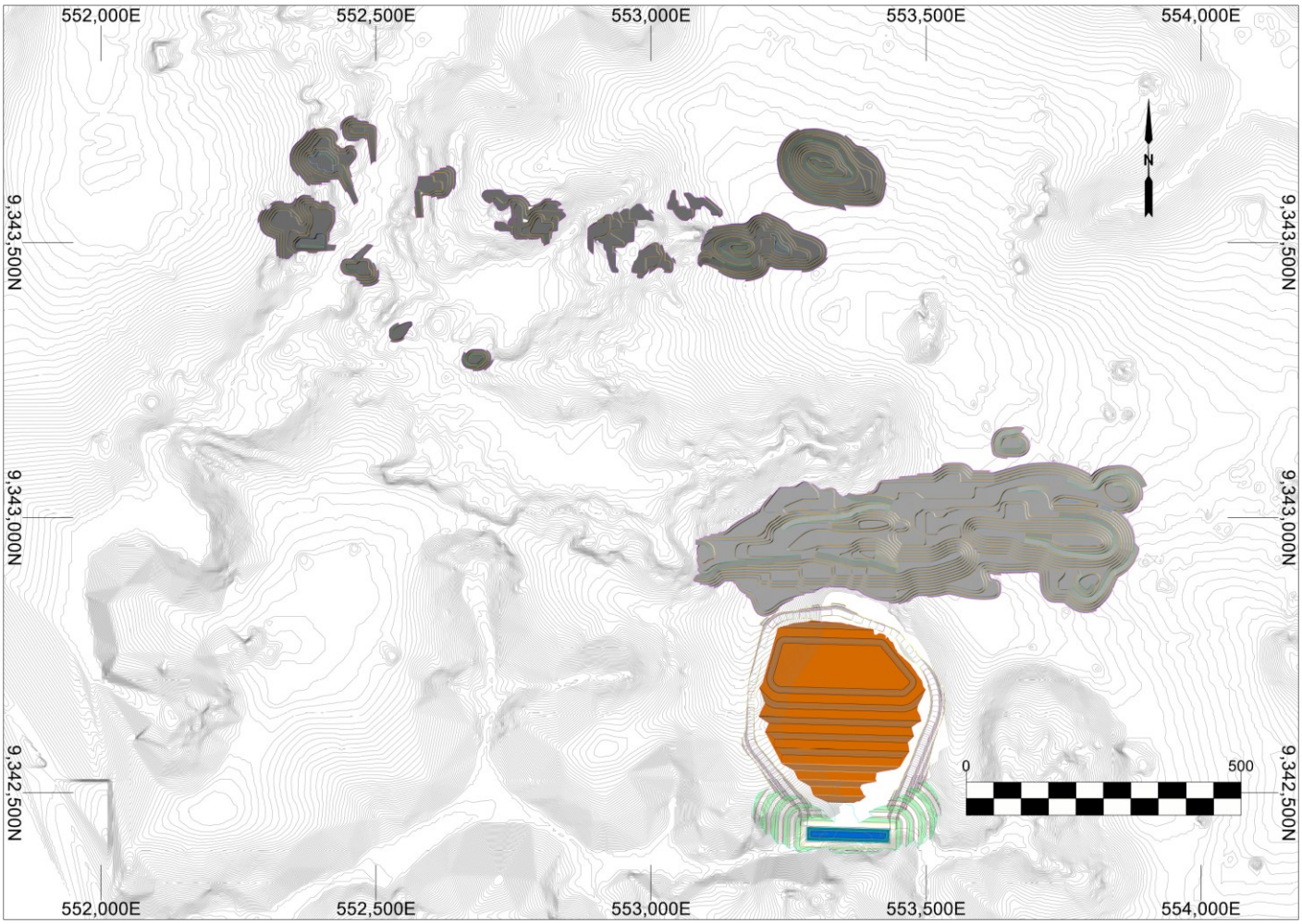
Source: Deswik, 2025.

Figure 15-3: Central Site Layout



Source: Deswik, 2025.

Figure 15-4: Machichie Site Layout



Source: Deswik, 2025.

Test work and processing results demonstrate that all ore is amenable to a conventional gold processing route. This process includes crushing, agglomeration, leaching, extraction through carbon-in-column (CIC), and final processing in an adsorption-desorption-recovery plant, followed by refining to produce doré bars.

15.2 Estimation Procedure

15.2.1 Reserve Block Model

The pit optimization and engineered pit designs for the Cuiú Cuiú Project were developed using block models prepared by different consultants: VMG Consultoria e Soluções Ltda. (2024) for the MG deposit, and Dzick Geoconsultants (2025)

for the Central and Machichie deposits. For the MG deposit, a parent block size of 10 m x 10 m x 5 m (X, Y, Z) was applied, with sub-blocking enabled. The Central and Machichie deposits, regular block models with a 5 m × 5 m × 5 m (X, Y, Z) block size were used. Each model incorporates block attributes coded with the following parameters:

- Gold (Au) grade
- Lithology information (saprolite and Blanket)
- Resource category (Measured, Indicated, and Inferred)
- Density

The MG model was regularized to a Selective Mining Unit (SMU) of 5 m x 5 m x 5 m, considered appropriate for selective mining using small-sized equipment. This SMU sizing also reflects the free-digging nature of the material. Final LOM designs were completed for the open pits and serve as the basis for estimating the production plan at the Cuiú Cuiú Project.

15.2.2 Open Pit Optimization

The open pit optimizations were performed using the Pseudoflow algorithm in Deswik.CAD software (version 2024.2). By incorporating mining costs, processing costs, selling costs, gold recovery values, and an overall pit slope, the pit optimizer delineates an ultimate pit shell that maximizes the value of the extractable material.

A series of pit optimizations were conducted across a range of revenue factors to generate an industry-standard pit-by-pit graph. This process assessed the sensitivity of the pit optimizations to fluctuations in mineral selling prices, as well as the impact of pit size and stripping ratios on the Project's net present value (NPV). The optimization procedure yields a series of nested pit shells that prioritize the extraction of the most economically viable material. Less profitable material, characterized by lower grades and/or higher strip ratios, is only mined in later pit shells as commodity prices increase.

From these optimizations, suitable pit shells were selected to inform the engineered pit designs and production plan estimates. All pit optimizations utilized reasonable and relevant economic, cost, recovery, and pit slope assumptions and were conducted using diluted gold grades. Only resource blocks classified as Indicated were included in the pit optimizer. The model does not contain any blocks classified as Measured. All inferred blocks were considered as waste.

15.2.3 Dilution and Extraction

Total dilution is calculated as the sum of planned and unplanned dilution:

- Planned dilution: Non-ore material (below cut-off grade) located within the designed boundaries (mining lines), determined by the selectivity of the mining method, the continuity of the orebody along strike and dip, and the complexity of its shape.
- Unplanned dilution: Additional non-ore material (below cut-off grade) from outside the designed boundaries, incorporated due to blast-induced overbreak and/or the challenges in separating ore from waste during excavation.

Given the orebody geometry and the operational shape of the open pit, a 5% dilution rate was assumed for both MG and Central. For Machichie, considering the narrow vein characteristic of the deposit, a 10% dilution was applied. Mining recovery was estimated at 95% of the in situ ore.

15.2.4 Cost Parameters for Pit Optimization

The key pit optimization parameters used to define the economic pit shells for the deposits are summarized in Table 15-1. These optimizations were based on parameters and cost data projected for the Project, incorporating current quotations specific to the Project.

Table 15-1: Pit Optimization Parameters

Modifying Factor	Value
Gold price	US$ 2,250/oz
Gold Refining Charge	US$ 30/oz
Royalties	4% of Gross Revenue
Exchange rate	R$ 5.75 : US$ 1.0
Costs	
Mining	US$ 3.50/t
Fuel Cost	US$ 1.3/L
Transportation Cost Central to MG	US$ 1.41/t
Processing	US$ 10.0/t processed
G&A	US$ 1,500,000/a
Plant recovery	85% Machichie and MG 75% Central
Mining recovery	95%
Dilution	5% MG and Central 10% Machichie
Pit Design Parameters	
Face angle	70.2°
Bench height	5 m
Berm width	3.2 m
Inter-ramp Angle (IRA)	45°
Overall Slope Angle (OSA)	30-45°
Road width	10 m
Road gradient	10%

Mining costs were calculated based on the contract rates quoted specifically for this Project, along with the current mine scheduling and transportation profiles provided to the contractor.

15.2.5 Pit Optimization Mill Recovery

Metallurgical test work was completed at Kappes Cassiday and Associates (KCA) in Reno, NV, on a total of ten oxide material samples from the MG, Central, and Machichie deposits. KCA performed a series of tests on each composite,

including coarse and fine milled bottle roll leach tests, compacted permeability tests, and column leach tests. Gold extractions in the bottle-roll leach tests generally exceeded 90%, with a maximum recovery of 98% achieved after 336 hours of leaching.

15.2.6 Cut-off Grades (COG)

The COG represents the minimum average grade a selective mining unit must achieve to be considered economically viable for mining, factoring in both planned and unplanned dilution. The mine COG marks the boundary for material worth mining, calculated as follows:

$$COG = \frac{M + P + O}{r \times (V - R)}$$

where:

- M = difference in mining cost between treating material as ore versus waste
- P = processing cost
- O = overhead (general & administrative) cost
- r = proportion of valuable product recovered from mined material
- V = value per unit of valuable product
- R = refining costs per unit of valuable material produced

Based on the parameters and assumptions in Table 15-1, the calculated COG for the Cuiú Cuiú Project is 0.20 g/t Au for MG, 0.25 g/t Au for Central and 0.21 g/t Au for Machichie.

15.2.7 Pit Optimization Results

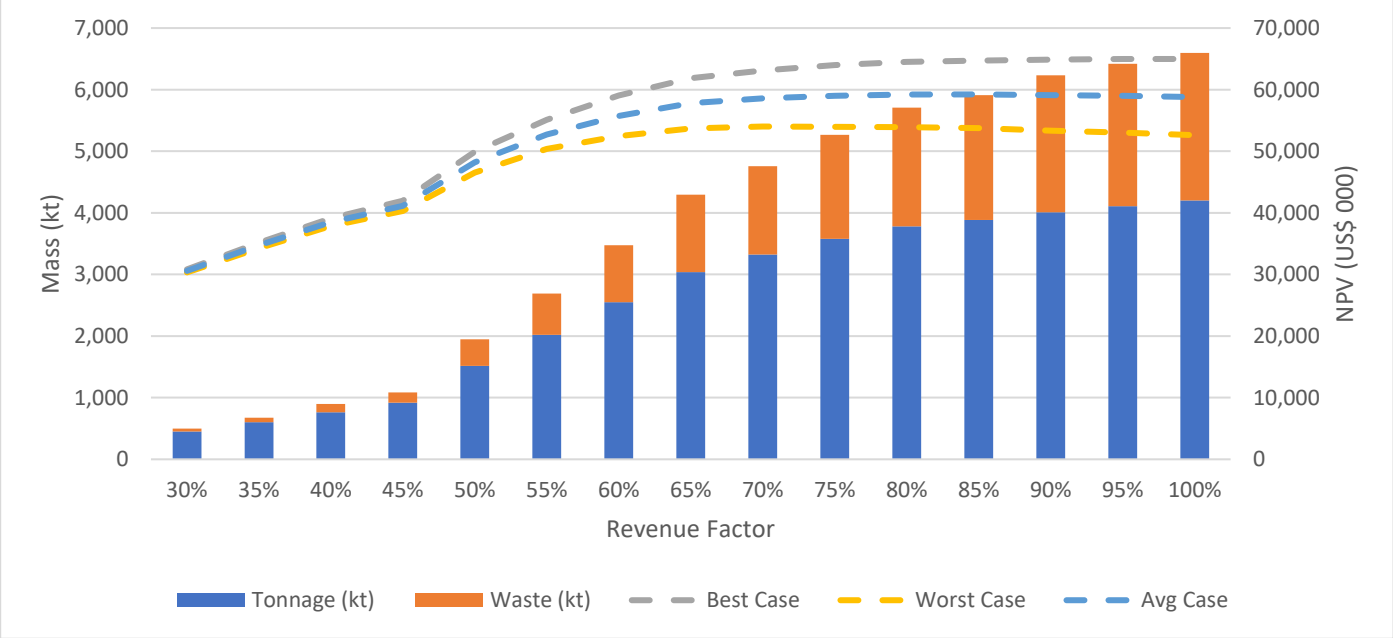
A series of pit shells were generated, using revenue factors (RF) ranging from 30% to 100% of the estimated selling price, with an exchange rate of R$5.75/US$1.0, along with other parameters specified above. The pit optimization results for all deposits are presented in the following tables and figures.

Table 15-2: Pit Optimization Run Results for MG (In Situ Values)

RF	Tonnage (kt)	Waste (kt)	Au Grade (g/t)	NPV (US$ 000)		Strip Ratio
				Best Case	Worst Case	
30%	451	45	1.49	30,830	30,335	0.10
35%	603	72	1.34	35,177	34,302	0.12
40%	761	135	1.23	39,088	37,889	0.18
45%	919	167	1.14	41,944	40,289	0.18
50%	1,517	429	0.94	49,894	46,558	0.28
55%	2,018	671	0.85	55,084	50,384	0.33

RF	Tonnage (kt)	Waste (kt)	Au Grade (g/t)	NPV (US$ 000)		Strip Ratio
				Best Case	Worst Case	
60%	2,550	927	0.79	59,044	52,471	0.36
65%	3,039	1,256	0.75	61,869	53,704	0.41
70%	3,326	1,434	0.72	63,129	54,020	0.43
75%	3,578	1,689	0.71	63,979	53,978	0.47
80%	3,779	1,927	0.69	64,520	53,934	0.51
85%	3,886	2,024	0.69	64,722	53,736	0.52
90%	4,012	2,223	0.68	64,899	53,360	0.55
95%	4,111	2,310	0.67	64,965	53,023	0.56
100%	4,202	2,396	0.67	64,982	52,623	0.57

Figure 15-5: Pit Optimization Results for MG



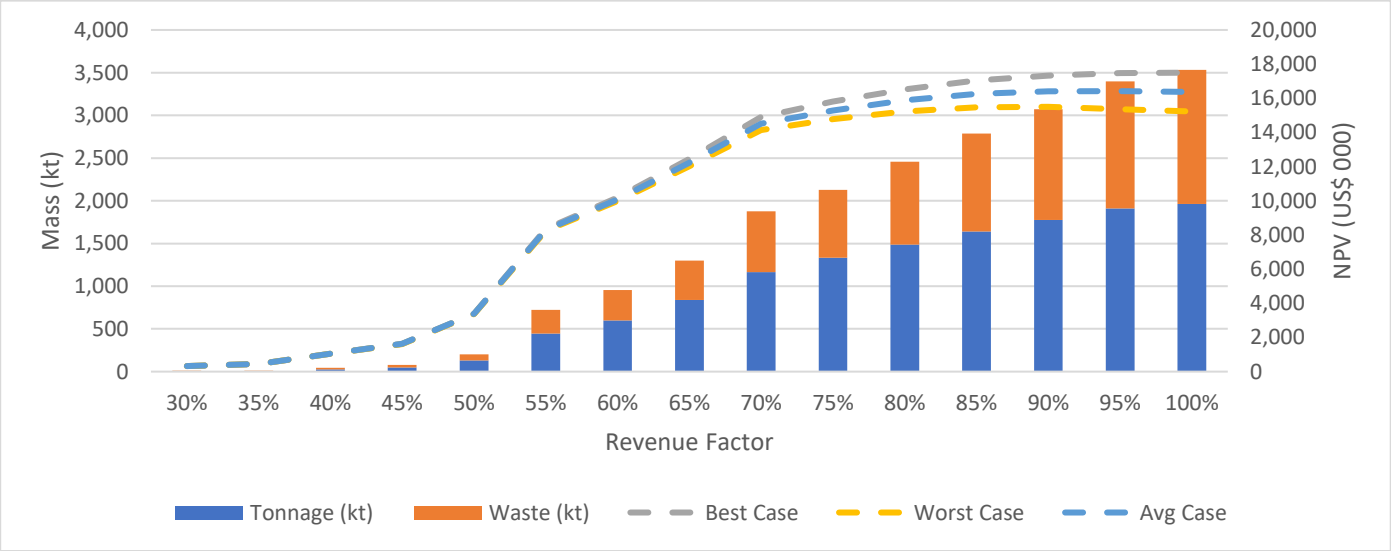
Source: Deswik, 2025.

For MG, the 100% RF price shell was selected as the base case for design, considering mine scheduling will be a mix of best case and worst case, that shell generates maximum ore recovery. The ore loss in the operational pit, compared to the mathematical pit, results from unmined ore left at the pit bottoms. The increased waste volume is due to the multiple ramps needed on both the north and south sides of the pit, designed to minimize haul distances for both ore and waste material.

Table 15-3: Pit Optimization Run Results for Central (In Situ Values)

RF	Tonnage (kt)	Waste (kt)	Au Grade (g/t)	NPV (US$000)		Strip Ratio
				Best Case	Worst Case	
30%	6	3	1.63	325	325	0.54
35%	9	4	1.47	455	455	0.44
40%	25	20	1.29	1,048	1,047	0.79
45%	48	30	1.11	1,621	1,618	0.63
50%	132	71	0.94	3,392	3,379	0.54
55%	444	277	0.82	8,345	8,249	0.62
60%	598	357	0.78	10,188	9,974	0.60
65%	840	458	0.73	12,455	12,024	0.54
70%	1,164	713	0.70	14,907	14,134	0.61
75%	1,332	797	0.68	15,805	14,777	0.60
80%	1,489	968	0.67	16,525	15,231	0.65
85%	1,642	1,147	0.66	17,042	15,478	0.70
90%	1,775	1,297	0.65	17,323	15,501	0.73
95%	1,909	1,489	0.64	17,484	15,352	0.78
100%	1,962	1,571	0.64	17,501	15,223	0.80

Figure 15-6: Pit Optimization Results for Central



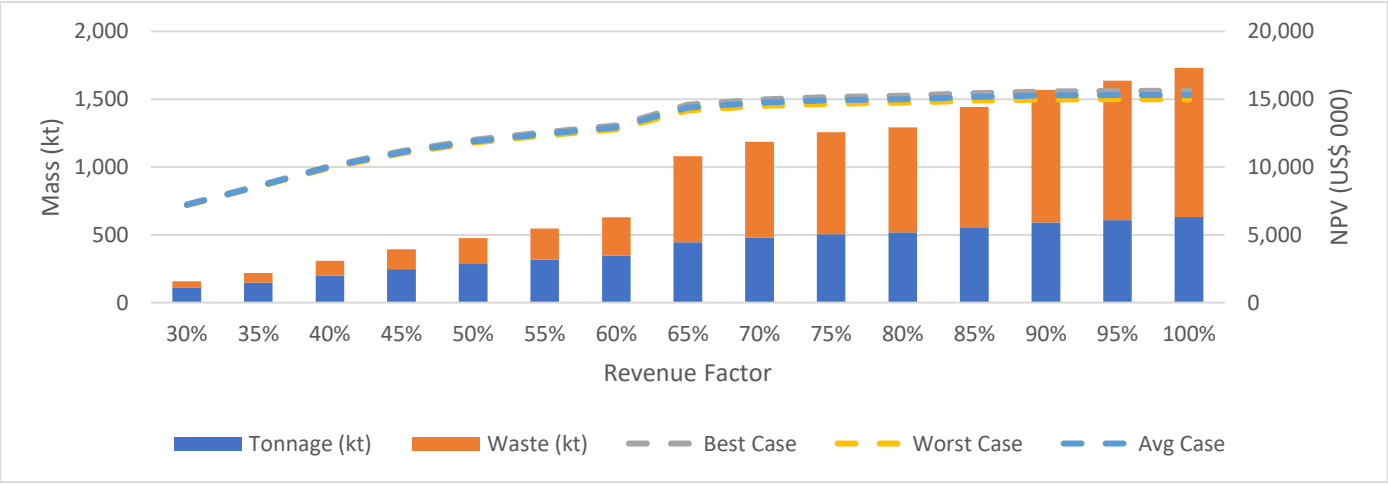
Source: Deswik, 2025.

For Central, the 85% RF price shell was selected as the base case for mine design. This option minimizes waste removal and uphill mining, since the incremental increase in ore (at lower grades) is outweighed by the higher waste movement, resulting in only a marginal NPV improvement for a larger pit.

Table 15-4: Pit Optimization Run Results for Machichie (In situ Values)

RF	Tonnage (kt)	Waste (kt)	Au Grade (g/t)	NPV (US$ 000)		Strip Ratio
				Best Case	Worst Case	
30%	111	45	1.53	7,237	7,188	0.40
35%	147	73	1.43	8,618	8,544	0.50
40%	198	110	1.29	10,073	9,955	0.56
45%	247	145	1.19	11,165	10,999	0.59
50%	285	192	1.14	11,990	11,785	0.67
55%	317	230	1.10	12,575	12,338	0.72
60%	346	283	1.07	13,055	12,789	0.82
65%	446	633	1.03	14,602	14,182	1.42
70%	481	705	1.00	14,977	14,513	1.46
75%	505	751	0.99	15,168	14,668	1.49
80%	519	773	0.97	15,251	14,730	1.49
85%	557	887	0.95	15,450	14,893	1.59
90%	592	977	0.93	15,571	14,979	1.65
95%	608	1,028	0.92	15,608	14,999	1.69
100%	632	1,100	0.91	15,625	14,975	1.74

Figure 15-7: Pit Optimization Results for Machichie



Source: Deswik, 2025.

For Machichie, the 100% RF price shell was selected as the base case for design, as this deposit presents the highest grades among the areas considered, and this shell maximizes ore recovery. The difference between the operational pit and the mathematical pit is mainly due to ore left unmined at the pit bottoms. The increase in waste results from the need to establish multiple accesses to the small pits.

15.3 Mineral Reserves Statement

The Mineral Reserves are presented in Table 15-5.

Table 15-5: Mineral Reserves Cuiú Cuiú Project, Effective Date July 23, 2025

Deposit	Area (Mining Method)	Cut-off (g/t)	Probable Reserve			Proven Reserve		
			Tonnage (kt)	Au (g/t)	Ounces (oz)	Tonnage (kt)	Au (g/t)	Ounces (oz)
MG	Open pit	0.20	4,035	0.64	82,912	-	-	-
Central	Open pit	0.25	1,511	0.62	29,959	-	-	-
Machichie	Open pit	0.21	632	0.79	16,032	-	-	-
Total			**6,178**	**0.65**	**128,903**	**-**	**-**	**-**

Notes:
1. CIM (2014) definitions were followed for Mineral Reserves.
2. Mineral Reserves have an effective date of July 23, 2025. The Qualified Person for the estimate is Bruno Yoshida Tomaselli, B.Sc., FAusIMM, an employee of Deswik.
3. Mineral Reserves are confined within an optimized pit shell that uses the following parameters: gold price including refining costs US$ 2,220/oz; mining costs US$ 4.20/t; processing costs US$ 10.00/t processed; general and administrative costs US$ 1.5 M/a; process recovery of 85% for MG and Machichie and 75% for Central; mining dilution of 5% for MG and Central and 10% for Machichie; ore recovery of 95%; pit overall slope angles that range from 30 –45°.
4. Tonnages and grades have been rounded in accordance with reporting guidelines. Totals may not sum due to rounding.

The estimated waste tonnage is 4,814 kt.

15.4 Factors that May Affect the Mineral Reserves

The main factors that may impact the Mineral Reserve estimates are as follows:

- Metal prices and exchange rate assumptions
- Mining, process, and operating cost
- Recovery assumptions

The QP is not aware of any environmental, legal, title, taxation, socioeconomic, marketing, political or other relevant factors that would materially affect the estimation of Mineral Reserves that are not discussed in this Report.

16 MINING METHODS

16.1 Overview Process Design

At the Cuiú Cuiú Project, the orebody lies near the surface and extends to greater depths, with an oxide zone that is well-suited for shallow, open-pit mining. There is also potential to extend the mine's life by exploring deeper in the primary zone.

The proposed mining operations will employ hydraulic excavators and a fleet of haul trucks with conventional open-pit methods. Excavated material will be loaded into trucks and transported either the Run-of-Mine (ROM) pad or to Waste Rock Storage Facilities (WRSF). Quality control personnel from the Geology department will monitor the excavation and haulage of ore, with material movements tracked through a radio dispatch system. The material is suitable for free digging, without requiring drilling or blasting. Benches will be set at a height of 5 meters to enhance control over ore dilution.

16.2 Geotechnical Considerations

This revised geotechnical assessment for the Cuiú Cuiú Project presents a comprehensive evaluation of slope stability conditions for the current pit designs. The assessment focuses on three principal mining areas: the Central Pit, the MG Pit, and the Machichie Pit, which comprises a series of smaller pits northwest of MG.

The primary objective is to confirm that the proposed slope geometries in the updated designs meet the safety standards typically required for open-pit mining operations in tropical geological environments. The evaluation addresses both static and pseudo-static (seismic) conditions, as well as key operational considerations such as water management, design compliance, and long-term monitoring requirements.

The conclusions of this assessment provide the technical basis for the slope designs, ensuring safe implementation of the updated mine plan.

16.2.1 Sectorization and Locations of Analyzed Sections

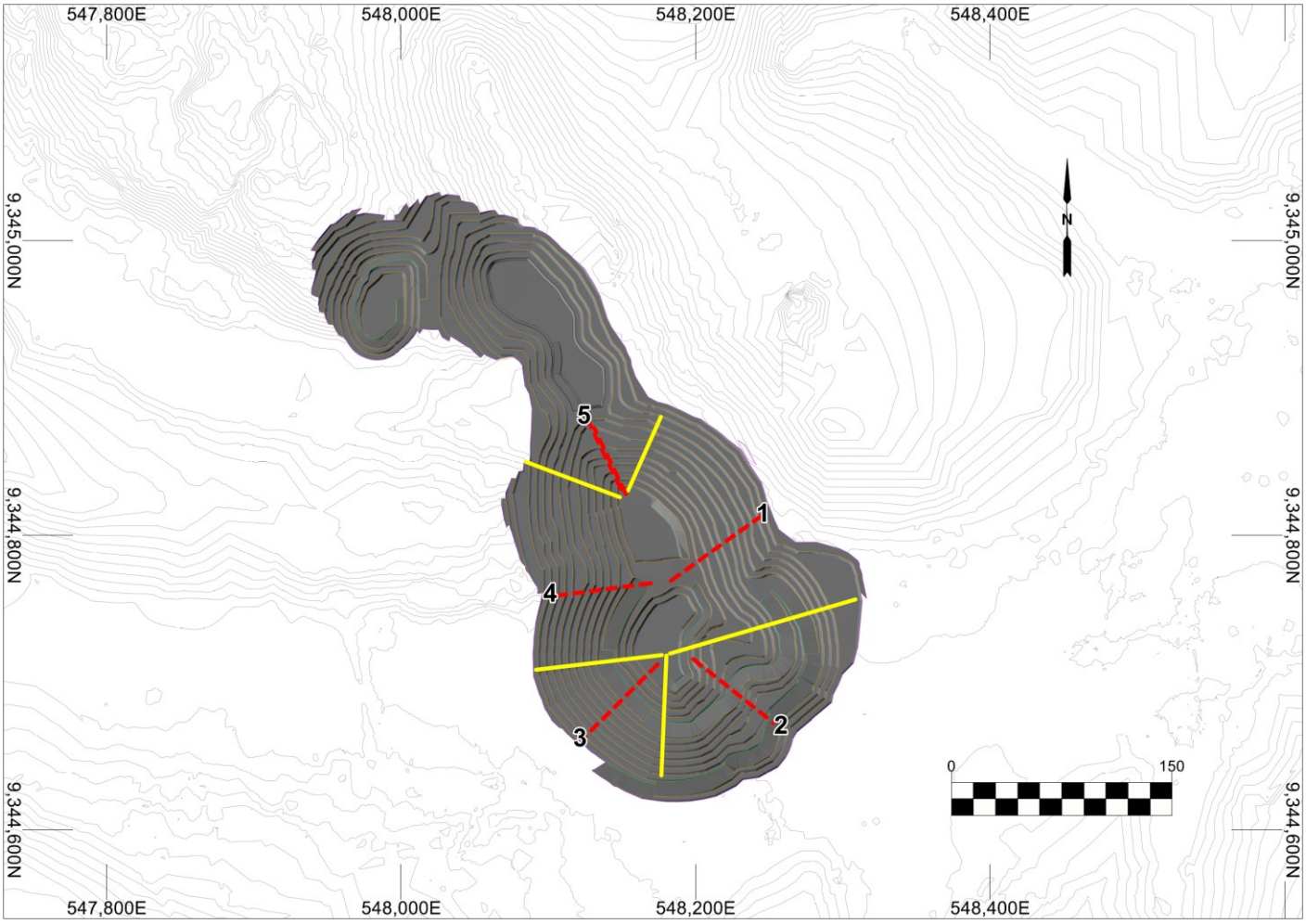
The changes in pit design and layout required the geotechnical team to redefine the sectorization of the slope stability analyses. This process ensures that the stability evaluations represent the geomechanical conditions expected throughout the new excavation geometries, accounting for lithological variations, structural features, and slope orientations.

- Central Pit: subdivided into five sectors, strategically located along the pit perimeter to represent the most critical slope geometries. These sectors capture variations in slope orientation, excavation depth, and material distribution.

- MG Pit: redefined into seven sectors, providing detailed coverage of the geotechnical conditions around the pit. The new arrangement reflects the updated geometry and ensures that all critical directions of slope exposure are represented.
- Machichie Pit: although this deposit includes a cluster of smaller pits, the analysis was concentrated on the largest pit located in the northeastern portion of the body. For this pit, four sectors were defined to capture representative slope conditions.

The Central Pit was sectorized to capture representative slope profiles along sections critical to the planned excavation depth and geometry (Figure 16-1).

Figure 16-1: Sectorization of Central Pit

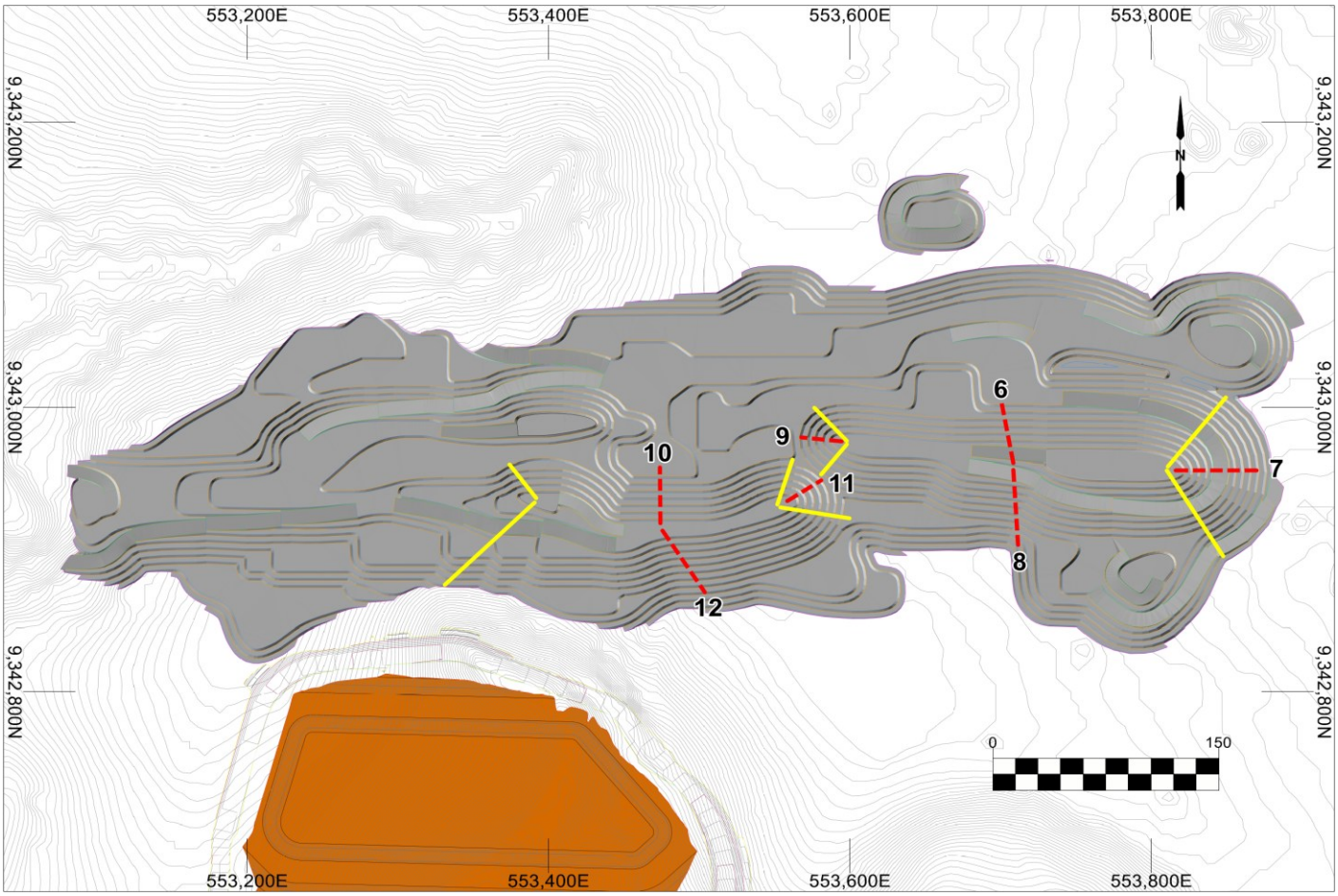


Source: Geotech, 2025.

In the Central Pit, five representative sections were defined to capture the range of geotechnical conditions along the pit perimeter. Section 1, located on the northeastern flank, represents an area where slope stability will require close observation due to its orientation and proximity to planned excavation fronts. Moving clockwise, Section 2 on the southeastern side reflects a sector influenced by deeper excavation, where results are expected to confirm stability but still warrant verification during operations. Section 3, positioned to the southwest, generally benefits from more favourable geotechnical conditions and is anticipated to maintain adequate stability margins. On the western flank, Section 4 is expected to show similar behaviour, with design geometry contributing to more secure slope conditions. Finally, Section 5, located to the north, intersects the pit's upper extension and will provide important information regarding slope performance in this transitional zone between the main excavation and the northern appendage of the pit.

The MG Pit includes additional sections that capture varying geotechnical conditions influenced by complex geological features (Figure 16-2).

Figure 16-2: Sectorization of MG Pit

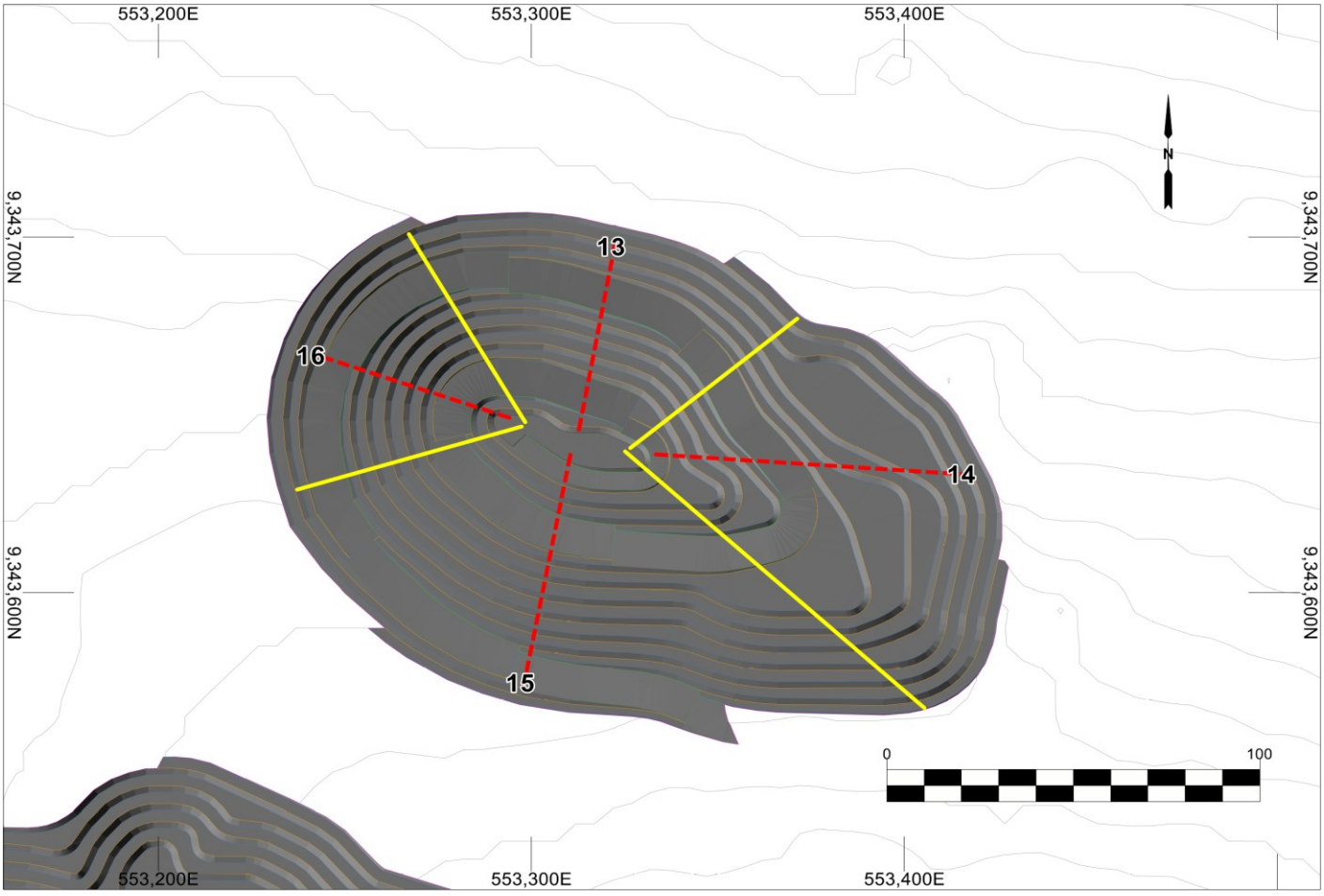


Source: Geotech, 2025.

In the MG Pit, seven representative sections were defined to cover the full range of geotechnical and structural conditions present in the new excavation layout. Sections 6 and 10, both located along the northern portions of the pit, are positioned in areas where slope performance is particularly relevant to the continuity of mining, and their stability outcomes will be critical to the long-term design. On the eastern flank, Sections 7 and 11 correspond to excavation fronts that require careful control due to the expected combination of slope inclination and lithological variability; these areas will demand continuous monitoring as mining progresses.

Toward the southern sector, Sections 8 and 12 represent zones where excavation depth and geometry increase the relevance of slope stability checks, although preliminary indications suggest that these areas may benefit from more favourable conditions compared to other pit boundaries. Finally, Section 9, located on the western side, captures a transition zone where geotechnical conditions are expected to be heterogeneous, making it an important reference point for evaluating slope behaviour across different material domains.

Figure 16-3: Sectorization of Machichie Pit



Source: Geotech, 2025.

In the Machichie Pit, four sectors were defined to represent the geotechnical conditions of the largest excavation area within this cluster of deposits. Section 13, positioned along the northern side, provides a reference for slope performance in the upper portion of the pit, where excavation geometry is expected to remain moderate but still requires verification of stability under seasonal rainfall. On the eastern flank, Section 14 captures a steeper slope orientation, where lithological contrasts and slope angles may introduce additional challenges; this area will be a key focus for geotechnical monitoring as mining advances. Toward the southern and southeastern perimeter, Section 15 corresponds to a sector with deeper excavation, where slope control measures will play an important role in ensuring long-term stability. Finally, Section 16, located on the western to northwestern side of the pit, represents a transitional zone where slope behaviour will need to be assessed against varying material conditions, providing an important benchmark for adaptive management.

The sectorization of the Central North, MG, and Machichie pits has provided a structured framework for evaluating slope performance under the diverse geotechnical conditions present in each area. By analysing representative cross-sections across all three pits, the study ensures that slope designs are tailored to local characteristics while maintaining the safety factors required for open pit operations. This approach not only strengthens the reliability of the geotechnical design parameters but also establishes the basis for ongoing monitoring and operational control throughout the life of the Project.

16.2.2 Stability Analysis Results

The updated geotechnical stability assessment of the Cuiú Cuiú Project pits was conducted to evaluate slope performance under static and pseudo-static conditions. As in the earlier phase, two complementary methodologies were applied to provide a comprehensive and conservative understanding of slope behaviour:

- Limit Equilibrium Analysis (LEA): using the Bishop Simplified method in Slide2 (Rocscience) to determine global Factors of Safety (FS). This approach is widely accepted in open pit design and provides robust estimates of potential slip surfaces.
- Stress-Strain Analysis: employing the shear strength reduction technique in RS2 (Rocscience), used to calculate Shear Reduction Factors (SRF). This methodology is particularly valuable in simulating progressive failure mechanisms and provides an additional layer of confidence by assessing slope behaviour under complex stress redistributions.

The combination of these two methodologies ensures that both overall stability and localised deformation mechanisms are captured, offering a balanced and technically defensible framework for slope design at the Pre-Feasibility Study (PFS) stage.

For this phase, the geotechnical database was expanded with the addition of new drillholes specifically logged for geotechnical purposes, including Standard Penetration Tests (SPT). The SPT data provided further confidence in the representativeness of the adopted design parameters. Importantly, the new results confirmed that the parameters defined in the earlier study remain valid, reinforcing their conservative nature and allowing continuity across project phases.

As in the previous assessment, two primary material domains were distinguished: soil and saprolite. This division reflects the tropical lateritic weathering profile of the Project area, where residual soils overlie saprolitic horizons. Such subdivision is critical, as these units exhibit markedly different geomechanical behaviours: soils are generally weaker and more compressible, while saprolite retains partially preserved rock structure, with higher strength parameters but increased susceptibility to saturation and weathering effects.

The parameters used in the analysis are outlined in Table 16-1.

Table 16-1: Parameters Input

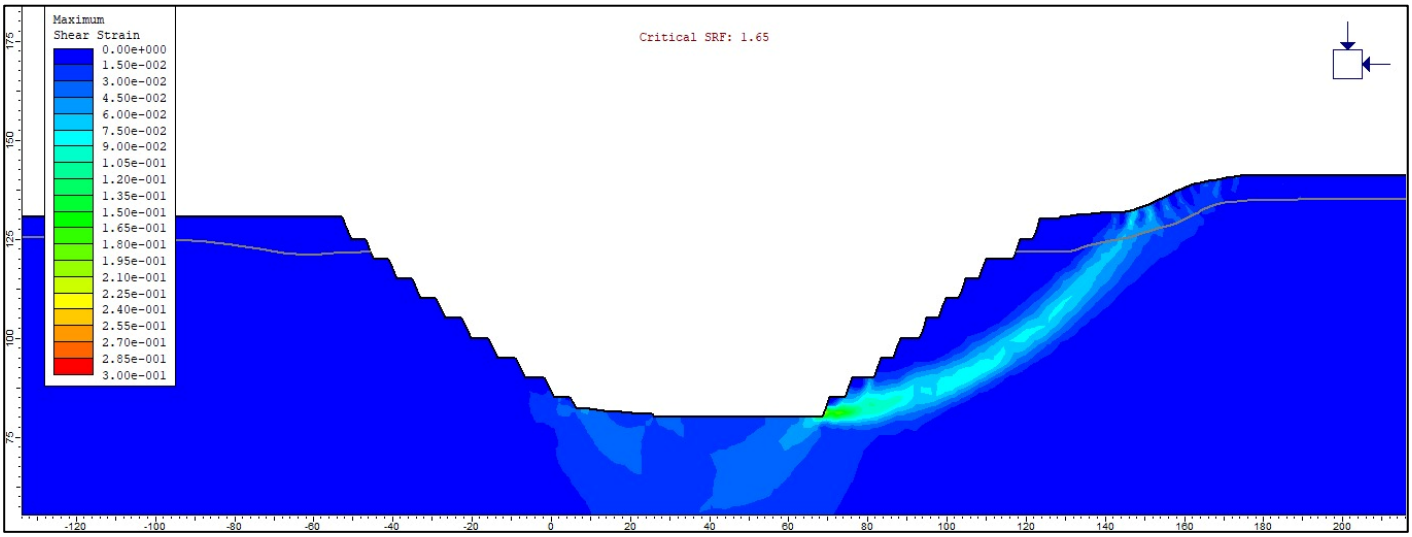
Material	Color	Unit Weight (kN/m³)	Strength Type	Cohesion (kPA)	Phi (degree)
Saprolite		22	Mohr-Coulomb	100	30
Soil		20	Mohr-Coulomb	70	25

Both were modelled using the Mohr-Coulomb failure criterion, which provides a conservative basis for slope design and is widely recognized in geotechnical practice for weathered profiles.

The analysis demonstrated that the slope designs for the Central, MG, and Machichie pits are consistent with accepted safety requirements. Representative results are discussed below.

Central Pit: Section 1, located on the northeastern flank, achieved an FS of 1.579 and SRF of 1.65 (Figure 16-4). These values confirm stability even in a geometrically sensitive area where excavation depth and slope orientation warrant careful attention. Section 4, on the western flank, recorded FS 1.515 and SRF 1.59, also within acceptable ranges. Overall, the Central Pit results indicate secure conditions, although operational monitoring should continue to ensure performance is maintained during deeper excavation stages.

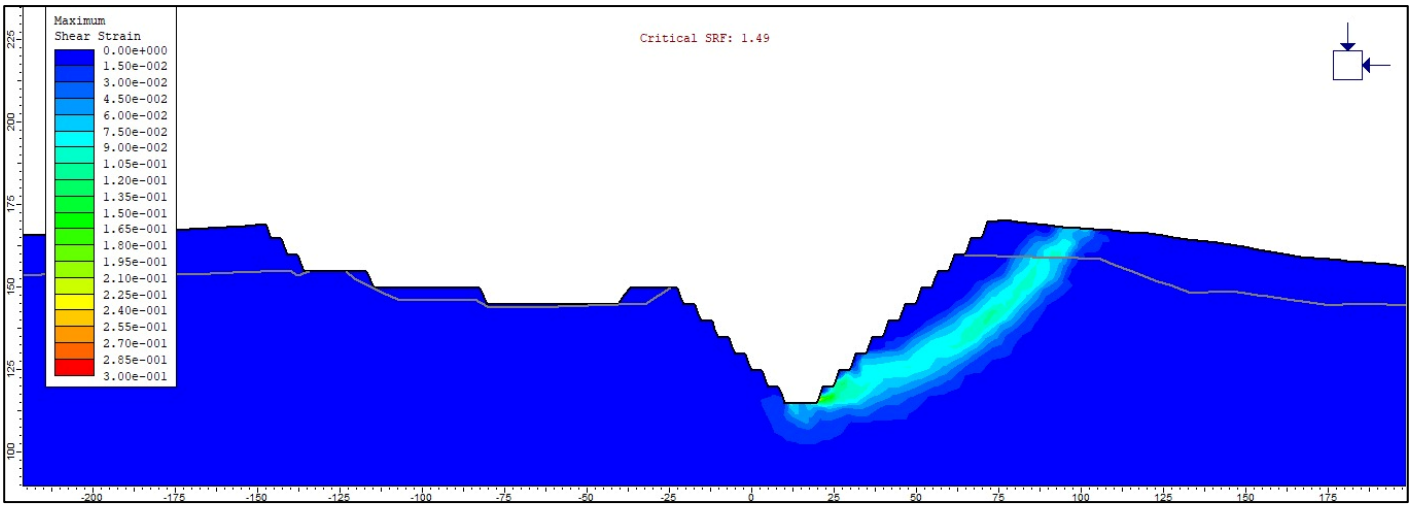
Figure 16-4: Central Pit Section 1



Source: Geotech, 2025.

MG Pit: Results in this pit reflected the more complex geological and structural setting. Section 6, in the northern part, recorded FS 1.562 and SRF 1.70, confirming robust stability margins. Section 8 yielded FS 1.500 and SRF 1.58, while Section 12, toward the southern flank, returned FS 1.408 and SRF 1.49 (Figure 16-5), representing the lowest values obtained across all pits. Although these remain above critical thresholds, Section 12 highlights the need for continuous monitoring and potential operational controls as mining deepens.

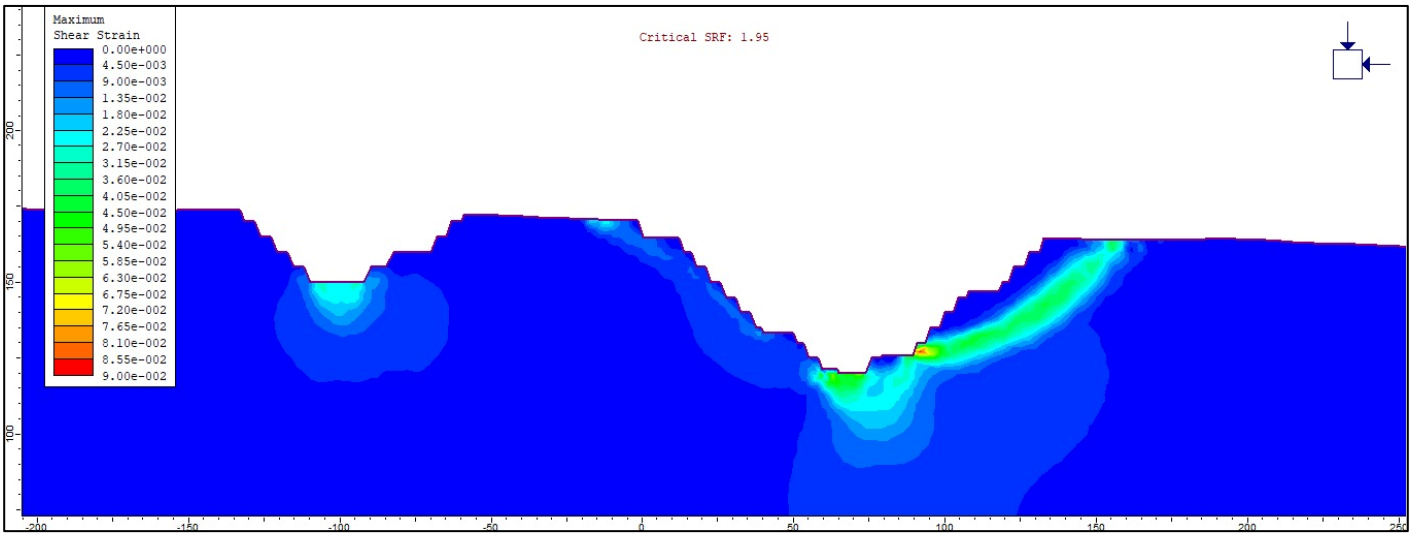
Figure 16-5: MG Pit Section 12



Source: Geotech, 2025.

Machichie Pit: The inclusion of this deposit returned favourable outcomes across all analysed sections. Section 13, on the northern side, recorded FS 1.854 and SRF 1.95 (Figure 16-6), while Section 15, located to the south, achieved FS 1.677 and SRF 1.76. These results demonstrate that the Machichie Pit benefits from conservative slope geometries and less challenging material domains, reinforcing the overall robustness of its design.

Figure 16-6: Machichie Pit Section 13



Source: Geotech, 2025.

The combination of additional SPT data, validation of geotechnical parameters, and application of complementary analysis methods provides confidence that the adopted slope designs are technically appropriate for the PFS stage. Although certain sectors—such as Section 12 in the MG Pit—present more modest stability margins, these values still comply with minimum standards and highlight areas for enhanced operational monitoring rather than immediate design modification.

The conservative nature of the adopted parameters ensures that slope designs are on the safe side of expected performance. Nevertheless, future stages of the Project will benefit from more detailed laboratory testing of strength and deformation properties, enabling progressive refinement of parameters and potential optimization of slope geometries.

In summary, the analysis confirms that slope performance across the Central, MG, and Machichie pits is adequate for safe operations at this stage. Representative results demonstrate both the strength of conservative design assumptions and the identification of areas where adaptive management will be required.

16.2.3 Operational Constraints and Requirements

For the Cuiú Cuiú Project, the safe and efficient operation of the Central, MG, and Machichie pits depends heavily on strict adherence to geotechnical design parameters, supported by robust drainage systems and continuous monitoring. In a tropical setting characterised by intense seasonal rainfall, effective surface water management and environmental control measures are indispensable to maintaining slope stability and preventing degradation.

The regulation of runoff is one of the most critical elements in this context. By controlling surface water flow, it is possible to reduce erosion, limit pore pressure build-up, and avoid ponding on slope faces—all factors that could undermine stability. To achieve this, a comprehensive drainage system must be established. This includes diversion channels, surface drains, and berms strategically positioned to channel water away from pit walls and vital infrastructure. Such arrangements are designed to prevent infiltration into slopes, protecting the integrity of both soil and saprolite horizons. In addition, lined ditches, sumps, and designated discharge points must be distributed around and within the pits to manage excess water volumes, particularly during peak rainfall periods.

Equally important to slope safety is ensuring compliance with the geotechnical design throughout the life of the pits. This involves routine inspections and systematic verification of slope angles, bench widths, and excavation depths, as established in the stability analysis. To complement visual checks, monitoring instruments—such as piezometers, inclinometers, and survey markers—must be deployed. These tools provide early warning of changes in pore pressure or slope movement, allowing the technical team to detect departures from expected conditions at an early stage.

This combination of design compliance, drainage management, and real-time monitoring across the Central, MG, and Machichie pits provides the framework for proactive management of geotechnical risks. By applying these controls consistently, the operation can preserve stability margins, adapt to changing conditions, and ensure that excavation progresses within safe limits.

16.2.4 Geotechnical Monitoring and Maintenance Programs

The geotechnical monitoring and maintenance strategy developed for the Cuiú Cuiú Project plays a central role in guaranteeing slope stability and safe operations in all pits. Its primary purpose is to verify compliance with the design criteria, evaluate the effectiveness of drainage and water control systems, and implement preventive or corrective actions whenever signs of instability are detected. By integrating monitoring with maintenance, the program aims to minimize environmental risks, regulate surface and subsurface water, and preserve the structural integrity of pit slopes throughout the mine’s life.

The monitoring program is organized to deliver continuous feedback on slope performance and water management. Its main components include:

- Instrumentation and Data Collection: installation of piezometers, inclinometers, and surface extensometers in critical areas of the pits. Piezometers provide real-time information on groundwater pressure and help identify water infiltration that may affect stability. Inclinometers and extensometers record horizontal and vertical deformations, acting as early warning devices for potential slope movements.

- Visual Inspections and Design Compliance: routine inspections of benches and slopes ensure that pit development follows the geotechnical design, including specified slope angles, bench widths, and berm positions. These inspections also detect erosion, cracks, or any irregularities that could compromise stability, allowing corrective measures to be implemented quickly.
- Surface Water and Drainage Monitoring: drainage systems such as channels, lined ditches, and sumps must be regularly reviewed, especially during and after periods of intense rainfall. Inspections focus on identifying blockages, sediment accumulation, or erosion that could hinder water flow. Timely maintenance and cleaning of these structures are essential to prevent ponding and infiltration, thereby protecting slope integrity.

The maintenance program complements monitoring by combining planned activities with rapid-response measures when stability issues are identified:

- Slope Reinforcement and Remedial Actions: if monitoring detects unusual slope behaviour—such as excessive pore pressure or measurable displacement—reinforcement measures must be deployed without delay. Possible actions include construction of toe berms, additional drainage works, or local reinforcement with rock bolts or mesh to increase resistance. Such interventions are applied only where needed, allowing targeted stabilisation.
- Drainage and Environmental Infrastructure Maintenance: keeping the drainage network operational is critical. Regular cleaning, repair, and reinforcement of ditches, channels, and sumps reduce the risk of overflow or erosion. These activities are prioritised before the rainy season to prepare the site for periods of elevated runoff.
- Emergency Response Protocols: a structured protocol must be followed in the event of significant geotechnical concerns. Should critical slope movement or water ingress be detected, access to the area is restricted, and mining activities may be suspended until the situation is reassessed. Mitigation measures are then applied in accordance with the Trigger Action Response Plan (TARP), ensuring swift, systematic, and effective action that limits operational disruption and protects personnel.

16.2.5 Conclusions

The geotechnical reassessment of the Central, MG, and Machichie pits confirms that the overall slope designs remain adequate for safe operation at the Pre-Feasibility Study stage. The updated stability analyses, carried out with the combined application of Limit Equilibrium (Slide2) and Stress-Strain (RS2) methods, validated that the slope geometries are consistent with accepted safety standards and remain defensible under both static and pseudo-static conditions.

In the Central Pit, representative results such as those obtained in Section 1 (FS 1.579, SRF 1.65) and Section 4 (FS 1.515, SRF 1.59) demonstrate that the pit is characterised by stable to moderately stable slopes. These outcomes indicate that the conservative slope designs are sufficient to ensure operational safety. Although the values are not among the highest across the project, they confirm that stability requirements are met and highlight the importance of continued geotechnical observation during mining progression, especially in areas where slope orientation coincides with deeper excavation.

In the MG Pit, the results covered a broader range of stability conditions, reflecting the more complex geological and structural framework of this deposit. Section 6 yielded FS 1.562 and SRF 1.70, confirming secure performance. Section 8 recorded FS 1.500 and SRF 1.58, while Section 12 returned the lowest margins of the study, with FS 1.408 and SRF

1.49. Although still above critical thresholds, Section 12 stands out as a sector that will require closer operational monitoring and potentially adaptive controls under adverse conditions. These results reinforce that the MG Pit design is feasible but should be accompanied by careful monitoring and early warning measures throughout the mine life.

In the Machichie Pit, stability conditions proved particularly favourable. Section 13 recorded FS 1.854 and SRF 1.95, the highest values of the study, while Section 15 returned FS 1.677 and SRF 1.76, also confirming robust stability margins. These results indicate that the Machichie Pit benefits from more conservative geometries and less critical ground conditions, ensuring a high degree of confidence in its slope performance.

Taken together, the analyses confirm that the current slope designs for the Central, MG, and Machichie pits are technically appropriate for implementation at this stage of the Project. The variability observed—particularly the lower safety margins in MG Pit Section 12—does not compromise operational feasibility but does highlight the importance of applying continuous monitoring, especially in areas where margins are more modest. The conservative nature of the adopted parameters, validated by the expanded geotechnical database with additional drillholes and SPT data, provides further assurance of the robustness of the designs. Future stages will benefit from laboratory testing and refined geomechanical characterization, enabling progressive optimization of slope geometries.

The long-term stability of slopes in this environment relies heavily on effective surface water management. Drainage structures—including lined channels, sumps, and diversion berms—must be implemented to cope with intense seasonal rainfall, preventing water build-up near pit walls and reducing erosion risks. The proper functioning of these systems will require routine inspection and maintenance, particularly during the rainy season, to ensure that infiltration into slope faces does not compromise structural integrity.

Another essential element is continuous monitoring and adaptive maintenance. The proposed program, which integrates piezometers, inclinometers, and extensometers, provides real-time information on pore pressure, slope displacement, and deformation. This monitoring framework enables the early identification of deviations from design assumptions. In addition, regular inspections are required to verify compliance with slope angles, bench dimensions, and berm placement, while visual checks of drainage structures confirm that runoff is being effectively managed.

The maintenance program must be structured to react promptly to any warning signs detected by instrumentation or inspections. Should elevated pore pressures or measurable slope movement occur, reinforcement measures can be deployed—such as the installation of supplementary toe berms, additional drains, or localised slope bolting. Drainage structures must also undergo regular cleaning and repair to prevent obstruction by sediments or debris. Finally, the implementation of an emergency response plan is essential: if significant stability issues arise, access restrictions and temporary halts to mining may be required, allowing the geotechnical team to apply corrective measures. This structured approach reduces operational risk while safeguarding both personnel and equipment.

In summary, the integration of updated geotechnical data, conservative parameter selection, complementary analytical methods, and comprehensive operational controls underscores the Project's commitment to safe, sustainable, and compliant mining operations. The slope designs for the Central, MG, and Machichie pits are validated as appropriate for the PFS stage, with specific attention recommended for sectors such as MG Section 12, where monitoring must be reinforced. This framework provides the necessary confidence to advance the Project while maintaining flexibility for refinement in subsequent phases.

16.3 Hydrogeological Considerations

According to Ausenco, 2024, precipitation in the basin is in the order of 2,158 mm and 70% is concentrated between the months of December to April, a period considered as the wet season, 9% is concentrated between June and October, a period considered as the dry season. May, October, and November are considered transition months between both seasons. The maximum precipitation in 24 hours for the 100, 200 and 500 years return periods would be 211, 221 and 234 mm, respectively. The value of the total annual evaporation is 839.6 mm.

Due to the high rainfall expected during the wet season, controlling water flow within the pit is critical to not impact slope stability. Mining operations will manage these flows without the need for dewatering wells. Water will be collected and directed to designated areas for pumping out of the pit, ensuring minimal interference with ongoing mining activities.

16.3.1 Pit Design

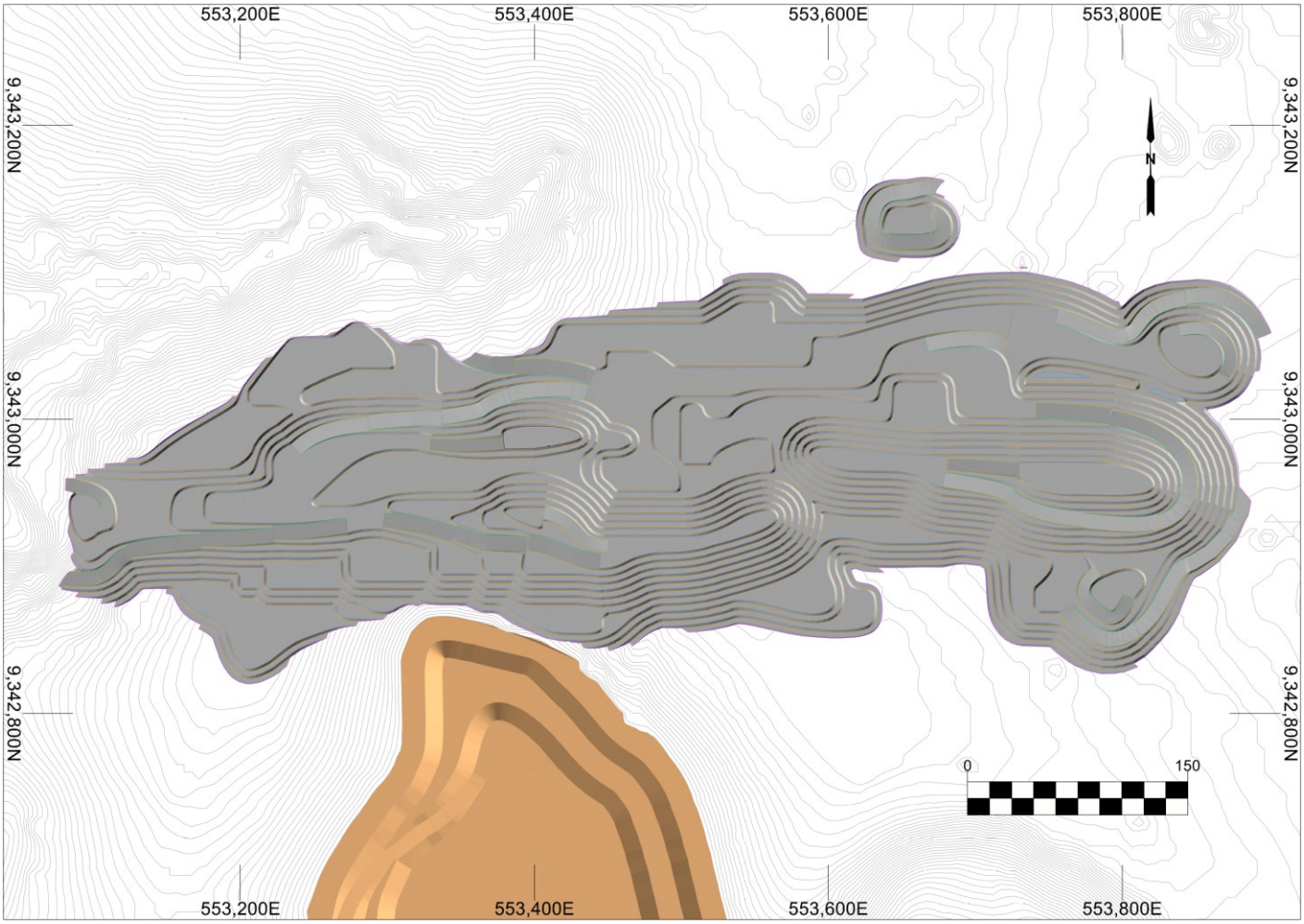
The engineered pit designs were completed using the pit optimization shells as a guide to maximize the value and gold recovered inside the ultimate pits. The resulting pit designs include practical geometry that is required in an operational mine, such as the haul road to access all the benches, recommended pit slopes with geotechnical berms, proper benching configuration, and smoothed pit walls.

The following parameters were used to design the final pit.

- Bench height: 5 m
- Ramp width two lanes: 10 m
- Ramp maximum gradient: 10%
- Berm width: 3.2 m
- Face angle: 70.2°

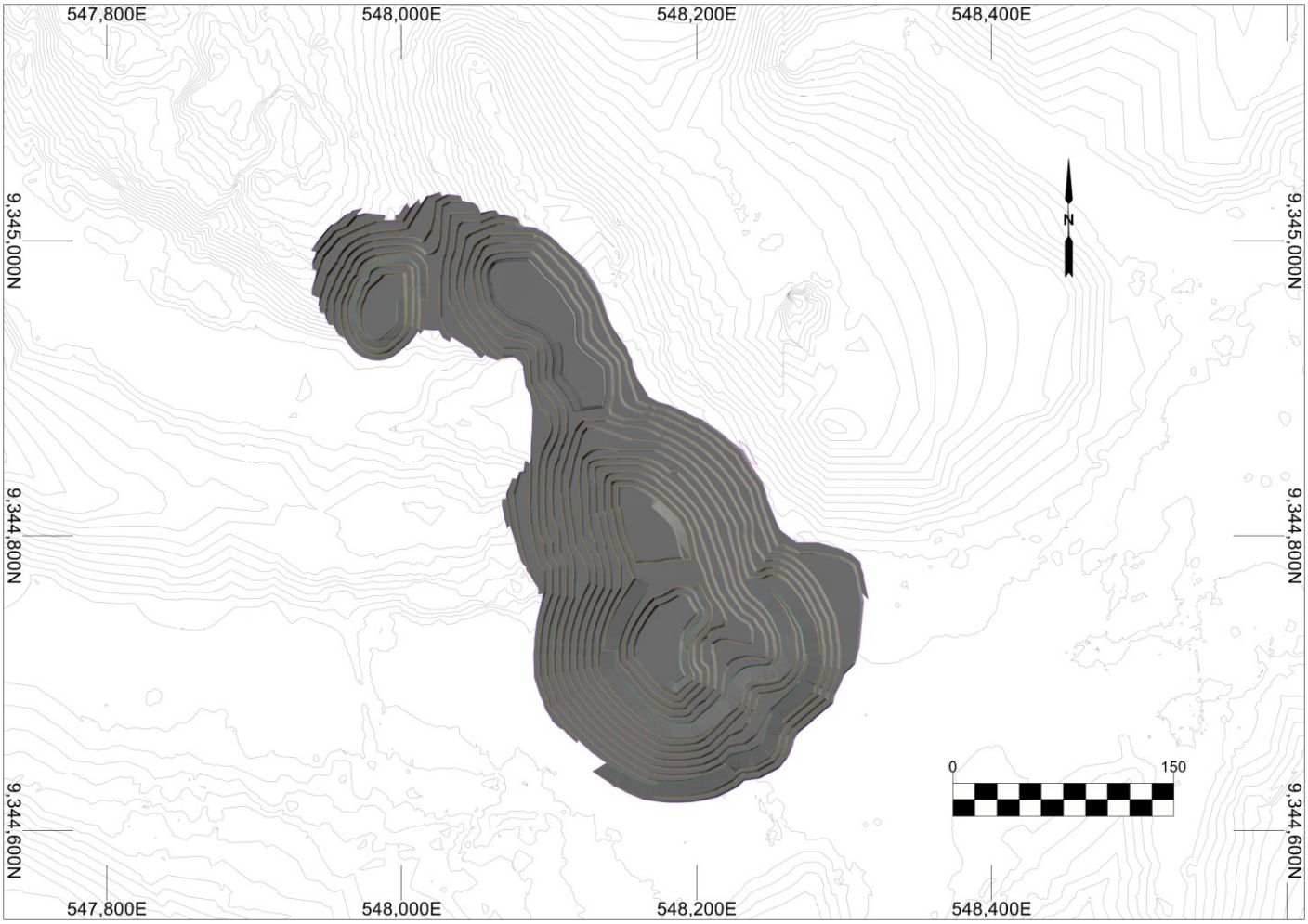
The resulting engineered pit designs are presented in Figure 16-7 for the MG pit, Figure 16-8 for the Central pit, and in Figure 16-9 for the Machichie pit.

Figure 16-7: MG Pit Layout



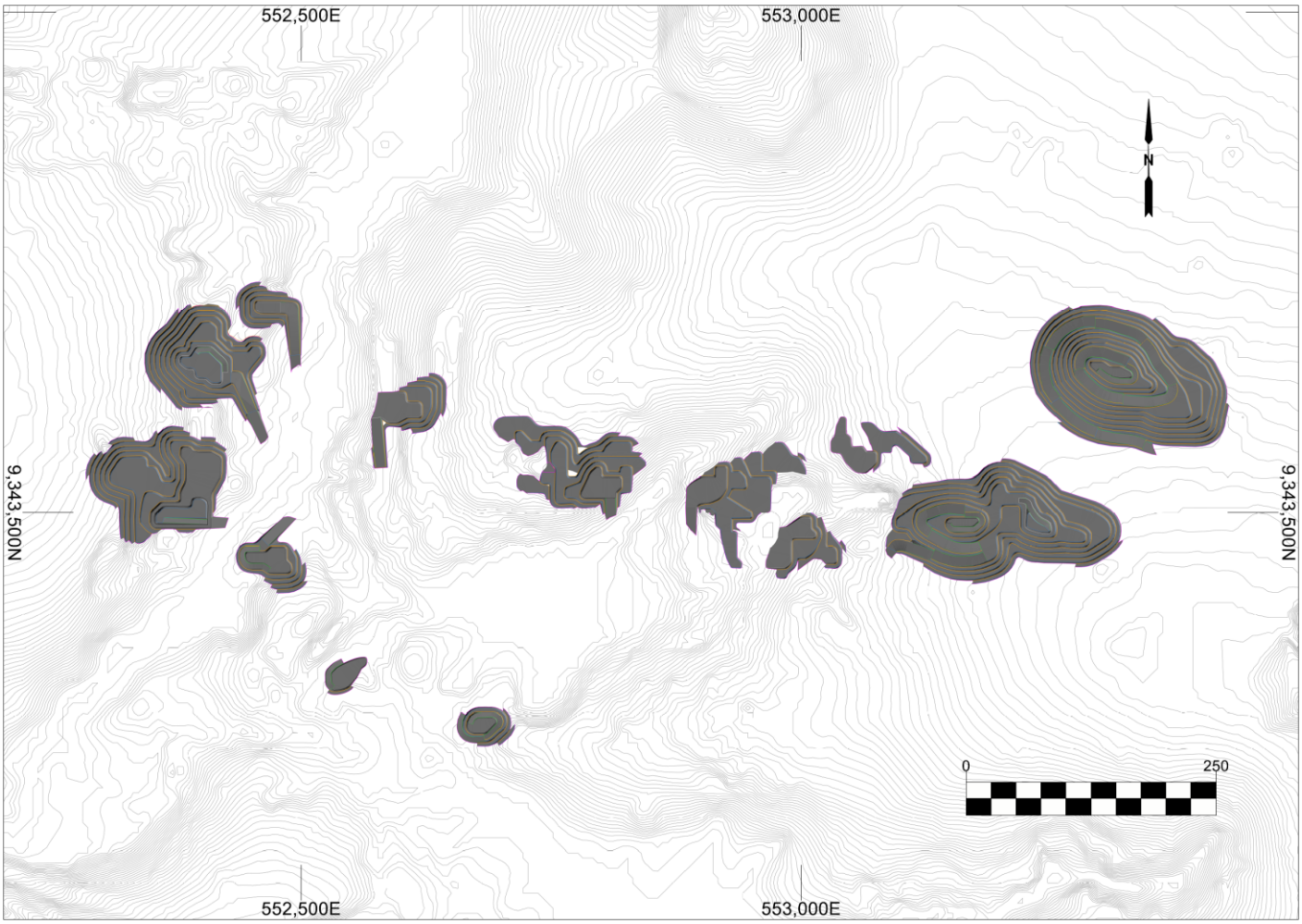
Source: Deswik, 2025.

Figure 16-8: Central Pit Layout



Source: Deswik, 2025.

Figure 16-9: Machichie Pit Layout

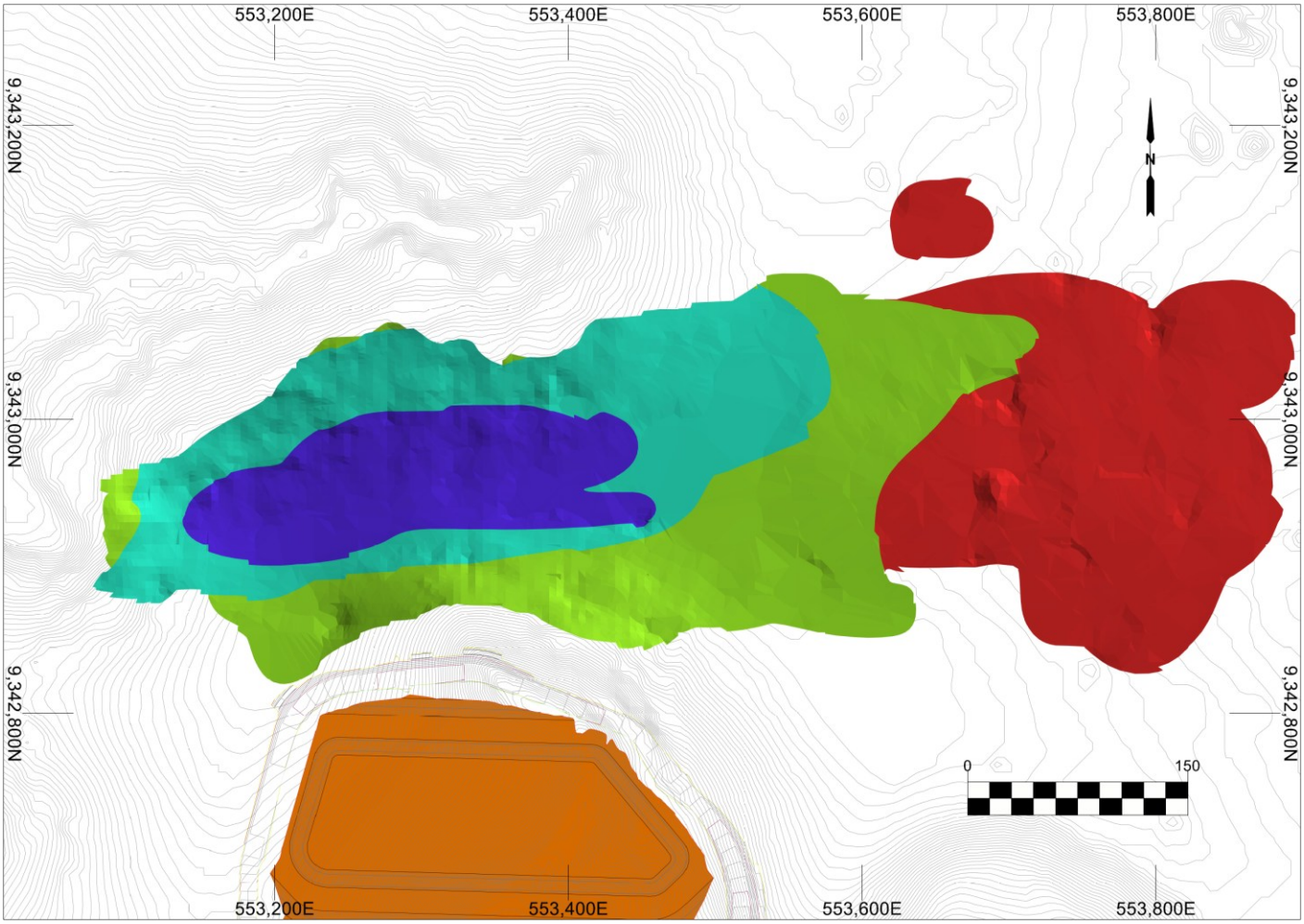


Source: Deswik, 2025.

16.4 Mining Sequence

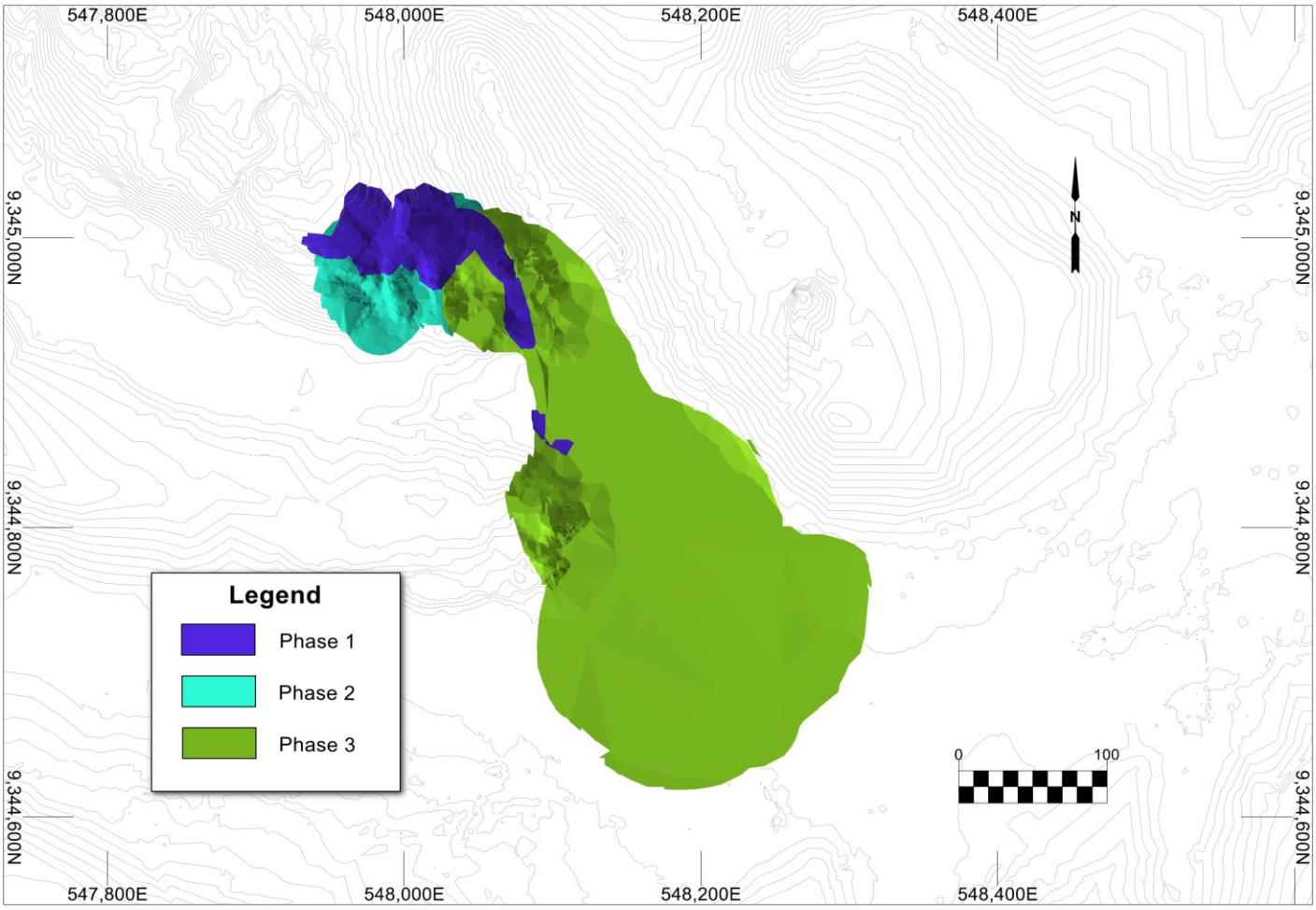
Pushbacks (pit phases) were strategically designed to guide mine scheduling, based on pit shells generated from pit optimization for both the MG and Central deposits. At Machichie, due to the limited size and configuration of the multiple small pits, only a single phase was defined for each. The restricted footprint and constrained geometry of these pits preclude the construction of multiple ramps, rendering additional phases impractical. At Central, an initial preparation phase was also included to provide access to the northern portion of the deposit located at the top of the hill. Figure 16-10 presents the phase designs for MG and Figure 16-13 for Central, illustrating the planned pushbacks to support efficient ore extraction.

Figure 16-10: MG Phase Layout



Source: Deswik, 2025.

Figure 16-11: Central Phase Layout



Source: Deswik, 2025.

The mine scheduling assumptions for the Cuiú Cuiú Project are as follows:

- **Plant Capacity:** 1.0 Mt/a
- **Operation Start Date:** July 2026
- **Year 1**: Initial mining activities commence at the MG Pit, where outcropping, high-grade mineralization provides early ore feed to the plant.
- **Year 2**: Development of the Machichie Pit is scheduled to begin in Year 2, contributing additional high-grade material to the production schedule.

- **Year 5**: Mining at the MG Pit continues until full depletion, after which ore production transitions to the Central Pit. The Central Pit is characterized by comparatively lower grades and is located at a greater haul distance from the processing facility.
- **Stockpiling**: No low-grade stockpiles will be utilized during the operation
- **Total Material Movement**: Maximum 2.3 Mt/a

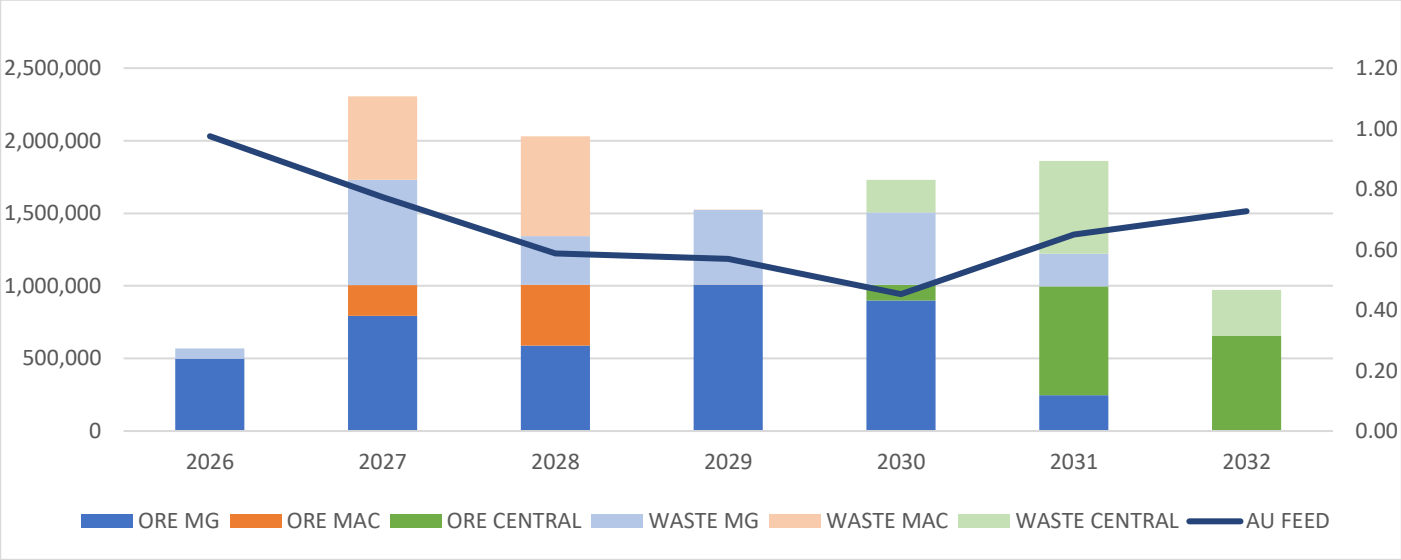
Table 16-2 presents the detailed mine scheduling for the Project, displayed annually until the end of the LOM.

Table 16-2: Mine Scheduling for Cuiú Cuiú Project

Period	ROM (kt)	Au Grade (g/t)	Au (oz)	Waste (kt)
Y1	499	0.97	15.6	71
Y2	1,006	0.77	25.0	1,299
Y3	1,008	0.59	19.0	1,023
Y4	1,007	0.57	18.4	517
Y5	1,008	0.45	14.7	723
Y6	997	0.65	20.8	864
Y7	655	0.73	15.3	317
TOTAL	**6,178**	**0.65**	**128.9**	**4,814**

Note: Tonnages and grades have been rounded in accordance with reporting guidelines. Totals may not sum due to rounding.

Figure 16-12: Mine Schedule for The Cuiú Cuiú Project by Deposit



Source: Deswik, 2025.

16.5 Blasting and Explosives

All material is classified as free-digging, eliminating the need for explosives throughout the operation.

16.6 Grade Control

Despite the disseminated nature of the project's mineralization, a grade control method will be implemented to enhance accuracy and confidence in mined grades. A reverse circulation (RC) drill is planned for use in the mine to conduct grade control activities effectively.

16.7 Mining Equipment

The open pit mining activities were assumed to be primarily undertaken by a contractor-operated fleet.

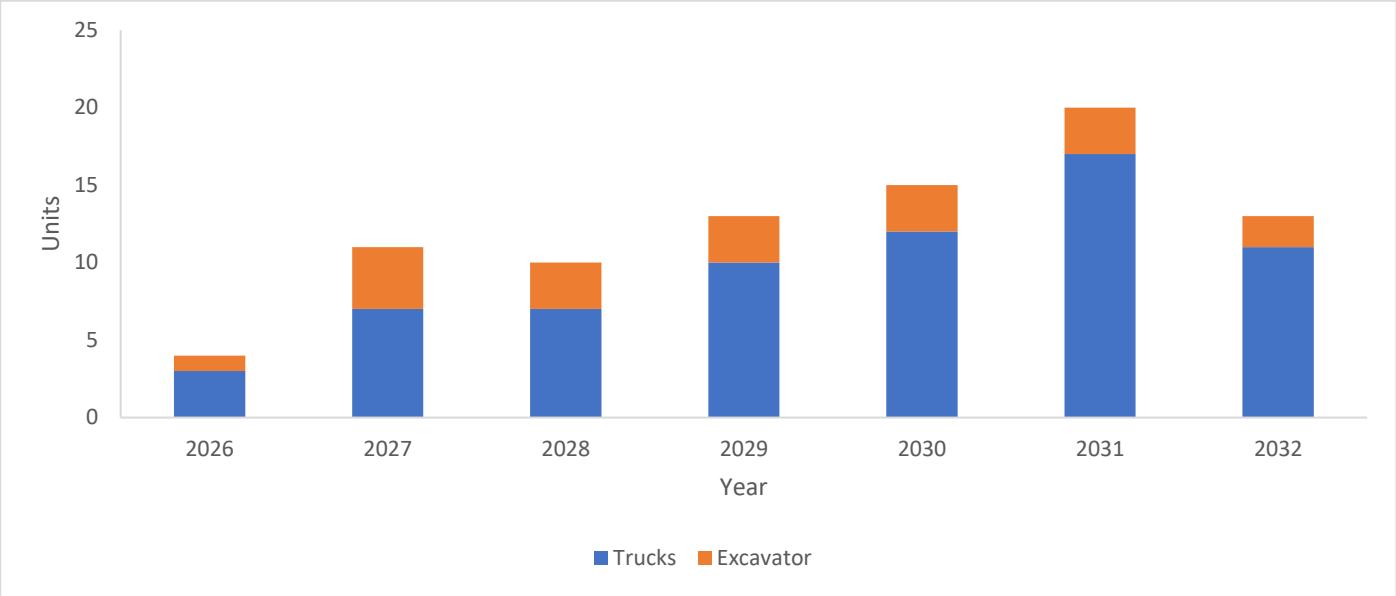
The proposed annual material movement ranges from 0.6 to 2.3 Mt, which is suitable for on-highway trucks. For both ore and waste material, an excavator of 2.4 m^3 (CAT 336 or similar) was selected to load 25-t class trucks (Actros 8x4 or similar). Eight passes of the excavator can entirely load the truck in a total of 2.9 minutes. A wheel loader (JD 524 or similar) will be used on the ROM pad.

The proposed mining fleet, together with the peak equipment requirements, is summarized in Table 16-3. Figure 16-13 illustrates the annual fleet profile, including the number of excavators and haul trucks required. Beginning in Year 5, the truck fleet is expanded to account for the 8.3-km haul distance between the Central Pit and the ROM pad. This increase in haulage capacity is necessary to meet the higher material handling requirements as mining transitions to the Central deposit.

Table 16-3: Major Open Pit Equipment Requirements

Description	Equipment Type	Class	Number of Units
Loading	Hydraulic Excavators	35 t	3
Hauling	On-Highway Trucks	25 t	17
Support	Track Dozer	200 HP	4
	Motor Grader	180 HP	3
	Wheel Loader	13 t	1
	Lube/ Fuel Truck	-	2
	Water Truck	-	3
	Compactor Roller	-	2
	Open Truck	-	2
	Low Bed Truck	-	2
	Pick-ups	-	6
	RC-Drill	-	2
TOTAL			**47**

Figure 16-13: Truck and Excavator Annual Units



Source: Deswik, 2025.

16.8 Labour

Mine personnel will work one shift per day, organized into two crews to provide coverage for 12 hours a day, seven days a week. The shift system will follow a 15 days in and 15 days out rotation. This setup allows for extended work periods while ensuring adequate time off, which can enhance productivity and promote worker well-being. Production and maintenance activities will be managed by contractors. The total labor force for the mine during peak operations is estimated to be 171 personnel.

17 RECOVERY METHODS

17.1 Process Overview

Production from the Cuiú Cuiú Project will be processed via heap leaching using an on/off pad design. Ore will be agglomerated with cement prior to stacking, with leaching limited to a single 5-m-high lift to minimize the risk of compaction and loss of solution flow. Pregnant solution from the leaching process will be processed through a conventional adsorption, desorption, recovery (ADR) Plant to produce gold doré bars as the final product.

The product from the primary crusher will be agglomerated with cement and barren solution at cement addition rate of 10 to 15 kg/t of leached material. Due to its nature, ore is predominantly very fine but presents as big clumps.

Agglomerated ore will be transported to four on/off heap leach pads using grasshopper conveyors. A maximum of two pads will be leached concurrently, while the other two pads will be in the process of loading and unloading.

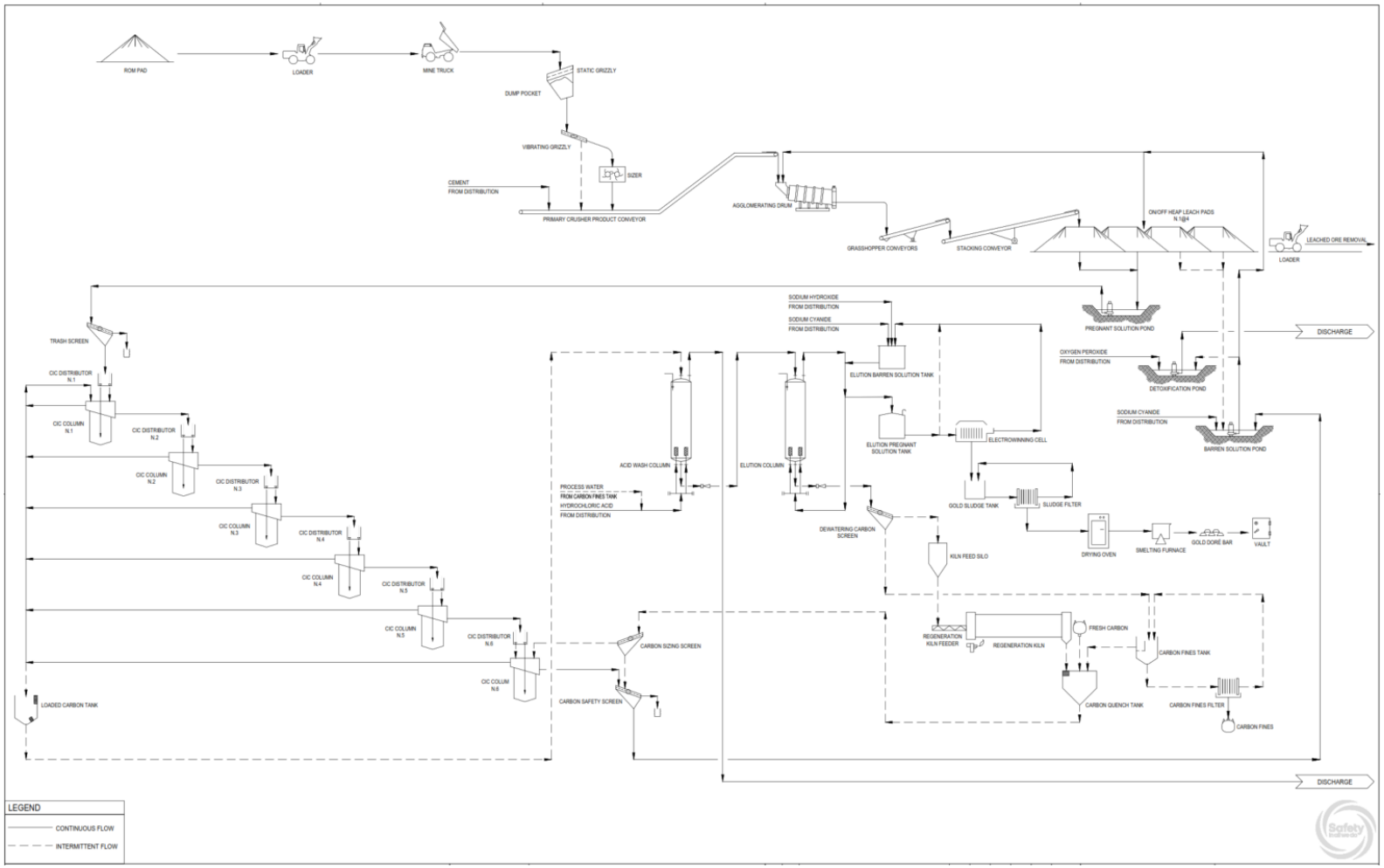
Stacked ore will be leached with a dilute cyanide solution, with gold recovery from the solution achieved using a carbon-in-column (CIC) circuit. The design solution-to-ore ratio is 2.4:1 to achieve the design gold recovery.

Over the life of the Cuiú Cuiú Project, the total ore production is estimated at 4.30 Mt with an average grade of 0.85 g/t Au, yielding a total of 117.62 koz Au. The projected mine life is 6.2 years. The crushing circuit has nominal processing rate of 1,000,000 t/a, equivalent to 2,740 t/d. The design rate for ROM processing, which forms the basis for leaching and adsorption, is 3,288 t/d (including a 20% design factor). Key process plant design criteria are summarized in Table 17-1.

Table 17-1: Process Plant PFS Main Design Criteria.

KPI	Unit	Value
Plant Nominal Capacity	Mt/a	1.00
Plant Nominal Capacity	t/d	2,740
Gold Average Grade	g/t	0.85
Average Gold Recovery	%	85.4%
Average Production Rate	oz/a	23,338
Heap Leach Type	-	ON/OFF
Lift Height	m	5.0
Number of Lifts	-	1
Leach Cycle	days	60
Irrigation Rate	$L/h/m^2$	12.0
Pregnant Solution Design Flowrate	m^3/h	242

Figure 17-1: Cuiú Cuiú Project – Simplified Process Flowsheet



Source: Ausenco, 2025.

The process design is based on the information and recommendations provided in Section 13 of this Technical Report.

For the MG Blanket resources, the average expected gold recovery is 88.0%, while for the MG saprolite resources, the expected recovery is 90.5%.

For Central Blanket reserves, average expected gold recovery is 91.0%, while for the Central saprolite reserves, the expected gold recovery is 72.5%. For Machichie reserves, the expected gold recovery is 88%.

17.2 Plant Design

17.2.1 Crushing, Agglomeration and Pads

The ROM stockpile will have a capacity of 9,535 t, providing approximately 42 hours of storage. ROM ore will be fed into the crusher feed hopper, which is equipped with a fixed grizzly screen with 250 mm x 250 mm openings, at a rate of 205.1 t/h of dry solids.

Any oversized material retained by the grizzly screen will be broken by a mobile rock breaker. The undersized material from the grizzly will be directed to a vibrating grizzly feeder with 50 mm openings. The grizzly feeder then discharges into a mineral sizer, which functions as the primary crusher but with main function of ROM material disaggregation.

Crusher discharge and grizzly feeder fines will discharge onto the agglomerator feed conveyor, which is equipped with a weigh scale. Cement and barren solution will be added to the agglomerate crushed ore, aiming to improve permeability, mechanical strength, and geotechnical stability of the stacked ore. Barren solution will be added to adjust the moisture content of the agglomerates to the desired level, as determined by test results.

The discharge from the agglomeration drum will be conveyed to the heap leach pad that is being actively stacked.

For maintenance purposes, the mineral sizer area will be equipped with a 3-t electric hoist.

Compacted permeability testing has determined that the maximum lift height is 5 m, which precludes the use of typical multi-lift heap leaching. As a result, an on/off heap leach operation was selected. The leach pads cover an area of 14,583 m², with a lift height of 5 m and a total material volume of 72,914 m³, providing a capacity of 98,433 t per pad. The leaching cycle will consist of 60 days for leaching, followed by 12 days for rinsing and neutralization, and 18 days for leached ore removal.

17.2.2 Adsorption and Ponds

Stacked ore will be leached with barren solution pumped from the barren solution pond, where sodium cyanide will be added at a concentration of 20% to maintain a concentration of 1 g/L NaCN. Hydrated lime slurry will be added for pH adjustment, if necessary, and an anti-scaling agent will be used to prevent clogging of the irrigation lines.

Barren solution will be applied via drip emitters, starting at an initial rate of 3 L/h/m². Over the first four days of the leaching cycle, the application rate will gradually increase until the final design rate of 12 L/h/m² is achieved.

This slower irrigation phase is designed to prevent the displacement of fine material from the top of the heap, helping to maintain the hydraulic permeability of the stacked material, which is critical for the leaching process.

At the end of each leach cycle, the leached ore will be allowed to drain, with the resulting solution flowing into the pregnant solution pond. The leached ore will then be rinsed to reduce the cyanide concentration. The rinse solution will be directed either to the barren solution pond or to cyanide detoxification. The site-wide water balance will determine whether treatment and discharge of excess solution are necessary during the wet season.

Pregnant leach solution will flow by gravity to the pregnant solution pond, which has a capacity of 20,159 m^3, accounting for a 50% operating level and additional capacity to accommodate 24 hours of plant downtime. Pregnant solution will be transferred by submersible pumps and sampled using a string sampler before being sent to the trash screen to prevent the solids from entering the CIC circuit.

The CIC circuit will consist of six contactors arranged in a cascade operation. Pregnant solution passing through the trash screen will flow by gravity to the distributor, which will feed the first contactor at a nominal flow rate of 350 m^3/h. The solution enters the bottom of each contactor and flows through a distributor plate with bubble caps to distribute the flow across the contactor's cross-section. The rising solution flow fluidizes the carbon, and a cross launder is used to feed each contactor and bypass one as needed for maintenance.

Barren solution from the last contactor will flow over a static carbon safety screen to capture any fine carbon. The undersize flow from the safety screen will flow by gravity into the barren solution pond, which has a capacity of 10,080 m^3, after passing through an inline sampler.

Barren solution will be pumped to the heap leach pads for irrigating the stacked material and to the agglomeration drum via submersible pumps (one in operation and one on standby).

Fresh and regenerated carbon will be introduced into the last contactor. Loaded carbon advances counter-currently to the solution flow by a recessed impeller pump. Loaded carbon from the first contactor will be transferred to the loaded carbon tank.

The loaded carbon tank will be equipped with screened drainage and an overflow system to prevent the loss of loaded carbon. Loaded carbon will flow by gravity to the acid wash column.

Regenerated carbon will be added to the last contactor by gravity, passing over a static carbon sizing screen. The oversize material from the sizing screen will discharge into the contactor, while the undersize will flow by gravity to the safety screen and then directed to the barren solution pond.

This area will be equipped with a hydrogen cyanide gas detector and alarm system for safety.

For maintenance purposes, the area will have a 2-t capacity hoist.

17.2.3 Acid Wash

Loaded carbon will be transferred by gravity to the acid wash column. Once the loaded carbon has drained, the vessel will be filled with a 3% hydrochloric acid solution, pumped into the column and diluted in line with process solution. Acid solution will then circulate through the carbon for 4 hours to remove carbonate scale. After the acid wash, the carbon will be rinsed before being transferred to the elution column using an eductor. Spent acid solution will be transferred either to the barren solution pond or to detoxification.

The acid wash area will be equipped with a sump pump that will direct any floor drainage along with the solutions drained from the elution column to the stormwater pond, which has a capacity of 9,817 m^3.

This area will also be equipped with a safety shower and eyewash station for safety.

17.2.4 Elution

Acid-washed loaded carbon will be hydraulically transferred to the elution column using an eductor. The elution circuit will operate using the pressure Zadra process, where a high cyanide, caustic solution is recirculated through the pressure elution column at 140°C and 350 kPa pressure to elute the precious metals from the carbon. The precious metal-rich solution from the column will exchange heat with the barren solution flowing into the column. A typical elution cycle will last between 12 and 16 hours, reducing the gold content of the carbon from 2,500 g/t to less than 125 g/t. The cooled pregnant solution will then flow through electrowinning cells, where gold and silver are deposited onto the cathodes, and the solution will then be recycled back to the elution column.

This area will also be equipped with a safety shower and eyewash station for safety.

17.2.5 Carbon Regeneration

Eluted carbon will be transferred to the carbon dewatering screen. The screen oversize will discharge into the kiln feed hopper while screen undersize will flow by gravity to the fine carbon tank. Periodically, the tank will be pumped to the fine carbon filter using a diaphragm pump. The filtered carbon fines will be stockpiled for potential off-site treatment.

A screw feeder transfers dewatered carbon from the feed hopper to the regeneration kiln, which operates at a temperature range of 650-750°C with a residence time of 20 minutes. After regeneration, the carbon is discharged into the carbon quench tank, where fresh carbon is introduced. The discharge from the quench tank is then pumped to the carbon sizing screen. The screen oversize is added to the CIC circuit, while undersize will flow by gravity to the safety screen and then directed to the barren solution pond or carbon fines tank.

The regeneration kiln is fitted with mercury capture equipment including a sulphur impregnated carbon scrubbing system.

17.2.6 Electrowinning and Gold Room

The gold room houses the electrowinning and smelting processes, where the final gold doré bars are produced. This area is secure and closely monitored, with access control, intruder detection, and surveillance systems in place.

Pregnant solution from the elution column will flow into the electrowinning cells, where gold will deposit on stainless steel mesh cathodes. The gold-rich sludge will be removed from the cathodes using high-pressure spray water and flows by gravity to the electrowinning sludge filter feed tank. The sludge will be pumped from the feed tank to the gold room sludge filter, where it will be filtered and collected into mercury retort boats. The boats will be loaded into the mercury retort. The retort will heat the electrowinning sludge to 360°C to retort and condense mercury. The mercury retort will include the retort oven, condenser, mercury trap, sulphur-impregnated carbon adsorber, and a vacuum pump with seal water separator. Mercury will be collected in a mercury trap and decanted into a mercury flask. Mercury collected will be treated off site for storage or disposal.

Retorted and dried sludge will be mixed with fluxes and smelted in a diesel-fired smelting furnace to produce gold doré bars, which will be stored in the gold room vault prior to shipment.

Each electrowinning cell will be equipped with a mist eliminator and an extraction fan to remove fumes, which are vented through a common stack. The smelting furnace will also be equipped with extraction fans. The fumes from the smelting furnace will be directed to a baghouse for dust collection before being vented to the atmosphere.

For maintenance purposes, the area will have a 1-t capacity hoist.

17.2.7 Detoxification

The stormwater pond will collect rainwater, drainage from the acid wash column and the acid wash area. Rinse solution from the leached ore can also be directed to the stormwater pond as required.

The contents from the stormwater pond will be pumped to the detoxification tank, where hydrogen peroxide, copper sulphate solution, and lime slurry are added to reduce cyanide concentrations to environmentally acceptable levels. Once treated, the water will be transferred to the discharge area using submersible pumps. Cyanide detoxification will only be operated as required to discharge excess water to the environment.

The emergency pond will have a capacity of 25,915 m^3 and will be designed to handle overflow from other ponds, particularly during heavy rainfall. The accumulated water in this emergency pond will also be transferred to the discharge area using submersible pumps (one in operation and one on standby).

17.3 Reagents and Consumables

Reagents will be prepared and stored in a dedicated, self-contained area within the process area. They will be delivered to the required addition points using dosing pumps equipped with individual control valves to ensure precise application.

For operating and maintenance purposes, Sodium Cyanide and Copper Sulphate areas will have a 1.5-t capacity hoist each.

The reagents that will be used in the process include:

- Cement
- Hydrated lime
- Sodium cyanide
- Hydrochloric acid
- Hydrogen peroxide
- Copper sulphate pentahydrate
- Sodium hydroxide
- Activated carbon
- Smelting fluxes such as borax, silica, sodium nitrate, and sodium carbonate

Table 17-2: Estimated Annual Reagent Consumption

Area	Item	Annual Consumption (t)	Packaging/Delivery Format
Agglomeration	Cement	0.67	Bulk / 20 tonne trucks
Heap Leach	Cement	11,819	Bulk / 20 tonne trucks
	NaCN	252	1 tonne, briquette big bags
	Activated Carbon	27.8	500 kg bulk bags
Desorption	HCl	38.7 m³	1 m^3 IBC
	NaCN	2.60	1 tonne, briquette big bags
	NaOH	24.9 m³	1 m^3 IBC
Gold Room	Borax	0.66	25 kg bags
	Silica	0.33	25 kg bags
	Sodium Nitrate	0.055	25 kg bags
	Sodium Carbonate	0.055	25 kg bags
Cyanide Detoxification	Lime	694	Bulk / 20 tonne trucks
	Hydrogen Peroxide	54.4	1 m^3 IBC
	Copper Sulphate	2.72	500 kg bulk bags
	Coagulant	1.75	1 m^3 IBC
Plant Services	Antiscalant	22.8	1 m^3 IBC
	Propane*	399,257	Compressed, trucks
	Diesel*	38,443	Diesel trucks

*Propane and diesel consumptions are notes in liters, not tonnes.

The main process consumables and their estimated consumption rates are as follows:

- Mineral sizer liner: replaced annually.
- Agglomerator drum liner: replaced annually.
- Heap leach drip emitter piping: consumed at a rate of 38,000 m per year.
- Gold room consumables: consumed at a rate of one set every two months.

These consumption rates are based on reference data. Minor maintenance materials and consumables have not been estimated at this stage; however, a general allowance for these items has been included in the operating cost estimate.

17.4 Energy/Power and Water Requirements

For the current Cuiú Cuiú Project facility, the current energy/power and water requirements are shown as follows:

- The electrical power demand is currently estimated at 0.833 MW.
- The design process water requirement is 252.5 m^3/h as process solution, with a freshwater requirement of 32.0 m^3/h, indicating a recirculation of 220.5 m^3/h of water/solution to the process.

17.5 Comments on Recovery Methods

- The technology and process route considered for the Project are well-established and widely used by operators globally. Laboratory testwork has demonstrated high recovery rates, validating the suitability of the chosen technology applied to this Project.
- Process design was informed by metallurgical testwork programs developed in reputable laboratories specifically for the metallurgical domains of the MG and Central deposits.
- The testwork included analysis of potentially deleterious elements such as arsenic and mercury. Arsenic concentrations were found to be low, while mercury concentrations are sufficiently high to include abatement equipment on the process flowsheet. Tests for total organic carbon and preg-robbing behavior indicated no evidence of this issue.
- The plant was designed with a 20% capacity factor, adhering to standard engineering practices in the industry.

18 PROJECT INFRASTRUCTURE

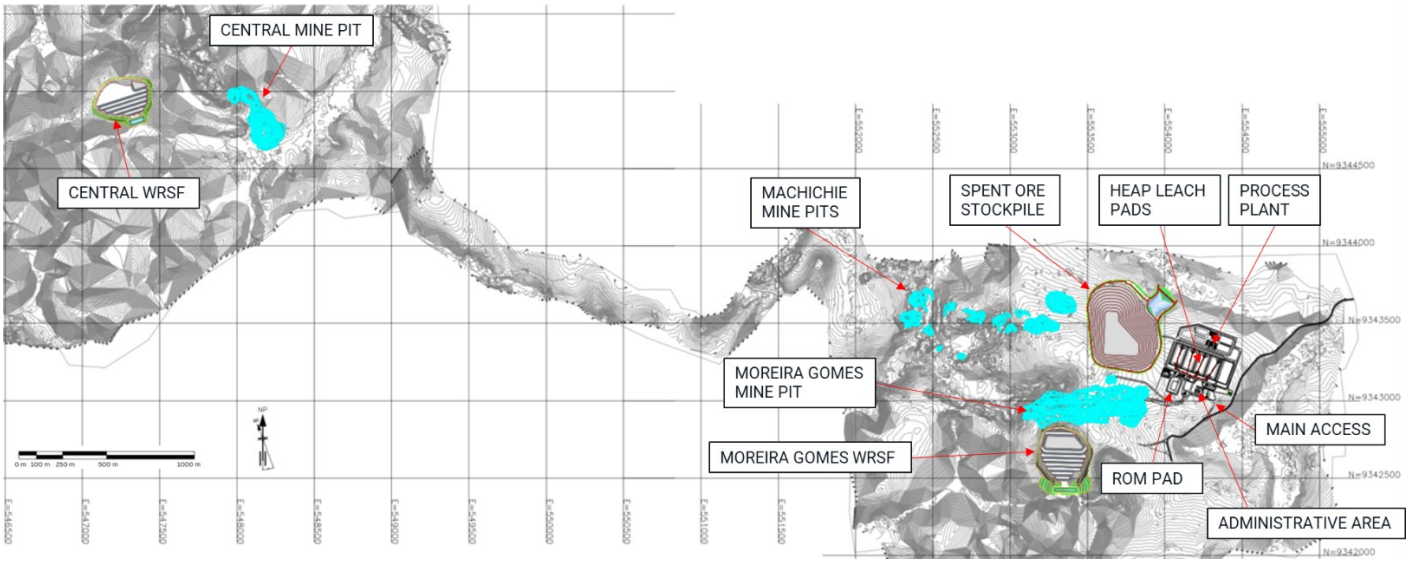
18.1 Introduction

The Cuiú Cuiú Gold Project is located within the Amazon Basin of Brazil, which is located in the municipality of Itaituba, in Pará State and 1,035 km southwest of the Atlantic coast port city of Belém. The Cuiú Cuiú Project is located approximately 195 km south-southwest of Itaituba, State of Pará, Brazil. The Transgarimpeiro road is 60 km south of the Project, and highway BR-163, which connects the city of Cuiaba (Mato Grosso State) with the city of Santarém (Pará State), lies 90 km east of the property.

The site will require the facilities listed below and shown in Figure 18-1.

- Site access road
- Mine roads
- Sizer based crushing plant
- Cement supply system and agglomeration
- Heap leach pads and ponds
- ADR Process Plant
- Power generation and electrical distribution
- Fuel storage
- General facilities include a gatehouse, administration building, accommodations and truck weigh scale
- Water supply and water management.

Figure 18-1: Cuiú Cuiú General Arrangement



Source: Ausenco, 2025.

18.2 Site Access

Site access was designed primarily to meet operating demands, which include reliable delivery of major consumables cement and diesel fuel, access to the two pits (MG and Central), processing plant, waste dumps, water wells and the leached ore stockpile.

The site can be reached via the Tapajós River, with ferry transportation to Itaituba, where the nearest airport is also located. From Itaituba, the route heads south along the BR-163 highway to the municipality of Moraes Almeida. If access via the Tapajós River is not feasible or a structured port is required, the alternative route is through the Amazon River to Santarém, which has a fully equipped port. From Santarém, the BR-163 highway provides access to the municipality of Moraes Almeida, located approximately 600 km away.

The property is accessed from the BR-163 highway, as previously mentioned, followed by a 25 km drive along the Transgarimpeiro state road (yellow line in Figure 18-3). While this road is not asphalted, it is paved. This route includes a ferry crossing over the Jamanxim River. Beyond the state road, an additional 124 km of rural road leads to the site. The first 63 km of the road (red line in Figure 18-3), are paved for all all-weather operation, and serves the recently commissioned G Mining Tocantinzinho Gold Project. This section facilitates vehicle traffic with minimal maintenance. The last 61 km (blue line in Figure 18-3), is unpaved and has an average width of 7 m and is currently being upgraded to 10m width. This portion includes steep slopes and low-lying areas that require elevation adjustments. To address these issues, maintenance equipment have been deployed since May 2025 to ensure continuous road operation. The fleet includes trucks, loaders, a compactor roller, and specialized labour to operate the machinery. Ongoing road maintenance will be essential to maintain year-round site access and facilitate the delivery of operating supplies. Capital and operating costs for road maintenance are included in this study.

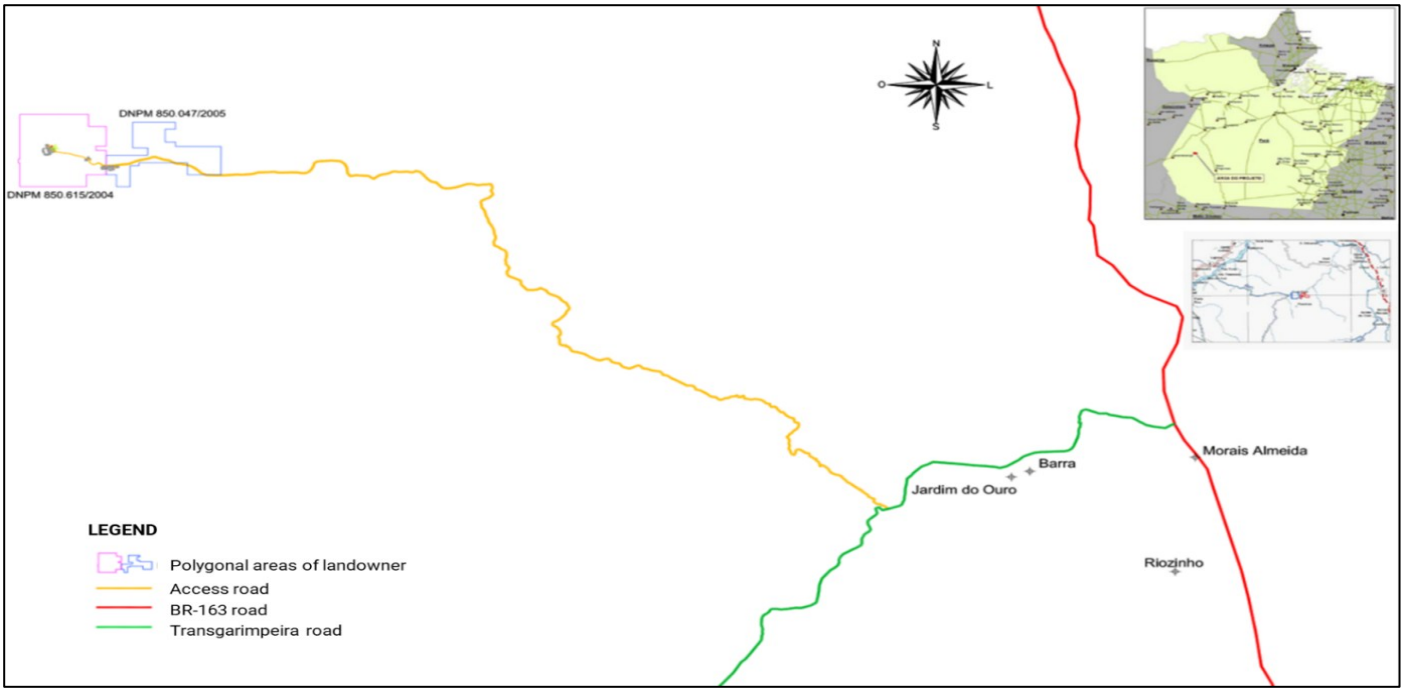
Initial roadworks on the 61 km Cuiú Cuiú access road will begin in May 2025 in collaboration with the local Itaituba Government and will continue through 2025 during the implementation phase. Contractors have provided cost and timeline estimates for the required roadwork, which are included in the capital and operating costs of this study. Contractor estimates were based on the LIDAR topographical survey conducted in late 2023-2024 and subsequent engineering study conducted by Ausenco in 2024. The access road will serve as the primary logistical corridor for the movement of personnel to and from of the project site.

The rural road contains 16 small wooden bridges, each measuring 8 m in length and 4 m in width, as along with two larger bridges – one 42 m long and the other with 20 m, both also 4 m wide. In addition, Cabral Gold plans to improve this road to enhance safety and accessibility. Currently 9 new bridges are being built for a total of 126m, including the reformation of the principal Tocantinzinho River Crossing Bridge.

The nearest community, Cuiú Cuiú, is about 5 km from the Central and MG pits.

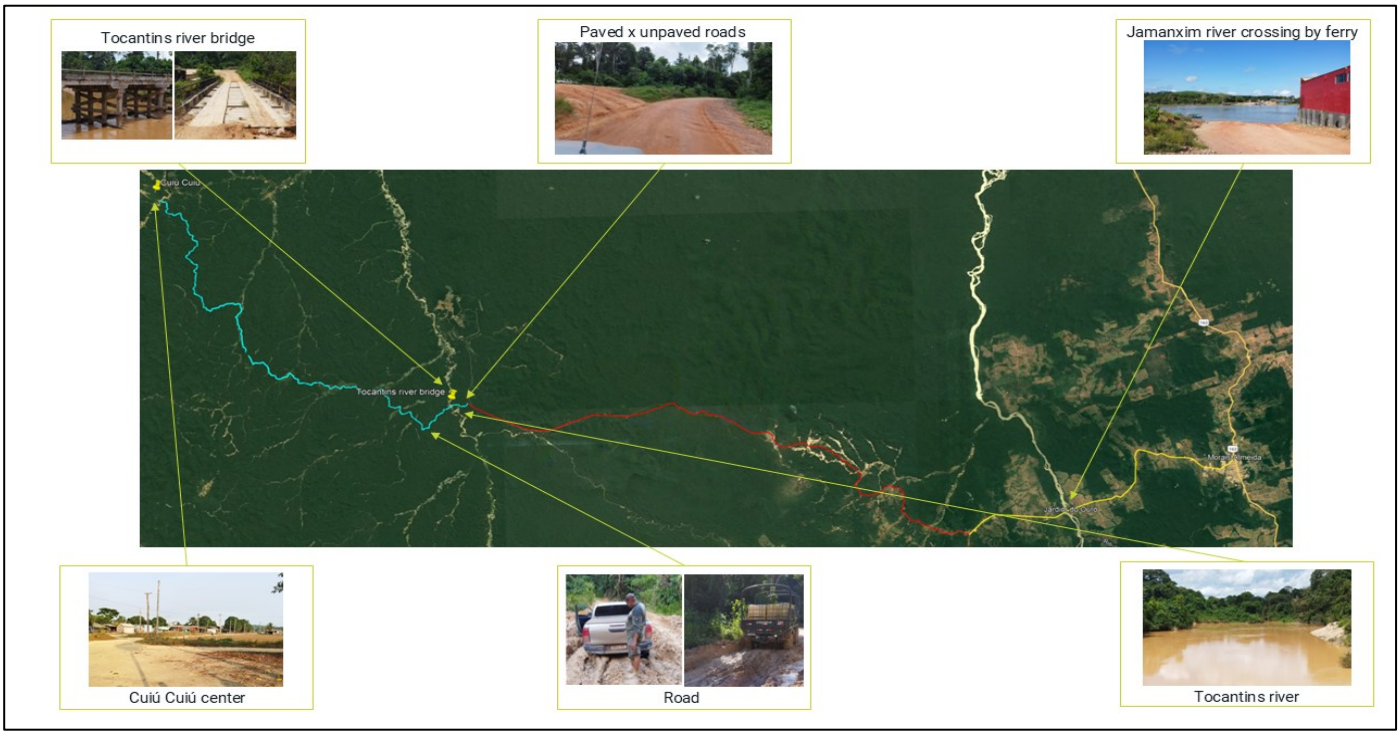
Figure 18-2 shows the site access roads, while Figure 18-3 illustrates the access road with photographs taken during site visits carried out by Ausenco in 2023 and 2024.

Figure 18-2: Site Access Roads



Source: Magellan Minerais, 2018.

Figure 18-3: Photographs along Site Access Roads



Source: Ausenco, 2024.

18.2.1 Site Access Maintenance

The standard methods for clearing, vegetation removal, and excavation will be utilized, incorporating drains, safety bunds, and backfilling with granular material and aggregates for road structure. Access to the processing and mine site will be controlled through a security gatehouse.

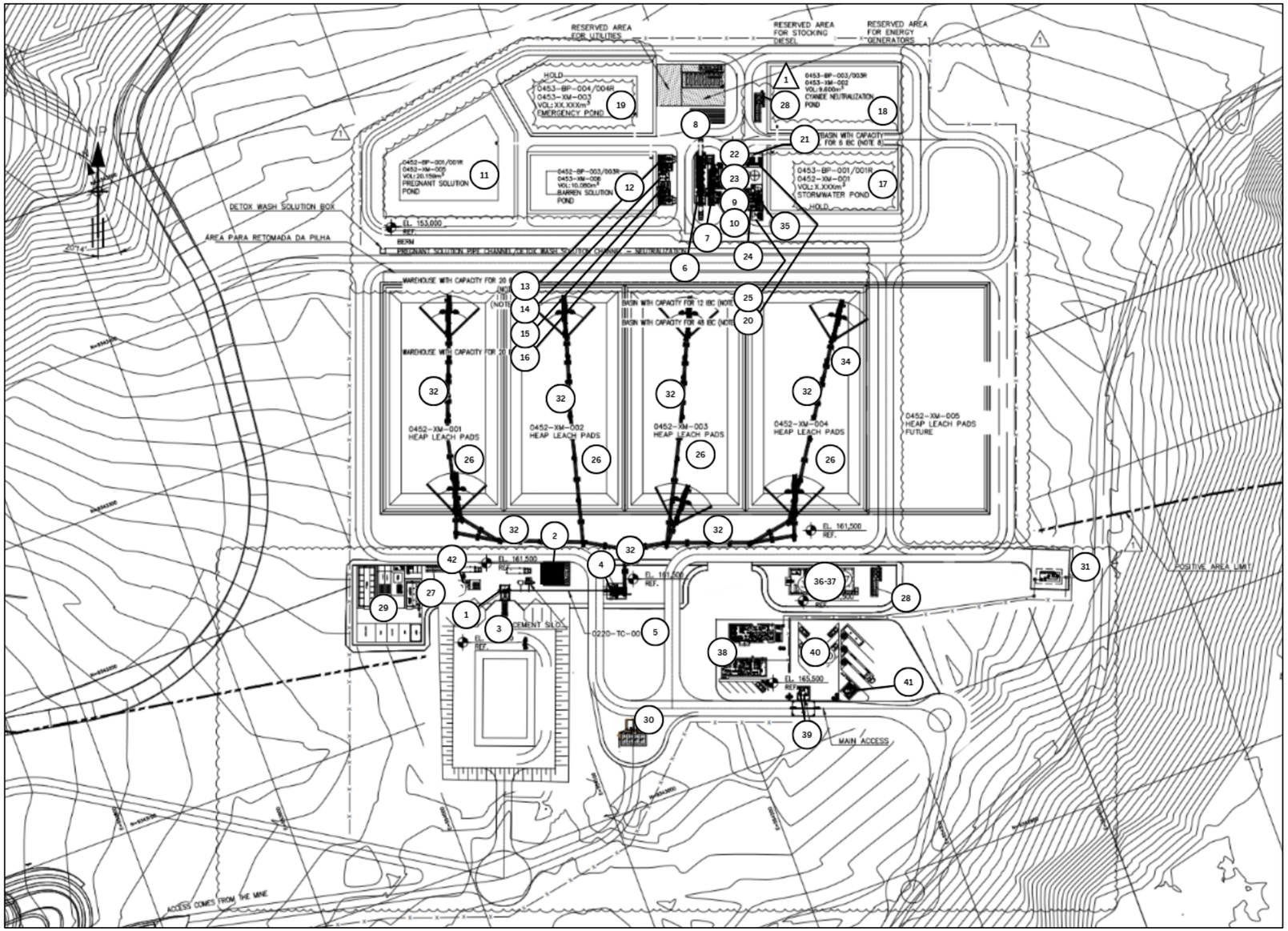
18.2.2 Plant Site Roads

The roads within the process plant area will generally be 8 m wide and integrated with process plant pad earthworks. They will be designed with adequate drainage (1 m) and will provide access to key facilities, including the administration support area, fuel storage and distribution, ROM pad, crushing building, heap leach area, ADR area, ponds and waste storage areas.

18.2.3 On-Site Infrastructure

The plant site consists of the necessary infrastructure to support the processing operations. All infrastructure buildings and structures will be built and constructed to all applicable codes and regulations. The plant site layout showing facilities is provided in Figure 18-1.

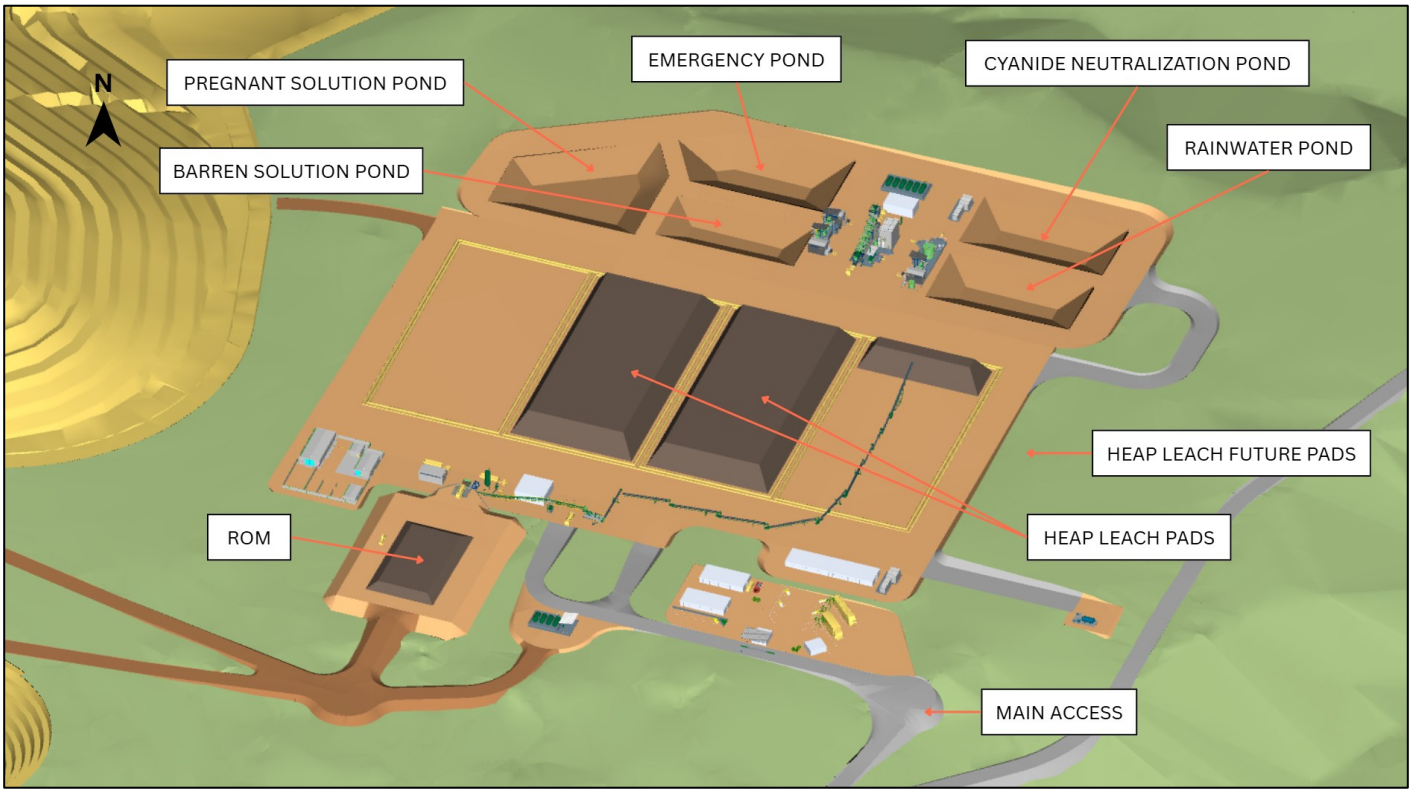
Figure 18-4: General Arrangement Components



Legend	
Item	**Area**
1	Primary Crushing
2	Crushing Substation
3	Cement Silo
4	Agglomerator Drum
5	Belt Conveyor
6	Adsorption
7	Acid Wash and Elution Electrowinning and Smelting Regeneration
8	Metallurgy Substation
9	Sodium Hydroxide Dosing
10	Hydrochloric Acid Dosing
11	Pregnant Solution Pond
12	Barren Solution Pond
13	Cyanide Storage Warehouse
14	Cyanide Preparation and Distribution
15	Lime Milk Preparation and Distribution
16	Lime Storage Warehouse
17	Stormwater Pond
18	Cyanide Neutralization Pond
19	Emergency Pond
20	Sodium Hydroxide Storage
21	Reagent Storage
22	Detox
23	Copper Sulfate Preparation and Distribution
24	Copper Sulfate Storage Warehouse
25	Hydrogen Peroxide Storage
26	Heap Leach Pads
27	Storage Bays
28	Recycling Bays
29	Industrial Waste Warehouse
30	Gas Station
31	WWTP – Wastewater Treatment Plant
32	Grasshoper Conveyor
~~33~~	~~Conveyor~~
34	Radial Conveyor (Stacker)
35	Hydrogen Peroxide Distribution
36	Warehouse
37	Workshop
38	Administrative (Changing Room / Cafeteria)
39	Main Gate
40	Parking
41	Support for Truck Drivers
42	Cement Storage

Source: Ausenco, 2025.

Figure 18-5: 3D General Arrangement



Source: Ausenco, 2025.

18.3 Infrastructure Geotechnical Investigation

A limited infrastructure geotechnical investigation was performed that consisted of several boreholes. The material encountered was saprolite to depths greater 30 m along with ground water encountered at depths ranging from 12 to 18 m below the ground surface. Information from the program was utilized in the design of site infrastructure.

18.4 Built Infrastructure

18.4.1 Accommodation

Employee transportation will utilize the paved BR163 highway to Moraes Almeida, followed by the all-weather Tocantinzinho-Cuiú Cuiú access road. Accomodation will be located on the periphery of the Cuiú Cuiú community within a modular campsite with capacity for over 60 people. The campsite will include living accomodations, recreational and medical facilities, laundry and refectory. Transportation to and from the mine site will be provided via buses and four-wheel drive vehicles.

Facilities will include:

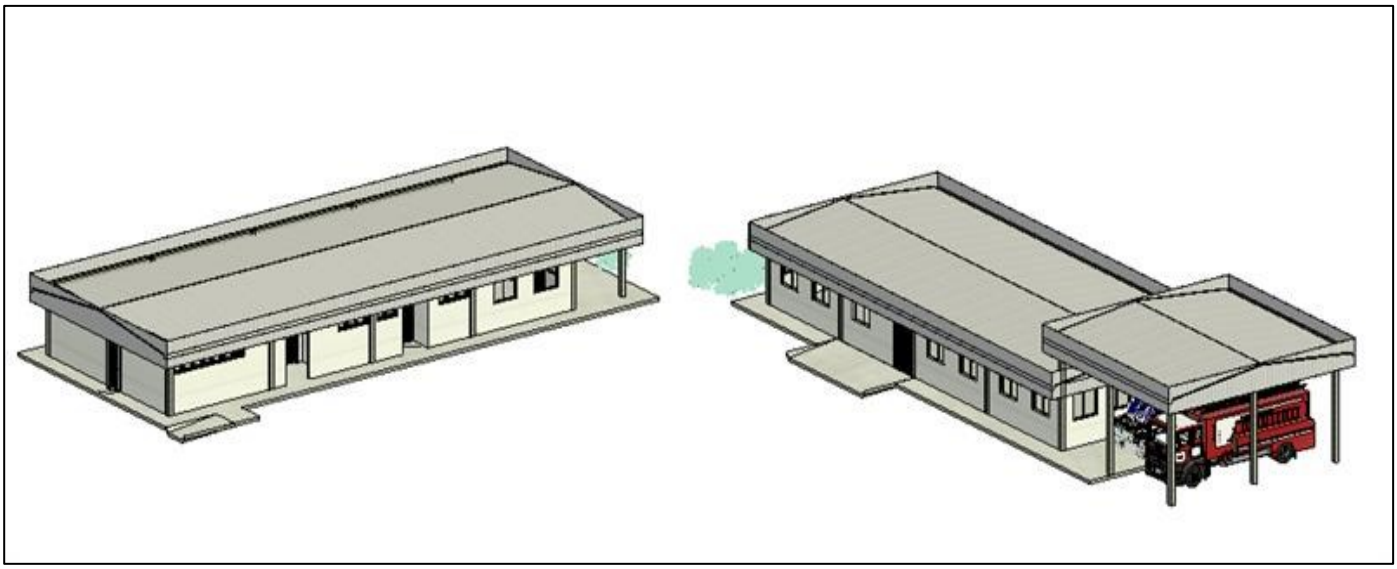
- Four fully insulated modules for kitchen facilities and refectory with capacity to feed up to 100 people.
- Four fully insulated modules for an outpatient clinic with a reception area, nursing station and medical consultation rooms.
- Three fully insulated modules for office administration to accommodate up to 12 people.
- Twenty fully insulated modules to accommodate up to 60 employees, expandable if necessary.
- Employee accommodations also include recreation areas, laundry and ablution facilities.

18.4.2 Administrative

On the administrative shift, there will be 21 people per day. For the operational area, four teams and three 8-hour shifts will be considered, with one of the teams being off-duty. Each day, 3 groups of 30 people will be on-site.

There will be an administrative building - which will house the office, a changing room, the dining hall and a first-aid room - and a gatehouse, with access control to the site.

Figure 18-6: Administrative Buildings



Source: Ausenco, 2025.

The office must be sized for 25 people, and will have a meeting room with 10 seats, toilets and a cafeteria. For sanitary facilities, the minimum ratio of one toilet for every group of 20 workers will be considered. The toilets must be separated by gender. One toilet will be provided for people with disabilities.

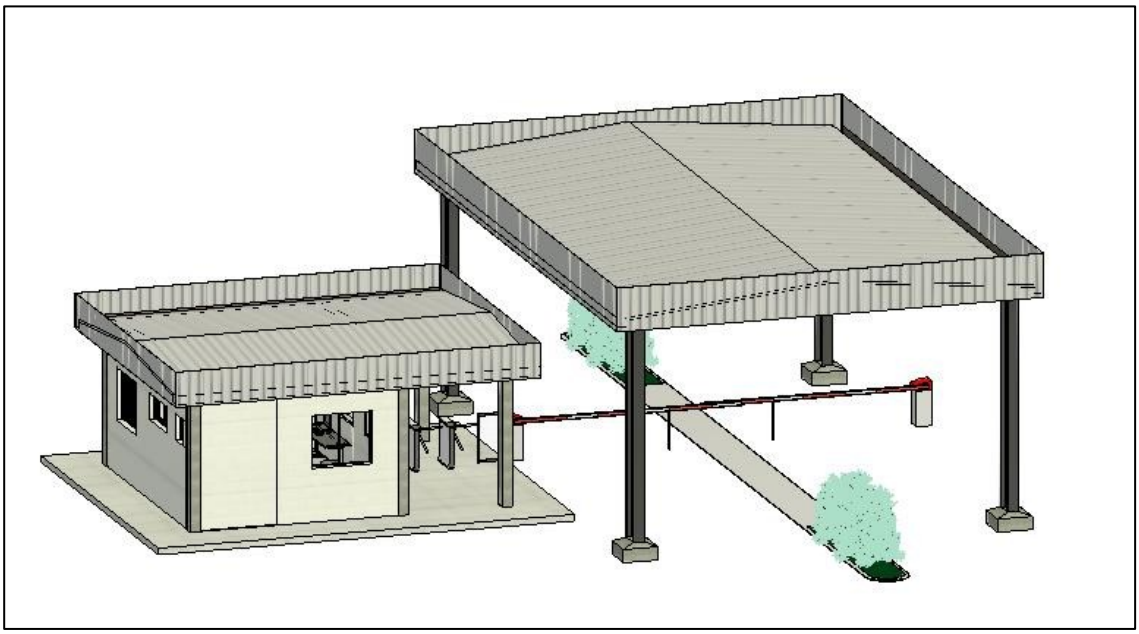
For the changing room, the total number of employees in the operational and maintenance areas will be adopted, totaling 120 people. Of these, for sizing criteria, 100% of the workforce will be male and an additional 30% female. Each employee will have a double locker, in accordance with current regulations. One toilet and one urinal will be considered for each group of 20 workers, and one shower and one sink for every 10 workers on the largest shift, which corresponds to 30 people.

Meals will not be prepared on site. A finishing kitchen will be provided to finish and make meals available to employees, and a dining room, sized to accommodate half of the peak number of workers (lunch), considering administrative shift and the operational staff number in a work shift.

The first-aid room will have a stretcher for immediate care and a patient hygiene area, as well as a covered area for ambulance parking.

The gatehouse will have a reception, toilets and a small training room. There will be turnstiles for access to the site and a covered area for vehicle entry and exit, with barriers for access control.

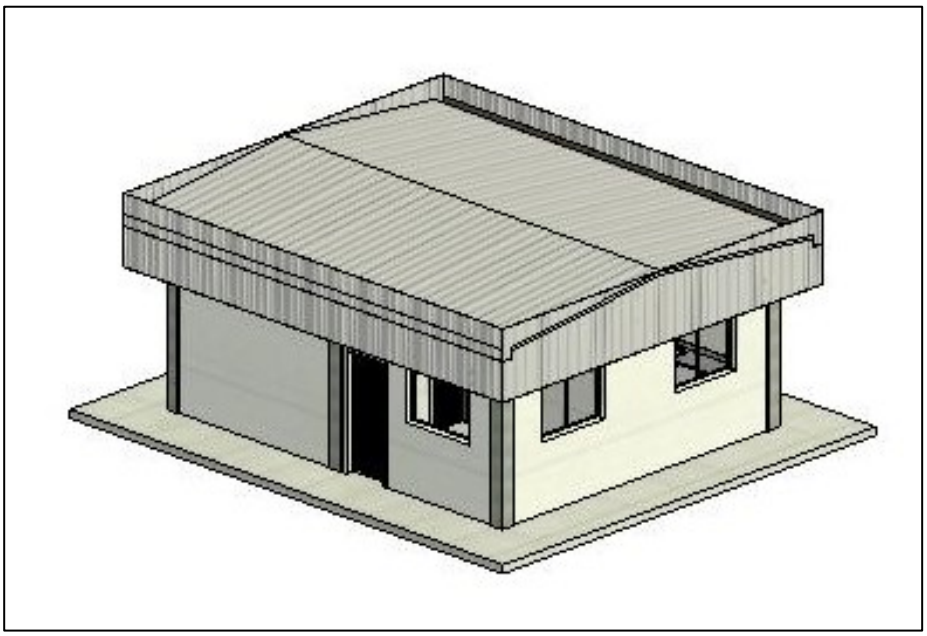
Figure 18-7: Gatehouse



Source: Ausenco, 2025.

The driver´s building will have male and female toilets, besides a resting area / cafeteria for the truck drivers.

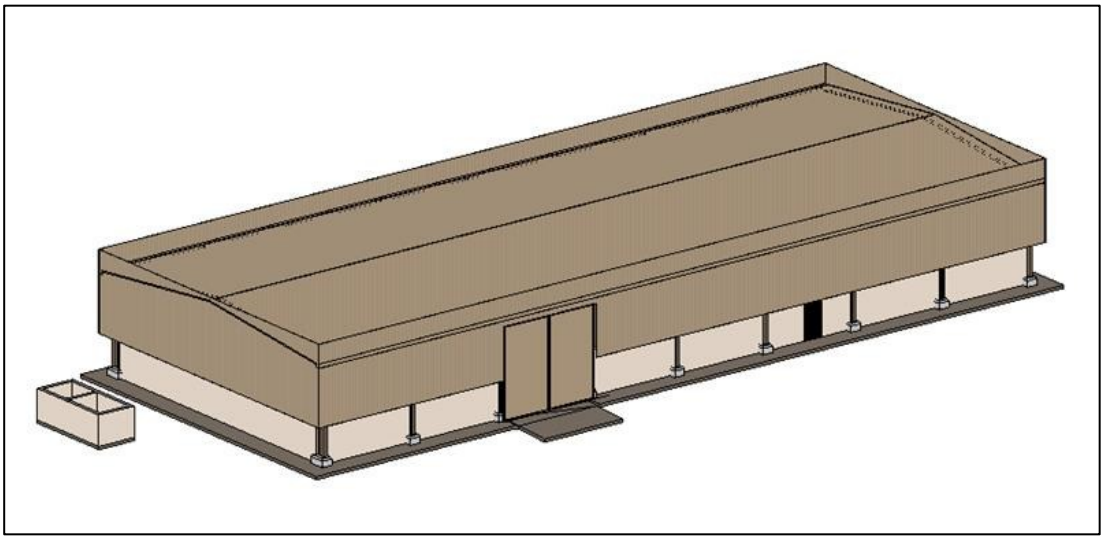
Figure 18-8: Driver's Building



Source: Ausenco, 2025.

One building will house the warehouse and maintenance workshop, with separate entries.

Figure 18-9: Warehouse and Maintenance Workshop



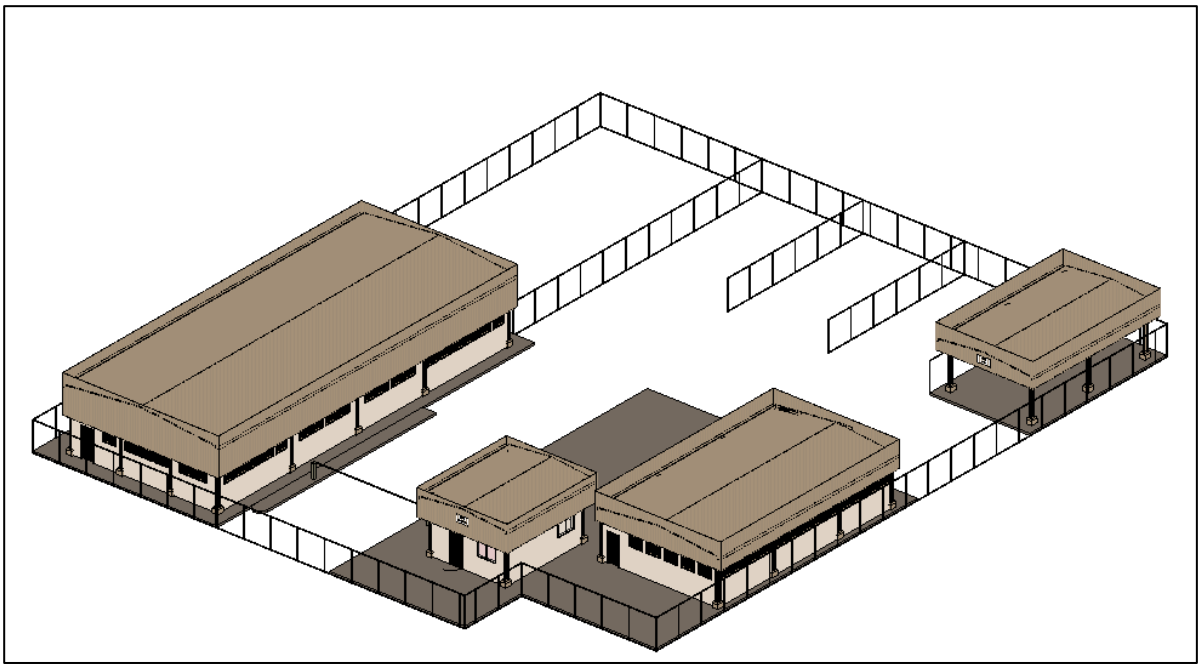
Source: Ausenco, 2025.

18.4.3 Discarded Materials Central (DMC)

The Discarded Materials Central (DMC) will consist of a facility including a warehouse for Class I waste (hazardous waste), a warehouse for Class II waste (inert and non-inert waste), an office/security gatehouse, a covered area for storage of tires and rubber materials, and open yards for storage of other materials such as conveyor belts, wood, scrap metal, and unusable/available items.

The warehouses and yards will have concrete flooring, and the hazardous waste storage warehouse will be equipped with a drainage channel to collect oily effluents, directing them to a collection sump, which will be emptied by tanker truck as needed.

Figure 18-10: Discarded Materials Central (DMC)



Source: Ausenco, 2025.

18.5 Stockpiles

18.5.1 ROM Pad

Crushing will be directly fed by trucks with a net capacity of 25 t, which dump ROM into the primary crusher feed hopper. During any shutdowns, ROM production will be stockpiled on the ROM pad, which provides a buffer for the plant and will have the capacity for one hour of plant operation (222t/h).

The ROM stockpile is located close to the edge of the MG Pit (still respecting minimum setback), optimizing the material transport distance (DMT) from the pit to primary crushing at a higher elevation than the plant to avoid additional earthworks and improve energy consumption for transferring the material to the leach pad, which is located at a lower elevation.

ROM production will be reclaimed with a CAT 966 loader, which will transfer ROM production into the primary crusher dump hopper.

The pile will have the dimensions of:

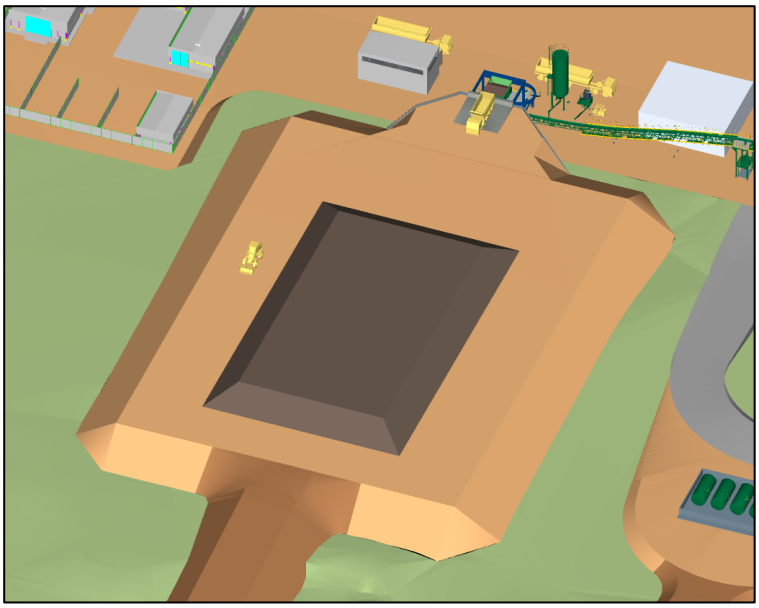
- Length: 62 m
- Width: 39 m
- Capacity: 9535,2 t
- Residence Time: 42 hours of retention time

Meanwhile, the pond's capacity can be divided into two types:

- Emergency Pond: 25,915.00 m³
- Rainwater Pond: 9,817.00 m³

Figure 18-11 shows the ROM pad and the primary crusher.

Figure 18-11: ROM Pad



Source: Ausenco, 2025.

18.6 Heap Leach Pad and Ponds

Mining is conducted using standard open-pit methods, with material crushed by a sizer, agglomerated with cement, and then conveyor-stacked onto the on/off heap leach pad cells with four separate and 5-meter lifts (Figure 18-3).

A trade-off study between permanent and on/off heap leach pads was conducted as part of this project. The preferred option was using an on/off pad because of the significant reduction in stacked material permeability with loads over 6 m. Ausenco designed the heap leach pad. It will be constructed in a single on/off pad with four cells based on the leach cycle. The heap leach pad will feature a composite liner made of a compacted subgrade and a single-sided textured HDPE geomembrane. The leached (spent ore) material will be detoxified and removed by a front-end loader and haul trucks. Then, it will be placed and compacted in the spent material stockpile with a compacted subgrade serving as the liner system.

The cycle for a single cell takes 30 days to stack the material, followed by a 60-day leach cycle, a 12-day rinse and detoxification cycle, and 18 days to off-load the spent material, totaling a 120-day cell cycle. Leaching happens in one cycle using a dilute cyanide solution at an application rate of 12 L/h/m², with a total leach duration of 60 days. The gold-bearing solution is then transferred to the Pregnant Solution Pond (PLS) and processed in a carbon adsorption-desorption-recovery plant to extract the gold.

Engineering and design of the processing plant was undertaken for complete crushing, leaching, and recovery systems. The criteria for the design of the processing circuit are summarized in Table 18-1.

Table 18-1: HLF Design Criteria Summary

Parameter	Description
Operating days	365 days per year
Operating time	For the crushing, conveying, agglomeration, and stacking section of the plant, the avalibility is 83.5%
Note: All Tonnes Are Dry Tonnes	
Plant Nominal Capacity	2,740 t/d
Crushing Product Size (P_{100}), mm	0.50
Number of Leach Pad Cells	4
Leach Cycle, days (total)	120
Nominal Barren Application Rate	122 (250-2 Cells)
Irrigation Design Rate, L/h/m^2	12
Barren System Pumping Flow, m³/h	122 (250-2 Cells)
Pregnant Solution Design Flow Rate, m³/h	122 (250-2 Cells)

Source: Ausenco, 2025.

18.6.1 Mineral Sizer

Mineral Sizers are designed to offer a more effective way to crush clay-laden, sticky materials that can cause issues in other types of primary crushers, such as Jaw, Gyratory, and Impactor crushers. (Refer to Figure 18-12). ROM production will be crushed to 50 mm and then agglomerated before being stacked on the on/off leach pad.

Figure 18-12: Mineral Sizer



Source: Ausenco, 2025.

18.6.2 Heap Conveying and Stacking

The material from the crushing unit (sizer) will feed a conventional belt conveyor, which will directly discharge into the agglomeration drum. Two independent cement addition systems will be installed on this conveyor:

- Primary System: A silo with a storage capacity of 96 tonnes, equipped with a dosing screw to ensure controlled cement addition to the process.
- Auxiliary System: A hopper designed to receive 3.0-tonne big bags, with discharge carried out by forklift, ensuring operational continuity in the event of temporary unavailability of the primary silo.

To support the auxiliary system, a storage tent will be installed for the organized stocking of big bags, enhancing operational flexibility and reducing the risk of supply shortages.

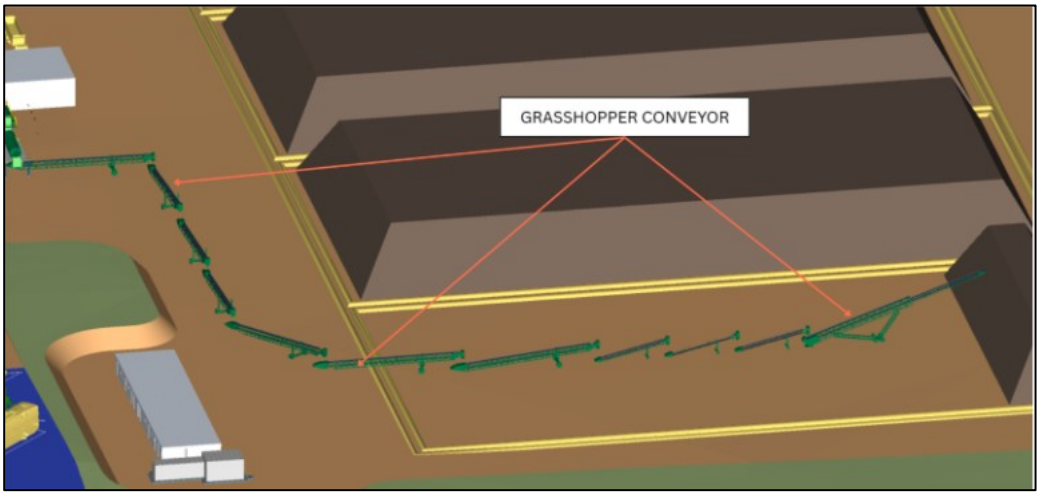
Figure 18-13: Agglomerator and Stacking System



Source: Ausenco, 2025.

After the agglomeration stage, the material will be conveyed to mobile grasshopper conveyors, which will feed a radial stacker responsible for building the heap leach pads in single layers of five (5) meters in height.

Figure 18-14: Grasshopper Conveyor

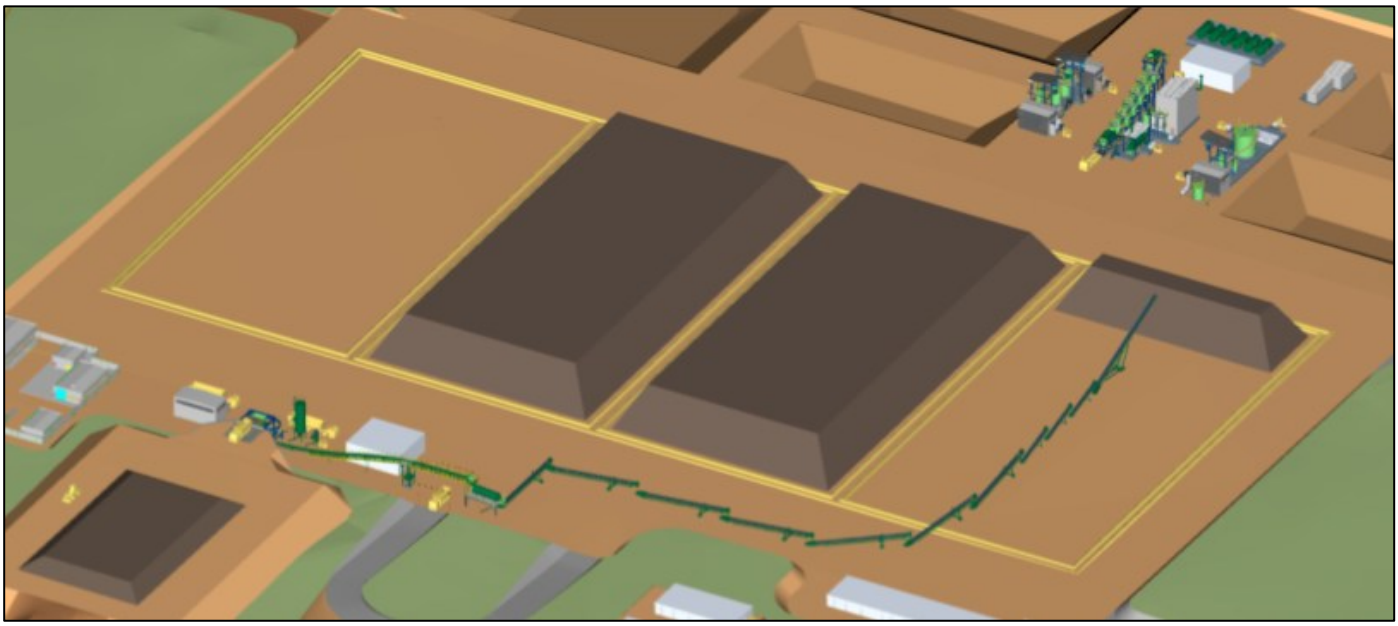


Source: Ausenco, 2025.

The material handling and stacking system in the leach pad area will consist of these mobile conveyors and the radial stacker. As the stacker advances, the system will be periodically stopped to allow for the addition or removal of grasshopper conveyors as needed.

The stacked material will consist of crushed and agglomerated ore. Once each cell is formed, it will undergo the leaching process through an irrigation and solution collection system. After the leaching phase is completed, the material will be washed and detoxified. The irrigation system will then be removed, and the cell will be unloaded using front-end loaders and off-highway trucks, which will transport the leached material to a dedicated stockpile.

Figure 18-15: Heap Leach Pad and Heaps



Source: Ausenco, 2025.

18.6.3 Heap Leaching

After stacking, the material is irrigated with a dilute sodium cyanide barren solution that leaches out the gold from the mineral and is then conveyed to the pregnant solution pond for processing in the ADR plant. The project is designed as a single lift and single pass system on/off pad, with no intermediate solution used for heap application. The heap will be irrigated using a drip-tube system for solution application. HDPE pipes distribute the solution to the drip-tubes on top of the heap.

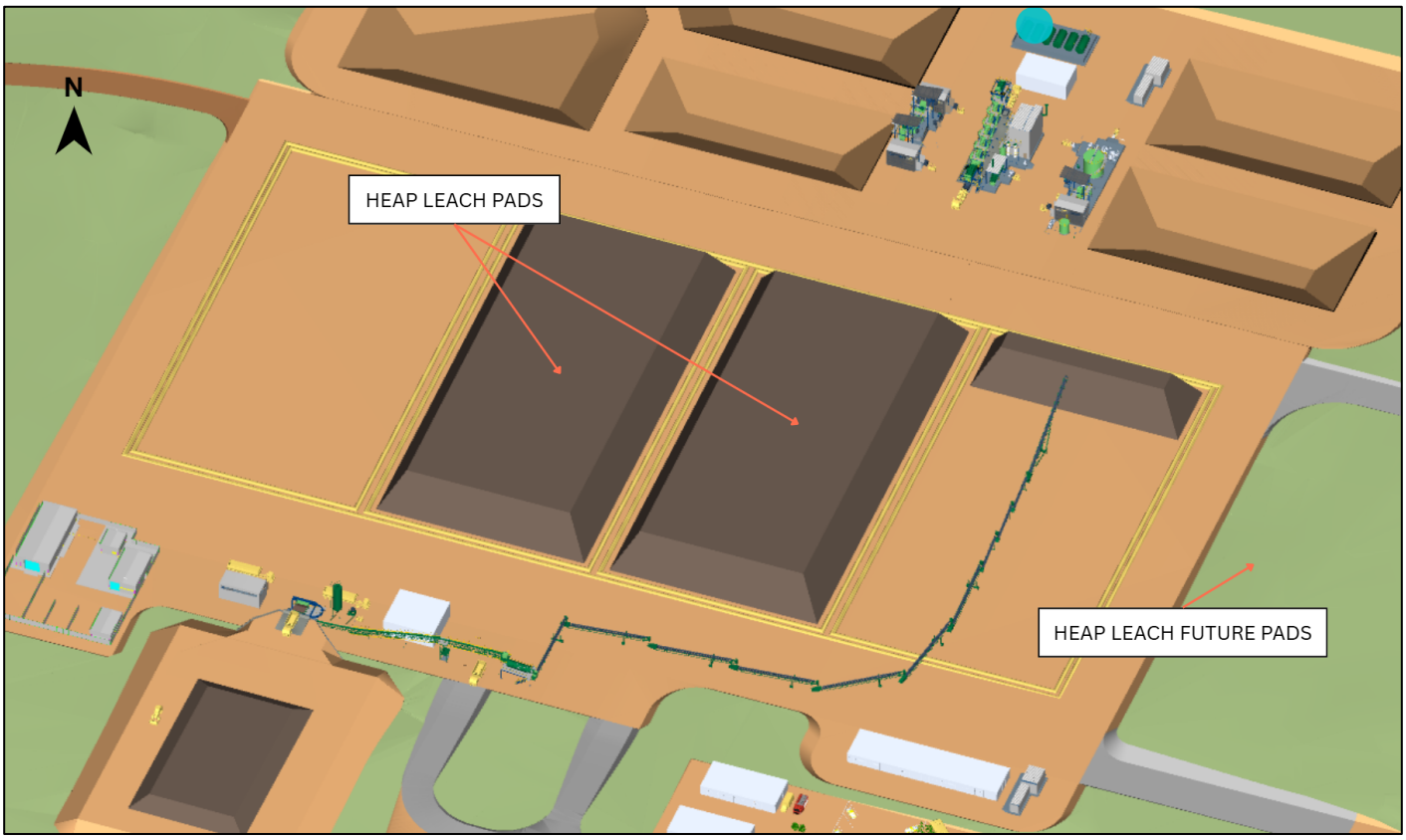
The total leach cycle of 60 days has been designed for the heap leach system, based on metallurgical test work completed to date. The leach process operates in a single 60-day cycle, with leach solutions applied to the ore at a nominal rate of 12 L/h/m^2. When applied to the heap, the leach solutions will have an approximate cyanide concentration of 1 g/L.

The centrifugal pump operating at the barren pond will be used for applying the barren solution to the heap. It will be mounted next to the barren pond along with the process solution pump. High-strength sodium cyanide solution will be added to the suction side of the barren leach solution pump using a metering pump. The combined nominal flow to the heap is 350 m^3/h. Gold-bearing solutions draining from the leach pad are collected by a network of perforated drainage pipes that transition to solid SDR HDPE pipe before exiting the cells and carrying solution to the PLS pond. Pregnant solution is pumped from this pond by a submersible pump to ADR plant.

18.6.4 Heap Leach Facility Design

Ore from the mineral deposit will be processed through heap leaching. An on/off HLF has been designed for the project by Ausenco. The HLF consists of four (4) 75 m by 144 m cells, each with an ore capacity of approximately 59,467 t, based on a dry bulk density of 1.35 tonne per cubic meter (t/m^3), as shown in Figure 18-16.

Figure 18-16: Heap Leach Facility



Source: Ausenco, 2025.

There is no international or Brazilian standard for the design of heap leach facilities like there is for tailings storage facilities. Therefore, for the feasibility design of the leach pad, Ausenco used the following guidelines to ensure the HLF meets or exceeds North American standards, such as Nevada Administrative Code 445A.434 for lining system design,

Nevada Administrative Code 445A.435 for pond design, and Arizona Revised Statute (A.R.S.) 49-243.B.1 along with Arizona Administrative Code (A.A.C.) R18-9-A202, which aim to reduce environmental impact on local soils, surface water, and groundwater. North American construction standards are designed to minimize impacts to surface and subsurface water sources.

The HLF, including the pad, ponds, and plant, covers an area of 12.0 hectares. Ore is planned to be stacked at a rate of 2,740 tonnes per day (t/d). ROM production will be crushed with a sizer and agglomerated, then placed on the leach pad using portable conveyors that feed a conveyor-stacker. The agglomerated material is intended to be stacked in roughly 5-meter lifts in each cell, with an average overall ore slope of 1.5H:1V (horizontal to vertical).

The foundation of the HLF includes an underdrain system within the structure to collect near-surface groundwater and direct it to the emergency pond. Fill material needed for perimeter roads, process ponds, and leach pad foundations is intended to be sourced from the excavation of the HLF. The leach pad has a composite liner system consisting of a compacted subgrade and geomembrane. The Heap Leach Pad is divided into four separate cells due to the on/off pad operations. Each cell is equipped with a solution collection system that drains by gravity to the PLS Pond located northwest of the leach pad. During rainfall events, runoff contained within the solution collection system flows into the PLS pond, and if it exceeds the pond's capacity, it will flow into the emergency pond. During extreme storm events that surpass the capacity of the solution collection system, water will flow through spillways into the lined corridor that provides secondary containment for the PLS pipeline. This secondary containment corridor discharges into the emergency pond, helping to reduce the dilution of pregnant solution from large storms flowing directly into the PLS pond.

The heap leach pad involves building four leach pad cells, a perimeter access road, an underdrain system (which also acts as a leak detection system), a pad composite liner system, a solution collection system, PLS, Barren, Rainwater, and Neutralization Ponds.

18.6.5 Heap Leach Pad

Before constructing the HLF, the area will be cleared, and all existing vegetation and topsoil will be removed. Cut and fill grading are necessary to ensure proper gravitational flow of leachate solution from the leach pad cells to ponds and for surface water management. Approximately 356,920 m^3 of cut and 21,682 m^3 of fill are required to build the HLF platform.

The on/off heap leach pad comprises four (4) individual cells, each measuring 75 m by 144 m, constructed and operated according to the standards outlined above. The leach pad is designed with a grading plan to ensure minimum heap slope stability FoS of 1.3 (during operations), 1.50 (post-closure), with static and pseudo-static factors of safety of 1.0. It also encourages positive gravity solution flow within the solution collection system above the leach pad liner. Typically, each cell is graded northwestward to achieve a minimum grade of 1 to 2%. The cells are fitted with an underdrain system extending beneath each, draining into the emergency pond. The underdrain is installed in trenches lined with non-woven geotextile, surrounding a perforated HDPE dual-wall pipe with a diameter of 150 mm to 300 mm, embedded in drainage gravel. This setup is designed to capture any near-surface groundwater within the foundation and serve as a leak detection system for potential leaks through the composite liner.

The leach pad cells are built with a composite liner system that consists of (from top to bottom):

- A 500 mm thick drainage overliner with a network of solution collection pipes as described below.
- A 2.0 mm thick, single-sided textured, linear low-density polyethylene (LLDPE) geomembrane.
- A 300 mm thick compacted low-permeability soil liner with a permeability no greater than 1 x 10^-5 centimeters per second (cm/s).

Along the north side of these cells is the lined secondary containment and stormwater channel. This channel contains the PLS pipeline that transitions from a perforated pipe within each cell to a 450 mm solid SDR 21 HDPE pipe that transports pregnant solution to the PLS Pond, which is described in more detail below. The channel also functions as the stormwater and overflow channel, carrying excess storm flow and overflow water from each cell to the emergency pond.

The 50 cm drainage overliner material above the leach pad geomembrane is a free-draining, durable crushed gravel with a minimum permeability of 1 x 10^-1 cm/s, placed over each cell. The permeability requirement of the overliner is designed to ensure that the maximum head on the liner does not exceed 1 meter.

The leach pad is divided into four cells by separation berms, enabling independent stacking, leaching, rinsing, and offloading of each cell. During ore leaching, solution is collected above the composite liner system through a network of perforated collection pipes within the drainage layer overliner material. This solution collection system features 150 to 300 mm diameter HDPE perforated dual-wall pipes. These pipes connect to a 400 mm diameter SDR 21 HDPE solid-wall pipe at the containment berm. That SDR pipe then links to another 400 mm diameter SDR pipe, which transports the solution to the PLS Pond. Between each cell's main conveyance pipe connections, there is a series of gate valves to direct flow either to the PLS or Emergency Ponds. During leaching, the solution flows into the PLS Pond, while during stacking, rinsing, and offloading, any flow is directed to the emergency pond for use at the plant or for treatment and environmental release. Pipe types and sizes are chosen based on the expected volume of leachate and annual rainfall.

Barren solution will be applied to each stacked ore cell at an average rate of 12 liters per hour per square meter ($L/h/m^2$) for 60 days. The solution is scheduled to be pumped and applied to the ore at a nominal flow of 122 m^3/h for a single cell under leach. After the leaching cycle is complete, the cell will be rinsed for 12 days. The rinse water will be sent to the emergency pond for reuse or treated and discharged into the environment. Once the rinse cycle is finished, the spent ore will be removed and stored in the ore stockpile. Every fourth cycle, or if the overliner becomes clogged with fines in any cell, the top 10 cm of the overliner will be removed and replaced with fresh crushed drainage gravel.

The on/off pad will operate year-round, covering both the dry season, from May to November, and the wet season, from December to March. During the dry season, average monthly rainfall varies from 19 mm to 166 mm, while in the wet season, it ranges from 253 mm to 352 mm. In the wet season, rain coverings (tarps) will be used to minimize runoff from mixing with the pregnant solution, preventing dilution of PLS going to the process plant. Runoff from the rain covers is non-contact water and will be released into the environment.

Stormwater diversion channels are designed to handle runoff from upstream basins of the HLF caused by the 100-year, 24-hour storm event, which is a standard industry practice. The diversion channels around the HLF and process ponds are constructed to carry this runoff through riprap-lined channels.

18.6.6 Heap Leach Facility Ponds

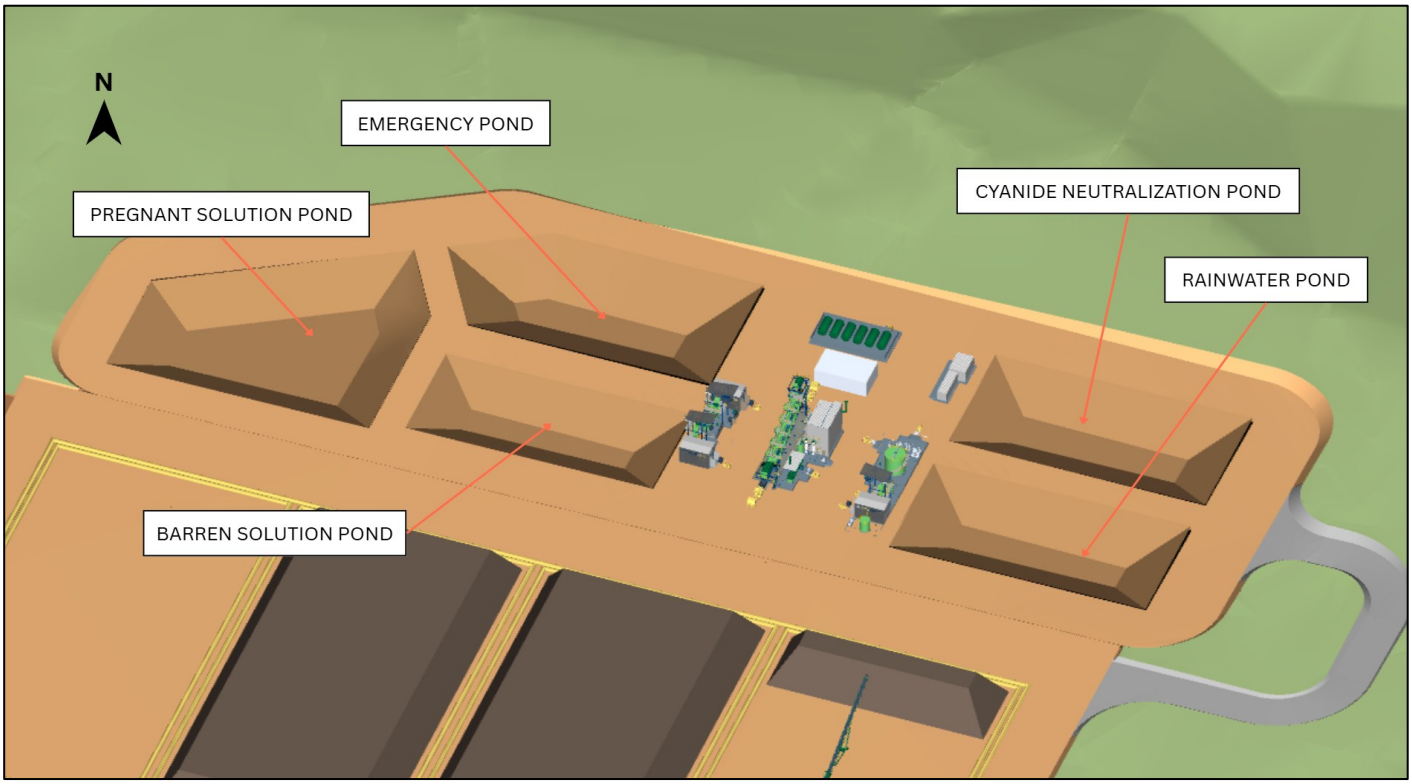
The HLF includes five ponds: the PLS, Barren, Emergency, Rainwater, and Neutralization ponds. These ponds are designed to handle solution and stormwater involved in the leaching cycle. The PLS and Barren ponds are meant to store cyanide-laced solution for transfer to and from the ADR plant. The PLS pond is located immediately downgradient in the northwest corner of the HLP, with pregnant solution conveyed to it via gravity through the collection system pipes. During major storm events, excess solution will be diverted to the emergency pond through spillways in each cell. The following design criteria have been considered for these process ponds.

- Process ponds (PLS and Barren) are designed to hold up to 24 hours of solution at a maximum heap irrigation rate of 244 m^3/h, with an additional 0.5 meters of freeboard.
- The PLS and Barren ponds liner system will feature a double liner setup that includes a leak collection and recovery system (LCRS) and consists of the following components (from top to bottom):
  - 1.5 mm HDPE single-sided textured geomembrane liner.
  - A geocomposite, consisting of a Geonet sandwiched between two geotextiles, includes a sump, riser, and pump located in a corner of these ponds.
  - 1.5 mm HDPE Double-Sided Textured Geomembrane Liner.
  - Geocomposite Clay Liner (GCL).
  - Prepared subgrade.
- The liner system for the Emergency, Rainwater, and Neutralization Ponds will consist of a single system with the following layers (from top to bottom):
  - 1.5mm HDPE Single-Sided Textured Geomembrane Liner.
  - Geocomposite Clay Liner (GCL).
  - Prepared subgrade.

18.6.6.1 Solution Storage

The HLF is designed to be a zero-discharge facility under typical annual climate conditions. It utilizes Pregnant, Barren, Emergency, Rainwater, and Neutralization ponds to collect and store solutions from operations and rainfall, as well as treat and discharge them into the environment. (Refer Figure 18-17). The ponds are designed to hold leachate solution and stormwater runoff from the heap during a 100-year, 24-hour storm event, considering the use of raincoats during the wet season to reduce solution dilution and water treatment.

Figure 18-17: Heap Leach Facility Ponds



Source: Ausenco, 2025.

The HLF process ponds have provisions to meet the storage volume requirements based on the combined design conditions and include 0.5 meters of freeboard across all ponds.

18.6.6.2 Pregnant Solution Pond

- Operational volume: 6-hour work period with an average solution application rate for two cells under irrigation of 244 m^3/h (1,464 m^3).
- Capacity for pump shutdown: 24-hour drain down at the maximum solution application rate of 244 m^3/h (5,856 m^3).
- Additional storage capacity of 3,000 m^3.
- A portion of the design storm event is 10,292 m^3.
- The pond has a total capacity of 20,612 m^3.
- Double-lined pond equipped with a leak detection system.
- 0.5 m of freeboard.

18.6.6.3 Barren Solution Pond

- Operational volume: approximately 2 days of working volume at an average application rate of 244 m^3/h (10,243 m^3).
- Double-lined pond equipped with a leak detection system.
- 0.5 m of freeboard.

18.6.6.4 Emergency Pond

- Designed to contain the balance of the 100-year, 24-hour storm event (25,915 m^3).
- Single-lined Pond.
- 0.5 m of freeboard.

18.6.6.5 Rainwater Pond

- The design capacity amounts to 9,929 m^3 based on the water balance.
- 0.5 m of freeboard.

18.6.6.6 Neutralization Pond

- Design capacity is 9,817 m^3 based on the water treatment plant's capacity and discharge to the environment.
- Single-lined Pond.
- 0.5 m of freeboard.

18.6.7 Heap Leach Facility Roads

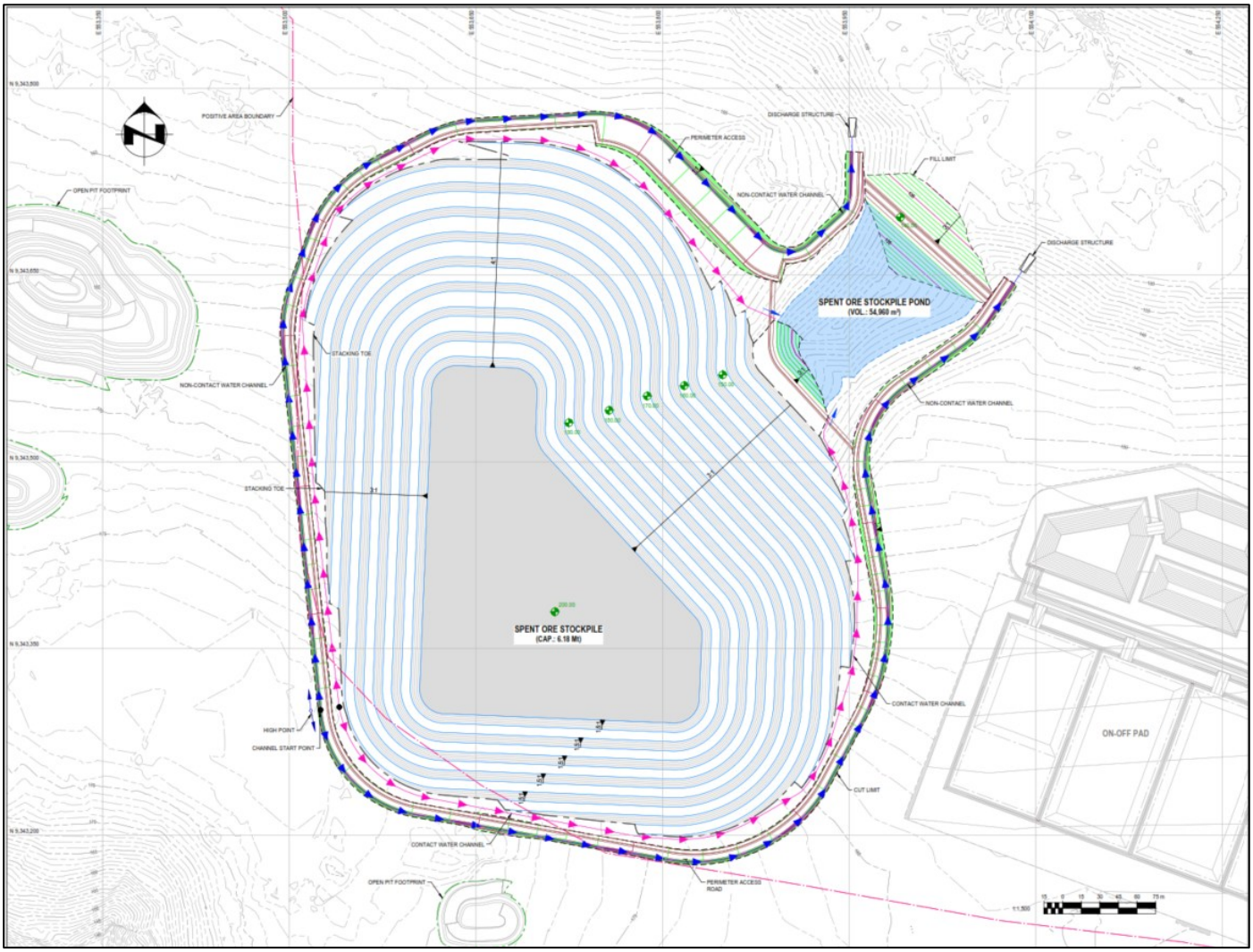
The HLF has perimeter roads surrounding the on/off pad, ponds, and ADR plant. These roads provide access to the heap leach facilities. They are 5 meters wide with a 0.2-meter-thick road base to ensure all-weather accessibility, especially during the rainy season.

18.6.8 Spent Ore Stockpile (SOS)

The spent ore stockpile is designed to hold 6.18 Mt of spent ore after rinsing to remove residual cyanide (refer to Figure 18-18. Its foundation consists of several meters of saprolite. The top 0.3 m of saprolite will be scarified and compacted to serve as a low-permeability soil liner. The SOS will feature a 1 m-high containment berm surrounding the stockpile to capture surface runoff and direct it to the contact water pond located east of the pile. There is also an underdrain, which includes a perforated HDPE dual-wall pipe wrapped in non-woven geotextile and a gravel blanket. This system will help capture seepage through the pile. At the north end of the facility, a geomembrane-lined channel will collect runoff and seepage from the SOS and convey it to the contact water pond. The pond is designed to contain the 100-

year, 24-hour storm event. Water from the pond will either be pumped to the rainwater pond for process use or treated and released.

Figure 18-18: Spent Ore Stockpile and Pond



Source: Ausenco, 2025.

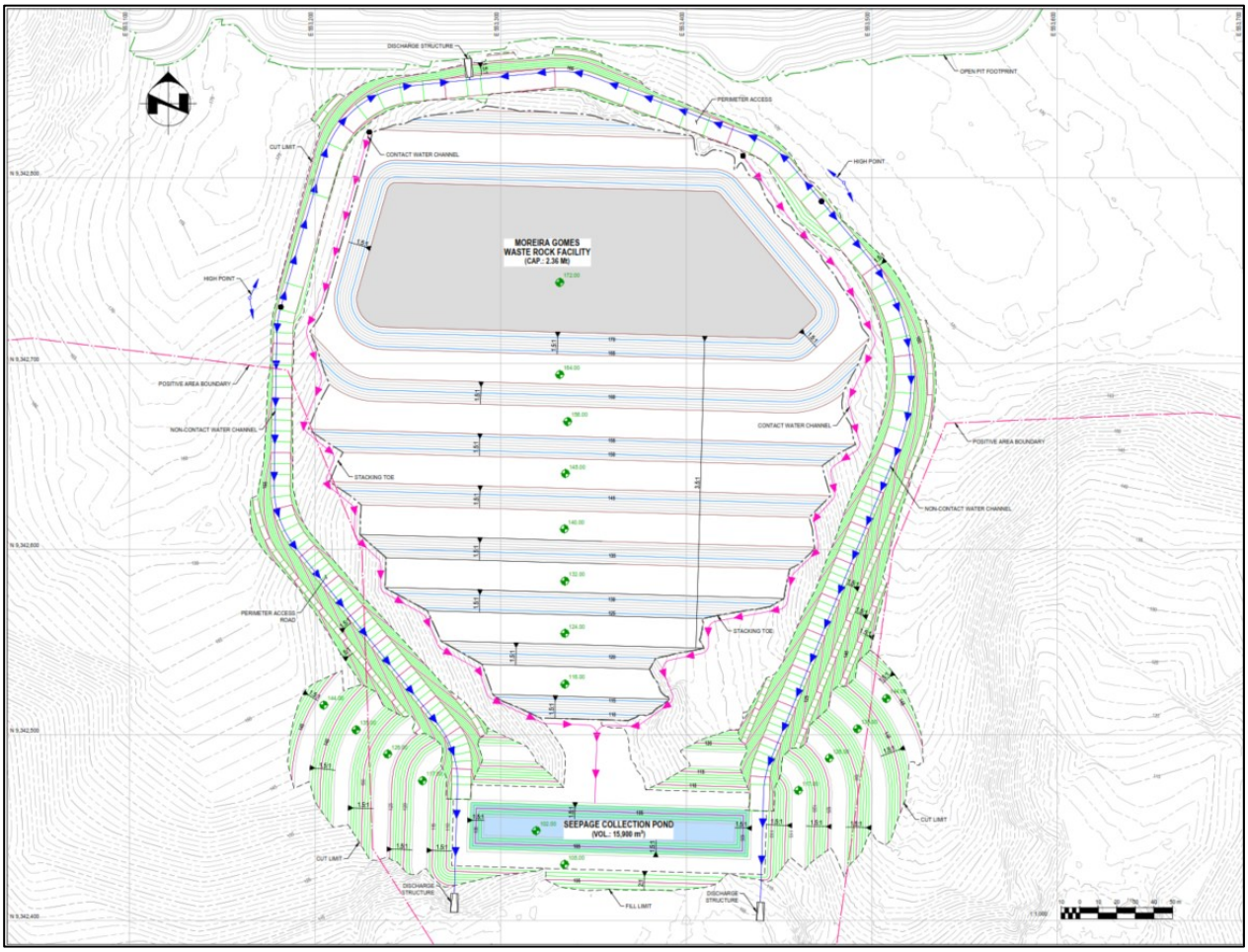
The spent ore will be transported to the SOS using haul trucks, where it will be spread and compacted to form a low-permeability surface that causes most rainfall to runoff and flow into the contact water pond. The spent ore will be stacked with a 4:1 (H:V) slope on the north side and a 3:1 (H:V) slope on the other three sides. The stockpiles will be constructed using a bottom-up method for each lift, with each lift reaching a maximum height of 5 m and a bench width of 12.5 m on the north side and 7.5 m on the other sides. The facility will be closed progressively as it is built from the bottom up, which will help reduce erosion and sediment management.

The SOS is designed with a grading plan to meet minimum stockpile stability FoS of 1.3 (operations), 1.50 (post-closure), and 1.0 pseudo-static, while also promoting positive gravity runoff to the SOS pond. Stormwater diversion channels are sized to contain runoff from upstream basins of the SOS caused by the 100-year, 24-hour storm event. The diversion channels surrounding the SOS are designed to carry this runoff in riprap-lined channels. Surface water runoff from the SOS is directed to the SOS pond. The diversion system is designed to handle the 100-year, 24-hour storm event. The pond is sized to contain this volume, which is 40,000 m^3. Runoff from the SOS, collected in the SOS pond, will be pumped to the rainwater pond for operational water supply.

18.7 Waste Storage Facility

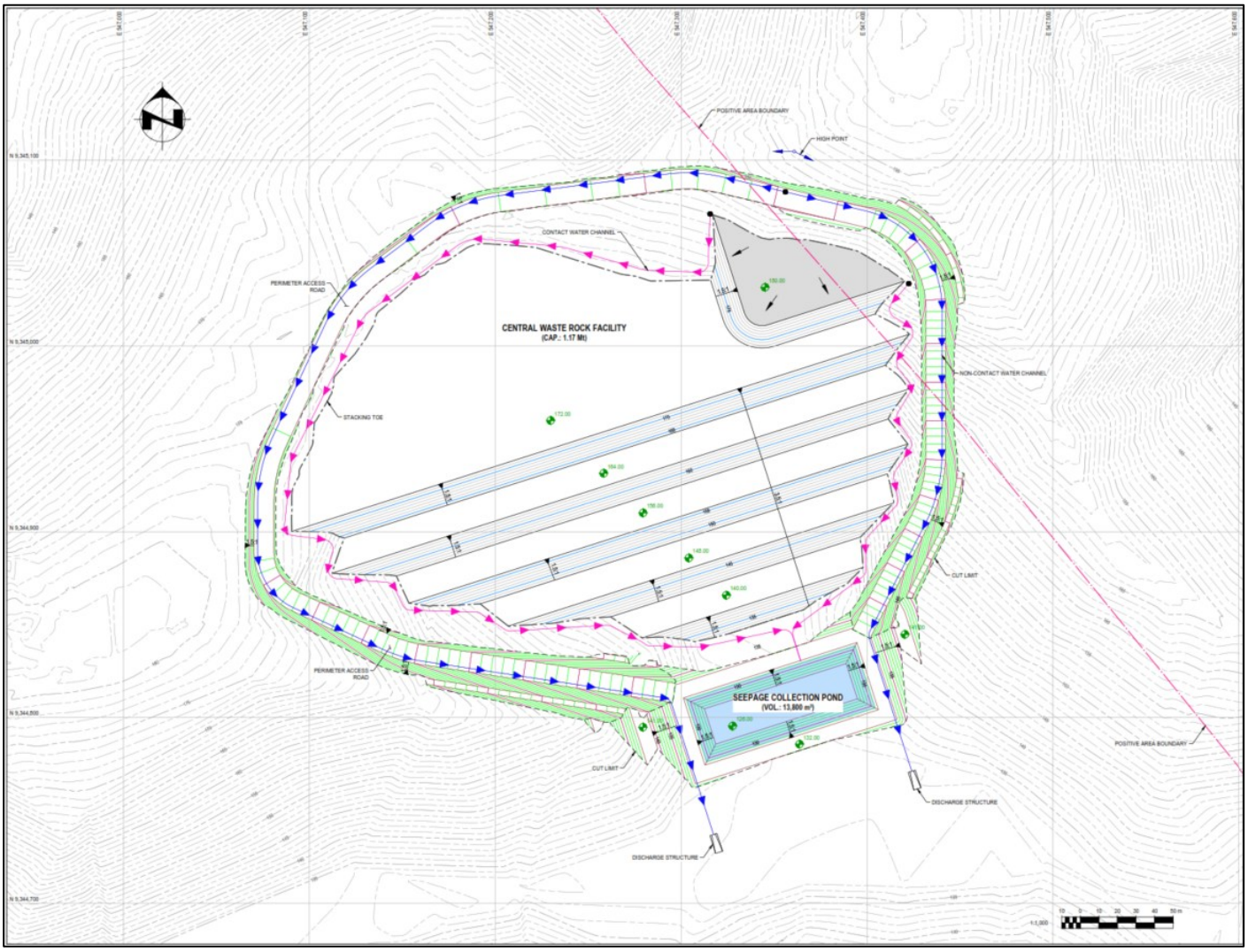
For the Pre-Feasibility Study (PFS), waste quantities for the open pits were provided by others. Ausenco designed the waste storage facilities (WSFs) for the Cuiú Cuiú Project. There are two WSFs for this project: one at the Moreira Pit and one at the Central Pit. (Refer to Figure 18-19 and Figure 18-20). In addition, Machichie Pits will take advantage of the multiple open pits to store waste instead of constructing a waste storage facility for the open pits.

Figure 18-19: Moreira WSF



Source: Ausenco, 2025.

Figure 18-20: Central WSF



Source: Ausenco, 2025.

Ausenco provided the geotechnical design specifications for the WSFs, which are summarized in Table 18-2.

Table 18-2: WSF Design Criteria

Parameters	Description
Moreira Gomez (MG)	
Lift Height	8 m
WRSF Height	63 m
Lift Fact Angle	1.5:1 (H:V)
Lift Bench Width	16 m
Global WSF Slope	3.5:1 (H:V)
Seismic Event Design	1:475 Year Event
Stability Factor of Safety	1.3 Static (operation) 1.5 Static (post-closure) <1.0 Pseudo-static
Seepage Collection Pond Capacity Design Capacity	15,900 m^3
Non-Contact Water Diversion Channel Design Event	1:100 Year Event
Central	
Lift Height	8 m
WRSF Height	35 m
Lift Fact Angle	1.5:1 (H:V)
Lift Bench Width	16 m
Global WSF Slope	3.5:1 (H:V)
Seismic Event Design	1:475 Year Event
Stability Factor of Safety	1.3 Static (operation) 1.5 Static (post-closure) <1.0 Pseudo-static
Seepage Collection Pond Capacity Design Capacity	13,800 m^3
Non-Contact Water Diversion Channel Design Event	1:100 Year Event
Machichie (In-pit Storage)	
Lift Height	N.A.
WRSF Height	N.A.
Lift Fact Angle	N.A.
Lift Bench Width	N.A.
Global WSF Slope	N.A.
Seismic Event Design	N.A.
Stability Factor of Safety	N.A.
Seepage Collection Pond Capacity Design Capacity	N.A.
Non-Contact Water Diversion Channel Design Event	N.A.

Source: Ausenco, 2025.

The WRSFs are designed with a total capacity of approximately 3.53 million tonnes using a dry waste rock density of 1.5 t/m^3 and the in-pit waste storage at Machichie has a capacity of 1.21 million tonnes. Therefore, the WSF provides some excess capacity if required. Table 18-3 provides a summary of the waste produced during the mine life and the volume of waste used for leach pad construction.

Table 18-3: WSFs Volume Requirement Summary

Open Pit	Total Mine Waste (Mt)	Waste Volume (Mm^3)
MG	2.36	1.57
Central Section	1.17	0.78
Machichie (In-pit Storage)	1.21	0.81

Source: Ausenco, 2025.

Based on laboratory testing, the waste rock produced from both pits is non-acid generating and therefore does not need a liner system to capture runoff and seepage. However, contact water from the two facilities will be collected by seepage collection ponds located at the base of these facilities and have been designed to gather seepage water from the underdrains as well as surface stormwater runoff. The ponds have been sized to store the 100-year, 24-hour storm event and to release surface water during larger storm events. The seepage collection ponds will serve as a location to monitor water quality and pump the water to the HLF, if necessary, for makeup water.

Waste from the pits will be placed in the two waste storage facilities (WSFs). The surface of the WSFs will be regraded to an overall slope of 3H:1V, which will direct contact water to the ponds. The contact water ponds are designed to contain the 100-year, 24-hour precipitation event falling on the WSFs, below the spillway. The overflow spillways are built to handle the 100-year, 24-hour storm event. Stormwater diversion channels (non-contact water) around the WSFs perimeter have been created to prevent erosion of the waste rock surface. These channels are sized to contain runoff from upstream basins caused by the 100-year, 24-hour storm event. The diversion channels are lined with riprap to guide runoff and sediment control structures are installed downstream of waste areas to manage sediment from runoff and underdrain flows. The WSFs are designed to be progressively reclaimed during operations to reduce the amount of contact water that may need to be managed.

18.8 Power Supply Facility

The power supply will be 460 V, three-phase, 60 Hz for the process loads and 220-V, three-phase, 60 Hz for the lighting system. Energy will be generated on-site by a diesel-powered generation plant, which will be located near the electrical room.

The generation plant will have an installed power capacity of 2.5 MVA, with a maximum consumed demand of 1.1 MVA.

Power distribution will be through cables from the generation plant, arranged in cable trays installed in pipe racks or cable racks.

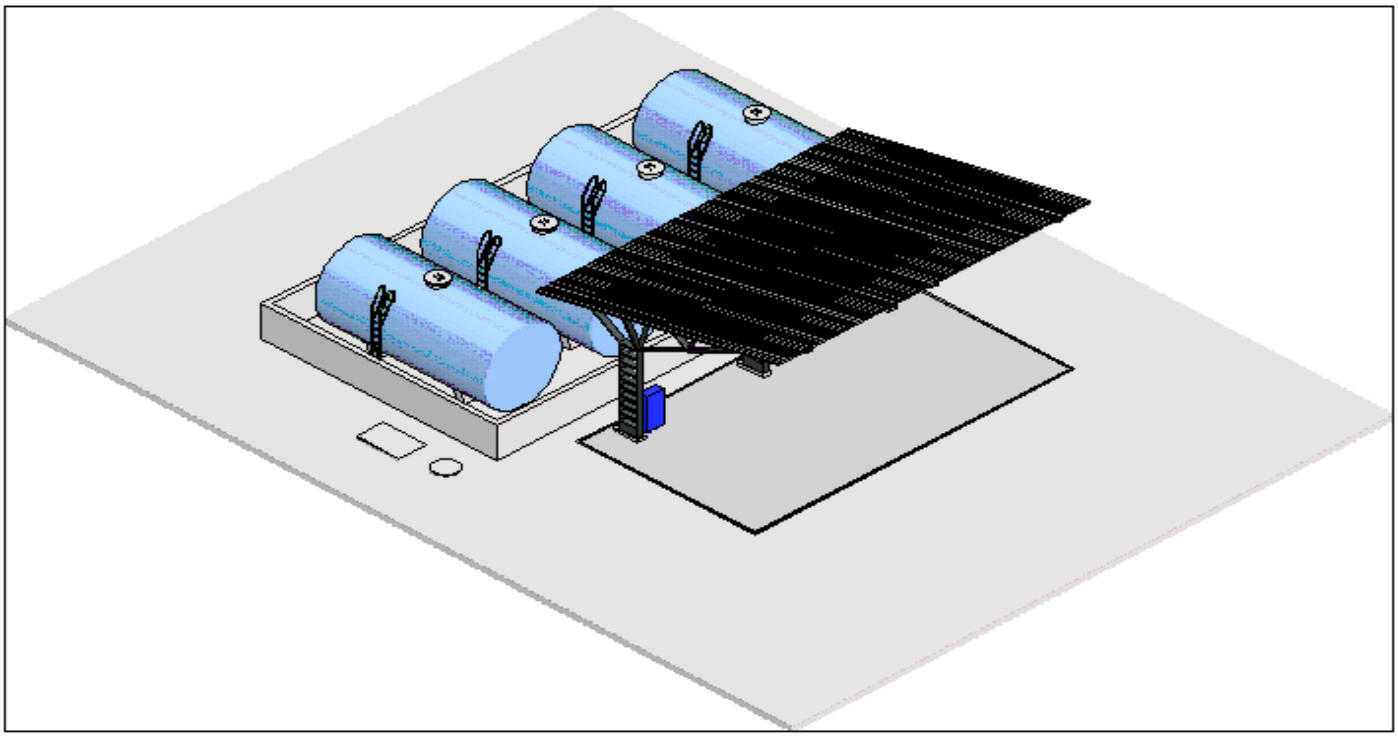
Table 18-4: Project Power Demand

Generation Plant	Rated Power (kVA)	Maximum Power Consumed (kVA)	Loading Percentage (%)
0400-GE-001	2500	1105.51	44.22

18.9 Fuel

Cabral Gold currently operates a fully licensed fuel depot at its exploration camp with a capacity of 70,000 L, expandable up to 150,000 L. Additionally, a new 150,000 L capacity fuel depot will be constructed at MG to meet the fuel demands of the plant's energy supply and mining operations. This will ensure at least one month's supply at MG, with backup supplies at the Cabral Gold exploration camp. Fuel deliveries will continue in 20,000 L trucks during the drier summer months, with deliveries reduced to more frequent 10,000 L trucks during the wet season if necessary.

Figure 18-21: Gas Station 150,000 L



Source: Cabral Gold, 2024.

18.10 Water Supply and Management

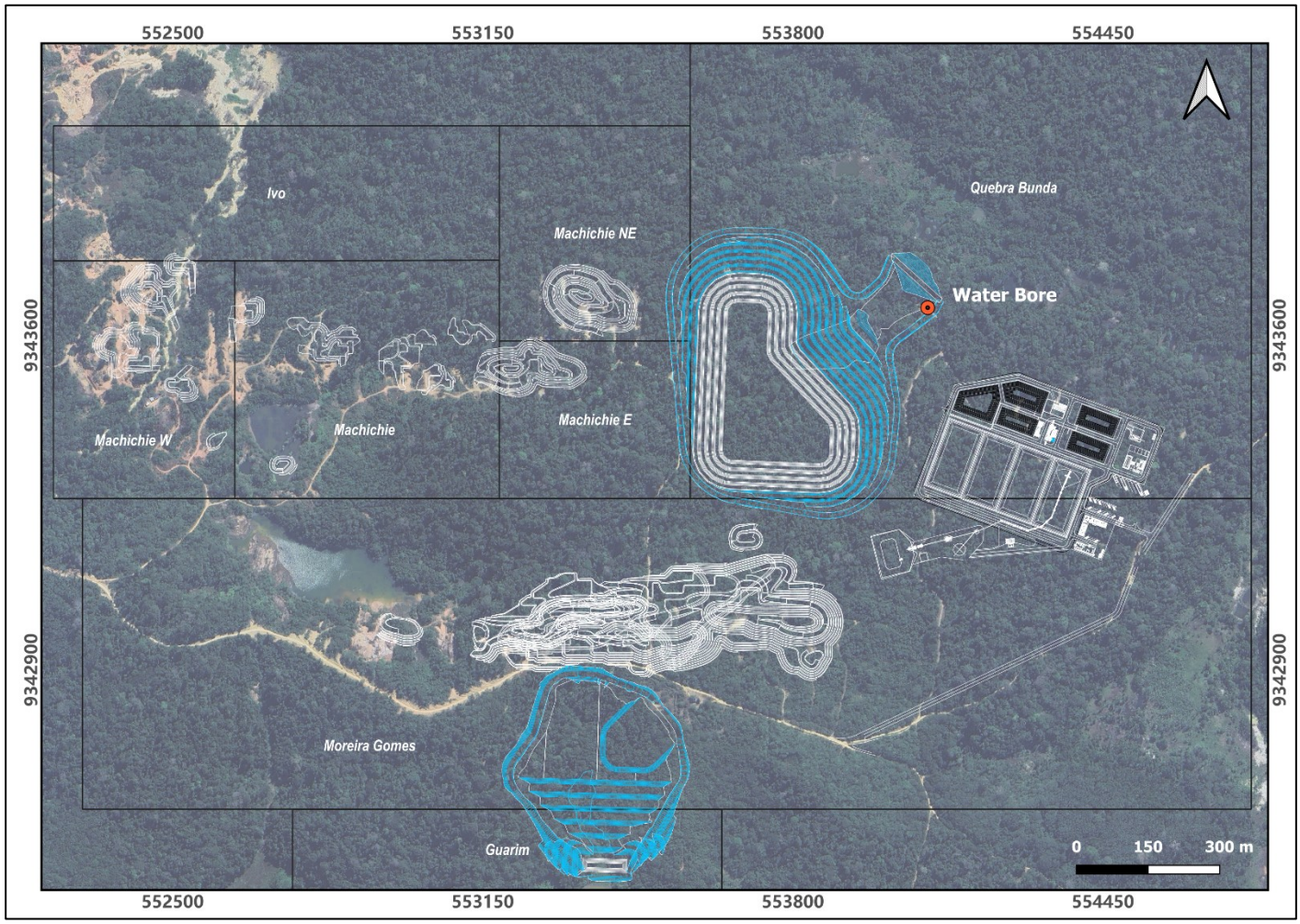
This section covers the site-wide management, the design of water management structures, hydrology, and the water balance. Drainage solutions were designed for the primary contributing structures within the study area.

18.10.1 Raw Water Supply

To support industrial activities, water will be pumped from two water wells that were previously mining pits. The locations of the water bores for the raw water supply are shown in Figure 18-22 and Figure 18-23 below.

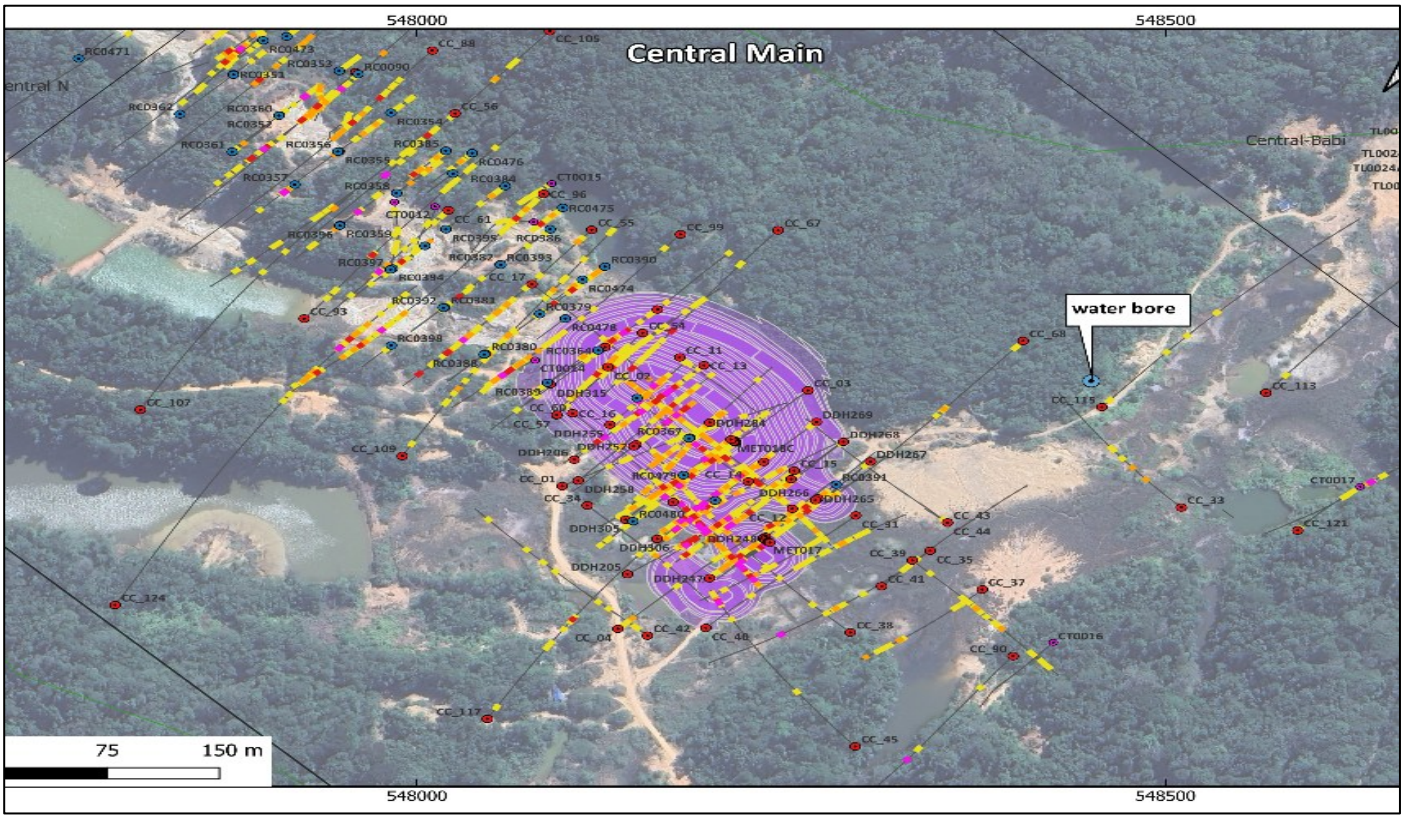
Geologically, the wells are drilled in granite rocks belonging to the Cuiú Cuiú Complex. Locally, a sequence of oxidized material (soil/saprolite) was observed to a depth of 37 m. The predominant rock is diorite, with textures ranging from coarse to medium, and it intersects zones of intense tectonic deformation, resulting in mylonitic processes. Furthermore, the rock exhibits significant hydrothermal alteration, leading to metamorphism in localized halos.

Figure 18-22: Water Boreholes at MG



Source: Cabral Gold, 2024.

Figure 18-23: Water Boreholes at Central



Source: Cabral Gold, 2024.

Water extraction from the wells will require a permit from the Environmental Department of Pará State. Currently, exploration drill holes with measured water flows will be licensed and converted into water wells to comply with government regulations and provide the necessary flowrate for operation consumption.

Process Makeup Water: A 10% loss of the total irrigation flow for the heap leach pads was assumed, resulting in a flow rate of 349.98 m³/h (as per Table 17-1). This leads to a calculated loss of 34.99 m³/h.

Service Water for the Plant: The following assumptions and criteria were used to determine the average daily consumption:

- Maximum simultaneous number of points in operation: 5
- Operating time per point: 1 h
- Frequency of use: 3 times/d
- Instantaneous flow rate per outlet: 8.50 m³/h

- Average daily consumption: 5.31 m³/h

Potable Water: the following assumptions and criteria were used to calculate the average daily consumption:

- Per capita consumption (including bathing): 100 L/person/day
- Consumption per meal: 28 L/meal/d
- Total number of people: 320
- Number of meals: 304
- Total daily consumption: 40,512 L/d
- Average daily flow: 1.69 m³/h

Based on this information, an estimated flow rate of 32.25 m³/h will be pumped from the wells to a reservoir at the plant. This will consist of a flow rate of 16.64 m³/h from the MG well and 15.61 m³/h from the Central well. A second water well is currently being drilled at MG to meet the required flow rates.

18.10.2 Hydrometeorology

18.10.2.1 Meteorological information

Ausenco compiled the climate information provided by Cabral Gold. Due to the limited volume of hydrometeorological data collected at the project site, data from five potentially representative regional climate stations in the vicinity of the project area were used to characterize the climate. Table 18-5 presents the coordinates, altitude, data type, and source for each meteorological station.

Table 18-5: List of Meteorological Stations

Station	Geographic location		Altitude (masl.)	Type of Information	Source
	Latitude (°)	Longitude (°)			
Garimpo	-6.97	-56.47	248	Maximum monthly precipitation and total monthly precipitation.	ANA(1)
Jacareacanga	-6.24	-57.78	100	Maximum monthly precipitation and total monthly precipitation.	ANA(1)
Jardim do Ouro	-4.28	-55.98	7	Maximum monthly precipitation and total monthly precipitation.	ANA(1)
Jamanxim	-5.46	-55.87	86	Maximum monthly precipitation and total monthly precipitation.	ANA(1)
Itaituba	-4.28	-55.99	28	Evaporation	INMET(2)

Notes:

1. National Water and Basic Sanitation Agency (Agência Nacional de Águas E Saneamento Básico).
2. National Institute of Meteorology (Instituto Nacional de Meteorologia).

To describe the pattern of annual and monthly precipitation, evaporation, and temperature data in the study area, the records from four meteorological stations operated by the ANA (Garimpo, Jacareacanga, Jardim do Ouro and Jamanxim) were analysed. The stations are located at altitudes ranging from 7 to 248 masl. The Total Annual Precipitation series assigned to the Cuiú Cuiú Project was adjusted to different probabilistic models to estimate the total annual precipitation for different return periods in dry and wet years.

Table 18-6 shows the estimated annual total precipitation values in wet and dry years for different return periods.

Table 18-6: Total Annual Precipitation for Wet and Dry Years

Type of year	Return Period (years)	Total Annual Precipitation(mm)
Wet	500	2 963
	200	2 860
	100	2 778
	50	2 691
	20	2 691
	10	2 458
	5	2 335
Average		2 158
Dry	5	1 912
	10	1 813
	20	1 735
	50	1 650
	100	1 596
	200	1 548
	500	1 490

To characterize the Maximum Precipitation in 24 Hours parameter, the station with the most extensive records and an altitude similar to the Cuiú Cuiú Project area was selected. In this case, the Jacareacanga station was considered as representative for this parameter, with 33 years of data and an altitude of 100 masl. Table 18-7 presents the main characteristics of the Jacareacanga station (location, altitude and recording period).

Table 18-7: Jacareacanga Weather Station Information

Station	Altitude (masl.)	Geographic location		Registration Period (year)
		Latitude (°)	Longitude (°)	
Jacareacanga	100	-6.24	-57.78	1 982 - 2 022

The Maximum Precipitation in 24 hours was estimated based on the chosen probabilistic model, which is shown in Table 18-8.

Table 18-8: Analysed Distributions - Maximum Precipitation in 24 Hours.

Return Period (years)	Maximum Precipitation in 24 Hours (mm)
	Goodrich Distribution
2	123
5	153
10	169
20	184
50	200
100	211
200	221
500	234
1 000	242

Due to the lack of evaporation data and meteorological parameters for the indirect calculation, the evaporation data of the National Institute of Meteorology of Brazil (INMET) was used as a reference. The station closest to the Project (Itaituba Station) was selected based on its proximity. These values are derived from an analysis of data collected between 1991 and 2020. Table 18-9 shows the total monthly evaporation values for the Itaituba station.

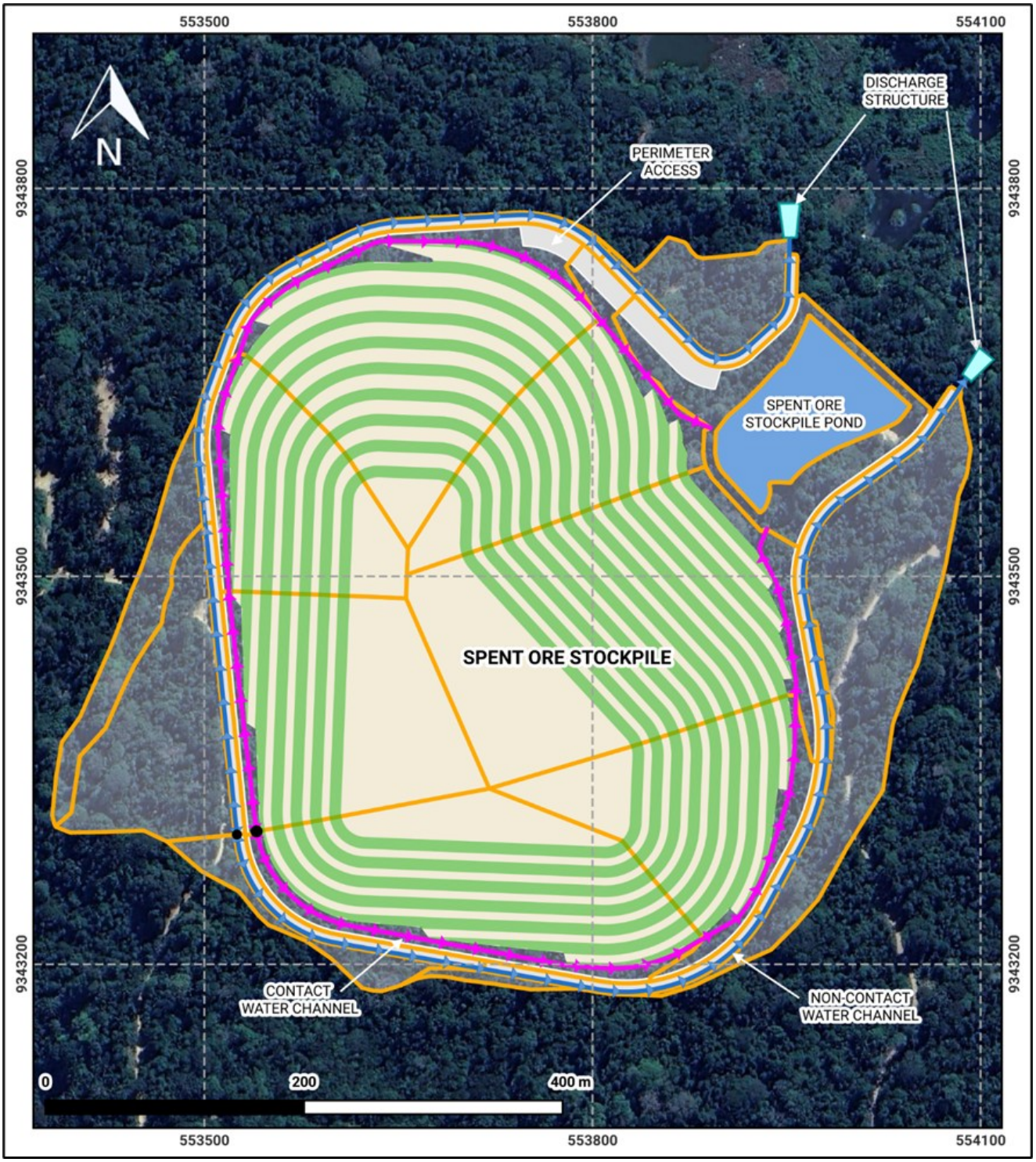
Table 18-9: Total Monthly Evaporation Rate at the Itaituba Weather Station (mm)

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
57.7	47.4	49.7	48.3	50.4	60.9	74.7	92.6	99	101	81.1	76.8	839.6

18.10.3 Surface Water Management

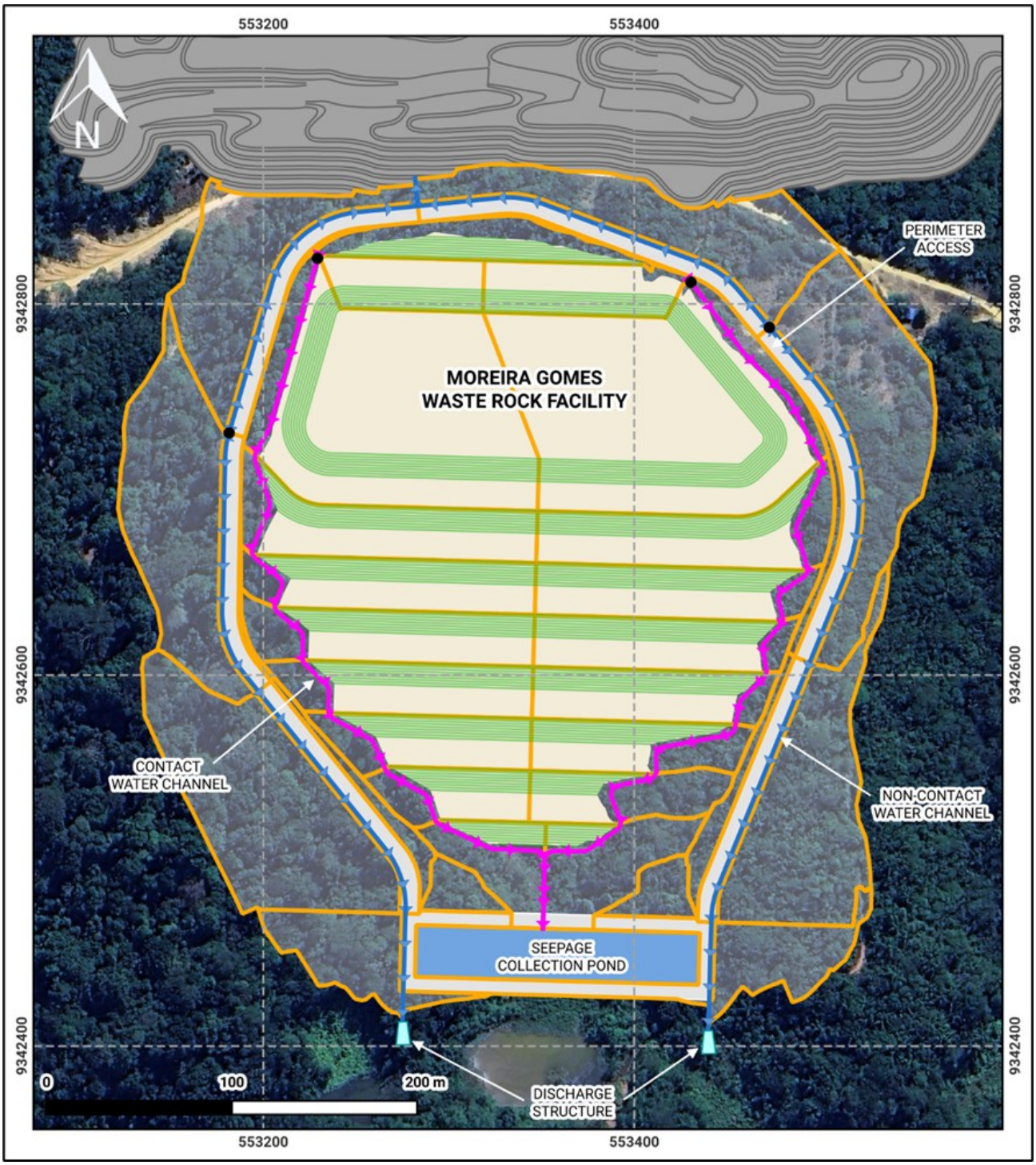
In this section, the design flows are estimated for the hydraulic structures present in the water management of the four components: three from the MG sector, and one from the Central sector. These components are the SOS, Process Plant Platform, and two Waste Dump Storage Facilities. The contributing areas and flow directions are shown in Figure 18-24, Figure 18-25 and Figure 18-26.

Figure 18-24: Contribution Areas of Water Management – Spent Ore Stockpile



Source: Ausenco, 2025.

Figure 18-25: Contribution Areas of Water Management – Waste Dump Storage Facility – MG Sector



Source: Ausenco, 2025.

Figure 18-26: Contribution Areas of Water Management – Waste Dump Storage Facility – Central Sector



Source: Ausenco, 2024.

Table 18-10 shows the summary of the accumulated design flows for the hydraulic structures of the MG SOS, MG Waste and Central Waste, water management facilities.

Table 18-10: Design Flows

Component	Hydraulic Structure	ID	Contributing Area (ha)	Design Flow RT=100 years (m^3/s)
Spent Ore Stockpile	Conduction Channel	JANC-01	3.82	0.86
	Conduction Channel	JANC-02	1.08	0.38
	Conduction Channel	JANC-03	0.85	0.29
	Conduction Channel	JANC-04	0.57	0.19
	Conduction Channel	JANC-05	1.91	0.51
	Conduction Channel	JANC-06	2.82	0.73
	Conduction Channel	JANC-07	3.03	0.80

Component	Hydraulic Structure	ID	Contributing Area (ha)	Design Flow RT=100 years (m^3/s)
	Conduction Channel	JANC-08	3.95	1.09
	Discharge Structure	ED-01	3.82	0.86
	Discharge Structure	ED-02	3.95	1.09
MG Waste	Conduction Channel	JANC-01	2.20	0.71
	Conduction Channel	JANC-02	0.95	0.31
	Conduction Channel	JANC-03	0.76	0.26
	Conduction Channel	JANC-04	0.86	0.29
	Conduction Channel	JANC-05	1.08	0.36
	Conduction Channel	JANC-06	2.12	0.70
	Discharge Structure	ED-01	2.48	0.80
	Discharge Structure	ED-02	2.40	0.79
	Discharge Structure	ED-03	1.62	0.54
Central Waste	Conduction Channel	JANC-01	1.39	0.47
	Conduction Channel	JANC-02	0.63	0.22
	Conduction Channel	JANC-03	1.11	0.35
	Discharge Structure	ED-01	2.14	0.72
	Discharge Structure	ED-02	2.46	0.75

18.10.4 Sediment Analysis and Required Volumes

Table 18-11, Table 18-12 and Table 18-13 display the volumes required to retain sediments, promote settling, prevent resuspension, and allow maximum flow storage for the collection pond of the SOS, MG Waste and Central Waste.

Table 18-11: Volumes Required for the Collection Pond of the SOS

Description	Units	Effluent Pond
Contributing Areas	ha	22.91
Dead Volume [A]	m^3	2 700
Settling and Resuspension Volume [B] (1)	m^3	2 934
Minimum volume for pump operation [C]	m^3	16 535
Storage Volume [D] (2)	m^3	32 106
Freeboard Volume [E]	m^3	6 762
Total Required Volume [A]+[B]+[C]+[D]+[E]	m^3	61 037

Notes:
1. Volume equal to 0.5 meter in height (design criterion for settling and resuspension, considering the filling curve of the pond for the Spent Ore Stockpile).
2. Storage volume for a maximum 24-hour rainfall associated with a 50-year return period storm.

Table 18-12: Volumes Required for the Collection Pond of the MG Waste

Description	Units	Effluent Pond
Contributing Areas	ha	9.27
Dead Volume [A]	m^3	263
Settling and Resuspension Volume [B] (1)	m^3	804
Minimum volume for pump operation [C]	m^3	1 886
Storage Volume [D] (2)	m^3	12 915
Freeboard Volume [E]	m^3	2 478
Total Required Volume [A]+[B]+[C]+[D]+[E]	m^3	18 436

Notes:
1.Volume equal to 0.5 meter in height (design criterion for settling and resuspension, considering the filling curve of the pond for the MG Waste).
2. Storage volume for a maximum 24-hour rainfall associated with a 50-year return period storm.

Table 18-13: Volumes required for the collection pond of the Central Waste

Description	Units	Effluent Pond
Contributing Areas	ha	7.57
Dead Volume [A]	m^3	225
Settling and Resuspension Volume [B] (1)	m^3	979
Minimum volume for pump operation [C]	m^3	1 974
Storage Volume [D] (2)	m^3	10 564
Freeboard Volume [E]	m^3	1 906
Total Required Volume [A]+[B]+[C]+[D]+[E]	m^3	15 648

Notes:
1.Volume equal to 0.5 meter in height (design criterion for settling and resuspension, considering the filling curve of the pond for the Central Waste).
2. Storage volume for a maximum 24-hour rainfall associated with a 50-year return period storm.

19 MARKET STUDIES AND CONTRACTS

19.1 Market Studies

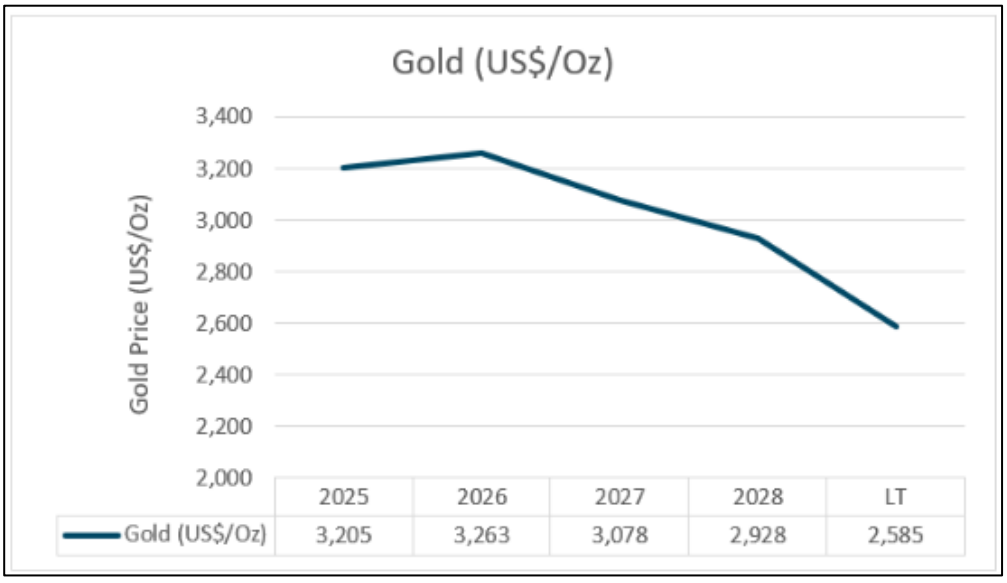
Cabral Gold has not completed any formal marketing studies with regards to gold production that will result from the mining and processing of ore from the Project into gold doré bars. Gold production is expected to be sold on the spot market, with the terms and conditions of sales contracts expected to be typical of similar contracts for the sale of doré throughout the world. There are many markets in the world where gold is bought and sold, and it is not difficult to obtain a market price at any particular time. The gold market is very liquid with a large number of buyers and sellers active at any given time.

19.2 Commodity Price Projections

Project economics were estimated based on both the long-term metal prices obtained from consensus forecasts compiled in August 2025 as well as the spot gold prices at the time of project development. The precious metal markets are highly liquid and benefit from terminal markets around the world (e.g., London, New York, Tokyo, and Hong Kong).

According to the analyst consensus published by CIBC Global Mining Group (August 2025), the gold price is projected at US$3,205/oz in 2025, gradually decreasing to US$2,928/oz in 2028, with a long-term reference price of US$2,585/oz. A base case price of US$2,500/oz was adopted in the economic analysis presented in Section 22.

Figure 19-1: Gold Price Forecast



Source: CIBC Global Mining Group, 2025.

It should be noted that commodity prices are subject to volatility, and various factors may cause actual process to differ from the forecasted assumptions.

19.3 Contracts

At this stage of project development, no marketing contracts exist.

Cabral Gold plans to contract out the transportation, security, insurance, and refining of gold doré bars. The company may also enter into contracts for forward sales of gold or other similar contracts under terms and conditions that would be typical of, and consistent with, normal practices within the industry in Brazil and in countries throughout the world. For the PFS, transportation and refining costs were assumed at US$30.0/oz Au, with a payability rate of 99.5% for gold sales and no additional deductions.

No allowance has been made for insurance, marketing or representation.

19.4 Foreign Exchange Rates

The foreign exchange market is highly liquid and responds rapidly to economic and political changes, resulting in frequent fluctuations in exchange rates.

Exchange rates of 5.70 Brazilian Reals (BRL) per US dollar (USD) and 0.74 USD dollars per Canadian dollar (CAD) were applied in the economic model.

19.5 Comments on Market Studies and Contracts

The Qualified Person has reviewed these analyses and that the results support the assumptions in the Technical Report. Commodity prices can be volatile, and there is the potential for deviation from the forecast.

20 ENVIRONMENTAL STUDIES, PERMITTING, AND SOCIAL OR COMMUNITY IMPACT

20.1 Introduction

The Cuiú Cuiú Project is located on the left bank of the Tapajós River, one of the longest in the Amazon basin, formed by the Juruena and São Manuel (or Teles Pires) rivers. The Tocantinzinho and Crepori Rivers, tributaries of the Tapajós, constitute the main bodies of water bordering the Project area. Locally, the Cuiú Cuiú River, which flows into the Crepori, and the PDM River are particularly significant. These rivers not only provide abundant water and fish resources but also served as key alluvial gold deposits during the peak of gold production in the Tapajós Region. The Cuiú Cuiú River is especially valuable for its navigability during flood season, which allows goods to be transported closer to the local village (ICMBio, 2014).

The region features complex vegetation, with two typologies found in the municipality: Dense Ombrophilous Forest, which is more common, and Open Ombrophilous Forest. The vegetation types vary based on the region's relief and soils. In areas of lower relief, bordering drainage channels, rivers, and streams, there is a high occurrence of lianas, as well as the presence of epiphytes, a high diversity of palm trees, and emerging species. In areas of higher relief, the vegetation becomes more uniform, with greater definition between the strata and, fewer lianas. Hills are generally covered by Submontane Open Ombrophilous Forest, rich in herbaceous plants on rocky substrate (ICMBio, 2014).

The Project lies within the Tapajós Environmental Protection Area (APA). The landscape in the project area is dominated by fragmented vegetation cover, with small remnants of the original vegetation remaining and few commercially valuable species. The extension of the area shows low levels of preservation and a high degree of alteration, causing total de-characterisation of its natural plant composition. The Project area has been subject to illegal mining and farming since 1958.

The community of Cuiú lies within the Project's Area of Direct Influence (AID), while the towns of Moraes Almeida and Itaituba fall within its Area of Indirect Influence (AII). Some garimpeiro activity is still occurring in certain areas of the Project but will end once the Full Mining License is issued.

The company maintains a good relationship with the local community and also through its formal surface access agreement with the Condominium of Garimpeiros, the holders of the traditional surface rights over the Cuiú Cuiú property. The contract includes a yearly rental payment paid to each member of the condominium for access and envisages a final compensation payment upon the issue of the Full Mining License and a positive feasibility study.

Trial Mining is permitted within the agreement as part of the exploration phase and in those areas impacted by the trial mining anticipated purchases of the underlying surface rights have been conducted and are owned by Cabral Gold's fully owned Brazilian Subsidiary Magellan Minerais e Prospecção Geologia Ltda. A security detail maintains these areas free of garimpeiro activity.

Cabral Gold has been proactive in its relationship with the local community and sensitive to the garimpeiros request both to legalize current garimpeiro activities and the future destination of community members when the

Condominium Agreement is formally activated, where all garimpeiro activity must cease in the area of the condominium and final compensation paid. As a result, two tenements of the Cuiú Cuiú Portfolio were transferred to a newly created Cooperative of Condominos do Cuiú Cuiú and converted to Prospector Leases. In relation to the transfer of those Exploration Permits to the Cooperative, the Company has in place a Cooperation Agreement with the Cooperative and it retains the right to continue to carry out exploration works in the areas of such PLGs/'Mineral Rights having full and unrestricted access to the areas and, in the event final positive reports are delivered to and approved by ANM, the Company has an option to acquire these Mineral Rights back from the Cooperative, paying the amounts established in said Cooperation Agreement.

The environmental licensing of these two Prospector Leases (PLGs) is underway with the State SEMAS/PA and should be available in October 2025 pending consent from the Federal ICIMBIO environmental agency.

The company, where possible, will source labour locally at Cuiú Cuiú or in the nearby towns of Moraes Almeida, Novo Progresso and Itaituba. Due to the scarcity of some qualified professional labour this will be sought both within Pará State or in other states of Brazil.

Figure 20-1: Aerial View of the Project Cuiú Cuiú, Itaituba-PA



(a) Aerial View of the Cuiú Cuiú Project **(b) Aerial View of the Cuiú Cuiú Project**

Source: Terra, 2020.

Figure 20-2: Forest Fragments in Central Area



(c) View of Forest Fragments



(d) Interior View of Fragmented Forest, with the Presence of Vines and a High Layer of Leaf Litter

Source: Terra, 2020.

Figure 20-3: View of the Internal Profile of Fragmented Forest in MG/Guarim Area



(a) Fragment Profile View



(b) View of the Interior of the Fragment, with the Presence of Vines and a High Layer of Leaf Litter

Source: Terra, 2020.

Figure 20-4: View of the Internal Profile of Fragmented Forest in MG/Guarim Area

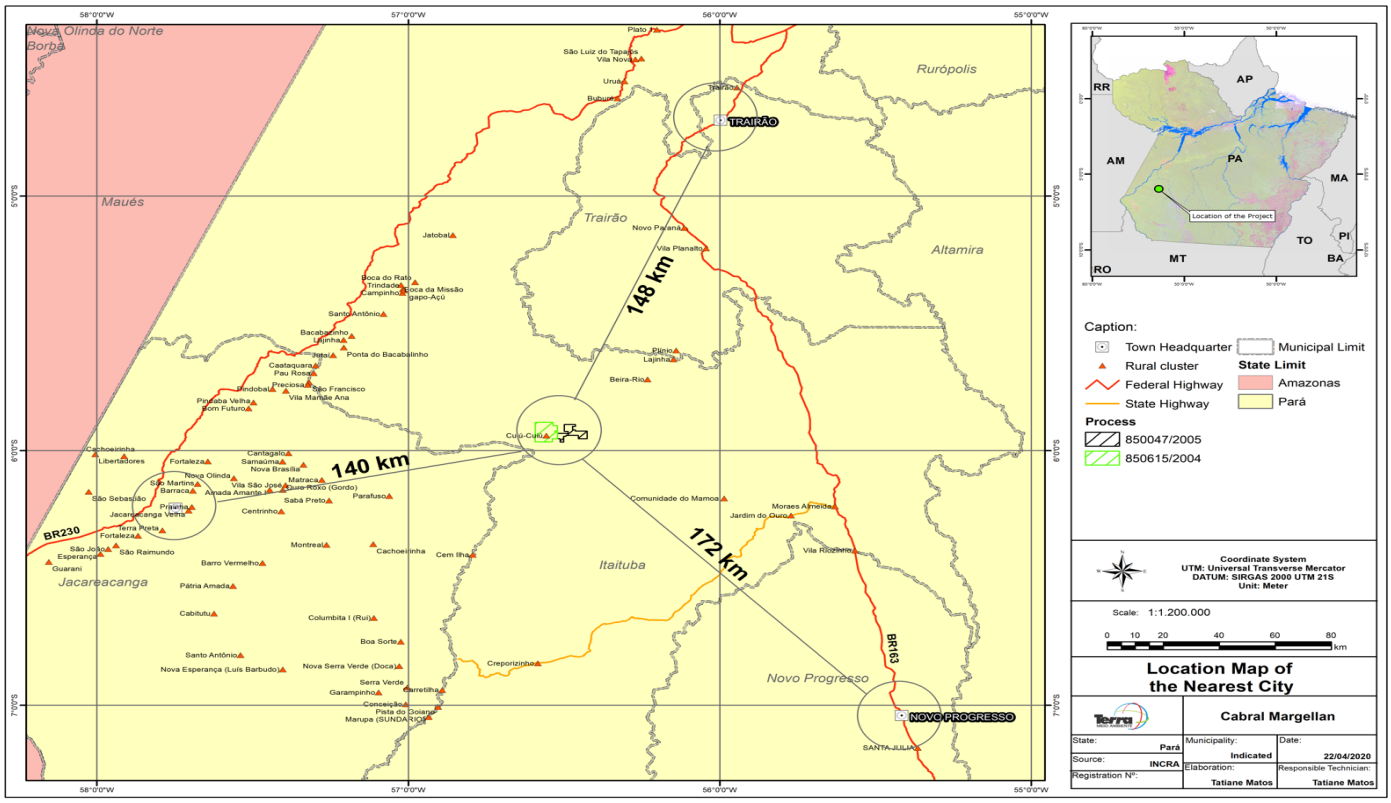


(a) View of Fragmented Profile

(b) View of the Interior of the Fragment, Partially Open.

Source: Terra, 2020.

Figure 20-5: Map of Nearest City Location



Source: Cabral, 2017.

20.2 Environmental Permitting Requirements

- The Project is being developed in accordance with the Brazilian National Environmental Policy, established on August 31,1981 (Federal Law ref. No. 6,938), which mandates environmental licensing for all activities that cause pollution or may cause pollution. Licensing procedures are governed by regulations established by the National Council for the Environment (CONAMA) under Resolution 237, issued on December 19, 1997.
- Through the licensing process, the issuing agency determines the conditions, limits and measures for natural resource management, enabling the installation and operation of a mining project. Depending on the project's nature and location, licences must be obtained from federal, state, or municipal agencies.
- Federal agencies are responsible for licensing activities that may cause national or regional environmental impacts (when more than one federal state is affected).
- State agencies, including the federal districts, are responsible for environmental licensing of potentially polluting activities that do not meet the criteria set by municipal licensing laws.
- Municipal agencies are responsible for licensing of activities that may cause local environmental impacts, as defined by the state environmental agency.

Other criteria are also considered, including the administrative responsibility for managing protected areas such as sustainable forests, water resources, conservation areas, and other protected areas.

The two Cuiú Cuiú mining permit applications, 850.615/2004 and 850.047/2005, currently have two trial mining licenses issued in February 2021, as well as environmental licenses PL and LI granted by the State SEMAS/PA in June 2022. The trial mining license on 850.047/2005 was renewed on May 30, 2025 with an increase in volume to 300,000/t year whilst the renewal of the 850.615/2004 is underway and expected in October 2025.

The LI for the two GU's was renewed on the June 13, 2025 and published on June 23, 2025, valid for two years.

Under the permitting regulations, Article 225 of the federal constitution (1998) states that "Those who exploit Mineral Resources shall be required to restore the degraded environment, in accordance with technical solutions directed by the lead public agency." The reclamation plan must include the objectives for short, medium, and long-term goals in chronological order. Short-term goals involve topographic restoration of the land, erosion control, replanting vegetation, and waste management, among others. The medium-term goals focus on improving the physical and chemical properties of the soil, recycle nutrients, and encourage the return of fauna. Long-term goals aim to support the self-sustaining recovery process, improving the soil-plant-animal relationship, and enabling the future use of the area.

A suppression of vegetation license (ASV) was requested in November 2021 and published in April 2023, with validity until April 24, 2026. An updated ASV was requested in April 2024 reflecting the changes in the plant layout as part of the PFS. The new ASV, for a total area of 244.61ha, was received and published on July 25, 2025, valid for 12 months. At the same time, the license for the rescue of Fauna was also received on July 25, 2025. Notification of the start of suppression (within 30 days) was registered with SEMAS/PA on August 5th. Suppression is expected to commence in the 1st week of September 2025.

The applications for the environmental license and Full Mining License were submitted in December 2020. The review was completed in early 2025 with a field audit conducted by SEMAS/PA in the second quarter and two public audiences were successfully conducted on August 12th at Cuiú Cuiú and a second audience on August 13th in Itaituba Para. The Preliminary Licence (LP) anticipated to be issued in late October early November 2025. A request for Installation Licenses will be registered soon after the publication of the LP.

20.3 Environmental Baseline and Impact Studies

Environmental baseline studies were conducted as part of an Environmental Impact Study (EIA/RIMA) from January 2018 to late 2019 to support the Preliminary Licence (PL) application for the Project, submitted to the Secretary for the Environment and Sustainability of the state of Pará (SEMAS/PA). Terra Meio Ambiente (Terra), headquartered in Belém, Pará, Brazil, was hired by Magellan to conduct an EIA-RIMA for the Cuiú Cuiú Project. Baseline studies included the collection of surface water, groundwater, biodiversity, climate, and geochemical data.

The EIA-RIMA was submitted as part of the mining applications for 850.615/2004 and 850.047/2005 on December 23, 2020, within the legally required timeframe.

Along with the response to the ICMBio (Chico Mendes Federal agency) notification received in early 2024 an updated EIA-RIMA was repaired to reflect the changes that have occurred to heap leach trial mining project and the Full Mining License Industrial plant, specifically the elimination of tailings dams with introduction of dewatering, filter press and dry stacking of tailings from the proposed CIL Plant. This updated report was delivered to the State Environmental Agency (SEMAS/PA) at the end of 2024 with analysis of the updated EIA_RIMA to completed in early 2025. Public Audiences related to the Full Mining License were conducted on August 12th and 13th and we expect to receive the Preliminary License (LP) in late September, early October 2025 and the Installation License (LI) in early 2026.

The Consent from ICMBIO (Anuência Licenca Ambiental), for both the Installation License related to the two GU's and the EIA-RIMA studies and subsequent request for Preliminary Licence for the Full Mining Licence, was received and published on April 17, 2025.

20.3.1 Environmental Area of Influence

The baseline characterization studies and environmental impact assessment (EIA) for the Cuiú Cuiú Project were prepared by Terra to support the EIA submission for the Preliminary Licence.

The EIA aims to assess the potential impacts of the Project on the physical environment and/or local communities, comparing them to baseline conditions. It evaluates both the positive and negative aspects of the Project, using a scale of high, moderate, low, or insignificant. Depending on the probability of an identified adverse impact, mitigation measures will be developed to minimize the potential impacts to acceptable levels.

20.3.2 Environmental Control

Based on the identified and evaluated impacts from the implementation and operation of the Cuiú Cuiú Project, the prevention, control, mitigation, monitoring, and environmental compensation actions that should be implemented by

Magellan are presented in Table 20-1 below. These actions aim to monitor the evolution of both positive and negative impacts caused by this Project.

The details of the environmental actions will be presented in the EIA, subsequently, in the Installation Licence (LI) Phase, and in the Environmental Control Plan (PCA).

Table 20-1: Environmental Control, Mitigation, Monitoring, and compensation actions as part of the EIA-RIMA & RCA-PCA

Actions	Categories
Solid Waste Management Program	Mitigation
Water and Effluent Quality Monitoring Program	Monitoring
Climatic Changes and Variation Program	Monitoring
Air Quality Monitoring Program	Monitoring
Environmental Noise Monitoring Program	Monitoring
Vibration Level Monitoring Program	Monitoring
Vegetation Suppression Monitoring Program and Possible Fauna Rescue	Monitoring
Fauna and Rescue Monitoring Program	Monitoring
Environmental Control Program at the Construction Site and Construction Phase	Mitigation
Recovery Plan for Degraded Areas - PRAD	Mitigation
Environmental Education Program	Mitigation
Social Communication Program	Mitigation

20.3.3 Biodiversity Studies

Brazil is a very biodiverse country that, like other nations, has implemented various laws and regulations to protect its environmental resources. At the same time, the country is focused on diversifying and expanding its economy, with mining becoming an increasingly important sector. In accordance with Brazilian law and international Best Management Practices (BMPs), mining project proponents must find a practical and effective balance between project economics and environmental protection, including the preservation of biodiversity.

20.3.3.1 Flora

The Project is located in the Amazon biome and does not overlap with National or State Parks.

According to the studies carried out by Júnior (2014), gold mining for mineral exploration has been one of the major environmental problems in the Tapajós basin. Deforestation occurs in the region affected by the BR-163 highway, which extends from northern Mato Grosso to the municipality of Novo Progresso, and by the Trans-Amazonian highway, in the vicinity of Jacareacanga and Itaituba (INPE, 2013).

The environmental impacts of mining can be categorized into physical and biological effects. Physical impacts are characterized by the destruction of vegetation and soils, as well as river siltation. Soil disturbance leads to intense erosion of the riverbanks (ravines), dragging suspended solids and mercury bound to organic matter into the drainage system. This process may be a significant pathway for natural or anthropogenic mercury entry into Amazonian aquatic systems (Roulet et al, 1998; Roulet et al., 2001; Veiga, Silva, & Hinton, 2002). Biological impacts mainly affect water quality through siltation, the dumping of petroleum products such as diesel and grease, increased use of detergents to disperse ore, and, most seriously, the improper use of mercury (Veiga, Silva, & Hinton, 2002).

According to Brown (1992), the Brazilian Amazon contains one-third of the world's tropical forests, with approximately 50% of the forest biomass composed of carbon. Thus, biomass represents a significant source of CO_2 that can either be added or removed from the atmosphere depending on changes in the cover, use, and management of these forest ecosystems (Brown, 1997).

Understanding the characteristics and properties of the different plant communities that constitute these forests can lead to more effective forest management, preventing significant changes to the floristic composition and structure of these vegetations. This helps maintain environmental stability and preserves the ecological identity of the area (Oliver & Larson, 1996).

In this context, the current assessment aims to present a floristic survey and vegetation characterization within the areas of influence (ADA, AID, AII). The diagnosis will detail the structure of the local flora with taxonomic identification, based on the inventory. This data will contribute to the Biotic Environment section of the EIA/RIMA for environmental licensing of the Cuiú Cuiú Project.

The vegetation types were classified based on the pre-existing vegetation in the areas, sourced from the IBGE database (2008). The data presented in the document are primary, collected during a field survey, and were used to compare secondary data available in specialized libraries.

The predominant type of vegetation in the area is the Ombrophilous Forest, characterized by its exuberant vegetation, complex forest stratification, high biodiversity, and the presence of lianas and epiphytes, as well as its high capacity for local climate regulation. In the project area, the Ombrophylous Forest is represented by two distinct formations, namely:

- Submontane Dense Ombrophylous Forest (Fs) Emergent Canopy: occurring at altitudes between 100 and 600 m. This formation is characterized by tall trees, often reaching over 50 m. It exhibits several physiognomies based on its topographic position, often dominated by autochthonous species.
- Submontane Open Ombrophylous Forest (As) with Lianas: characterized by well-spaced trees, groups of palm trees, and numerous sarmose phanerophytes that surround the trees and cover the lower stratum.

Extensive anthropic activities developed in the area have led to alterations in the vegetation in these formations that range from altered to strongly altered (Figure 20-1, Figure 20-2, Figure 20-3), making it possible to determine at least two successional stages: Initial and Intermediate (Figure 20-3) and altered or strongly altered native forest (Figure 20-4). These stages are classified as Secondary vegetation with palm trees, secondary vegetation, and areas disturbed by mining.

Figure 20-6: Aerial View Altered Forest Fragments in the Cuiú Cuiú Project Study Area



Source: Terra, 2019.

Figure 20-7: Profile View of the Altered Forest Fragment in the Cuiú Cuiú Project Study Area



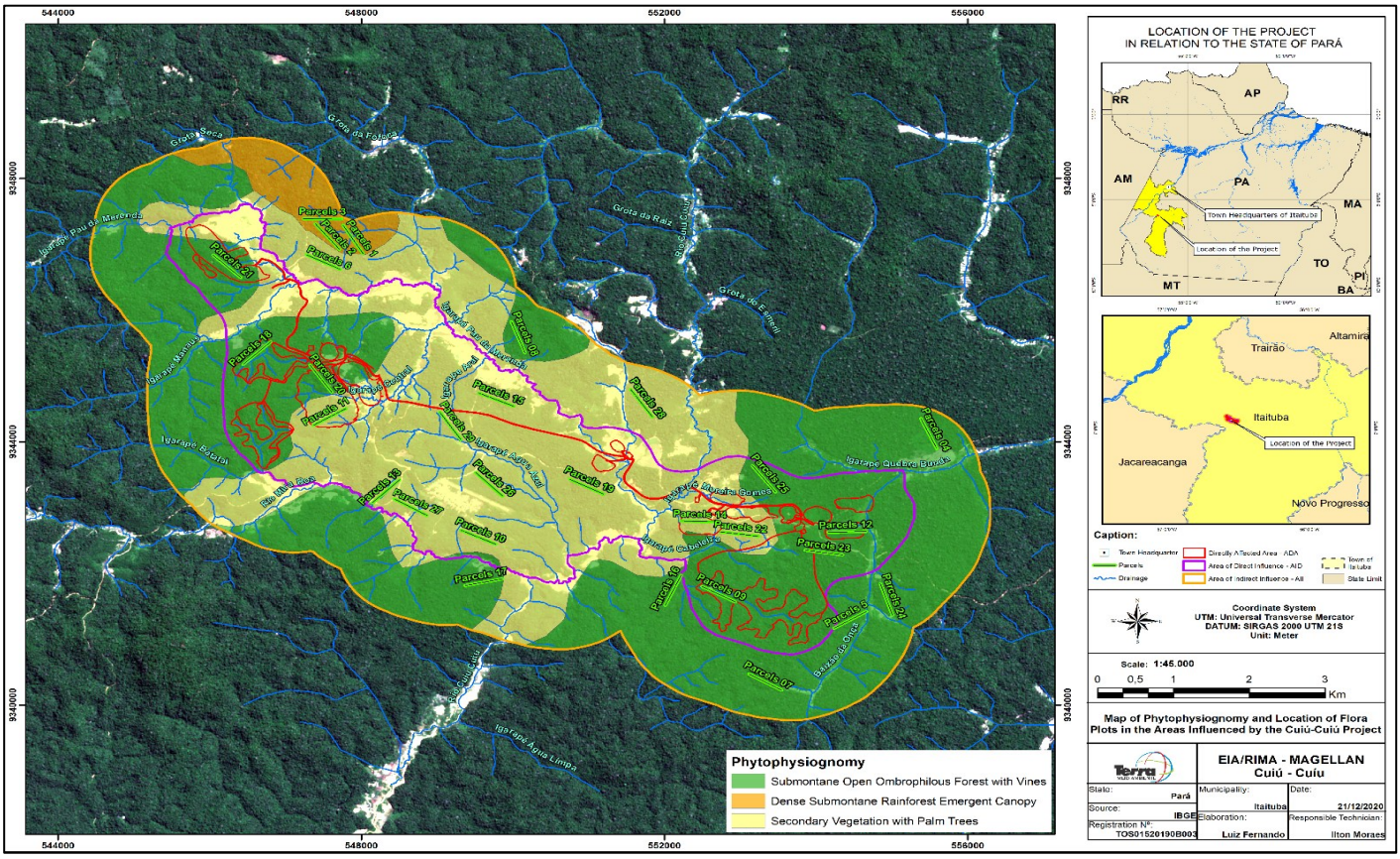
Source: Terra, 2019.

Figure 20-8: Internal View of the Altered Forest in the Cuiú Cuiú Project Study Area



Source: Terra, 2019.

Figure 20-9: Location Map of Phyto-physiognomies and Flora Sampling Plots in the Areas of Influence of the Cuiú Cuiú Project



Source: Terra, 2020.

The vegetation present in the AII, Areas of Direct Influence (AID), and Directly Affected Areas (ADA) originates from the typologies of Emerging Canopy Dense Rainforest and Submontane Open Rainforest with lianas and palm trees. These typologies, which have been heavily altered and transformed into secondary vegetation in an intermediate stage of succession, comprise the majority of the project area. The anthropized areas total 2,527.15 Ha (44.51%), of which 1,472.07 Ha have been anthropized for over 30 years. These areas are classified by the Brazilian Vegetation Manual (IBGE, 2012) as Secondary vegetation with palm trees and come from the Submontane Open Ombrophylous Forest with palm trees.

Vegetation sampling covered a total area of 14.5 Ha, distributed in 29 plots of 5,000 m² each, equivalent to 0.5 Ha, in which the arboreal stratum (trees with DBH ≥ 20 cm) was sampled. Additionally, 58 plots of 200 m² (0.02 Ha), totalling 1.16 Ha, were sampled for shrub and herbaceous strata. The plots were distributed across different vegetation types and stages of secondary ecological succession within the anthropized areas. To evaluate the floristic composition and phytosociological structure, the forest strata were classified as follows: the upper or arboreal stratum, included individuals with a DBH ≥ 20 cm; the intermediate or shrubby stratum, included individuals with a DBH between 5 and 20 cm; and the lower or herbaceous stratum, consisted of plants with a DBH < 5 cm.

A total of 3,281 individuals were registered, distributed as follows: 775 (23.62%) in the ADA, 1,211 (36.9%) in the AID, and 1,295 (39.47%) in the AII. By phyto-physiognomy, 1,460 individuals (44.50%) were in the Submontane Open Rainforest with lianas, 341 (10.39%) in the Submontane Dense Rainforest Emergent Canopy, and 1,480 (45.11%) in Secondary vegetation with palm trees. By forest stratum, 2,134 individuals (65.04%) were in the arboreal stratum, 348 (10.61%) in the shrub stratum, and 799 (24.35%) in the herbaceous stratum.

The flora is made up of 289 species from 56 botanical families. Among these, 218 species were recorded in the Open Submontane Rainforest with lianas, 90 in the Dense Submontane Rainforest Emerging Canopy, and 206 in the Secondary vegetation with palm trees.

Fabaceae, Sapotaceae and *Lecythidaceae* recorded the highest values of abundance, frequency, dominance and richness across all areas of influence and strata evaluated. Additionally, five families (*Celastraceae, Marantaceae, Polygonaceae, Quiinaceae and Verbenaceae*) were recorded with only one individual in the sampling, while 16 families were recorded with only one species.

Pouteria caimito, Bellucia grossularioides and *Jacaranda copaia* recorded the highest values for abundance and frequency, while *Bertholletia excelsa, Pouteria caimito* and *Bellucia grossularioides* recorded the highest dominance values. A total of 31 species were recorded across all phyto-physiognomies (including successional stages).

The 289 species were classified into nine (9) use classes. Of these, 185 species were identified for timber and roundwood, 81 for food, 62 for ornamental purposes, and 54 for medicinal use, mainly. A further classification was made based on the extractive use of these species, as many have been utilized by traditional communities for food supplementation, alternative medicine, and income generation through their marketable products. In total, 17 species distributed among 109 individuals were recorded as suppliers of Non-Timber Forest Products, mainly fruits (for food and other uses), latex (for medicinal purposes and commercialization), and oils and seeds (for food and medicinal uses).

Six species, represented by 22 individuals across the ADA, AID and AII areas in different phyto-physiognomies, are classified as vulnerable (VU), endangered (EN), or critically endangered (CR) according to official lists (state, national, and international) of endangered flora.

Among these, 16 species are endemic to Brazil, with 233 individuals represented in the sampling, all of which are recorded in the literature as occurring in the northern region of Brazil.

Phenological phases (flowering and fruiting) were recorded for 40 species throughout the field campaigns. These data should support efforts to collect propagules and seedlings during land clearance and monitoring activities in the areas.

20.3.3.2 Terrestrial Ecosystems

For the **Anthropophilic Entomofauna (Disease Vector Diptera)**, the dipteran species list in this study should be considered preliminary. Additional sampling, using different methods and conducted at different periods is required for a more complete characterization of the environments and their fauna. Although preliminary, the results obtained indicate that the areas studied have great potential for outbreaks and epidemics due to the presence of several species of epidemiological importance, such as those from the Psycodidae and Culicidae families. The implementation of a project in these areas will likely attract people, leading to population growth, which, if not properly managed by public authorities, could become chaotic. According to Foratini & Massad (1998), population growth inevitably leads to ecological changes that result in the formation and development of the environment in which humans live. The fundamental reason is that rather than adapting to nature, the human species creates its own environment – the anthropic environment – which implies not only physical changes, but also behavioral ones, thus affecting the behavior of certain species. In the project area, many species of sandflies were found, many of which are involved in the transmission of enzootics caused by *Leshmania* spp to both wild and domestic animals, as well as to humans.

While it is nearly impossible to eliminate the mosquito responsible for transmission, it is crucial to combat it. This can be achieved through basic sanitary measures, such as avoiding the accumulation of trash around homes or in vacant lots, as garbage attracts "mosquitoes," which breed in organic matter. The record of a species with epidemiological importance, such as *Sabethes cyaneus*, indicates a well-preserved forest environment. However, with the implementation of a project that will bring structural and ecological changes, along with an increase in human activity in the area, it is recommended to ensure that the local population receives vaccination against the Yellow Fever virus. Finally, considering the results of this study along with factors such as the evolution of these organisms, their previous existence in the areas and their occupation of ecological niches, it is crucial to emphasize the need for effective epidemiological surveillance.

The **Drosophilidae** community captured in the study displayed lower richness compared to reports from other regions of the Amazon. This is likely due to the structure of the anthropic habitat in the area. In anthropic environments, many native species struggle to thrive, resulting in low abundances, leaving ecological niches vacant and can be occupied by exotic species that thrive in harsher environmental conditions. This study found a predominance of exotic species to the detriment of native ones. Differences in the abundance, richness and diversity of species were observed when comparing each transect of the study area. These variations can be attributed to the different levels of environmental change across the habitats, as well as the availability of resources for feeding, reproduction, and the development of these organisms. Drosophilid species are considered reliable indicators of environmental quality. In the Cuiú Cuiú

Project area, the state of preservation is significantly impacted by the loss of vegetation cover and habitat fragmentation. These changes promote an increase in the number of exotic species, in contrast to primary forest environments, which have low frequencies of these species and higher abundances of native species.

The **mimercofauna** observed in this study represents species with different habitat uses and food preferences, indicating a heterogeneous environment, despite a certain level of disturbance. In general, the composition of the mimercofauna found in this study is similar to other studies carried out in the Amazon. The results show differences in composition between the three transects studied, corresponding to environmental complexity. This suggests that ants are sensitive to environmental variations. Earlier-stage fragments tend to harbor more generalist species with lower richness and diversity, while areas with greater environmental complexity tend to harbor higher species diversity and richness.

In the study of **herpetofauna**, 465 specimens were recorded across 47 species of herpetofauna belonging to two major groups – Amphibia and Squamata (lizards and snakes) – over the course of two sampling campaigns. The groups with the highest richness and abundance were the anurans and lizards. It was verified with the first-order Jackknife estimator that the species richness of the region has yet to be completely captured. As for the modules, T1 and T3 showed the highest diversity indices, while T-2 has the greatest abundance. T-2 also had a higher dominance index and lower equitability index, due to the prevalence of certain anuran species in this sampling area. Seasonal variations also influenced the presence of herpetus. The sampling effort across the two campaigns was 8,640 hours/bucket for the Interception and Drop Trap method, and 96 hours/observer for the Time-Limited Search. The PLT method was more efficient in collecting a greater number of species compared to AQI data, primarily because AQI is influenced by the period during which the buckets remain open. Furthermore, the PLT also has a direct influence on the collector's ability to verify different types of habitats.

No endemic or threatened species were recorded in either campaign. Only one species of medical interest, the true coral (*Micrurus surinamensis*), was recorded in the study area. Amphibian and reptile species are strongly affected by fluctuating climatic conditions (daily, monthly, and annual), as well as by habitat availability, vegetation structure, and water resources; and their detectability also varies depending on these conditions. Several herpetofauna species with different habitats and behaviors were identified through these two campaigns. This data provides a preliminary understanding of the community’s composition and structure in the area, as well as its degree of conservation. Conducting additional campaigns at different times of the year will enable a better analysis of the environmental quality, composition, and conservation status of local herpetofauna.

Since this work is grounded in scientific research, the **Ornitofauna** data presented here can support public policies to determine priority areas for bird conservation, aiding both government and civil society initiatives. The faunal diagnosis of wild bird species included in this study are required procedure in environmental assessments, as stipulated by the National Council for the Environment, in CONAMA Resolution No. 001, dated January 23, 1986, Article 6, Item I (Brasil, 1896), and by the faunal diagnostic criteria established in Normative Instruction No. 146, dated January 10, 2007, Article 5, Items I to VI (Brasil, 2007). Monitoring birdlife allows for detailed assessment of the impacts on forest environments resulting from the implementation of different types of projects. The bird diversity found in the sampling sites within the area of influence of the Magellan Mining Project reflects the high diversity of this group in the region. However, the sampling period for this study, which included two campaigns (one in June and the other in September 2018), may be considered insufficient to provide comprehensive results in the final evaluations. It is important to

highlight that the stabilization of bird populations and the species diversity observed fluctuated mainly between the rainy and dry seasons in the Amazon region.

The negative anthropogenic effects are advancing rapidly in the studied area, making it necessary and urgent to identify priority areas for implementing essential conservation measures to protect local birdlife. Bird species from the *genera Psittacidae, Thamnophilidae* and *Rhamphastidae* are important indicators of the state of preservation of this environment. Despite their good dispersal abilities, these birds have very restricted distributions, meaning that the impacts they face in these areas can lead to considerable threats, such as habitat destruction and the subsequent loss of species. These efforts aim to support the effective conservation of areas that are not yet adequately protected. It is crucial to identify the most important areas for conservation and assess whether they are being properly preserved before it is too late. As such, it is the collective responsibility of Brazilian society to protect these species and ensure the preservation of sufficiently large areas to support viable populations. The scarcity of ornithological surveys for the region is especially problematic because it makes it impossible to extrapolate species in such regions. It is necessary to define conservation target areas on a scale that encompasses and ensures adequate habitat for local bird species. However, such areas represent the minimum that must remain preserved, and other still-unknown areas warranting further study before future developments generate irreversible effects and hinder new scientific discoveries. This underscores greater urgency to define and disseminate one of the most important areas for the conservation of birds that inhabit this mosaic of ecosystems so peculiar to the Amazon region.

In the **Mastofauna** study, 25 species and 138 individuals were recorded during the two inventory campaigns in the area of influence of the Cuiú Cuiú Project. Of these, 11 were medium and large mammals, ten were small, non-flying mammal species, and four were winged mammal species. Compared to nearby areas, it is likely that the mammal fauna in this area has not been fully surveyed. Considering the study area as a whole, the richest and most abundant was point number 2, with 13 species and 44 individuals recorded. In terms of diversity, the transect with the highest index was T-2 (H'=2.57). The transect with the highest equitability value was T-1 (0.86). When considering the similarity between areas, Transects T-3 and T-2 were the most similar to each other. The cumulative species curve has not yet stabilized, which indicates that new species may still be recorded in the study area. Among the registered species, four are listed as endangered species, ranging from vulnerable to endangered status. These include two Primates species – the white tamarin (*Mico leucippe*) and the red-nosed cuxiú (*Chiropotes albinasus*) – the Giant Anteater (*Myrmecophaga tridactyla*) belonging to the order Pilosa, and the tapir (*Tapirus terrestris*), belonging to the order Perissodactyla. The main threat to these species is habitat loss, as mining enterprises cause permanent environmental changes. Monitoring these species is of fundamental importance for the management and monitoring of their populations in the region throughout the execution of the Project. The data obtained from the two inventory campaigns in the region revealed that the area still supports a rich diversity of mammal species. The study identifies species considered as environmental indicators. In addition, species that present some degree of extinction risk were also identified. Therefore, future monitoring of these populations will ensure their long-term preservation once the Project's activities begin. As sampling efforts increase in the study area, it is likely that additional taxa will be added to the species list.

20.3.3.3 Aquatic Ecosystems

The environmental parameters analyzed for **Planktonic Communities (Phyto- and Zooplankton)** were considered limiting factors for the presence or absence of planktonic flora and fauna species. In the Amazon region, the factors influencing planktonic dynamics vary throughout the year and are primarily determined by abiotic conditions, with

rainfall being a key factor. During the two campaign periods, the dissolved oxygen (DO) and pH levels remained relatively stable with no significant fluctuations. There was a small variation in temperature during the second campaign, but it was not relevant. Overall, conductivity decreased considerably during the dry period, likely due to the absence of soil leaching, a phenomenon caused by rain or mining activities. However, higher levels of salts were observed in most points, likely due to their concentration in the soil. During the rainy and less rainy periods, zooplankton organisms were absent in PBA4, although the presence of phytoplankton was observed. In PBA5, a greater presence of planktonic organisms, including phytoplankton and zooplankton, was recorded. However, all points continue to experience changes in the environment, as physical, chemical and biological parameters detected high levels of pollution and chemical contamination. The Igarapé (Ig.) Água Azul is in the recovery phase, with riparian vegetation regenerating and water exhibiting less turbidity and minimal color, as detected in situ using specific devices. Electrical conductivity decreased significantly compared to the rainy season.

The Cuiú Cuiú River is silted, very turbid, with high salt values. Ig. Água Azul flows into this river, contributing ionic and cationic compounds to the river. The Ig. Pau da Merenda spans two collection points, characterized by silt and signs of corrosive water. PBA3 is very turbid with a “whitish” color, while PBA4 is very turbid with a “reddish” color, potentially indicating the presence of different ions. In PBA4, diesel stains were also observed in its beds. Lago Grande is also in the recovery phase, with the riparian forest showing signs of regeneration. The lake’s water has become less turbid, with minimal color and low dissolved solids, and exhibits a very low level of electrical conductivity compared to the first campaign. This fact can be attributed to the sedimentation of substances such as salts at the bottom of the lake during the dry period, coupled with a period of inactivity at this point. However, activity is resuming around the lake. *Cosmarium contractum* and *Aulacoseira granulata* are commonly present in watercourses in the Amazon region, with the latter thriving particularly in areas with high organic matter and anthropogenic activities, where nutrient accumulation is prevalent. The other organisms recorded in the study area were considered rare, likely due to limited light penetration into watercourses caused by high suspended particulate matter, causing low phytoplankton development. The predominance of *Copepoda*, during the rainy season, particularly those from the order *Cyclopoida*, may be associated to the site’s trophic level, as their omnivorous predatory feeding habits enable them to ingest portions of filamentous and colonial algae.

It is important to highlight that the genus *Mesocyclopsis sp*., from the order *cyclopoida-Copepoda*, can act as a host for the parasite *Dracunculus medinensis,* which transmits dracunculiasis, a disease found in regions of Africa, Pakistan and India. A greater number of rotifer taxa were recorded during the period of lower rainfall, a marked difference compared to the high rainfall season. This aligns with their preference to colonize freshwater habitats, particularly lakes, where, as herbivores, they feed primarily on phytoplankton, with lake depth and low-water periods also playing a significant role. In general, the environment studied shows altered species composition and abundance, influenced by anthropogenic disturbances, as many taxa were absent, infrequent, or rare during both rainy and less rainy periods. Furthermore, hydrological differences between periods of greater or lesser rainfall likely influenced plankton density values, with higher densities observed during the rainy period. In this context, the water quality of the watercourses in the Project's area of influence may experience impacts, potentially causing imbalances in the dynamics of these aquatic ecosystems. Such changes must be closely monitored and assessed. However, determining bioindicator species of environmental quality is a time-consuming process that requires a thorough, long-term study of the aquatic environment. Additionally, given that the measuring devices are out of calibration during the measurements, it is recommended that the devices be calibrated at each point during future measurements.

The **Benthic Macroinvertebrate** fauna in the area under the influence of the Project consisted of 25 taxa, belonging to the *phyla Nematoda* (unidentified), *Plathyhelminthes* (one taxon), *Annelida* (four taxa) and *Arthropoda* (19 taxa). Insect larvae were the main component of benthic associations in the area, which is typical for continental environments. Although the composition was standard, it was characterized by low species richness and organism density, with a dominance of groups that are generally tolerant to environmental impacts.

For **Ichthyofauna**, the study area presented a low abundance of species in fish communities at all collection points during the first campaign. The order *Characiformes* was the most frequent and abundant in the first campaign, while in the second campaign, *Perciformes* became the most frequent in this study. This shift can likely be correlated with the hydrological period (drought), which is characterized by higher mortality rates due to predation among groups of individuals present in water bodies. This occurs due to the low supply capacity that such environments suffer due to the decline in water levels (at collection points which correspond to the area of the Tapajós basin). The most abundant genus in the first campaign was *Astyanax* (Order of *Characiformes*, Family *Characidae)*, commonly known as "Lambarís," while the most abundant genus in the second campaign was *Aequidens* (Order of *Perciformes*, Family *Cichlidae)*, commonly known as "Acará." These genera occur throughout the Amazon basin. It is worth noting that no specimens were captured at collection point PBA1 in the first campaign, nor at PBA1 and PBA2 in the second. This was due to local conditions and characteristics, such as the average depth of the water body (measuring around 15 cm), which makes it impossible to set up gillnets. Additionally, the average width of the water body is narrow (measuring around 3 m), with a strong current that prevents the formation of backwater areas, making it impossible to set up gillnets and capture with sieves due to its high transparency (crystal clear water with minimal sediment from the current), substrate conditions (slightly rocky with gravel and minimal unconsolidated muddy sediment that prevented the use of a trawl net). Given these characteristics, surrounding areas were explored to potentially compensate for the limitations at the point in question. Approximately 50 m from the site, a dam-like environment was found for PBA1, measuring roughly 6 m wide and 15 m long (between upstream and downstream). However, this area had a lower average depth than that of the specified collection point, making capture procedures using approved fishing gear and the previously mentioned methodology (authorized by SEMAS/PA), ineffective at PBA2.

Efforts to locate other suitable capture sites in the vicinity were unsuccessful. Despite the limited data on local fish species, a re-evaluation of the area is necessary, with a focus on identifying new habitats that may support potential breeding grounds for the species. This study area remains largely unexplored, with many habitats still understudied or unexplored, and considering the conservation challenges posed by numerous illegal mining activities affecting these environments and their fauna. There are also substantial taxonomic and geographic data gaps, along with limited information on the life cycles of many species.

In order to overcome this situation, several mitigation actions can be taken by public agencies and the private sector at a regional level, aimed at promoting the conservation of fish species in the region. Recommended actions include: 1) Preventing deforestation and unsustainable land use near watercourses; 2) Restricting the direct discharge of untreated industrial and domestic effluents and the dumping of waste; 3) Regulating the intentional or accidental discharge of organic and inorganic chemical pollutants, such as pesticides and mercury, into the aquatic environment; 4) Avoiding the introduction of exotic species for food, recreation, or restocking without prior environmental impact studies (e.g., tilapia); and 6) Enforcing compliance with environmental protection legislation. To support species conservation in the region, it is extremely important for public agencies, educational and research institutions, NGOs,

and other organizations to focus on studies examining the conservation status and biology of the species. Building comprehensive data repositories and establishing regional scientific collections are also vital steps.

The **Aquatic Macrophytes** community in the study area consisted of 38 species, distributed in 20 families and 30 genera, with Cyperaceae as the best represented family. The species were primarily amphibians (semi-aquatic, living in aquatic and terrestrial areas) and emergent (rooted at the bottom but partially submerged). The flora consisted of perennial taxa with a high regeneration rate, adapted to inhabit anthropized environments, river margins, and areas that undergo cycles of flooding and drought.

20.4 Geochemistry

Cabral Gold/Magellan contracted KCA to carry out metallurgical testing for the Cuiú Cuiú deposit. In addition to metallurgical testing, KCA also carried out geochemical and geotechnical characterization of the mineralized material related to heap leaching of the ore.

Further studies of the mineralized material and associated tailings of both saprolite and primary ore were conducted in Brazil by Fundação Gorceix in Ouro Preto, Brazil, and Hidrogeo Engenharia e Gestão de Projetos Ltda, in Belo Horizonte. The geochemical tests aimed to evaluate the dewatering potential of primary and saprolite ores and evaluate the potential generation of acid mine drainage and leaching. The following tests were performed: Acid Base Accounting (ABA), Modified Acid Base Accounting (MABA), Net acid generation (NAG) and leaching by ABNT NBR 10006:2004 standards.

Three sample types were submitted:

- Saprolite tailings from heap leach column tests conducted by Testwork Desenvolvimento de Processos Ltda in Belo Horizonte, Brazil.
- Blended Central and MG saprolite tailings from dewatering and filter press studies conducted at Fundação Gorceix in Ouro Preto, Brazil.
- Primary Central and MG tailings from filter press studies conducted at Fundação Gorceix in Ouro Preto, Brazil.

The main results of geochemical characterization were:

- The Cuiú Cuiú mineralised system has a low sulphur content, with Primary Central Ore containing 1.64% S and MG containing 0.71% S in the primary ore.
- Pyrite is the main sulphide mineral present in the primary ore.

Heap Leach Tailings:

- Sample assays from Heap Leach Tailings of Saprolite ore did not reveal any potentially problematic elements apart from Aluminium (Al), which has elevated levels in all sample types. Additionally, Central high-grade ore tailings contained elevated arsenic (As) levels at 0.012 mg/L As, and low-grade ore tailings had levels of 0.013 mg/L As.

Chromium (Cr) levels were also elevated, with 0.0630 mg/L Cr in low-grade Central ore tailings and 0.0450 mg/L Cr in high-grade Central ore tailings.

Filtered Saprolite and Primary Ore Tailings:

- Sample assay from the Filtered Blend of Central and MG saprolite ore did not reveal any potentially problematic elements apart from Chromium (Cr) with elevated results of 0.0690 mg/L and 0.072 mg/L.
- Sample assays from Filtered Primary ore tailings did not reveal any potentially problematic elements apart from one elevated result of Arsenic (As) for MG Primary ore with 0.011 mg/L As, while the 10.004/2004 norm is 0.01 mg/L As.
- All mineralized samples from both Saprolite and primary ore were considered non-acid generating.
- The Neutralization Potential (NP) based on %S content, all tailings have a similar low NP with potential for acidification less than one (<1.0), and all waste samples are below the curve NP/PA=4, which indicates a NP greater than four times the acidity potential. The Neutralization Potential (NP) as a function of %S.
- Samples with NP/AP <1 are considered acid generating. Samples with NP/AP >3 are considered non-acid generating. Samples between these two ratios are considered potentially acid generating and will require additional testing. Samples with %S >0.35 are likely to be acid generating and, conversely, samples with %S <0.12 are likely to be considered non-acid generating.

20.5 Archaeological Studies

In 2018, Magellan commissioned Terra to carry out the initial archaeological survey of the Cuiú Cuiú Project. The Archaeological Heritage Impact Assessment Project (PAIPA) for the Cuiú Cuiú Project was prepared and submitted to the Institute of Historical and Artistic Heritage (IPHAN), Brazil's regulatory agency for archaeological matters, for approval. After PAIPA was approved, Terra carried out field surveys in the areas directly affected by the Project, along with bibliographical reviews of the physiographic and cultural contexts. Excavations were also completed for 293 test pits out of a planned 457 (some areas were impacted by flooding or garimpeiro activities), and all returned negative results for archaeological remains.

The information gathered from office research and fieldwork was compiled into the Archaeological Heritage Impact Assessment Report (RAIPA) for the Cuiú Cuiú Project. Magellan filed the RAIPA and received approval in June 2023, marking a significant step in the process of obtaining the necessary licenses for project implementation.

20.6 Socioeconomic Studies

As part of the EIA-RIMA submission, Terra conducted the socioeconomic studies for the Project. According to the Brazilian Institute of Geography and Statistics (BGE), the Cuiú Cuiú Project area belongs to a single intermediate geographic region of Itaituba and includes four immediate geographic regions: Vila of Cuiú Cuiú, Moraes Almeida, and the communities of Mamoal and Jardim do Ouro, which are situated along the road connecting Villa of Cuiú Cuiú and Moraes Almeida.

The studies developed were:

- Social setting of the Project
- Social areas of Impact
- Social Risks, Impacts, and mitigation measures
- Stakeholder mapping
- Socioeconomic benefits, community relations and communications
- Social Management Policies and Social Management System.

The studies focused on the AII, Area of Direct Influence (AID) and Area Directly Affected (ADA).

The comprehensive Socioeconomic Report was submitted together with all other volumes of the EIA-RIMA report in December 2000.

20.7 Physical Environment Studies

Terra was contracted to carry out the surface and physical environment field campaigns. The works were carried out in February-March 2018 (the rainy season), and in July-August 2018 (the dry season). The programs consisted of the items listed in the following subsections.

20.7.1 Climate and Meteorology

In this diagnosis, the climatic characterization as part of the environmental assessment for the Itaituba municipality. The analysis is grounded on reputable literature and in a series of climatological data on key meteorological variables, including precipitation, temperature, relative humidity, evaporation, insolation, cloud cover, wind direction and speed, and water balance.

20.7.1.1 Climatic Characterization

According to Köppen's climate classification, the municipality of Itaituba, located in the southwest Pará mesoregion, has an Am (tropical monsoon climate) type climate. In Group A climates, the air temperature shows minimal variation over time and space, with a small annual temperature range and no distinct winter as the temperature of the coldest month remains above 18°C and the annual temperature fluctuations generally stay below 5°C.

In climatic subtype “m” rainfall is excessive during some months, balanced by one or two months with less than 60 mm of rain, which supports the growth of dense forests. The annual rainfall regime creates a relatively dry season and another with greater rainfall intensity.

Due to the location of the Project, four nearby rainfall stations were used to characterize the area's rainfall patterns. Among the meteorological variables that determine the climate of the northern region, the precipitation regime stands out for its significant temporal and spatial variability.

20.7.1.2 Precipitation

The seasonality of precipitation is distinguished by two major periods: the rainy season and the dry season. The dry season includes months with below-average rainfall, while the rainy season includes months with above-average rainfall. The average rainfall across the four stations used to characterize the Project's area is 186 mm.

The rainy period covers the months from November to April, with an average rainfall volume of 1,680 mm across these months. This period generally experiences heavy rainfall, accounting for more than 78% of the annual total, with the month of March recording the highest monthly volume at 345 mm.

The dry period occurs from May to October, with an annual average of only 550 mm, and July records the lowest volume during the year at 28 mm.

April and November are observed as traditional months between the two periods.

20.7.1.3 Air Temperature

Temperatures recorded at the Itaituba climatological station show minimal seasonal variation, typical of equatorial regions. As a result, the average annual temperature remains around 27.3°C.

The seasonal pattern of average air temperature indicates a relatively warmer period from August to October, conditioned by reduced cloud cover and high solar exposure. September generally records the highest monthly temperatures, with average temperatures reaching around 34.5°C. From November to March, average temperatures slightly decrease due to meteorological conditions associated with the high precipitation volumes, characteristic of the rainy season.

The average annual maximum temperature is around 32.8 °C, with September and October being the hottest months, particularly reaching 34.5°C. The lowest temperatures are generally observed in July, averaging 22.2°C. This results in an average monthly temperature variation of only 1.9°C throughout the year.

20.7.1.4 Insolation & Cloud Cover

Insolation, or the duration of direct solar radiation, totals approximately 2,098 hours annually, averaging around 6 hours per day. Cloud cover is high throughout the year.

Insolation, as well as precipitation, temperature and other meteorological variables, follows two distinct periods throughout the year. The period with the lowest hours of sunshine occurs during the rainy months (November to April), with February having the fewest hours of sunshine, averaging 124 hours or about 4 hours per day. From May to October the less rainy season brings the highest levels of sunshine, with July recording 237 hours of sunlight, averaging about eight hours per day.

Unlike insolation, cloud cover is at its lowest from June to December, with an average of 0.5 tenths, predominantly of a convective nature. From January to May, cloud cover is highest with an average of 0.7 tenths.

The month of February experiences the maximum cloud cover and the fewest hours of sunshine, a pattern related to the rainfall regime. In August, the lowest cloud cover coincides with the highest number of hours of sunshine recorded during the year.

20.7.1.5 Evaporation

The climatological norms indicate that evaporation rates begin to decline in November and remain low through May. This period coincides with intense precipitation, extensive cloud cover, and high relative humidity, factors that make evaporation difficult.

From June to October, evaporation reaches its highest levels due to increased insolation. In the rainy season, humidity values tend to be higher, while evaporation values tend to increase in the dry season.

The months of February and October experience the lowest and highest evaporation rates, at 48 mm and 97 mm, respectively. Over the course of the year, the total accumulated evaporation totals 826 mm.

20.7.1.6 Relative Air Humidity

Relative humidity is the percentage that expresses the ratio between the amount of moisture present in a given volume of air and the maximum amount of moisture it could hold if fully saturated. This parameter is influenced by variations in topography, the distribution of reservoirs and other water bodies, and the movement of moist air from the coast.

The wettest period occurs from March to May, with relative air humidity levels that reach 91%. On the other hand, October is considered the driest month, with humidity around 83.5%. The annual average relative humidity is around 88%, remaining high even during the drier seasons due to nearby water bodies that supply ample moisture.

The behaviour of relative air humidity, evaporation, and precipitation is closely related: higher humidity leads to lower evaporation rates and increases the possibility of rainfall.

The development of relative humidity aligns with rainfall variations but with a slight delay: while rainfall declines rapidly, relative humidity decreases more gradually. Conversely, as the season shifts from drier to wetter, relative humidity rises in tandem with the increase in rainfall.

20.7.1.7 Wind Direction & Velocity

In terms of direction, winds in Itaituba range from northeast (NE) to east (E), with the northeast direction being dominant at 86%.

The average annual wind is 0.6 m/s, with minimal variation throughout the year. The highest recorded speed is 0.7 m/s, occurring between October and February, while the lowest is 0.4 m/s, recorded from May to June. Wind speeds are lower in the dry period, which also coincides with the period of highest temperatures and lowest rainfall.

20.7.1.8 Water Balance

Water balance is a climatological indicator of water availability in the project area. Potential evapotranspiration (ETP) refers to the amount of water transferred to the atmosphere through evaporation and transpiration over a unit of time, from an extensive surface fully covered with low vegetation and well-supplied with water. Real evapotranspiration (ETR) is the amount of water actually transferred to the atmosphere through evaporation and transpiration, under actual atmospheric and soil moisture conditions. Real evapotranspiration is always equal to or less than potential evapotranspiration (ETR ≤ ETP).

Despite the significant annual precipitation (2,136 mm), its distribution results in two distinct periods with contrasting water availability.

From November to April (the rainy season), when ETP is equal to ETR, there is no water shortage to meet the needs of soil evaporation and transpiration. In May, as the dry season begins, the soil retains enough moisture to meet the atmospheric demand for a few days. However, rainfall soon drops below the ETP, and this condition persists until October.

20.7.2 Air Quality

The air quality characterization process consists of seven stages.

The first stage involved studying the area by analyzing cartographic data to evaluate the location for air quality monitoring within the Project's area of influence. This assessment took into account energy supply conditions and equipment safety, following the site selection criteria recommended by the United States Environmental Protection Agency (US EPA).

Sampling campaigns were carried out from the designated location, Vila do Cuiú Cuiú, considering seasonal variations. The first campaign in April-May 2018, and the second campaign in August-September 2018. Laboratory analyses of the samples were then performed, followed by calculations and the compilation of data obtained to develop this document.

Based on the average results obtained from the two sampling campaigns that assessed the air quality in the area of influence of the Cuiú Cuiú Project, all measured parameters had concentrations below the limits established by CONAMA Resolution No. 491/2018.

For half of the SO_2 measurements, the air quality index (AQI) remained at the regular standard during the first campaign. These results were likely influenced by the operation of a diesel generator located near the sampling site. All other parameters, however, remained at the Good quality standard.

Air quality is influenced by pollutant emissions as well as the variability of atmospheric components, which play a key role in the transport, transformation, and dispersion of pollutants into the atmosphere. These processes are affected by local topography and factors such as wind, atmospheric pressure, temperature, precipitation, and solar radiation.

The rainfall pattern in the Itaituba region is characterized by two distinct periods: dry and rainy. Maximum temperatures and wind speeds occur during the dry period, while the opposite occurs during the rainy period. During the rainy season, precipitation serves as the primary mechanism for removing pollutants from the air, effectively cleaning the atmosphere through wet deposition.

Considering the climatology and location of the sampling point, the results of the two campaigns were consistent with the seasonal patterns typical of the region where the Project is located. It was observed that the highest concentrations were generally recorded during the campaign carried out during the dry period.

Under these circumstances, the Project's area of influence was diagnosed with a Good AQI.

20.7.3 Noise Quality

The noise background in the Project's area of influence was established through primary data collection.

Initially, work was conducted to assess the area and identify suitable locations for monitoring noise levels.

After data collection, the information was downloaded, and the results were compiled and analyzed to characterize the noise levels.

The measurements of noise levels for this background were carried out on April 30, May 2, and 3, 2018 at eight points across the Project's area of influence, focusing on residential areas and sensitive sites such as churches and schools.

The measurements were taken in different locations within the area of influence, all sharing similar spatial characteristics. As a result, the assessment criteria for the eight measurement points were categorized as Site and Farm Areas.

The results show that all sound measurements, for both day and night, at the eight points, exceeded the maximum limits (40 and 35 dB(A), respectively) established by NBR 10.151 of the Brazilian Association of Technical Standards (ABNT), dated June 31, 2000, when they were classified as Site and Farm Areas. It is important to note that the maximum limits established by ABNT remained unchanged in the updated standard (NBR 10.151/2019).

During the measurements, it was observed that the noises recorded by the decibel meter were primarily caused by vehicle traffic, such as motorcycles and quadricycles, which are the most common modes of transport in the village. Additionally, sounds from nearby conversations, animals, and other sources were also captured.

According to NBR 10.151 (ABNT, 2000), since the sound sources driving this study are the activities associated with the implementation of the Cuiú Cuiú gold extraction and processing project, which have not yet started, and the ambient noise level (Lra) has exceeded the established limits, the equivalent continuous weighted sound level (LAeq) results will serve as the new reference limits for the corresponding points and times to be monitored.

The implementation of the gold extraction and processing project requires monitoring sound levels at selected points around the project area. This monitoring will help determine whether corrective measures are needed to maintain the acoustic environmental quality of surrounding populations.

20.7.4 Vibration

Vibration sources can be either natural or human made. Natural sources are associated with natural phenomena such as earthquakes or the impact of strong winds on large structures. Human-induced vibrations are generally related to the operation of industrial machinery, road and rail traffic, and activities linked to civil construction (Brito et al., 2015).

Reil (1998) identifies three key factors related to ground vibration that determine whether structures vibrate:

1. Maximum particle vibration velocity and resulting vibration (VR).
2. Duration of vibration.
3. Vibration frequency.

The vibration background in the Project's area of influence was established through primary data collection.

Initially, work was conducted to assess the area and identify suitable locations for monitoring vibration levels.

The field campaign was carried out at the end of May and the beginning of June 2018. After measuring and recording the seismic events, the data was downloaded, seismographic reports were generated, and the results were compiled.

By analyzing the peak particle vibration velocity, known as Peak Particle Velocity (PPV), NBR 9653:2005 recommends assessing the risks of induced damage based on the magnitude and frequency of particle vibration.

The background vibration levels generated from the daily movement of each measuring point were below the damage prevention limits recommended by NBR 9653:2005, which served as comparison parameters. This indicates that these vibrations are not sufficient to cause damage to the existing structures in the area.

Another aspect of vibration considered was the discomfort criterion. The sensation of vibrations perceived by people near all measured points remained at a very noticeable level, according to the study by Wiss and Parmelee (1974), except at point PV06.

It is important to note that, regarding discomfort, no Brazilian or international standard establishes particle speed limits for human discomfort, as individual sensitivity to vibration varies widely and is influenced by subjective factors.

Human discomfort in response to vibrations is difficult to quantify, as it reflects the discomfort reaction that most people experience when exposed to such stimuli. In relation to nuisance as addressed by the ISO 2631-2:2003 standard, only three points (PV01, PV03, and PV06) showed at least one orthogonal component exceeding the standard specified for residential areas.

20.7.5 Water Resources

20.7.5.1 Hydrology

These studies aimed to collect data and information to characterize water resources within the Project's area of influence. The first section covered topics related to the region's hydrography and hydrological aspects, followed by the characterization of water resources, focusing on the quality of surface and groundwater.

The Cuiú Cuiú Project is located in the municipality of Itaituba, in the state of Pará, northern Brazil. For the hydrographic classification, state legislation was applied through Resolution 04/2008 of the State Water Resources Council (CERH), which standardizes the subdivision and grouping of basins and hydrographic regions. This resolution specifies that the water body under analysis should be classified using the Otto Pfafstetter coding method and aligned with the division of regions and sub-regions within Brazil's hydrographic macro-regions.

Otto Pfafstetter developed a method for subdividing and coding river basins using a hierarchical system with ten digits, based on the drainage areas of watercourses, designed to support the National Water Resources Plan. This method is implemented following Resolution No. 30/2002 of the National Water Resources Council (CNRH) and Resolution No. 04/2008 of CERH.

20.7.5.1.1 Hydrographic Characterization of The Municipality of Itaituba

The main river that runs through the municipality is the Tapajós. One of its sources, the Teles Pires River, forms a natural boundary to the southwest, with the State of Mato Grosso. Most of the right-bank tributaries include rivers such as the Cururu, das Tropas, Crepurú, and Jamaxim, along with streams such as Rato, Janari, and Bom Jardim (Abraão De Brito et al, 2014). In addition to the Teles Pires River, other major rivers in the area include Jamanxim, São Benedito, and Arapiuns, which flow into the Amazon River.

This hydrographic region is of fundamental importance for the state of Pará due to its connections with other states, its potential for waterways and energy production, and its greenish, crystal clear waters from August to October. The rocky riverbed unique to this area makes it naturally suited for ecological tourism.

The ADA is located at Code 44, according to the coding adopted by the Otto Pfafstetter methodology. According to Resolution No. 04/2008 of the CERH, Annex I, the Cuiú Cuiú Project is situated within the Tapajós Hydrographic Sub-region, which is part of the Tapajós Hydrographic Region.

The Tapajós River basin covers 492,000 km² in the states of Mato Grosso, Pará, Amazonas, and a small part of Rondônia. It covers 16.8% of the state of Pará and includes the municipalities of Itaituba, Rurópolis, Trairão, Aveiro, Juriti, Jacareacanga, Novo Progresso, Belterra, and Santarém. The basin is divided into the following hydrographic sub-regions: Tapajós – Amazonas and Tapajós.

20.7.5.1.2 Local Context of Hydrology in the Municipality of Itaituba

The Tapajós Hydrographic Basin is located in the Amazon region. The river is formed by the confluence of the Teles Pires and Juruena rivers at Barra de São Manuel, on the border between the states of Pará and Mato Grosso. The

Tapajós River spans 843 km, flowing through the states of Amazonas, Pará, and Mato Grosso before emptying into the Amazon River. It covers nearly 6% of Brazilian territory.

The Tapajós River basin is a tributary of the right bank of the Amazon River and considered a federal waterway as it passes through multiple states. Furthermore, it significantly contributes to local ecosystems due to the potential of its natural resources (Santos et al., 2014).

The tributaries of the Tapajós River contribute to an average flow of 12,259 m^3/s at the station located in Itaituba, Pará (Santos, 2015). However, during El Niño events, this flow decreases by approximately 1,647 m^3/s, while during La Niña events, the reduction is about 588 m^3/s (Foley et al., 2002).

According to the Köppen classification, the basin has two climatic typologies, the northern region is classified as Am, characterized by a short dry season and heavy rainfall throughout the year, while the southern region is classified as Aw, with summer rainfall (Mendonça & Dani-Oliveira, 2007).

Rainfall throughout the basin is a very important component as it allows zoning of areas that are more susceptible to water stress during drier periods (Mello JR et al., 2006).

Until the 17th century, the basin was occupied by indigenous peoples, however, from the 18th century onwards, non-indigenous settlement increased, accompanied by the exploitation of its natural resources. The population began to settle along the Tapajós River, driven by the onset of gold mining around 1958, a practice that continues to this day.

In addition to its mineral potential, the basin is also notable for its energy potential (hydroelectric power), as well as its role in supplying water for the population and for animals). The Tapajós River serves as an important waterway corridor, facilitating the transport of goods from the southwest regions of Pará, Southeast Rondônia, and the North and Central East regions of Mato Grosso.

The Tapajós basin has a high untapped hydroelectric potential, which has led the Federal Government to plan the construction of new hydroelectric plants. Seven plants are proposed for the Tapajós Complex, including two large-scale plants, São Luiz and Jatobá (Brazil, 2013; WWF Brazil, 2016).

20.7.5.1.3 Local Hydrological Characteristics

The municipality where the municipality is located does not have any rainfall stations, meaning there is no available historical precipitation data for the area. This information was verified using the National Water Resources Information System platform, subsidized by the National Water Agency.

20.7.5.1.3.1 Rainfall Characterization of the Project Area

There are no rainfall stations in the municipality where the Project is located, that is, there is no possibility of consulting a historical series with rainfall data from the location. The information was verified using the National Water Resources Information System platform, subsidized by the National Water Agency.

20.7.5.1.3.2 Fluviometric Characterization of the Tocantins River

According to IBGE (2016), the Tocantins River, which flows through the states of Goiás, Tocantins, Pará and Maranhão, has an area of 803,200 km^2 and a length of 2,416 km.

The river originates in Goiás, primarily at the border between the municipalities of Ouro Verde de Goiás and Petrolina de Goiás. The main tributaries are the Rio das Almas, Rio Cana Brava, Rio Santa Clara, Rio dos Patos, Rio Uru, Rio Tocantinzinho, Rio Sono, Rio Cacau, Rio Mupi, and Rio Barra Grande.

Its waters are permanently turbid with low salinity due to the considerable volume of freshwater discharge from the Hydrographic Complex, which involves the southern arm of the Amazon and the mouth of Tocantins River, forming the Pará River.

20.7.5.1.3.3 Fluviometric Characterization of the Crepori River

The Crepori River is an important tributary on the right bank of the Tapajós River, originating in the foothills of Serra do Cachimbo, along the border between Itaituba and Jacareacanga. Its main tributaries are the Marupá River, a left-bank tributary that flows into the Crepori River, about 3 km upstream from the Creporizão district; the Creporizinho river, a right-bank tributary with sources at an altitude of 320 m; and the Piranhas River, another right-bank tributary with sources at an altitude of 335 m.

The main riverbed contains areas with rocky outcrops, creating rapids in certain sections that are difficult to navigate during the dry season. However, during the flood season, navigation is possible in most areas, with only a few waterfalls obstructing passage along the river. In the tributary streams, signs of seasonal fluctuations in water levels and the impact of mining activities can be observed, as reflected in the colour of the water.

According to the Brazilian Forest Service, the Crepori River has a shallow bed and many islands along its course. It is possible to travel in ferries with a capacity of 60,000 liters to the Boca do Crepori currutela. A few kilometers beyond this point, the river enters a long stable stretch. However, new rapids emerge near the Conservation Unit, which make navigation impossible during periods of drought.

Information on fluviometric data is not available.

20.7.5.1.3.4 Fluviometric Characterization of the Cuiú Cuiú River

The municipality where the Cuiú Cuiú River is located lacks fluviometric stations, meaning that historical flow data for the area is not available. The information was confirmed using the National Water Resources Information System platform, subsidized by the National Water Agency.

20.7.5.2 Water Quality: Superficial

The study presents the results of water quality monitoring in surface water, derived from the first and second campaigns, as well as the Complementary Campaigns, totalling four samples, within the Cuiú Cuiú Project area of

influence. An analysis of the key quality parameters enables the development of an environmental assessment of water resources within the Project's direct area of direct influence.

Water quality is defined by a set of chemical, physical, and biological characteristics. As a shared and strategic resource, the protection of waterbodies has required legal regulations through laws, resolutions, and guidelines. Thus, water properties must be kept within specific limits represented by standards and guiding values for water quality, sediments, and biota. However, local and regional factors that may affect the inherent qualities of the water body should also be considered.

Monitoring water quality is one of the most important tools in environmental management. It involves systematic monitoring of the qualitative aspects of water to generate information for the scientific community, the general public, and most importantly, for decision-making agencies. In this way, water quality monitoring plays a key role in environmental management, offering a comprehensive view of the environmental landscape.

The surface water quality assessment began with field reconnaissance, during which the locations that would best represent the project area were identified.

A total of four surface water sampling campaigns were carried out. The first campaign included five sampling points, and the second campaign had seven points, all collections took place in 2018. Subsequently, two additional campaigns (complementary campaigns) were carried out. A third campaign during the dry season in 2019, and a fourth campaign during that rainy season in 2020, with all sampling taking regional seasonality into account.

Complementary campaigns were required due to changes in the project layout, resulting in different sampling points from those in the first and second campaigns. These new points were selected to account for the influence of the Project's new layout. Once the sampling points were established, on-site parameters were recorded and water samples were collected, following the guidelines provided by the laboratory that carried out the analyses.

Five surface water sampling points were selected for the first and second campaigns, and four points were selected for the Complementary Campaigns.

The on-site parameters were measured by the field team at the time of collection, while other parameters were analyzed from samples collected and sent to the laboratory, where tests were processed to obtain the results. The surface water samples were collected by Terra's technical team and sent to the Multianalysis Laboratory in Belém-PA.

Results indicate that all water bodies studied are impacted by human activities, particularly mining. The direct effect of this activity is the presence of "melechete," characterized by a high concentration of suspended and colloidal solids in the water. This leads to increased levels of suspended solids, total solids, and turbidity, and can even alter the classification of water bodies, as observed at point PSUP 03, during the third and fourth sampling campaigns.

It was also possible to verify that water quality fluctuates with seasonality, with the most noticeable changes occurring in the physical parameters. This is primarily due to increased surface runoff, which results in a greater amount of particles being carried into the water. The water bodies are mainly influenced by physical parameters, while chemical parameters, especially those related to organic materials, showed little to no significant variation.

20.7.5.3 Water Quality: Subterranean

The studies present the results obtained from monitoring groundwater quality, conducted during the first and second campaigns as well as the Complementary Campaigns, totaling four samples within the area of influence of the Cuiú Cuiú Project. Analyzing key water quality parameters enables the development of an environmental assessment of water resources in the Project's area of direct influence.

Water quality is represented by a set of chemical, physical, and biological characteristics. As a shared and strategic resource, it is essential to protect water bodies through legal restrictions on usage, enforced by laws, resolutions, and guidelines. Therefore, the properties and attributes of water must be maintained within certain limits, which are represented by standards, guiding values of water quality, sediments, and biota.

The diagnosis of groundwater quality was initially carried out by field reconnaissance, which helped define the sampling points that would best represent the project area.

In total, four groundwater sampling campaigns were carried out together with surface water sampling campaigns. The first campaign included two points, and the second campaign included 11 points, with all the collections taking place in 2018. Subsequently, two additional campaigns were carried out. The third campaign during the dry season of 2019, and the fourth campaign during the rainy season of 2020. All sampling efforts considered the seasonality of the region.

It was necessary to carry out Complementary Campaigns, due to changes in the project layout, which resulted in different sampling points from the first and second campaigns. The points of the Complementary Campaign were selected to account for the impact of the new project layout. Once the sampling points were identified, the in-situ parameters were determined.

The on-site parameters were measured by the field team at the time of collection. The other parameters were analyzed using samples that were collected and sent to the laboratory, where tests were processed to obtain the results.

The surface water samples were collected by Terra's technical team and then sent to the Multianalysis Laboratory in Belém-PA, which conducted the analyses and issue the reports, ensuring compliance with the 24-hour limit for certain parameters, such as bacteriological cones.

To characterize the conservation status of the vegetation cover, three categories were defined, based on Pinto et al. (2004), as follows:

1. Preserved springs: These have at least 50 m of natural vegetation surrounding them and do not show signs of disturbance or degradation.
2. Disturbed springs: These lack 50 m of surrounding natural vegetation but remain in good condition.
3. Degraded springs: These exhibit a high degree of disturbance, with very little vegetation, compacted soil, and signs of erosion.

The results concluded that groundwater characteristics align with those typically found in the Amazon region, including the presence of iron and a pH with acidic tendencies. Furthermore, the poor construction of some rudimentary wells

was observed, which directly impacted key parameters such as turbidity, electrical conductivity, biochemical oxygen demand, and chemical oxygen demand. Regarding the springs, it appears that most are experiencing disturbances, primarily due to how their surrounding areas are being managed, especially those serving as water sources for villages and camps.

20.7.5.4 Hydrometrics

Between October 27 and November 7, 2019, fluviometric stations were installed at the proposed dam sections (Cabeleira Dam, Manaus Dam and Batatal Dam), within the Cuiú Cuiú Project. The objectives of this installation were as follows:

1. To install limnometric rulers for establishing a control section for the dams.
2. To measure the flow in the dammed sections.
3. To provide technical training to Magellan employees on the installation, maintenance, and operation of fluviometric stations.

At the fluviometric monitoring points, located along the axis of each dam, the area was cleared and prepared for the installation of fluviometric stations. The stations consist of structures and limnometric rulers designed to measure liquid discharge, define the section profile, and collect samples for water quality analysis.

The instructions and methodologies for installing and operating the equipment are described below. On November 3, 2019, analysts Claudio Silva and Ádria Soares presented the procedures listed below in order to train five employees from Magellan in the operation and maintenance of the installed fluviometric stations. The procedures presented were:

1. Installation of Level References (RN).
2. Installation and maintenance of limnometric Rulers.
3. Measurement of liquid discharge using methods like windlass, volumetric, and float.
4. Explanation of the objective and importance of fluviometric stations in determining the key curve.

In addition, employees were provided with a notebook to digitally record fluviometric readings.

20.7.5.5 Hydrogeology

This document presents the preliminary design of the conceptual model of underground flow and its interaction with surface waters, developed based on field reconnaissance of key aspects of the area. These activities were recommended by Hidrovia Hidrogeologia e Meio Ambiente Ltda. and aimed to cover three research targets (Central, Jerimum de Baixo, and MG), located in the central region of the Tapajós Gold Province. In these targets, the mining method was defined as open pit, supported by other operational mining structures (tailings piles, water dams, processing plant, offices, and accommodations).

The main objective of hydrogeology services is to provide a detailed characterization of the hydrogeological units and understand the dynamics of groundwater flow and its interaction with surface waters in the project area. Given the mining plan under consideration, the study's findings, based on monitoring and assessment of the current conditions should predict potential future impacts, positive and/or negative, on water flow dynamics and local water interactions. The proposed area of hydrogeological influence includes portions of the Cuiú Cuiú and Tocantinzinho river basins.

In advancing the studies, the activities presented here are essential for area assessment and will support the completion of subsequent activities:

1. Proposing hydrodynamic tests.
2. Presenting a potentiometric map of the aquifers, with flow direction.
3. Conceptual modelling of the interconnection between aquifers and watercourses.
4. Developing mathematical models (based on primary data) of water resources to examine aquifer and watercourses connectivity.
5. Collecting hydrodynamic data of aquifers.
6. Determining of the average permeability of saturated layers and a natural vulnerability map for surface aquifers.
7. Presenting safe or unsafe scenarios for groundwater extraction.

From July 17 to July 19, 2018, a field visit was carried out to the project area, covering the vicinity of the mining targets: Central, Jerimum de Baixo, and MG. The main purpose was to survey the area to acquire an integrated understanding of the local physical characteristics, while also identifying geological units and assessing the general conditions of the hydrographic network.

The primary goal in the current phase of the study was to gather information to establish a quantitative water monitoring network. This included selecting drainage monitoring points to determine the local base flow, as well as identifying locations for groundwater level meters near mining structures, particularly around the pits, which are expected to experience drawdown in the future. At the time of the technical visit, 40 points were verified.

20.7.5.6 Water Quality Monitoring Program

During the implementation and operational phases of the Project, several activities may potentially affect the water quality of the environments within the project area and its surroundings. Therefore, it is essential to periodically monitor the evolution of the physicochemical and bacteriological characteristics of the water.

To this end, the Water Quality Monitoring Program (PMQA) will be implemented to ensure continuous monitoring and assessment of surface and groundwater quality in the areas influenced by the Cuiú Cuiú Trial Mining Project. Monitoring will be carried out through the periodic sampling and analysis of physicochemical and bacteriological parameters in both surface and groundwater, along with the evaluation of possible interferences in local water resources.

In cases where project activities are found to affect water quality, the implementation of corrective measures will be proposed.

20.7.5.6.1 Justifications

The installation of the Project, as well as most anthropogenic interventions, can cause changes in the quality of the water located in the area of influence of the Project. Therefore, an environmental control system is necessary in order to periodically monitor, during the implementation and operation phase, the evolution of water quality in the watersheds that are part of the AID, comparing these results with the reference standard (background) obtained during the environmental diagnosis of the study region.

20.7.5.6.2 Objectives

The main objective of Water Quality Monitoring is to monitor the quality of surface and groundwater during the implementation and operation activities of the Project.

20.7.5.6.3 Legal Aspects

The applicable regulations for this Project are:

- CONAMA Resolution No. 357/2005 – Provides for the classification of water bodies and environmental guidelines for their classification, as well as establishes the conditions and standards for the discharge of effluents, and provides for other provisions.
- CONAMA Resolution No. 396/2008 – Provides for the classification and environmental guidelines for the classification of groundwater and provides for other provisions.
- State Law No. 6,381 of 07/25/2001 - Provides for the State Water Resources Policy, establishes the Water Resources Management System and provides other provisions.

20.7.5.6.4 Methodological Procedures

The sampling points for the implementation and operation phase consider the location of the mining area, ore processing, water collection, tailings disposal locations, lodgings and support structures.

The monitoring of water quality parameters should be carried out periodically with the development of semi-annual sampling campaigns, during the implementation and operation phases of the Project, following the seasonal behaviour of precipitation and flows.

The physicochemical and bacteriological parameters to be monitored are presented in Table 20-2. From these parameters, the Water Quality Index (WQI) will be calculated, which will allow monitoring the evolution of water quality throughout the implementation and operation phases of the Project.

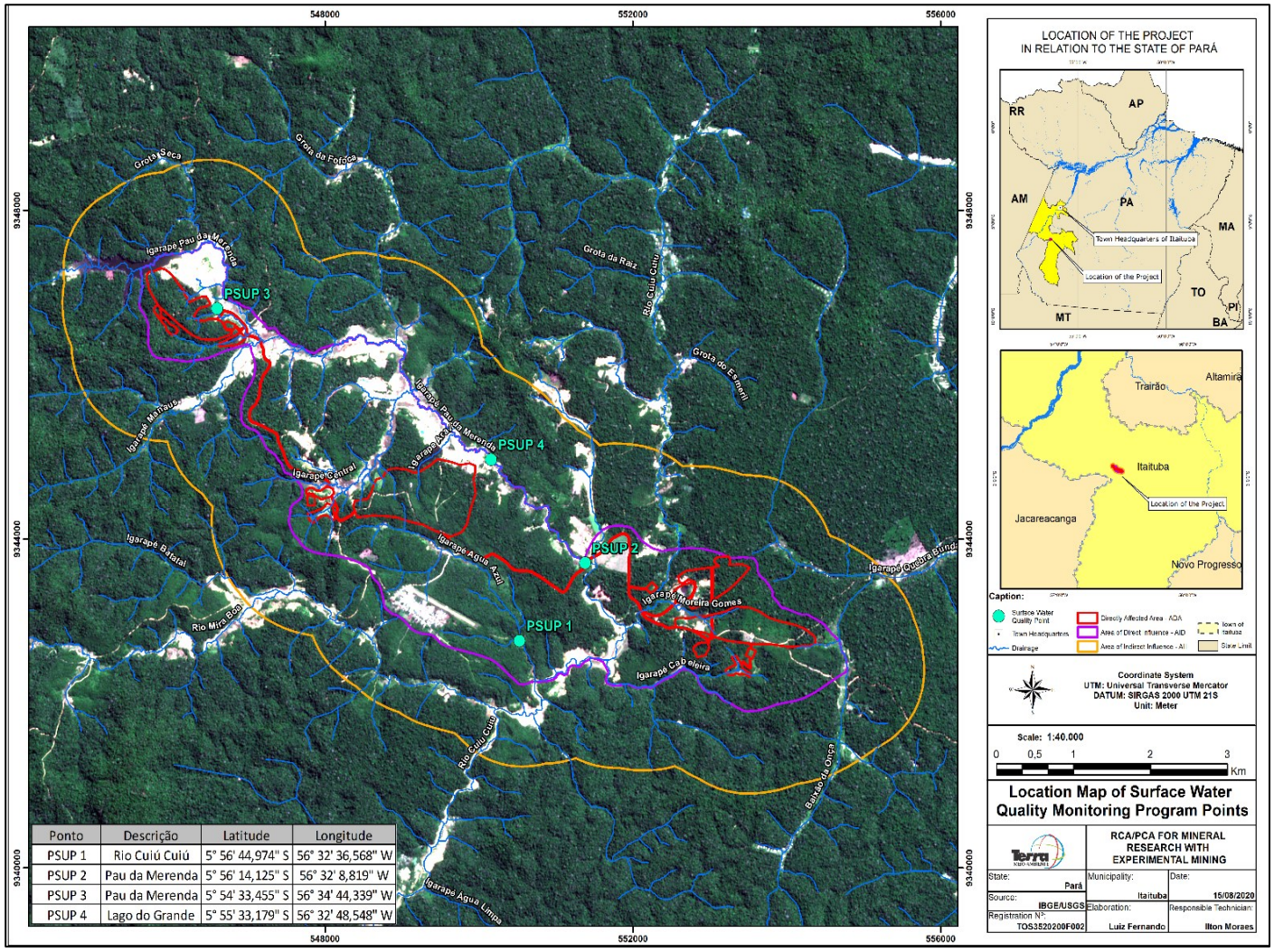
Table 20-2: List of Parameters Analyzed for Surface and Groundwater.

Parameters	Methodology
Dissolved Aluminium	SM 22 Method 3500 Al B
Ammonia (NH3)	SM 22 Method 4 500 NH3 B, C
Cadmium	SM 22 Method 3120 B
Lead	SM 22 Method 3500 Pb D
Cianide	SM 22 Method 4500 CN C, B, E
Cobalt	SM 22 Method 3030 E/US EPA
Dissolved Copper	SM 22 Method 3500 Cu C/E
Electrical Conductivity	SM 22 2012 Method 2510 B
Apparent Colour	SM 22 Method 2120 B
Chrome Hexavalente	SM 22 Method 3500 Cr B
Chrome Trivalente	SM 22 Method 3500 Cr B
DBO	SM 22 Method 5210 B
DQO	SM 22 Method 5220 B
Phenyls Totals	USEPA Method 420.1
Dissolved Iron	USEPA – June 27, 1980; 45(126:43459)
Phosporous Total	USEPA and SM 22 Method 4500-P-E
Magnesium	SM 22 Method 2340 C
Sedimentary Materials	SM 22 Method 2540 F
Mercury	USEPA 7470ª: 1994 VER.01/USEPA 6
Nitrates	SM 22 Method 4500 NO3 E
Nitrite	SM 22 Method 4500 NO2 B
Organic Nitrogen	Spectrophotometry
Total Nitrogen	Spectrophotometry
Total Nitrogen Kjeldahl	Standard Methods 21st
Olis and Grease	SM 22 Method 5520 B
Dissolved Oxygen	SM 22 Method 4500 O G
pH	SM 22 Method 4500 B
Salinity	Standard Methods 21st – Método 4500
Total Suspended Solids	SM 22 Method 2540 D e E
Total Dissolved solids	SM 22 Method 2540 C
Total Solids	SM 22 Method 2540 B
Sulphate	USEPA Method 375.4
Temperature	SM 22 Method 2550 B
Turbitity	SM 22 Method 2130 B
Coliformes Thermotolerant	SM 22 Method 9221 B
Coliformes Totals	SM 22 Method 9221 B
Escherichia coli	SM 22 Method 9221 B

20.7.5.6.5 Surface Water PCA (Initial Layout)

Initially, four points for monitoring the quality of surface water were defined (Table 20-3 and Figure 20-10).

Figure 20-10 Location of Surface Water Quality Monitoring Points Cuiú Cuiú Mineral Research with Experimental Mining Project.



Source: Terra, 2024.

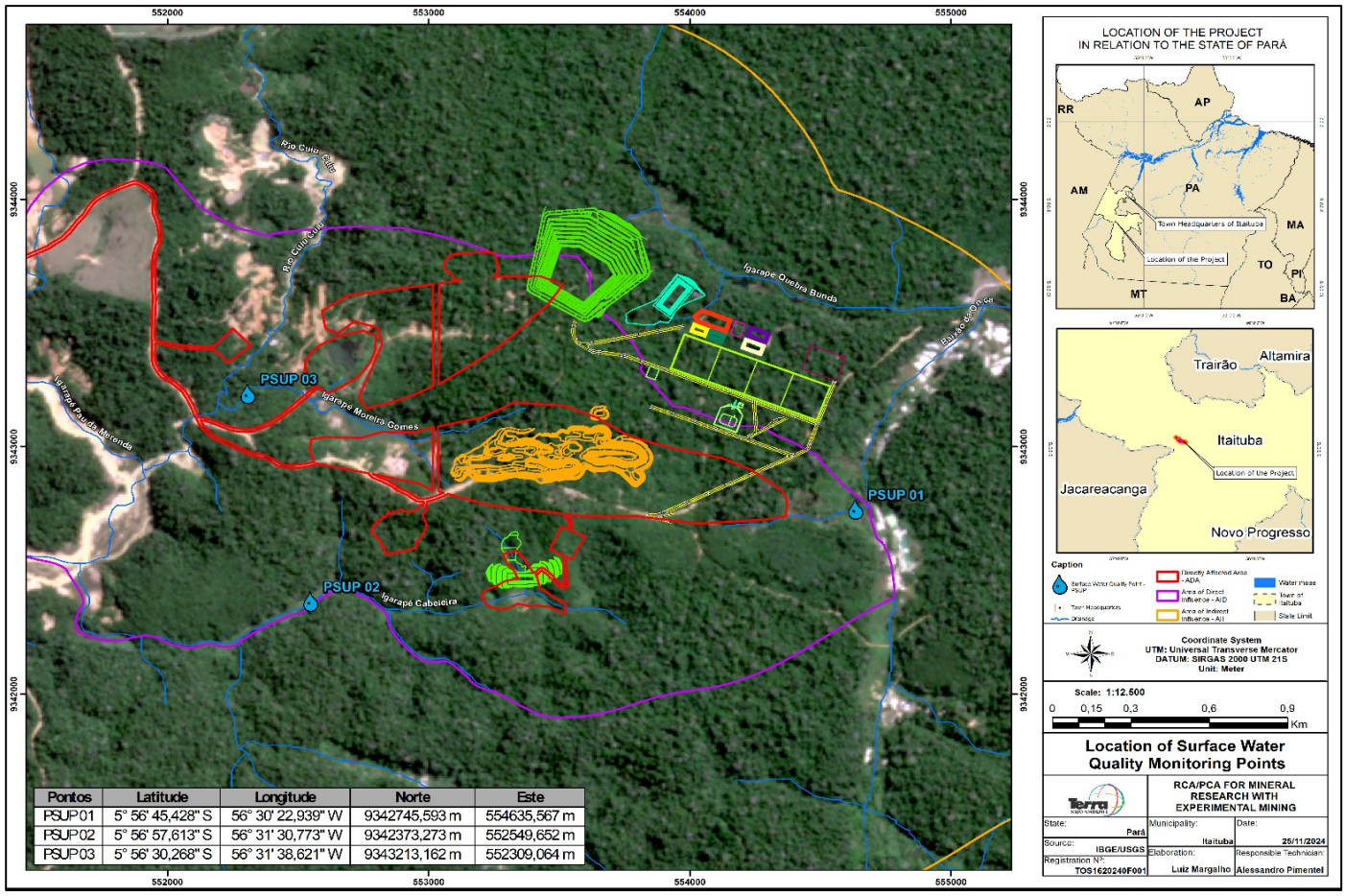
Table 20-3: Location of Surface Water Monitoring Points Cuiú Cuiú Project, Mineral Research with Experimental Mining.

Point	Type	Description	Geographical Coordinates	
			Latitude	Longitude
PSUP 1	Surface	Rio Cuiú Cuiú	5° 56' 44.974" S	56° 32' 36.568" W
PSUP 2	Surface	Igarapé Pau da Merenda	5° 56' 14.125" S	56° 32' 8.819" W
PSUP 3	Surface	Igarapé Pau da Merenda	5° 54' 33.455" S	56° 34' 44.339" W
PSUP 4	Surface	Lago do Grande	5° 55' 33.179" S	56° 32' 48.548"

20.7.5.6.6 PCA (Current Layout)

After the progress of the mineral research and a new evaluation by the project team, 03 points for monitoring the quality of surface water were defined (Table 20-4 and Figure 20-11).

Figure 20-11: Location of Surface Water Monitoring Points.



Source: Terra, 2024.

Table 20-4: Location of Surface Water Monitoring Points

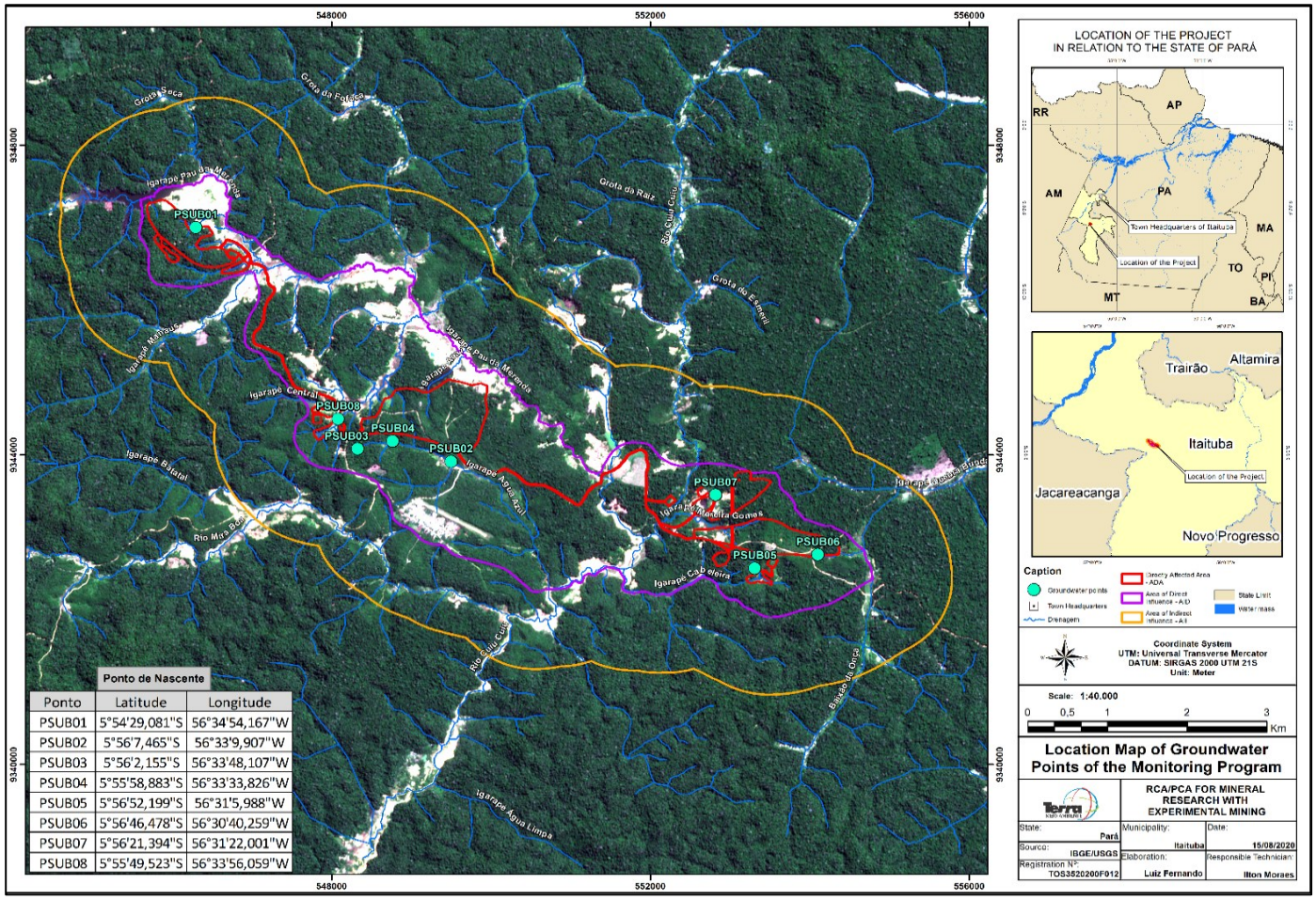
Point	Type	Description	Geographical Coordinates	
			Latitude	Longitude
PSUP 1	Surface	Afluente do Igarapé Baixão da Onça	5°56’45,428”S	56°30’22,939”W
PSUP 2	Surface	Igarapé Cabeleira	5°56’57,613”S	56°31’30,773”W
PSUP 3	Surface	Igarapé MG	5°56’30,268”S	56°31’38,621”W

It is important to mention that the surface water monitoring points may be moved, added or excluded, based on technical evaluation during monitoring in the phases of the Project (implementation and operation), with the possibility of inserting and/or removing parameters.

20.7.5.6.7 Groundwater PCA (Initial Layout)

Initially, eight groundwater quality monitoring points were defined (Table 20-5 and Figure 20-12).

Figure 20-12: Location of Groundwater Quality Monitoring Points (Springs) Cuiú Cuiú Mineral Research with Experimental Mining



Source: Terra, 2024.

Table 20-5: Location of Groundwater Monitoring Points (Springs) Cuiú Cuiú Mineral Research Project with Experimental Mining

Spring Sources					
Point	**Description**	**Latitude**	**Longitude**	**North**	**East**
PSUB01	Próximo ao Lago do Grande	5°54'29,081"S	56°34'54,167"W	9346939,27	546299,68
PSUB02	Nascente dos Garimpeiros	5°56'7,465"S	56°33'9,907"W	9343915,7	549502,98
PSUB03	Nascente Próxima a um acesso	5°56'2,155"S	56°33'48,107"W	9344079,69	548328,61
PSUB04	Nascente de Várias insurgências	5°55'58,883"S	56°33'33,826"W	9344179,82	548767,775
PSUB05	Nascente Próxima aos Garimpos	5°56'52,199"S	56°31'5,988"W	9342538,85	553311,811
PSUB06	Nascente Captação com Bomba	5°56'46,478"S	56°30'40,259"W	9342713,84	554103,017
PSUB07	Nascente Acamp. Do Maxixe	5°56'21,394"S	56°31'22,001"W	9343485,21	552820,299
PSUB08	Poço Captação de Água	5°55'49,523"S	56°33'56,059"W	9344467,77	548084,422

20.7.5.6.8 Groundwater PCA (Current Layout)

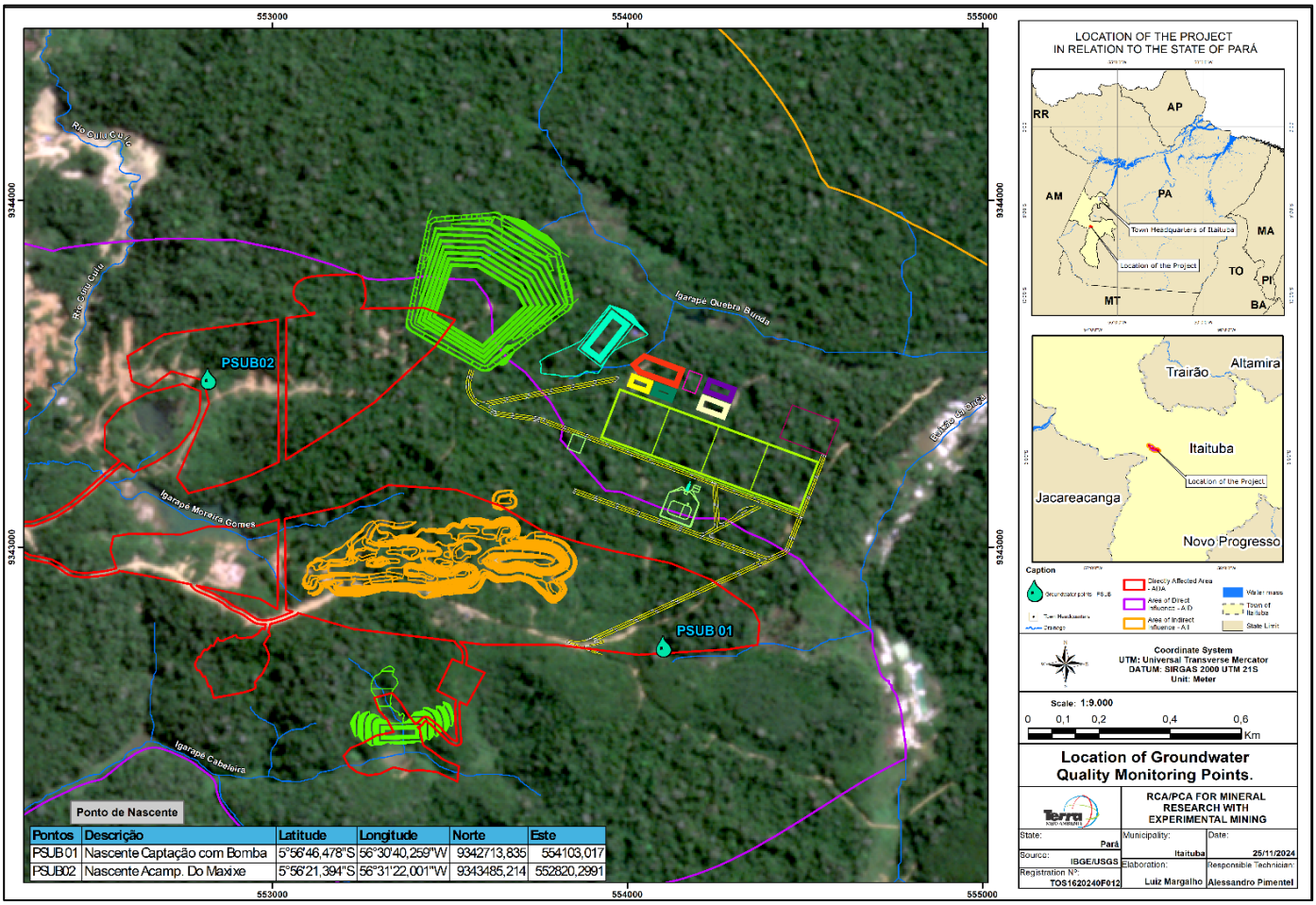
After the progress of the mineral research and a new evaluation by the project team, two groundwater quality monitoring points were defined (Table 20-6 and Figure 20-13).

Table 20-6: Location of Groundwater Monitoring Points

Spring Sources					
Point	**Description**	**Latitude**	**Longitude**	**North**	**East**
PSUB01	Nascente captação com bomba	5°56'46,478"S	56°30'40,259"W	9342713,835	554103,017
PSUB02	Nascente Acampamento do Maxixe	5°56'21,394"S	56°31'22,001"W	9343485,214	552820,2991

It is important to note that groundwater monitoring points may be relocated, added, or removed based on technical evaluations conducted during the Project's implementation and operational phases, with the possibility of also adding or excluding parameters.

Figure 20-13: Location of the Groundwater Monitoring Points



Pontos	Descrição	Latitude	Longitude	Norte	Este
PSUB 01	Nascente Captação com Bomba	5°56'46,478"S	56°30'40,259"W	9342713,835	554103,017
PSUB02	Nascente Acamp. Do Maxixe	5°56'21,394"S	56°31'22,001"W	9343485,214	552820,2991

Source: Terra, 2024.

20.7.5.7 Liquid Effluent Monitoring Program

20.7.5.7.1 Justifications

In the Project, effluents will be generated that can cause environmental impacts, both in the implementation phase and in the operation phase. Impacts can be minimized or eliminated through the choice of treatment systems, depending on the type of effluent generated. Thus, it is necessary to develop this program in order to reduce and even prevent significant changes in the receiving bodies of these effluents, comply with the relevant legislation and optimize the operating conditions of the control and treatment systems.

20.7.5.7.2 Objectives

The Program will aim to monitor the Project's liquid effluent treatment devices or systems during the implementation and operation stages of the Cuiú Cuiú Mineral Research with Experimental Mining Project, as a way to verify the effectiveness of the intrinsic control systems and operational procedures.

20.7.5.7.3 Legal Aspects

The applicable laws for this program are:

- CONAMA Resolution 357 of March 17, 2005 – Provides for the classification of water bodies and environmental guidelines for their classification, as well as establishes the conditions and standards for the discharge of effluents and provides for other provisions.
- CONAMA Resolution No. 362/2005 of June 23, 2005 - Provides for the collection, collection and final disposal of used or contaminated lubricating oil. Repeals Resolution No. 09, of 1993.
- CONAMA Resolution No. 397 of April 3, 2008 - Amends item II of paragraph 4 and Table X of paragraph 5, both of Article 34 of the Resolution of the National Council for the Environment CONAMA No. 357, of 2005, which provides for the classification of water bodies and environmental guidelines for their classification, as well as establishes the conditions and standards for the discharge of effluents.
- CONAM Resolution 430 of May 13, 2011 - Provides for the conditions and standards for the discharge of effluents, complements and amends Resolution No. 357, of March 17, 2005, of the National Council for the Environment - CONAMA. CONAMA Resolution No. 430/2011 will be applied in the evaluation of the results related to the monitoring of sanitary effluents, which determines the standards contained in Table 7.3-1.
- CONAMA Resolution No. 450/2012 of March 6, 2012 - Amends arts. 9, 16, 19, 20, 21 and 22, and adds Article 24-A to Resolution No. 362, of June 23, 2005, of the National Council for the Environment (CONAMA), which provides for the collection, collection and final disposal of used or contaminated lubricating oil.

20.7.5.8 Methodological Procedures

The monitoring of effluent quality parameters should be carried out periodically with the development of quarterly campaigns during the implementation phase, and semi-annual campaigns during the operation phase of the Project, following the seasonal behavior of rainfall and flows.

For monitoring at the Effluent Treatment Plant (ETE), the parameters contained in Table 20-7 will be used.

Table 20-7: Parameters selected for monitoring in the Waste Water Treatment Plant (WWTP)

Parameter	Justification
DBO	It is an indirect measure of organic matter of easy degradability, which in high concentration causes problems to the receiving body; CONAMA Resolution No. 430/2011 defines the launch standard.
DQO	It is an indirect measure of organic matter that is difficult to degrade; Organic matter consumes dissolved oxygen in the water body.
pH	CONAMA Resolution No. 430/2011 defines a standard for launching; pH values outside of neutrality harm the microorganisms responsible for biological treatment; Aquatic organisms suffer serious consequences due to sudden changes in the pH of the water.
Temperature	CONAMA Resolution No. 430/2011 defines a standard for launching; High temperatures cause problems to the aquatic community of the receiving body.
Oils and Greases	CONAMA Resolution No. 430/2011 defines a standard for launching;
Nitrogen Amoniacal	CONAMA Resolution No. 430/2011 defines a standard for launching; It is a nutrient, which in excess can cause eutrophication.
Nitrogen Organic	It is a nutrient, which in excess can cause eutrophication.
Sulphide	CONAMA Resolution No. 430/2011 defines a standard for launching;
Total Phosporoes	It is a nutrient, which in excess can cause eutrophication.
Solid Series	Identifies the concentration of volatile solids (organic matter) and fixed solids (inert).
Floating Materials	Interferes with biological treatment; Aesthetic effects on the water body.
Turbitity	It is related to the concentration of suspended solids in water.
Coliformes Thermotolerant	Indicator of the presence of pathogenic microorganisms.

20.7.5.8.1 Effluents PCA (Initial Layout)

Initially, 03 effluent quality monitoring points were planned, namely:

- 01 (one) tributary point to the waste water treatment plant (WWTP), that is, the raw sewage.
- 01 (one) effluent point to the WWTP, that is, the treated sewage, which must be collected immediately after the last unit of the treatment system.
- 01 (one) point at the exit of the CSAO, which will be collected prior to the referral to the rainwater drainage system.

20.7.5.8.2 PCA (Current Layout)

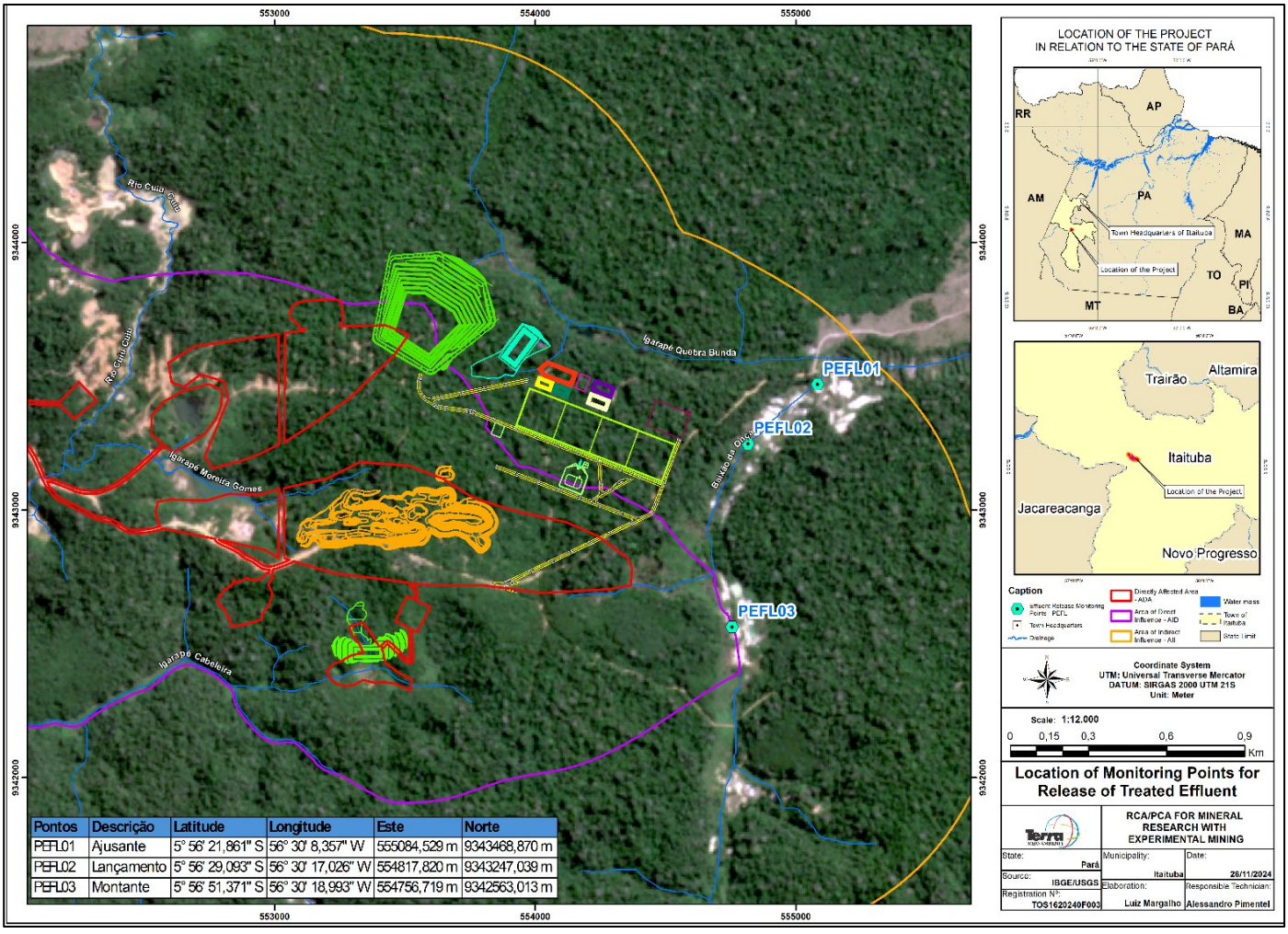
After the progress of the mineral research and a new evaluation by the project team, 03 points were defined to monitor the quality of the treated effluent (Table 20-8 and Figure 20-14).

Table 20-8: Location of the Treated Effluent Monitoring Points

Point	Type	Description	Geographical Coordinates	
			Latitude	Longitude
PEFL 1	Treated Effluent	Downstream	5°56’21,861”S	56°30’8,357”W
PEFL 2	Treated Effluent	Source	5°56’29,093”S	56°30’17,026”W
PEFL 3	Treated Effluent	Upstream	5°56’51,371”S	56°30’18,993”W

It is important to mention that the treated effluent monitoring points may be moved, added or excluded, based on technical evaluation during monitoring in the phases of the Project (implementation and operation), with the possibility of inserting and/or removing parameters.

Figure 20-14: Location of the Treated Effluent Monitoring Points



Source: Terra, 2024.

20.8 Mining Closure and Reclamation

A formal Closure and Reclamation Plan has not yet been prepared for the Cuiú Cuiú Project, but one will be developed as the Project advances through its subsequent stages.

For the preparation of the Decommissioning Plan, several aspects related to the Project, and its surrounding region were evaluated, with a view to determining the alternatives for future use of the area, concluding that the best future use for the area is linked to mining or reforestation. In view of the characteristics of the region in which the Cuiú Cuiú Project of Trial Mining is located, and because there is a great potential for the development of a gold mine in the very place where the mineral research is being carried out, two hypotheses are being adopted for the closure of the Project:

- First Hypothesis – Passage from the Mineral Research Phase with Trial Mining to the implementation of a Gold Mine with the Full Mining License: In this scenario, all the structures implemented will be used and expanded. This is the most likely result due to the results of the mineral research carried out so far. Whilst no formal reclamation bonds for mine closure exist under current Brazilian legislation a calculated total of R$17M has been considered for the mine closure plan of the Full Mining License after an estimated 14 years of production.
- Second Hypothesis – Total Closure: This hypothesis will be adopted considering the closure of the enterprise without the start of mining with a Full Mining License. Therefore, as it represents the worst environmental condition, this will be the hypothesis that will guide this Decommissioning Plan.

The Decommissioning Plan begins in the planning and design stage of the Project, and extends throughout its useful life, through the implementation of a series of procedures and measures. The Plan will only be considered completed after the ADA by the Project is stable and, gradually, has reached the conditions of future use proposed.

A conceptual closure plan will be developed in the next phase to provide a basis for estimating Project closure costs. Key considerations in developing the closure strategy include:

- Physical and chemical stabilization of mine waste facilities.
- Placement of topsoil over impacted ground surfaces, as required.
- Revegetation efforts.
- Regrading of mine haul roads.
- Runoff management.
- Demolition of the processing facilities.
- Post-closure monitoring and management.

The Decommissioning Plan aims to recover the pre-existing environmental characteristics of the area under the intervention of the Project, constituting an effective commitment to local environmental and social quality and complying with the relevant technical and legal requirements.

This plan is a basic document of environmental planning, whose concept should be extended to the socioeconomic sphere, with the following basic objectives:

- Reduce and, if possible, eliminate future obligations of the company, particularly in the environmental field, while ensuring the protection of human health, safety, environmental protection and aiming to contribute to the sustainable development of the communities where a mining-industrial unit is installed or where it is intended to be implemented.
- Identify, characterize and carry out consultations with the surrounding communities, particularly the groups that may be directly or indirectly affected by the closure of the Project.
- Obtaining the stability of the area, in the shortest possible time and with the use of appropriate technologies, is also one of the objectives of the Decommissioning Plan.
- Prepare the study of scenarios or alternatives for future use of the areas under intervention of the Project.
- Establish the procedures for closing the Project, at the end of its useful life, according to the proposed alternatives for future uses.
- Allow the provision of resources during the useful life of the Project to meet the costs of decommissioning and rehabilitation when in progress.
- Establish measures to reduce the risks arising from potential sources of contamination and to stabilize environmental liabilities in the area.
- Comply with DNPM Ordinance No. 237 (10/19/2001 DOU), amended by Ordinance No. 12 (01/29/2002 DOU), with regard to Mining Regulatory Standard (NRM) No. 20, which expresses the services necessary for the decommissioning of the Project, so that the Plan presented to SEMAS/PA is in line with that established by the National Agency of Mineral Production.

20.9 Final Considerations

Based on the preliminary work to be presented in the Preliminary License EIA, along with additional studies and current environmental legislation, the Cuiú Cuiú Project can and should be seen as environmentally viable. The anticipated benefits of its development and operation outweigh the local impacts identified in the current studies, contributing positively to the local social dynamics.

Finally, preventive, control, mitigation, compensation, and monitoring measures for potential negative impacts are planned to ensure that any environmental effects remain within acceptable limits as defined by current environmental legislation and societal standards.

21 CAPITAL AND OPERATING COSTS

21.1 Introduction

The capital, operating and sustaining cost estimates presented in this report to provide substantiated costs that support the pre-feasibility study of the Cuiú Cuiú Project. The estimates are based on an open-pit mining operation, an associated leached ore disposal and management facility, infrastructure, project indirect costs, owner's costs and provision costs.

21.2 Capital Costs

21.2.1 Overview

The capital cost estimate aligns with Class 4 guidelines for a PFS-level estimate with an accuracy of -20% to +30% specified by the Association for the Advancement of Cost Engineering International (AACE International). The capital cost estimate, developed in Q2 2025, is based on the proposed Project design, Ausenco's budgetary quotations for main equipment and construction contracts, and an in-house database of comparable projects and studies, including insights from similar operations.

The total capital cost summary is presented in Table 21-1. The total initial capital cost for the Cuiú Cuiú Project is US$37.69M. The sustaining capital cost is US$5.46M for Year 3, and US$2.55M in Year 5.

Table 21-1: Capital Cost Summary

Description	Total Cost (R$M)	Total Cost (US$M)
Process Plant	78.68	13.80
On-Site Infrastructure	32.72	5.66
Off-Site Infrastructure	9.03	1.58
Other Costs	21.71	3.81
Direct Cost	**141.69**	**24.86**
Project Indirect	33.15	5.82
Owner's Costs	4.20	0.74
Contingency	35.81	6.28
Total	**214.84**	**37.69**

Note: Values may not sum due to rounding.

21.2.2 Basis of Estimate

The capital cost estimate, developed by Ausenco in Q2 2025, is based on budgetary quotations from equipment suppliers (for major equipment), construction contracts, an in-house database of projects and studies, and experience from similar operations. Due to the methodology employed and the pre-feasibility level of engineering definition, the estimate has an accuracy range of -20% to +30%, in line with the Class 4 guidelines of the Association for the Advancement of Cost Engineering International (AACE International), appropriate for a pre-feasibility study.

The capital cost estimate was developed in Brazilian Reais (BRL), and the exchange rates used in the estimate are presented in Table 21-2.

Table 21-2: Exchange Rates

Currency	Currency Abbreviation	Exchange Rate
United States Dollar	USD	5.70
Australian Dollar	AUD	3.65
Euro	EUR	6.50
British Pound	GBP	7.60

The data used for the estimates has been obtained from numerous sources, including the following:

- Conceptual engineering design developed by Ausenco.
- Quotations for major packages, such as the adsorption, desorption and recovery plant (ADR Plant), mineral sizer, agglomerator drum, conveyor, grasshopper conveyors, steel structures, power generators, electrical substation, regenerated carbon screen, vibrating screen, cement silos, submersible pumps, vibrating feeder, electromechanical assembly, geotechnical and earthworks services.
- Engineering design at a pre-feasibility level.
- A 20% contingency applied to the total capital costs.
- Growth allowances were applied.

21.2.3 Mine Capital Costs

The mining operation will be fully executed by a contractor, eliminating the need for the purchase of mining equipment by the owner. Instead, the contractor will supply and manage all necessary equipment as part of their operational responsibilities. Infrastructure essential for supporting the mining activities, such as dewatering systems, maintenance workshops, electrical substations, and administrative offices, has been accounted in the Project's budget. This approach ensures capital expenditure is optimized while maintaining operational efficiency and project sustainability.

21.2.4 Direct Costs – Process Plant

The process equipment requirements were defined based on process flowsheets and process design criteria (see Section 17). All major equipment was sized according to the process design criteria to create a mechanical equipment list. Mechanical scopes of work were developed and sent to equipment suppliers for budgetary pricing. For mechanical equipment costs, 80% of the value was sourced from budgetary quotes. For platework supply, 85% of the value was sourced from budgetary quotations. The remaining costs were determined by Ausenco's recent database, adjusted to the Project's base date where applicable.

All structural steel required for the process plant was sized to generate a material take-off. For structural steel, 100% of the value was determined through budgetary quotations.

Civil works were based on all-in concrete material take-off. The pricing was derived from Ausenco's recent database and adjusted using factors from the Getúlio Vargas Foundation (FGV), where applicable.

Electromechanical assembly costs cover the services required for the Project's implementation, including the assembly of electrical materials, steel structures, platework, piping, automation, instrumentation, and telecommunication systems. This cost includes all direct and indirect expenses of the contractor performing the services. For electromechanical assembly, 82% of the total value was defined through budgetary quotations, with the remainder sourced from Ausenco's recent database.

The process plant costs are presented in Table 21-3 and described in the following sections.

Table 21-3: Process Plant Capital Costs

WBS Description	Initial Capital Cost (R$M)	Initial Capital Cost (US$M)
Crushing Plant	13.00	2.28
Heap Leach	22.66	3.98
Cyanide Detox Circuit	4.19	0.74
Acid Wash Circuit	0.06	0.01
Carbon Elution and Regeneration	25.27	4.43
Smelting	5.64	0.99
Storage and Distribution Reagents - Sodium Hydroxide, Cyanide, Copper Sulphate, Hydrochloric Acid, Cement, Hydrogen Peroxide, Lime Milk Preparation and Dosing Area	7.85	1.38
Total Process Plant	**78.68**	**13.80**

21.2.5 Direct Costs – On-Site Infrastructure

Material take-offs were developed for architectural and civil works services to obtain budgetary pricing from construction contractors. The pricing was derived from Ausenco's recent database and adjusted using factors from the Getúlio Vargas Foundation (FGV), where applicable.

The contractor's temporary construction facilities were defined by applying a factor to the total value of civil works services. This factor is based on similar projects from Ausenco's recent database.

The major electrical equipment was sized according to the Project's equipment list. Scopes of work were developed to receive budgetary pricing from equipment suppliers. For the electrical equipment, 100% of the value was sourced from budgetary quotations.

The on-site infrastructure includes costs with supplies storage, laboratory building and land acquisition, provided by Cabral Gold.

Costs for piping, automation equipment, instruments and telecommunication systems were determined by applying a factor to the total value of the mechanical supply. For electrical materials, costs were calculated by applying a percentage to the total value of the electrical equipment supply. These factors were derived from similar projects in Ausenco's recent database.

Costs for assembly of electrical equipment, materials, piping, automation, instrumentation, and telecommunication systems were calculated by applying a factor to the supply costs.

The contractor's temporary construction facilities were estimated by applying a factor to the total value of electromechanical assembly services. These factors were based on similar projects in Ausenco's recent database.

On-site infrastructure includes:

- Civil works
- Ancillary facilities
- Electrical equipment
- Supply storage
- Laboratory building
- Land Acquisition
- Piping
- Automation, instrumentation and telecommunication systems
- Electrical materials

The on-site infrastructure costs are presented in Table 21-4.

Table 21-4: On-Site Infrastructure

WBS	WBS Description	Initial Capital Cost (R$M)	Initial Capital Cost (US$M)
0000	General	32.27	5.66
Total On-Site Infrastructure		**32.27**	**5.66**

21.2.6 Direct Costs – Off-Site Infrastructure

The existing access road will be upgraded including widening, excavation, backfilling, installation of culverts as well as grading of corners to ensure suitability for daily operational traffic. The off-site infrastructure costs were based on information provided by Cabral Gold.

The off-site infrastructure costs are presented in Table 21-5.

Table 21-5: Off-Site Infrastructure

WBS	WBS Description	Initial Capital Cost (R$M)	Initial Capital Cost (US$M)
0000	General	9.03	1.58
Total Off-Site Infrastructure		**9.03**	**1.58**

21.2.7 Direct Costs – Earthworks

A material take-off was developed for earthworks and geotechnical services to obtain budgetary pricing from construction contractors. For these services, 46% of the total value was sourced from budgetary quotations from local suppliers. The remainder was defined using Ausenco's recent database, adjusted to the Project's base date with factors from Getúlio Vargas Foundation (FGV), where applicable.

The contractor's temporary construction facilities for vegetation suppression were defined by applying a factor to the total value of vegetation suppression services. This factor was based on similar projects from Ausenco's recent database.

On-site infrastructure includes:

- Earthworks services.
- Geotechnical services.
- Heap leach pads and platforms process plant.
- Internal access and crushing.
- Spent ore stockpile.

- Moreira Gomes (MG) waste rock facilities.

The earthworks costs are presented in Table 21-6.

Table 21-6: Earthworks

WBS	WBS Description	Initial Capital Cost (R$M)	Initial Capital Cost (US$M)
0000	General	17.01	2.98
0260	Crushed Ore Stockpile Reclaim	4.70	0.82
Total Earthworks		**21.71**	**3.81**

21.2.7.1 Taxes

The tax rates provided in the supplier proposals were applied in accordance with the current legislation. For packages with prices sourced from the database, the highest applicable tax rates were used. The taxes included in the capital cost estimate are:

- ISS (Municipal Service Tax)
- ICMS (Tax on the Circulation of Goods and Transportation and Communication Services)
- DIFAL (ICMS Tax Difference, applied to interstate operations)
- PIS (Employees' Profit Participation Program)
- COFINS (Social Contribution for Social Security Financing)
- IPI (Tax on Industrialized Goods)
- II (Import Duty)
- IOF (Tax on Financial Operations)

21.2.7.2 Freight Cost and Duties

All bulk materials, process equipment, and plant within the direct costs shall be based on delivery to the on-site storage. Freight costs are assumed to cover inland transportation to port of export, export packing, all forwarding costs, ocean and air freight when required, insurance, receiving port customs agent fees, and local inland freight to the project site.

Any freight costs for major equipment listed in vendor quotations were clearly separated from the equipment supply cost. All other freight costs were factored (7% for national freight, 5% for national and local freight, and 12% for international freight) from the direct supply cost and included in the corresponding line items. These factors were derived from region-specific freight costs or historical data.

21.2.8 Indirect Costs

The indirect costs include project-related indirect costs, owner's costs, and provision costs, as presented in the items below. Indirect costs are summarized in Table 21-7 and are described in the following sections.

Table 21-7: Indirect Costs Estimate

Description	Total Cost (R$M)	Total Cost (US$M)
EPCM (Engineering, Procurement, Construction and Management)	22.31	3.91
Supervision by vendor	1.00	0.17
Spare Parts and Special Tools	1.99	0.35
First Fills	1.32	0.23
Commissioning and Start-Up	1.25	0.22
Owner's Costs	4.20	0.74
Indirect Field Construction	4.39	0.77
Engineering, Construction and Civil Responsibility Risk Insurance	0.89	0.16
Total	**37.35**	**6.55**

Note: The total Indirect costs include Owner's Costs.

21.2.8.1 EPCM

EPCM costs include costs for detailed engineering, project management, construction management, as well as procurement costs, inspection, expediting, office expenses, and other support services. EPCM costs were developed from first principles by Ausenco.

21.2.8.2 Spare Parts

This cost includes the equipment and materials needed to maintain a two-year supply for plant operations. For this item, a 4% rate was applied to the total cost of mechanical and electrical equipment supply.

21.2.8.3 Assembly Supervision

Vendor representatives are required on-site during construction to verify that major equipment installation complies with technical documentation. Their presence will also be required during pre-commissioning. These costs will either be determined from vendor quotes or estimated using daily rates and durations, with professional judgment applied to consider both national and international personnel.

For this item, a 2% rate was applied to the overall cost of mechanical and electrical equipment supply.

21.2.8.4 First Fills

The costs for first fills include chemicals, fuels, lubricants, and consumables needed to establish the inventory levels necessary to begin operations. The costs for first fills were calculated at 1% of direct costs, excluding earthworks off-site and land acquisition cost.

21.2.8.5 Pre-commissioning, Commissioning and Start-up

Commissioning involves inspecting and verifying steps in the planned precedence networks to establish procedures for facility operations that fully align with the project design. The process also ensures traceability of all inspections completed during construction, pre-operation and operation phases, ultimately leading to plant start-up.

Professionals will be present at the plant to support decision-making and address operational and maintenance issues. Pre-operational tests, performed by the contractor, include tests on both unloaded and loaded equipment that start after electromechanical assembly and end when the system is ready for commissioning procedures.

Costs for Pre-Commissioning and Commissioning supervision were estimated at 2.5% of the electromechanical supply.

21.2.8.6 Field Construction Indirect Costs

This item includes all indirect costs covered by the Owner, such as temporary access, fencing, installations, area demarcation, materials handling and storage (including surveying, security, medical assistance, etc.), consumables, and chemical (portable) toilets. For general construction, field indirect costs were calculated as 0.2% of the total direct cost.

21.2.8.7 Engineering Risk Insurance

The builder must ensure comprehensive coverage in the insurance, with the amount determined by the "Maximum Indemnity Limit," to cover indemnity payments for any losses incurred during construction, as well as for damages that may be caused to the third party. Basic coverage includes protection against fire, natural explosions, wind, floods, theft of goods and materials, total collapse, and other risks. The cost of Engineering Risk Insurance was calculated at 0.5% of the total Project costs.

21.2.8.8 Owner's Costs

Cabral Gold has provided the Owner's costs of US$0.74M, which cover the following items:

- Safety, health, and environment measures
- Human resources
- Management, administration, and technical services
- The Owners costs do not include allowances for additional resource drilling, metallurgical testing or feasibility studies

- Costs related to reclamation are handled separately in the financial analysis

21.2.8.9 Contingency

Contingency is a reserve of funds set aside for unexpected costs within the defined project scope, accounting for the level of engineering effort and accuracy of estimates. It is intended to provide an overall level of confidence in both costs and schedule outcomes. The contingency is meant to cover events or incidents that arise during the Project that cannot be anticipated during the estimation phase and does not include allowances for Project Risk (Management Reserve). Contingency is expected to be used throughout the course of the Project.

The estimated contingency does not account for the following:

- Abnormal weather conditions
- Changes to market conditions affecting labour or material costs
- Scope changes within the general production and operating parameters
- Impacts from industrial disputes
- Socio-political factors (such as terrorism, war, unrest, etc.)
- Geotechnical faults or seismic events
- Force majeure
- Changes in government policies

A contingency rate of 20% has been applied on the total investment cost, in accordance with AACE International guidelines.

21.2.8.10 Exclusions

The following costs and scope are excluded from the capital cost estimate:

- Mining-related costs
- Taxes not included in the financial analysis
- Scope and project schedule changes, along with their associated costs
- Facilities or structures not specified in the project summary
- Financing charges and interest during the construction period
- Demolition or decontamination costs for the current site

21.2.9 Sustaining Capital Costs

The sustaining capital cost estimates conform to Class 4 guidelines for a PFS-level estimate with an accuracy range of -20% to +30%, as defined by AACE International guidelines. The PFS design is based on a phased expansion, scheduled for years 3 and 5. In Year 3, the expansion of the Leached Ore Stockpile and Moreira Gomes waste will be executed, while Year 5 comprises the implementation of Central waste stockpile.

Exchange rate reported in Brazilian Reais (BRL) to US dollars (USD) BRL5.70 = USD1.00.

Both estimates were developed in Q2 2025, based on specific engineering requirements, as defined in Section 18 and do not include escalation. A summary of the sustaining costs is presented in Table 21-8. The Year 3 sustaining capital cost is US$5.46M; and the Year 5 sustaining capital cost is US$2.55M.

Table 21-8: Sustaining Costs Summary

Description	Year 3 (R$M)	Year 5 (US$M)
Construction and Installation	4.45	2.08
Detailed Engineering and Procurement	0.28	0.13
Engineering, Construction and Civil Responsibility Risk Insurance	0.02	0.01
Contingency	0.71	0.33
Project Total	**5.46**	**2.55**

Note: Values may not sum due to rounding.

21.3 Operating Costs

21.3.1 Overview

Operating costs include the ongoing cost of operations related to mining, processing, leached ore disposal and general and administrative (G&A) costs. Covers all direct costs necessary for the operation of the enterprise, scheduled for seven years.

The operating cost estimate was developed in Q2 2025, based on budgetary quotations and Ausenco's in-house database of projects and studies as well as experience from similar operations. The accuracy of the operating cost estimate is -20% to +30%. The estimate includes mining, processing, and G&A costs.

The estimated LOM AISC is US$1,209.9 /oz Au. The AISC includes cash costs plus sustaining capital, closure costs and salvage value.

Costs are expressed in United States dollars (USD), using the exchange rate of BRL 5.70 = USD1.00. The estimate covers the following items:

- Mining costs

- Labour
- General and Administrative (G&A)
- Power
- Equipment maintenance
- Materials, fuels, and lubricants
- Reagents and consumables
- Cement consumption
- Maintenance of internal access and external road
- Laboratory
- Material handling
- Drip emitters
- Raincoat liners (RCL)

The annual operating costs are shown in Table 21-9.

Table 21-9: Operating Costs Breakdown

Item	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	LOM Average
	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed
Mining Costs	4.54	9.11	8.01	6.02	6.83	7.43	5.90	6.83
Processing	11.41	10.58	10.40	10.67	10.91	10.26	9.74	10.57
Site G&A	0.60	0.59	0.59	0.59	0.59	0.60	0.61	0.60
Total Operating Costs	**16.55**	**20.29**	**19.01**	**17.28**	**18.33**	**18.28**	**16.26**	**18.00**

21.3.2 Basis of Estimate

The following assumptions are common to all operating cost estimates:

- Cost estimates are based on Q2 2025 pricing, without allowances for inflation.
- Costs are expressed in USD, using the exchange rate of BRL5.70 = USD1.00.

- The majority of labour requirements are assumed to be sourced from neighbouring municipalities.
- Processing unit operations were benchmarked against similar or comparable processing plants.
- Equipment and materials will be purchased as new during implementation.
- Reagent consumption rates are estimated based on metallurgical test results.
- The mobile equipment cost includes fuel and maintenance costs.

21.3.3 Mine Operating Costs

Contract mining will be used for the Project. Mine and leached ore disposal cost estimates were provided by Cabral Gold, based on budgetary quotations from contractors. A summary of mining costs is presented in Table 21-10.

Mining costs includes the following:

- Mining equipment operation and maintenance
- Direct and indirect personnel, including technical services
- Fuel consumption
- Camp running costs
- Contractor mobilization and demobilization

Table 21-10: Mining Costs

Item	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	LOM Average
	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed
Waste – Mining Costs	0.56	5.14	4.04	2.04	2.85	3.45	1.93	2.86
ROM – Mining Costs	3.98	3.98	3.98	3.98	3.98	3.98	3.98	3.98
Total Costs	**4.54**	**9.11**	**8.01**	**6.02**	**6.83**	**7.43**	**5.90**	**6.84**

21.3.4 Process Plant Operating Costs

A summary of process plant operating costs is presented in

Table 21-11.

Table 21-11: Process Plant Operating Costs

Item	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	LOM Average
	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed
Labour	1.38	1.37	1.37	1.37	1.37	1.39	1.41	1.38
Power Costs	2.12	2.10	2.10	2.10	2.10	2.12	2.19	2.12
Equipment Maintenance, Fuel and Lubricant	0.57	0.57	0.57	0.57	0.57	0.57	0.58	0.57
Reagents and Consumables	1.66	1.67	1.64	1.63	1.61	1.65	1.60	1.64
Cement Consumption	3.20	3.07	2.94	3.20	3.13	2.72	2.56	2.97
Maintenance of internal access and external roads	0.57	0.57	0.57	0.57	0.57	0.57	0.58	0.57
Laboratory	0.06	0.06	0.06	0.06	0.06	0.06	0.07	0.06
Material Handling	1.13	1.13	1.13	1.13	1.13	1.13	0.73	1.07
Drip Emitters	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Raincoat Liner (RCL)	0.67	-	-	-	0.33	-	-	0.50
Total Cost	**11.41**	**10.58**	**10.40**	**10.67**	**10.91**	**10.26**	**9.74**	**10.57**

21.3.4.1 Labour

Staffing estimates were provided by Cabral Gold. The labour costs include the requirements for plant operations such as management, maintenance, site services, operations, metallurgy, and contractor allowances. The total operational labour force averages 47 employees, distributed as follows: 32 for plant, 8 for maintenance, 4 for safety, health and environment, human resources, administration, and procurement, and 3 for power generator operation as shown in Table 21-12.

Salaries and wages were based on information provided by Cabral Gold.

Table 21-12: Labour Summary

Item	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	LOM Average
	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed
Labour	1.38	1.37	1.37	1.37	1.37	1.39	1.41	1.38

Item	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	LOM Average
	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed
Total Cost	**1.38**	**1.37**	**1.37**	**1.37**	**1.37**	**1.39**	**1.41**	**1.38**

21.3.4.2 Power Costs

Power costs include expenses related to power generators rental and fuel. The plant will operate with a 2,500 kVA power generation plant running 24 hours a day, with a consumption rate of 240 L/h.

Power generators rental costs were determined based on budgetary quotations, and fuel cost were provided by Cabral Gold. The breakdown of power costs is shown in Table 21-13.

Table 21-13: Power Costs

Item	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	LOM Average
	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed
Power Generator - Rental	0.26	0.26	0.26	0.26	0.26	0.26	0.30	0.27
Power - Fuel	1.86	1.85	1.84	1.85	1.84	1.87	1.89	1.86
Total Cost	**2.12**	**2.10**	**2.10**	**2.10**	**2.10**	**2.12**	**2.19**	**2.12**

21.3.4.3 Equipment Maintenance

Equipment maintenance costs include annual expenses for spare parts and maintenance of process and handling equipment, as well as third-party services. Equipment maintenance costs were estimated at 4% of the total cost for process, mechanical, and electrical equipment from capital cost estimate, based on a percentage derived from similar projects.

Table 21-14: Equipment Maintenance Costs

Item	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	LOM Average
	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed
Equipment Maintenance	0.35	0.35	0.35	0.35	0.35	0.35	0.36	0.35
Total Cost	**0.35**	**0.35**	**0.35**	**0.35**	**0.35**	**0.35**	**0.36**	**0.35**

21.3.4.4 Materials, Fuel and Lubricants

This item includes all expenses for materials, as well as the consumption of diesel, gasoline, and lubricants for processing plant equipment (excluding power generation) and industrial support vehicles. The factors used to calculate the costs for these items are shown in Table 21-15. These factors were derived from similar projects an Ausenco's recent database.

Table 21-15: Materials, Fuel and Lubricants Costs (Factors)

Description	%	Source
Materials	1.5%	Index applied on the total costs of process, mechanical and electrical equipment (Capex).
Fuel and Lubricants	1.0%	

Costs for materials, fuel, and lubricants are presented in Table 21-16.

Table 21-16: Materials, Fuel and Lubricant Costs (Operating Basis, US$/t processed)

Item	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	LOM Average
	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed
Materials	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Fuel and Lubricants	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
Total Cost	**0.22**	**0.22**	**0.22**	**0.22**	**0.22**	**0.22**	**0.22**	**0.22**

21.3.4.5 Reagents and Consumables

This item includes the costs of reagents and consumables (excluding cement) for the plant. Quantities were defined by Ausenco's mineral processing team, based on flowsheets and mass balance calculations. The prices for reagents and consumables were based on budgetary quotations, and information provided by Cabral Gold. The costs for reagents and consumables are presented in Table 21-17.

Table 21-17: Reagents and Consumables Summary

Item	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	LOM Average
	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed
Reagents	1.58	1.54	1.50	1.50	1.48	1.52	1.54	1.52
Consumables	0.08	0.13	0.13	0.13	0.13	0.13	0.06	0.11
Total Cost	**1.66**	**1.67**	**1.64**	**1.63**	**1.61**	**1.65**	**1.60**	**1.64**

21.3.4.6 Cement Consumption

This item includes the costs associated with cement consumption at used in agglomeration of heap leach feed. The quantities were determined by Ausenco's mineral processing team, based on metallurgical testing data and mass balance calculations. The cement price was based on information provided by Cabral Gold. The costs for cement consumption are presented in Table 21-18.

Table 21-18: Cement Consumption

Item	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	LOM Average
	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed
Cement Consumption	3.20	3.07	2.94	3.20	3.13	2.72	2.56	2.97
Total Cost	**3.20**	**3.07**	**2.94**	**3.20**	**3.13**	**2.72**	**2.56**	**2.97**

21.3.4.7 Maintenance of Internal Access and External Road

This item includes expenses for the maintenance of internal access and external roads, as well as cleaning of the wearing course and dust control. The costs were estimated by Ausenco, based on recent database. The maintenance costs for internal access and external road are shown in Table 21-19.

Table 21-19: Maintenance of Internal Access and External Road

Item	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	LOM Average
	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed
Internal Access Maintenance	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
External Road Maintenance	0.35	0.35	0.35	0.35	0.35	0.35	0.36	0.35
Total Cost	**0.57**	**0.57**	**0.57**	**0.57**	**0.57**	**0.57**	**0.58**	**0.57**

21.3.4.8 Laboratory

The annual number of samples and associated costs were provided by Cabral Gold. Laboratory costs are presented in Table 21-20.

Table 21-20: Laboratory Costs

Item	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	LOM Average
	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed
Laboratory	0.06	0.06	0.06	0.06	0.06	0.06	0.07	0.06
Total Cost	**0.06**	**0.06**	**0.06**	**0.06**	**0.06**	**0.06**	**0.07**	**0.06**

21.3.4.9 Material Handling

Material handling costs associated the removal of leached ore from the leach pads to spent leached ore were provided by Cabral Gold and are presented in Table 21-21.

Table 21-21: Material Handling Costs

Item	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	LOM Average
	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed
Material Handling	1.13	1.13	1.13	1.13	1.13	1.13	0.73	1.07
Total Cost	**1.13**	**1.13**	**1.13**	**1.13**	**1.13**	**1.13**	**0.73**	**1.07**

21.3.4.10 Drip Emitters

The drip emitters and distribution lines were estimated by Ausenco and are presented in Table 21-22.

Table 21-22: Drip Emitters Costs

Item	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	LOM Average
	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed
Drip Emitters	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Total Cost	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**

21.3.4.11 Raincoat Liners (RCL)

Raincoat liners (large tarpaulins) are used during the wet season to cover areas not under active leach to shed precipitation away from the leach pads. The raincoats have an estimated life of 5 years before being replaced. The price was based on budgetary quotations from Ausenco, and the costs for Raincoat Liners are presented in Table 21-23.

Table 21-23: Raincoat Liners (RCL)

Item	Year 1	Year 5
	US$/t processed	US$/t processed
Raincoat Liners	0.67	0.33
Total Cost	**0.67**	**0.33**

21.3.5 General and Administrative Expenses (G&A)

The G&A costs are expenses not directly related to doré production and exclude mining, processing, external refining, and transportation costs.

The Project's G&A operational costs were allocated to the following cost centers: general expenses, health, safety and environment, human resources, administration, and outsourced services, based on the projected number of personnel, infrastructure, and services required during the operational period. G&A costs were provided by Cabral Gold. A detailed breakdown of all G&A costs is presented in Table 21-24.

Table 21-24: Summary of G&A Costs

Item	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	LOM Average
	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed	US$/t processed
General and Administrative (G&A) Costs	0.60	0.59	0.59	0.59	0.59	0.60	0.61	0.60
Total Cost	**0.60**	**0.59**	**0.59**	**0.59**	**0.59**	**0.60**	**0.61**	**0.60**

22 ECONOMIC ANALYSIS

22.1 Forward-Looking Information

The results of the economic analyses discussed in this section represent forward-looking information as defined by Canadian securities law. The results are based on inputs that are subject to known and unknown risks, uncertainties, and other factors that may cause actual results to differ materially from those presented here.

Forward-looking information includes:

- Mineral Resource and Reserve estimates
- Assumptions about commodity prices and exchange rates
- The proposed mine production plan
- Projected mining and process recovery rates
- Sustaining costs and proposed operating costs
- Assumptions regarding closure costs
- Assumptions regarding environmental, permitting, and social risks.

Additional risks related to forward-looking information include:

- Changes in production costs compared to assumptions
- Unanticipated environmental risks
- Unexpected reclamation expenses
- Unforeseen variations in the quantity of mineralized material, grade or recovery rates
- Geotechnical or hydrogeological conditions during mining may differ from initial assumptions
- Mining methods not performing as expected
- Plant, equipment, or processes not operating as anticipated
- Changes to assumptions regarding the availability and cost of electrical power in operating cost estimates and financial analysis
- Modifications to site access, water usage for mining purposes, and the time required to obtain environmental and regulatory permits

- The ability to maintain the social license to operate
- Accidents, labor disputes, and other mining-related risks
- Changes in interest rates
- Changes in tax rates.

The calendar years referenced in the financial analysis are for conceptual purposes only. Operational activities still require permitting, and approval for development must be granted by Cabral Gold's Board.

22.2 Methodologies Used

An engineering economic model was developed to estimate annual pre-tax and post-tax cash flows and sensitivities based on a 5% discount rate. It should be noted, however, that tax calculations involve complex variables that can only be accurately determined during operations; thus, actual post-tax results are only approximations. A sensitivity analysis was performed to assess the impact of variations in metal price, discount rate, operating cost, foreign exchange and initial capital costs.

The capital and operating costs were developed specifically for this Project and are presented in Section 21.

22.3 Financial Model Parameters

The economic analysis was performed using the following assumptions:

- All cash flows are discounted back to the start of project execution.
- From project execution until the start of the operation, is one year.
- Full production is achieved by Q2 of the first year of operation.
- All products are assumed to be sold in the same year they are produced.
- A constant gold price of US$2,500/oz.
- A mine life of 6.2 years.
- An exchange rate of 5.7 BRL:US$ was considered.
- No adjustments for price inflation or escalation were applied.
- Results are based on 100% ownership, with no financing costs assumed.
- No binding contractual arrangements are currently in place.
- The capital cost estimate was developed in Brazilian Reais (BRL), and the exchange rates used in the estimate are presented in Table 21-2.

22.3.1 Taxes

The Project was evaluated on a post-tax basis to provide approximate value of the potential economics. The tax model was compiled by Ausenco with support from a third party retained by Cabral Gold. The calculations are based on the tax regime in place as of the date of the PFS. At the effective date of the cashflow, the Project was assumed to be subject to the following tax regime:

- Brazilian corporate income tax of 25.0%, which includes a SUDAM incentive that grants a 75.0% tax reduction for the first 10 years of mine operation due to project's location.
- Social Contribution of 9% on taxable income.
- Initial tax loss carry-forward of C$30.0M (US$22.2M).
- Tax losses can be reduced up to 30% of taxable profit.

Total tax payments are estimated to be approximately US$13.22M over the LOM.

22.3.2 Working Capital

A high-level estimate of working capital has been incorporated in the cash flow, based on accounts receivable (10 days), inventory (30 days), and accounts payable (45 days).

22.3.3 Closure Costs

Closure costs are estimated as the 3% of Initial Capital Expenditures, totaling US$1.1M. Closure costs are applied at the end of the LOM and only account for the reclamation of the heap leach area.

22.3.4 Royalties

Based on the agreements in place, the Royalties assumed for the Project are as follows: State gold Royaty (1.5%), Osisko (1.0%) and Sandstorm (1.5%). Total undiscounted royalty payments over the LOM are approximately US$11.1M.

22.4 Economic Analysis

The pre-tax NPV (5%) is US$84.5M, with an IRR of 86%, and payback period is 0.82 year. On a post-tax basis, the NPV (5%) is USD73.9M, with an IRR of 77.6% and payback period is 0.85 years.

A summary of Project economics is shown in Table 22-1 and shown graphically in Figure 22-1.

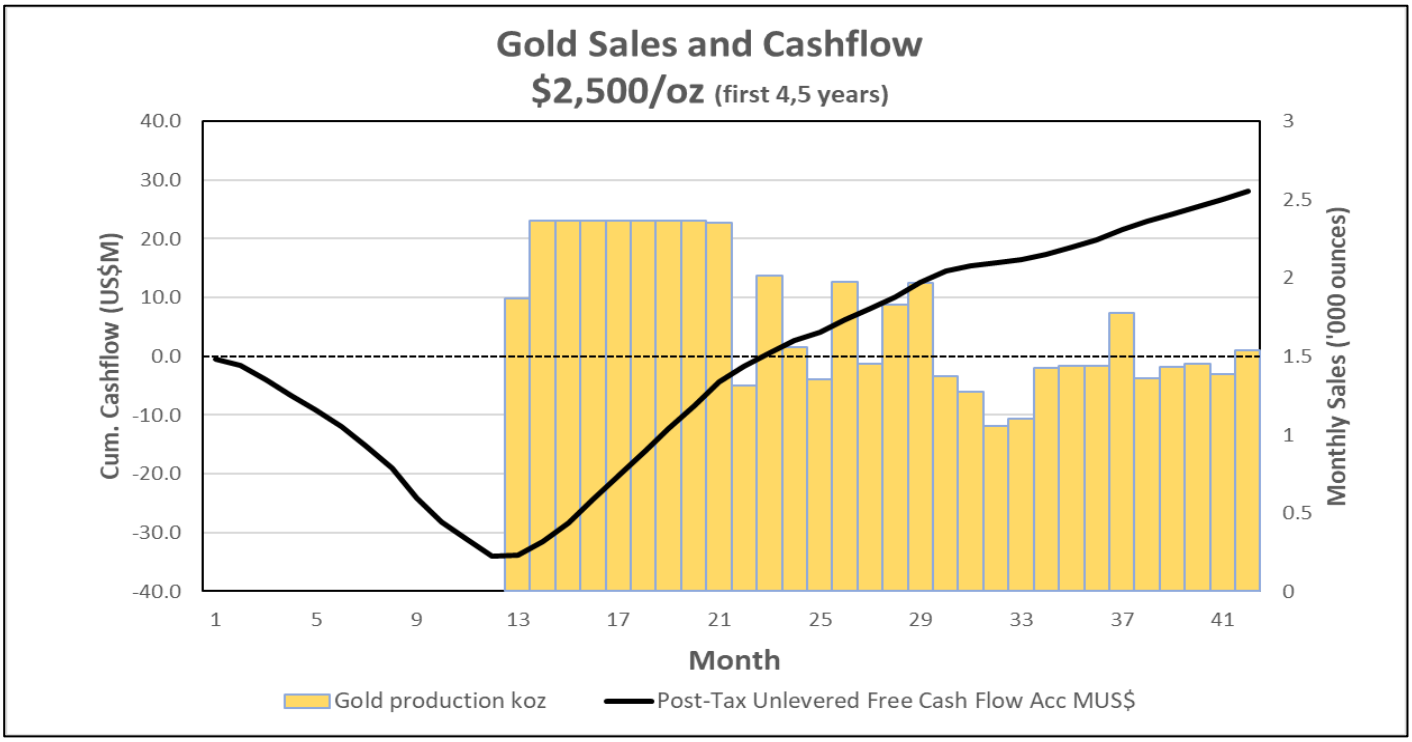
Table 22-1: Economic Analysis Summary Table

General	Base Case	Spot price Case
Gold Price (US$/oz)	$2,500	$3,340
Mine Life (years)	6.2	6.2
Exchange rate (BRL:US$)	5.7	5.7
Discount rate	5%	5%
Production	**LOM Total / Avg.**	
Ore to Leach (kt)	6,179	6,179
Total Recovered Gold (koz)	113.2	113.2
Total Recovered payable (koz)	113	113
Operating Costs	**LOM Total / Avg.**	
Mining Cost (US$/t processed)	7.08	7.08
Mining Cost (US$/t mined)	3.98	3.98
Processing Cost (US$/t processed)	10.54	10.54
G&A Cost (US$/t processed)	0.60	0.60
Refining & Transport Cost (US$/oz Au)	30.00	30.00
Royalties (US$/oz Au)	98.8	132.4
Total Operating Costs (US$/t processed)	18.22	18.22
Cash Costs (US$/oz Au)*	1,128.6	1,162.2
AISC (US$/ oz Au)**	1,209.9	1,243.5
Capital Costs	**LOM Total / Avg.**	
Initial Capital (US$M)	37.7	37.7
Sustaining Capital (US$M)	8.0	8.0
Closure Costs (US$M)	1.1	1.1
Financials – Pre-Tax	**LOM Total / Avg.**	
NPV (5%) (US$M)	84.5	159.6
NPV (0%) (US$M)	107.6	198.4
NPV (10%) (US$M)	67.2	130.4
IRR (%)	86.0%	156.4%
Payback (years)	0.82	0.6
Financials – Post-Tax	**LOM Total / Avg.**	
NPV (5%) (US$M)	73.9	137.8
NPV (0%) (US$M)	94.4	171.3
NPV (10%) (US$M)	58.5	112.4
IRR (%)	77.8%	139.3%
Payback (years)	0.85	0.6
Others	**LOM Total / Avg.**	
EBITDA (2 first years) (US$M)	32	50
After-tax CF (2 first years) (US$M)	27	42

* Cash costs consist of mining costs, processing costs, mine-level G&A and refining charges and royalties.

** AISC includes cash costs plus sustaining capital, closure cost and salvage value.

Figure 22-1: Projected LOM Post-Tax Unlevered Free Cash Flow



Source: Ausenco, 2024.

Table 22-2: Projected Cashflow on an Annualized Basis

	Unit	LOM	-1	1	2	3	4	5	6	7
Production Summary										
Total Material Mined	kt	10,993	--	570	2,305	2,031	1,524	1,731	1,861	972
Waste Mined	kt	4,814	--	71	1,299	1,023	517	723	864	317
Ore to Leach	kt	6,179	--	499	1,006	1,008	1,007	1,008	997	655
Au Head Grade	g/t	0.65	--	0.97	0.77	0.59	0.57	0.45	0.65	0.73
Au Contained	koz	129	--	16	25	19	18	15	21	15
Au Recovery	%	87.8%	--	88.0%	88.0%	88.0%	88.0%	87.9%	85.7%	86.7%
Au Recovered	koz	113.2	--	14	22	17	16	13	18	13
Au Payable	koz	112.6	--	14	22	17	16	13	18	13
Prices										
Gold Price	US$/oz	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500
Revenues										
Gold Revenue	US$/M	$281	--	$34.2	$54.8	$41.7	$40.3	$32.1	$45.3	$33.1

	Unit	LOM	-1	1	2	3	4	5	6	7
Operating Costs										
Mine Costs	US$M	($43.7)	--	($2.3)	($9.2)	($8.1)	($6.1)	($6.9)	($7.4)	($3.9)
Processing Costs	US$M	($65.2)	--	($5.7)	($10.6)	($10.5)	($10.7)	($11.0)	($10.2)	($6.4)
G&A Costs	US$M	($3.7)	--	($0.3)	($0.6)	($0.6)	($0.6)	($0.6)	($0.6)	($0.4)
Refining Charges, Transportation Cost & Royalties										
Refining charges costs	US$M	($3.4)	--	($0.4)	($0.7)	($0.5)	($0.5)	($0.4)	($0.5)	($0.4)
Royalties	US$M	($11.1)	--	($1.4)	($2.2)	($1.6)	($1.6)	($1.3)	($1.8)	($1.3)
EBITDA										
EBITDA	US$DM	$154.4	--	$24.2	$31.6	$20.4	$20.8	$12.0	$24.7	$20.8
Capital Expenditures										
Initial Capital	US$M	($37.7)	($12.0)	($25.7)	--	--	--	--	--	--
Sustaining Capital	US$M	($8.0)	--	--	--	($5.5)	--	($2.6)	--	--
Closure Cost	US$M	($1.1)	--	--	--	--	--	--	--	($1.1)
Change in Working Capital										
Change in Working Capital	US$M	--	--	($1.2)	$0.9	($0.2)	($0.1)	$0.3	($0)	$0
Pre-Tax Unlevered Free Cash Flow										
Pre-Tax Unlevered Free Cash Flow	US$M	$107.6	($12.0)	($2.7)	$32.5	$14.7	$20.8	$9.7	$24.7	$19.9
Pre-Tax Cumulative Unlevered Free Cash Flow	US$M	--	($12)	($15)	$18	$32	$53	$63	$88	$108
Taxes										
Unlevered Cash Taxes	US$M	($13)	--	($2)	($2)	($1)	($2)	($1)	($3)	($3)
Post-Tax Unlevered Free Cash Flow										
Post-Tax Unlevered Free Cash Flow	US$M	$94.4	($12.0)	($4.3)	$30.8	$13.7	$19.1	$8.6	$21.6	$16.9
Post-Tax Cumulative Unlevered Free Cash Flow	US$M	--	($12)	($16)	$14	$28	$47	$56	$78	$94
Cost KPI's										
Cash Costs*	US$/oz	$1,128.6	--	$731.8	$1,059.8	$1,277.9	$1,208.1	$1,568.6	$1,135.3	$932.7
AISC**	US$/oz	$1,209.9	--	$731.8	$1,059.8	$1,605.5	$1,208.1	$1,767.5	$1,135.3	$1,018.1

* Cash costs consist of mining costs, processing costs, mine-level G&A and refining charges and royalties.

** AISC includes cash costs plus sustaining capital, closure cost and salvage value.

22.5 Sensitivity Analysis

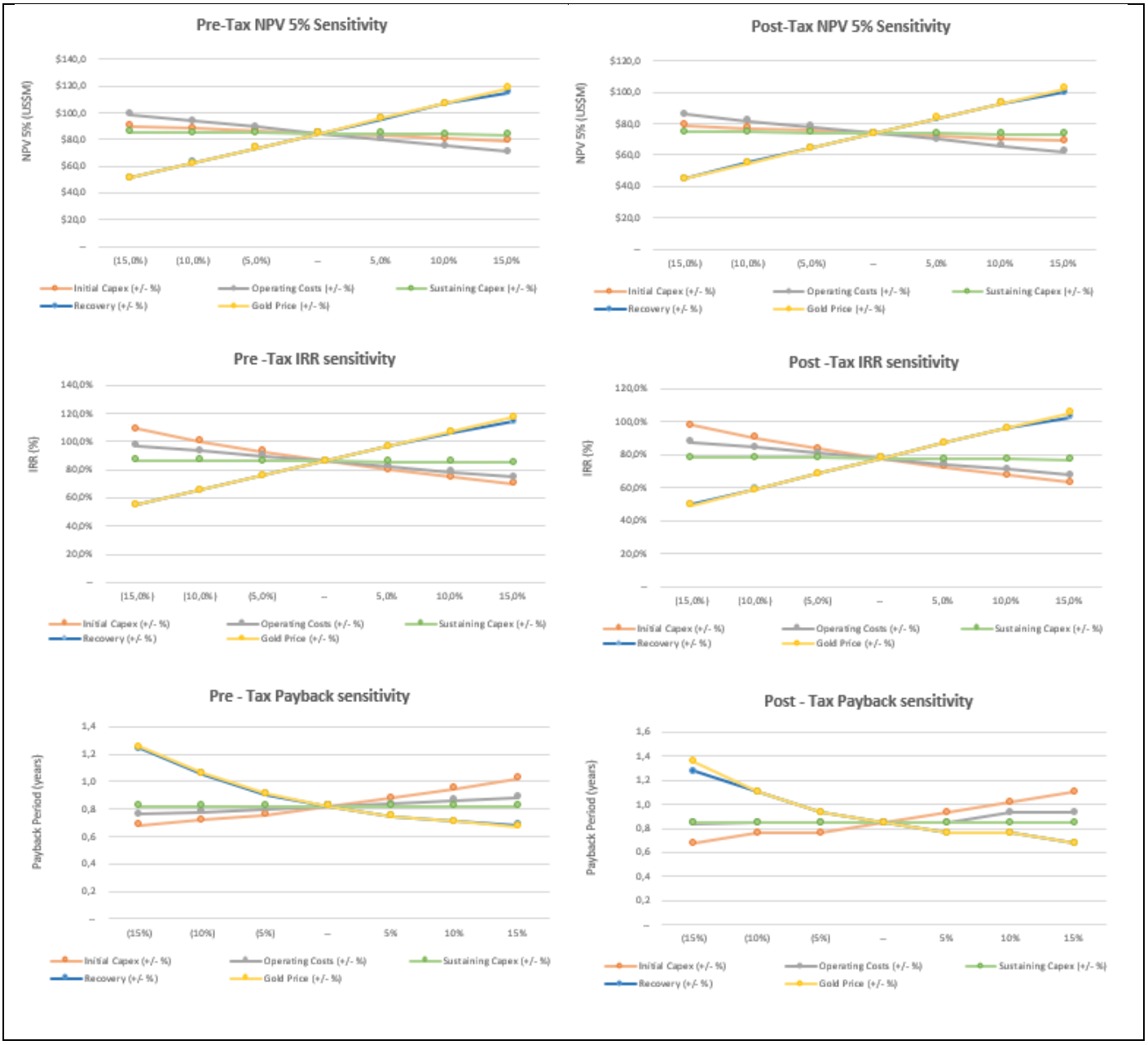
A sensitivity analysis was conducted on the Project's pre-tax and post-tax NPV, IRR, and payback period, assessing the impact of changes in initial capital costs, operating cost, sustaining capital costs, gold recovery and gold price.

The analysis indicated that the Project is most sensitive to fluctuations in gold price and recovery, with less sensitivity to changes in operating costs, initial capital costs, and sustaining capital costs, as shown in Figure 22-2.

Additional sensitivities were conducted using the discount rate, gold head grade, and foreign exchange rate (BRL/USD).

The results of all sensitivity analyses, on both a pre-tax and post-tax basis, are shown in Table 22-3 and Table 22-4.

Figure 22-2: Sensitivity Analysis



Source: Ausenco, 2025.

Table 22-3: Pre-Tax Sensitivity

Pre-Tax NPV (US$M) Sensitivity To Opex

Opex \ Metal Price	(25%)	(10%)	--	10%	25%
20.0%	$10.1	$43.7	$66.0	$88.4	$121.9
10.0%	$19.4	$52.9	$75.3	$97.6	$131.2
--	$28.6	$62.1	$84.5	$106.9	$140.4
(10.0%)	$37.8	$71.4	$93.8	$116.1	$149.7
(20.0%)	$47.1	$80.6	$103.0	$125.4	$158.9

Pre-Tax IRR (%) Sensitivity To Opex

Opex \ Metal Price	(25%)	(10%)	--	10%	25%
20.0%	16.0%	49.4%	70.8%	91.9%	123.8%
10.0%	25.2%	57.5%	78.5%	99.4%	131.0%
--	33.8%	65.3%	86.0%	106.8%	138.2%
(10.0%)	42.0%	72.8%	93.3%	114.0%	145.2%
(20.0%)	49.9%	80.3%	100.6%	121.1%	152.2%

Pre-Tax Payback (Year) Sensitivity To Opex

Opex \ Metal Price	(25%)	(10%)	--	10%	25%
20.0%	4.7	1.3	0.9	0.7	0.6
10.0%	3.0	1.2	0.9	0.7	0.6
--	2.3	1.1	0.8	0.7	0.6
(10.0%)	1.8	1.0	0.8	0.7	0.6
(20.0%)	1.4	0.9	0.8	0.7	0.6

Pre-Tax NPV (US$M) Sensitivity to initial Capex

Initial Capex \ Metal Price	(25%)	(10%)	--	10%	25%
20.0%	$21.1	$54.7	$77.1	$99.4	$133.0
10.0%	$24.9	$58.4	$80.8	$103.1	$136.7
--	$28.6	$62.1	$84.5	$106.9	$140.4
(10.0%)	$32.3	$65.9	$88.2	$110.6	$144.1
(20.0%)	$36.1	$69.6	$92.0	$114.3	$147.9

Pre-Tax IRR (%) Sensitivity to initial Capex

Initial Capex \ Metal Price	(25%)	(10%)	--	10%	25%
20.0%	22.7%	48.6%	65.5%	82.4%	107.8%
10.0%	27.7%	56.1%	74.7%	93.3%	121.5%
--	33.8%	65.3%	86.0%	106.8%	138.2%
(10.0%)	41.4%	76.8%	100.1%	123.6%	159.1%
(20.0%)	51.3%	91.7%	118.4%	145.3%	186.0%

Pre-Tax Payback (Year) Sensitivity to initial Capex

Initial Capex \ Metal Price	(25%)	(10%)	--	10%	25%
20.0%	3.2	1.4	1.1	0.9	0.7
10.0%	2.7	1.3	0.9	0.8	0.7
--	2.3	1.1	0.8	0.7	0.6
(10.0%)	1.5	0.9	0.7	0.6	0.6
(20.0%)	1.2	0.7	0.6	0.6	0.5

Pre-Tax NPV (US$M) Sensitivity To Sustaining Capex

Sustaining Capex \ Metal Price	(25%)	(10%)	--	10%	25%
20.0%	$27.3	$60.8	$83.2	$105.5	$139.1
10.0%	$27.9	$61.5	$83.8	$106.2	$139.7
--	$28.6	$62.1	$84.5	$106.9	$140.4
(10.0%)	$29.3	$62.8	$85.2	$107.5	$141.1
(20.0%)	$29.9	$63.5	$85.8	$108.2	$141.7

Pre-Tax IRR (%) Sensitivity To Sustaining Capex

Sustaining Capex \ Metal Price	(25%)	(10%)	--	10%	25%
20.0%	32.6%	64.2%	85.0%	105.9%	137.4%
10.0%	33.2%	64.7%	85.5%	106.3%	137.8%
--	33.8%	65.3%	86.0%	106.8%	138.2%
(10.0%)	34.4%	65.8%	86.5%	107.2%	138.5%
(20.0%)	35.0%	66.3%	86.9%	107.6%	138.9%

Pre-Tax Payback (Year) Sensitivity To Sustaining Capex

Sustaining Capex \ Metal Price	(25%)	(10%)	--	10%	25%
20.0%	2.5	1.1	0.8	0.7	0.6
10.0%	2.4	1.1	0.8	0.7	0.6
--	2.3	1.1	0.8	0.7	0.6
(10.0%)	2.3	1.1	0.8	0.7	0.6
(20.0%)	2.2	1.1	0.8	0.7	0.6

Pre-Tax NPV (US$M) Sensitivity To Recovery

Au Recovery \ Metal Price	(25%)	(10%)	--	10%	25%
20.0%	$51.5	$89.7	$115.2	$140.7	$178.9
10.0%	$45.1	$82.0	$106.6	$131.2	$168.1
--	$28.6	$62.1	$84.5	$106.9	$140.4
(10.0%)	$12.1	$42.3	$62.4	$82.5	$112.7
(20.0%)	($4.4)	$22.4	$40.3	$58.2	$85.0

Pre-Tax IRR (%) Sensitivity To Recovery

Au Recovery \ Metal Price	(25%)	(10%)	--	10%	25%
20.0%	55.1%	90.4%	114.0%	137.9%	174.0%
10.0%	49.4%	83.7%	106.5%	129.5%	164.4%
--	33.8%	65.3%	86.0%	106.8%	138.2%
(10.0%)	17.6%	46.8%	65.5%	84.2%	112.2%
(20.0%)	0.1%	27.8%	44.9%	61.6%	86.5%

Pre-Tax Payback (Year) Sensitivity To Recovery

Au Recovery \ Metal Price	(25%)	(10%)	--	10%	25%
20.0%	1.2	0.8	0.7	0.6	0.5
10.0%	1.4	0.8	0.7	0.6	0.6
--	2.3	1.1	0.8	0.7	0.6
(10.0%)	4.5	1.4	1.1	0.8	0.7
(20.0%)	6.2	2.7	1.4	1.1	0.8

Table 22-4: Post-Tax Sensitivity

Post-Tax NPV (US$M) Sensitivity To Opex

Opex \ Metal Price	(25%)	(10%)	--	10%	25%
20.0%	$7.3	$38.2	$58.1	$77.2	$105.7
10.0%	$16.0	$46.6	$66.0	$85.1	$113.6
--	$24.6	$54.8	$73.9	$92.9	$121.4
(10.0%)	$33.0	$62.7	$81.8	$100.8	$129.3
(20.0%)	$41.4	$70.6	$89.7	$108.7	$137.1

Post-Tax IRR (%) Sensitivity To Opex

Opex \ Metal Price	(25%)	(10%)	--	10%	25%
20.0%	13.2%	44.5%	63.9%	82.8%	110.8%
10.0%	22.1%	52.0%	70.9%	89.4%	117.2%
--	30.3%	59.2%	77.6%	96.0%	123.5%
(10.0%)	38.1%	66.1%	84.2%	102.4%	129.7%
(20.0%)	45.4%	72.7%	90.7%	108.7%	135.9%

Post-Tax Payback (Year) Sensitivity To Opex

Opex \ Metal Price	(25%)	(10%)	--	10%	25%
20.0%	4.8	1.4	1.0	0.8	0.7
10.0%	3.1	1.3	0.9	0.8	0.7
--	2.5	1.1	0.8	0.8	0.6
(10.0%)	2.0	1.0	0.8	0.7	0.6
(20.0%)	1.4	0.9	0.8	0.7	0.6

Post-Tax NPV (US$M) Sensitivity to initial Capex

Initial Capex \ Metal Price	(25%)	(10%)	--	10%	25%
20.0%	$17.5	$48.1	$67.4	$86.5	$115.0
10.0%	$21.1	$51.5	$70.7	$89.7	$118.2
--	$24.6	$54.8	$73.9	$92.9	$121.4
(10.0%)	$28.1	$58.1	$77.1	$96.2	$124.7
(20.0%)	$31.5	$61.3	$80.4	$99.4	$127.9

Post-Tax IRR (%) Sensitivity to initial Capex

Initial Capex \ Metal Price	(25%)	(10%)	--	10%	25%
20.0%	20.1%	44.3%	59.5%	74.5%	97.0%
10.0%	24.7%	51.0%	67.7%	84.2%	108.9%
--	30.3%	59.2%	77.6%	96.0%	123.5%
(10.0%)	37.2%	69.4%	90.1%	110.7%	141.8%
(20.0%)	46.1%	82.5%	106.1%	129.7%	165.2%

Post-Tax Payback (Year) Sensitivity to initial Capex

Initial Capex \ Metal Price	(25%)	(10%)	--	10%	25%
20.0%	3.3	1.5	1.2	0.9	0.8
10.0%	2.9	1.4	1.0	0.8	0.7
--	2.5	1.1	0.8	0.8	0.6
(10.0%)	2.0	0.9	0.8	0.7	0.6
(20.0%)	1.3	0.8	0.7	0.6	0.5

Post-Tax NPV (US$M) Sensitivity To Sustaining Capex

Sustaining Capex \ Metal Price	(25%)	(10%)	--	10%	25%
20.0%	$23.3	$53.7	$72.8	$91.8	$120.3
10.0%	$23.9	$54.2	$73.3	$92.4	$120.9
--	$24.6	$54.8	$73.9	$92.9	$121.4
(10.0%)	$25.2	$55.4	$74.5	$93.5	$122.0
(20.0%)	$25.8	$56.0	$75.1	$94.1	$122.6

Post-Tax IRR (%) Sensitivity To Sustaining Capex

Sustaining Capex \ Metal Price	(25%)	(10%)	--	10%	25%
20.0%	29.1%	58.1%	76.7%	95.1%	122.7%
10.0%	29.7%	58.7%	77.2%	95.6%	123.1%
--	30.3%	59.2%	77.6%	96.0%	123.5%
(10.0%)	30.9%	59.7%	78.1%	96.4%	123.9%
(20.0%)	31.5%	60.2%	78.6%	96.8%	124.2%

Post-Tax Payback (Year) Sensitivity To Sustaining Capex

Sustaining Capex \ Metal Price	(25%)	(10%)	--	10%	25%
20.0%	2.6	1.1	0.8	0.8	0.6
10.0%	2.5	1.1	0.8	0.8	0.6
--	2.5	1.1	0.8	0.8	0.6
(10.0%)	2.5	1.1	0.8	0.8	0.6
(20.0%)	2.4	1.1	0.8	0.8	0.6

Post-Tax NPV (US$M) Sensitivity To Recovery

Au Recovery \ Metal Price	(25%)	(10%)	--	10%	25%
20.0%	$45.4	$78.4	$100.0	$121.7	$154.1
10.0%	$39.6	$71.8	$92.7	$113.6	$144.9
--	$24.6	$54.8	$73.9	$92.9	$121.4
(10.0%)	$9.4	$37.0	$55.0	$72.2	$97.9
(20.0%)	($6.1)	$18.9	$35.2	$51.4	$74.4

Post-Tax IRR (%) Sensitivity To Recovery

Au Recovery \ Metal Price	(25%)	(10%)	--	10%	25%
20.0%	50.0%	81.6%	102.4%	123.2%	154.6%
10.0%	44.7%	75.6%	95.8%	115.9%	146.3%
--	30.3%	59.2%	77.6%	96.0%	123.5%
(10.0%)	15.1%	42.3%	59.4%	76.0%	100.8%
(20.0%)	0.0%	24.7%	40.6%	55.9%	78.1%

Post-Tax Payback (Year) Sensitivity To Recovery

Au Recovery \ Metal Price	(25%)	(10%)	--	10%	25%
20.0%	1.4	0.8	0.7	0.6	0.5
10.0%	1.4	0.8	0.8	0.7	0.6
--	2.5	1.1	0.8	0.8	0.6
(10.0%)	4.7	1.4	1.1	0.8	0.7
(20.0%)	0.0	2.9	1.8	1.2	0.8

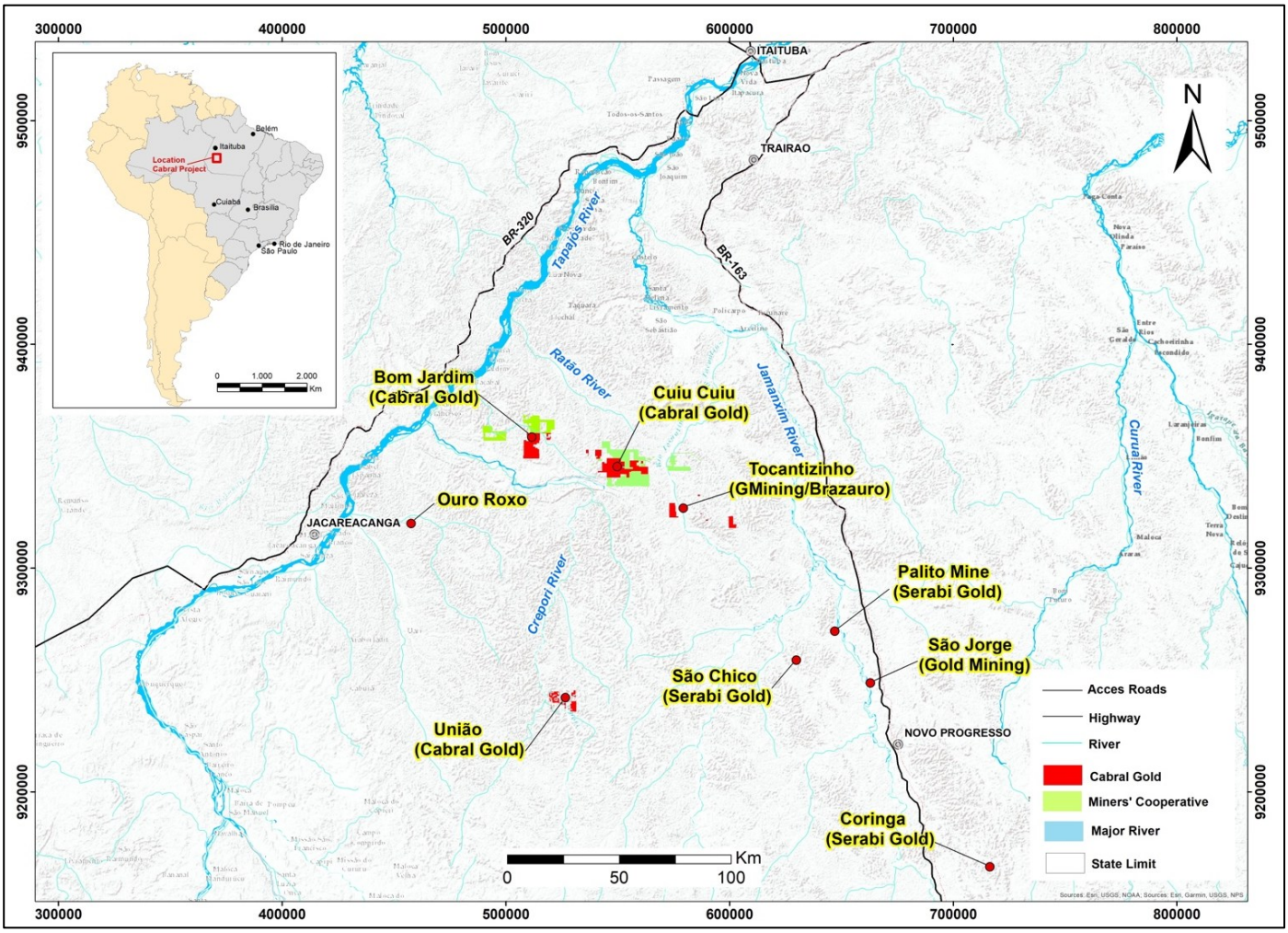
23 ADJACENT PROPERTIES

The Cuiú Cuiú Project is located in the western part of the state of Pará in northern Brazil. The area has been the focal point for mainly alluvial gold mining during the 1980s and 1990s and exploration claims cover large parts of the area. Figure 15-1 shows the Cuiú Cuiú property held by Cabral Gold and the adjoining exploration permits and projects.

The most advanced gold project in the Tapajós is the nearby Tocantinzinho Project, which is owned by G Mining and is located 25 km to the east-southeast, along trend/strike to Cuiú Cuiú (Figure 15-1).

Serabi Gold PLC operates the Palito Gold Mine in the Tapajós Province. The mine is located about 80 km southeast of Cuiú Cuiú. Gold Mining Inc.'s São Jorge Project (Figure 23-1) is another significant gold deposit within the Tapajós Gold Province. This QP cautions the reader that the mineralization may differ and is not necessarily indicative of the same mineralization studied in the present report.

Figure 23-1: Regional Location Map



Source: Cabral Gold, 2024.

24 OTHER RELEVANT DATA AND INFORMATION

This section is not relevant to this report.

25 INTERPRETATION AND CONCLUSIONS

25.1 Introduction

The QPs note the following interpretations and conclusions in their respective areas of expertise, based on the review of data available for this Report.

25.2 Mineral Tenure, Surface Rights, Water Rights, Royalties and Agreements

The Cuiú Cuiú Project encompasses 23 mineral rights, including exploration permits, small-scale mining permits (PLGs), and applications for mining concessions. The project area spans 24,570 hectares under direct ownership and an additional 22,087 hectares through cooperative agreements, totaling 46,658 hectares. In Brazil, surface rights are not inherently tied to mining leases or exploration claims and must be separately negotiated with landowners. At Cuiú Cuiú, agreements with local stakeholders (organized as a condominium) provide surface access for exploration and mining activities. Payments are structured annually and may include additional compensations tied to the discovery of economically viable gold reserves. Cabral Gold has also been acquiring individual stakeholder interests to consolidate strategic land tenure within the project area.

The Cuiú Cuiú Project is subject to several net smelter return (NSR) royalties. These include a 1% NSR held by Sandstorm Gold Ltd., a 0.5% NSR held by Equinox Gold Corp., and a recently negotiated 1% NSR with Osisko Gold Royalties Ltd. Royalty agreements include financial compensation terms that vary depending on production levels and future resource evaluations. Key agreements include cooperative arrangements with artisanal mining groups (garimpeiros) and local stakeholders, allowing exploration and mining in areas with small-scale mining permits.

25.3 Geology and Mineralization

The property is situated within the Tapajós Mineral Province (TMP), part of the Amazon Craton, with mineralization primarily associated with deformation zones linked to the Trans-Amazonian Orogen. Gold occurs in fresh basement rocks, weathered saprolite, and unconformable sedimentary layers, showcasing varied mineralization styles, including quartz-sulphide veins and replacement zones, indicative of hydrothermal processes.

Key targets like the Central and MG deposits reveal extensive brecciation, hydrothermal alteration, and a strong association between gold grades and pyrite content. The weathered mineralized profiles and unconformable blankets provide economically significant, shallow, and potentially low-cost mining opportunities. Key aspects for exploration are the role of structural controls, hydrothermal fluid dynamics, and regional geological evolution in concentrating gold mineralization.

25.4 Exploration

The exploration efforts at the Cuiú Cuiú Gold Project have spanned nearly two decades, with a comprehensive review of historical data and field activities beginning in 2017. Cabral Gold identified and examined 44 exploration targets as of 2025, utilizing integrated methodologies such as soil sampling, trenching, auger drilling, and geochemical analyses. While 27 of these targets have been tested with diamond and RC drilling, further work is needed to refine exploration priorities and identify high-potential ore zones. The focus on developed targets is justified given limited financial resources and the necessity to prioritize economically viable discoveries.

25.5 Drilling

The Cuiú Cuiú Gold Project has benefited from a robust drilling program, with over 116,116 m drilled across 929 holes. This comprehensive effort has provided a substantial database to support geological modeling, resource estimation, and project advancement.

Drilling has confirmed mineralization at key targets, including Central, MG, PDM, and the Machichie Complex, revealing various gold styles in saprolite, unweathered basement rocks, and unconformable blanket deposits. These findings have refined the prioritization of high-potential areas for further exploration and development.

Rigorous drilling and sampling protocols, including the use of diamond and RC rigs, ensure high-quality data. This reliability underpins accurate geological interpretation and resource estimation, contributing to project feasibility and economic evaluations.

Several identified targets remain drill-ready, with significant exploration potential yet to be unlocked. The Project's ability to integrate historical and recent drilling data provides a strong foundation for future discoveries and expanded resources.

This QP recommends infilling the advanced targets to enhance the categorization of the Mineral Resources, allowing the definition of Mineral Reserves and the preparation of a Definitive Feasibility Study. With the construction of a processing plant and an open-pit mine, cash flow will provide financial resources to test the less advanced targets.

25.6 Analytical Data Collection in Support of Mineral Resource Estimation

Sample preparation at ISO-certified laboratories like SGS Geosol and ALS involves standardized processes, including drying, crushing, pulverizing, and fire assay analysis, which meet international best practices. QA/QC measures include the use of certified reference materials (CRMs), blanks, and duplicates, monitoring laboratory precision, accuracy, and contamination. Control chart analyses reveal acceptable failures, with issues promptly addressed through re-analysis, ensuring data reliability.

There is a secure chain of custody maintained from the drill site to the laboratory. The QP concludes that the dataset demonstrates sufficient precision and accuracy for Mineral Resource evaluation. Recommendations, including the addition of pulp and reject duplicates and refining field duplicate sampling, suggest avenues for further improvement.

Overall, the sample preparation and QA/QC processes are deemed appropriate for supporting the Project's ongoing exploration and economic analysis.

25.7 Metallurgical Testwork

Results of historical metallurgical tests indicate that two major lithologies, blanket and saprolite, drive gold recoveries. Botha are present in MG and Central deposits.

Four metallurgical test programs have been completed to date on the Project. The most recent program in 2024 was used to derive recovery estimates for this report.

In 2024, a dedicated drill program generated samples for testing at Metso and KCA. The samples were composited based on their location (Central and MG pits) and lithology (saprolite and Blanket). KCA further categorized samples by grade (high and low). Metso completed point load, abrasion, crushability, and rod work index tests. Results showed the samples to be soft, easily crushable and to have low abrasivity. Gold recoveries ranged from 72.5% (from Central) to 91% (from MG) in column leach tests.

In 2025 trenching was used to generate samples from the Machichie deposit. Three samples were categorized as saprolite and one as blanket. Column leach gold extractions ranged from 88% to 96%. Compacted permeability tests confirmed earlier results that 10 kg/t to 15 kg/t cement to permit leaching in 5 m lifts.

Assaying confirmed that mercury concentrations in the three deposits were high enough to require mercury capture and abatement.

25.8 Mineral Resource Estimate

25.8.1 Central Deposit

The evaluation of Mineral Resources of the Cuiú Cuiú Prospect in compliance with NI 43-101. The work took place in April/May 2025.

The main activities developed by W. Dzick Geoconsultants were:

- Site visit, discussions with the technical staff about the geology and mineralization of the deposit, outcrop visit
- Validation of the drilling database and the topography information
- Selection of the drilling data used in the definition of Mineral Resources
- Statistical and geostatistical studies
- Estimation of Mineral Resources and mineral resources classification.

W. Dzick Geoconsultants did not visit the assay laboratories.

The materiality of the work developed by the Company, as well as the materiality of the deposit and the developed studies, are sufficient to support the disclosure of Mineral Resources of the Cuiú Cuiú Prospect in accordance with NI-43-101.

25.8.2 Machichie Deposit

The Mineral Resource estimate for Cuiú Cuiú Oxide Project, Machichie deposit, has been updated by the QP Mr. Walter A Dzick P Geo with W. Dzick Geoconsultants based on the addition of 41 drillholes completed in 2025.

- The main activities developed by W. Dzick Geoconsultants were:
- Site visit and discussions with technical staff about the geology and mineralization, outcrop visit.
- Validation of drilling database and topography
- Mineralization domains were defined by lithology, grade continuity, and structural information.
- Gold zones were defined within a 0.1 g/t Au shape
- Statistical and geostatistical studies
- Estimation of Mineral Resources and classification of mineral resources into Indicated and Inferred in accordance with the CIM guidelines (CIM 2014) which have been adopted as part of NI 43-101.

The materiality of the work developed by the Company, as well as the materiality of the deposit and the developed studies, are sufficient to support the disclosure of Mineral Resources of the Machichie deposit in accordance with NI 43-101.

25.8.3 Moreira Gomes (MG) Deposit

VMG conducted the evaluation of Mineral Resources of the Cuiú Cuiú Prospect in compliance with NI 43-101. The work took place from November 2023 to April 2024. The main activities developed by VMG were:

Site visit, discussions with the technical staff from Cabral Gold, understanding of the geology and mineralization of the deposit, and verification of the geological work performed by Cabral Gold and contractors on site, as well as verification of the materiality of the achieved results.

- Validation of the drilling database and the topography information
- Selection of the drilling data used in the definition of Mineral Resources
- Interpretation of the geological model
- Conducting statistical and geostatistical studies
- Estimation of Mineral Resources, as well as their quantification and classification
- Disclosure of the Mineral Resources for the Cuiú Cuiú Prospect in accordance with the NI-43-101

VMG did not visit the assay laboratories, but the SGS Geosol Lab laboratory is reputable international groups who meet or exceed the industry standards for sample preparation and analysis. The materiality of the work developed by the Company, as well as the materiality of the deposit and the developed studies, are sufficient to support the disclosure of Mineral Resources of the Cuiú Cuiú Prospect in accordance with NI 43-101.

25.9 Mineral Reserve Estimate and Mining Methods

The proposed mining operations for the Cuiú Cuiú Project are based on conventional open-pit mining methods, utilizing hydraulic excavators and a fleet of haul trucks. Deswik affirms that the project's estimates were prepared diligently by qualified professionals and are compliant with CIM (2014) standards. Probable Mineral Reserves are estimated at 6.2 Mt at an average grade of 0.65 g/t Au, yielding approximately 129 koz Au. These reserves support a mine life of 6 years and 2 months.

The mine layout features three distinct open-pit zones, MG Pit, Central Pit and Machichie Pit, each with dedicated access routes to the run-of-mine (ROM) stockpile and crushing pad, alongside separate Waste Rock Storage Facilities (WRSFs) for Central pit, and one for both MG and Machichie pits. Annual material movement is projected to peak at 2.3 Mt, optimized for transportation with on-highway trucks. Open-pit mining operations are planned to be predominantly contractor-operated, providing flexibility and efficiency in fleet management.

25.10 Recovery Methods

The process selected for recovery of gold from the MG and Central deposits is a conventional on/off heap leach. Mine production will be fed to a primary crusher (mineral sizer) at an average rate of 2,740 t/d. Ore will be crushed to 100% passing 50 mm, mixed with cement, agglomerated, and conveyor-stacked onto on/off heap leach pads, in 5-m-high lifts.

Stacked ore will be leached with a dilute cyanide solution applied through a drip irrigation system. After percolating through the heap, pregnant gold-bearing solution will flow by gravity to a pregnant solution pond, where it will be pumped to a carbon adsorption circuit for gold recovery. Leached ore will be drained, rinsed, and subsequently removed using front-end loaders for disposal. Gold will be stripped from the loaded carbon through a pressure Zadra desorption process, followed by electrowinning to produce a sludge. The sludge will then be retorted to remove mercury and refined in a melting furnace to produce gold doré bars.

25.11 Infrastructure

25.11.1 Heap Leach Facility

The design of the HLF includes an on/off pad with four cells, along with process and emergency ponds where the ore is stacked in a single 5-meter-high lift. At the end of the leach cycle, the spent ore is removed for disposal, and the pad is recharged with fresh ore. The pads and secondary containment corridor are lined with a composite liner, consisting of compacted low-permeability soil and geomembrane. The HLF process ponds are designed to contain barren solution from the pad cells and to collect pregnant solution for processing in the ADR plant. During the rainy season, raincoats are used to capture non-contact runoff, discharging it to the emergency pond to reduce dilution of pregnant solution

and improve mineral recovery in the process plant. Excess runoff from precipitation events, excluding raincoat runoff, up to the 100-year, 24-hour storm event, will be captured by the process ponds and the emergency pond. Both the PLS and barren ponds feature a double liner and leak detection system, while the emergency pond has a single liner system.

The HLF has a capacity to process 1973 t/d, with each cell having an operational capacity of 117,100 t. The typical leach cycle for a cell is approximately 120 days, during which the spent ore is rinsed to remove residual cyanide and then removed and placed in the spent ore stockpile. This stockpile has been designed to store 3.3 Mt of spent ore, as identified in this study. The HLF is built to North American standards, as described in Section 18.6.4. Both the HLF and the spent ore stockpile configuration meet the minimum factors of safety regarding geotechnical stability.

25.11.2 Waste Storage Facility

The two WSF designs provide capacity to store the 3.52 Mt of waste rock and overburden. The two WRSF configurations meet the minimum factors of safety with respect to geotechnical stability. The MG WRSF design has a storage capacity of 1.6 Mt and requires a maximum storage height of 40 m. The Central Section WRSF design has a storage capacity of 0.65 Mt and requires a maximum storage height of 30 m.

Waste storage from the Machichie Section will be handled back to the pits after mining depletion.

The WSFs are designed to be progressively reclaimed during operations to reduce the amount of contact water that may need to be managed during operations.

25.12 Markets Studies and Contracts

Gold Production is expected to be sold on the spot market. Terms and conditions included as part of sales contracts are expected to be typical of similar contracts for the sale of doré throughout the world. There are many markets in the world where gold is bought and sold, and it is difficult to obtain a market price at any particular time. The gold market is very liquid with a large number of buyers and sellers willing and active at any time.

25.13 Environmental, Permitting and Social Considerations

25.13.1 Environmental Considerations:

- The Cuiú Cuiú Gold Project is situated in a sensitive ecological zone within the Amazon, requiring rigorous environmental management. The project area has experienced significant environmental impacts from past illegal mining and deforestation, necessitating robust recovery strategies. Detailed environmental studies have identified key risks, including water contamination, biodiversity loss, and ecosystem fragmentation.
- Biodiversity assessments highlight the presence of endangered species and rich flora and fauna diversity, emphasizing the importance of conservation measures.
- The Project has implemented baseline studies and monitoring programs for water, soil, and air quality, demonstrating its commitment to environmental stewardship and compliance with legal standards.

25.13.2 Permitting Considerations:

- The Project complies with Brazil's strict environmental licensing framework, having completed comprehensive EIA/RIMA studies and obtaining trial mining licenses. Applications for full mining licenses are under review, with expected approval timelines extending to 2025.
- Navigating Brazil's complex permitting system offers an opportunity to align with best practices in sustainable mining and regulatory compliance, but delays could pose significant operational risks.

25.13.3 Social Considerations:

- Socioeconomic studies underline the Project's potential to deliver significant benefits to local communities, including employment, infrastructure development, and environmental education. However, community concerns about environmental impacts and land use require careful management.
- Stakeholder engagement and transparent communication are critical to maintaining the social license to operate and fostering long-term support.

25.13.4 Closure and Reclamation:

- Closure plans emphasize land restoration, erosion control, and biodiversity recovery, with long-term goals of creating a self-sustaining ecosystem. Compliance with Brazilian environmental regulations, including Article 225, underscores the Project's commitment to mitigating environmental impacts post-mining.

25.14 Capital Cost Estimate

The capital cost estimate aligns with Class 4 guidelines for a PFS-level estimate with an accuracy of -20% to +30% specified by the Association for the Advancement of Cost Engineering International (AACE International). The capital cost estimate, developed in Q2 2025, is based on the proposed Project design, Ausenco's budgetary quotations and an in-house database of comparable projects and studies, including insights from similar operations.

The total capital cost summary is presented in Table 21-1. The total initial capital cost for the Cuiú Cuiú Project is US$37.69M. The sustaining capital cost is US$5.46M for Year 3, and US$2.55M in Year 5.

25.15 Operating Cost Estimate

The operating cost estimate was developed in Q2 2025, based on budgetary quotations and Ausenco's in-house database of projects and studies as well as experience from similar operations. Mine and leached ore disposal cost estimates were provided by Cabral Gold, based on budgetary quotations from contractors.

The accuracy of the operating cost estimate is -20% to +30%. The estimate includes mining, processing, and G&A costs.

25.16 Economic Analysis

Based on the assumptions and parameters presented in this report, the PFS demonstrates positive economics, with a post-tax NPV (5%) of US$73.9M and a post-tax IRR of 77.6%. The results of the PFS support proceeding with further detailed studies.

25.17 Risks and Opportunities

25.17.1 Risks

25.17.1.1 Geology

The geological risks associated with the Cuiú Cuiú Project primarily stem from the complexity and variability of its geological structures and mineralization styles. The mineralization is closely tied to deformation zones and hydrothermal processes, which can lead to uneven distribution of gold grades and challenges in predicting continuity. The deep weathering and presence of unconformable sedimentary blankets may pose risks in accurately delineating mineralized zones. The variability in alteration and brecciation intensities further increases the potential for localized grade discrepancies, requiring detailed and ongoing geological mapping and sampling to mitigate these uncertainties.

25.17.1.2 Exploration

The Cuiú Cuiú Project faces several exploration-related risks. First, many targets require additional surface sampling and mapping, leading to uncertainties about their economic potential. Misallocation of resources to low-priority targets could diminish the Project's financial efficiency. Second, the Project may encounter geological challenges, such as complex structures or unfavourable mineralization, that hinder discovery efforts. Lastly, as exploration activities transition toward development, there is a risk of missing opportunities for greenfield discoveries that could enhance long-term resource potential.

25.17.1.3 Drilling

The risks related to drilling in the Cuiú Cuiú Project include logistical challenges posed by difficult terrain and weather conditions, which can limit access and drilling efficiency, particularly for larger rigs. Excessive water flow, soft saprolitic material may affect sample integrity and recovery. These conditions could be extreme, leading to the abandonment of holes. There is also a risk of incomplete data due to insufficiently tested deeper structures, necessitating follow-up drilling to confirm continuity and resource estimates. To operate a drilling campaign side by side with numerous artisanal miners may incur in violence, alcohol and drug abuse among workers These factors require careful planning and adaptive strategies to mitigate operational risks.

25.17.1.4 Mineral Processing and Metallurgical Testwork

- A small number of tests have been completed to support the recovery estimates defined in this stage. This can result in a lower accuracy of production estimates.

- Cement used in agglomeration is a major component of the operating costs. Cement requirements are based on a limited number of tests. Additional testing from areas of initial production to better forecast cement requirements.
- Leach characteristics of areas with higher grade veins are not fully developed. The higher-grade veins may leach slower than lower grade saprolite or blanket ore. Recoveries are expected to be lower than estimated for these areas.

25.17.1.5 Mineral Resource Estimate

The Cuiú Cuiú gold deposit, located in the state of Pará, Brazil, has been the site of active artisanal gold mining (garimpo) for many years. This longstanding mining activity may create challenges when interpreting eluvial, colluvial, and deluvial cover bodies (blankets) as it is difficult to distinguish between material displaced by mining activities and the natural sediment deposits.

The region also faces potential influences from specific legal, political, and environmental factors that may impact the development of the Project. These risks are outlined below.

25.17.1.5.1 Legal and Political Risks

Land ownership and access could affect the project timeline. Securing long-term land access agreements with landowners is essential for the success of the Project.

Brazil's mining sector operates within a complex regulatory framework that requires compliance with both federal and state-level legislation. Changes in mining laws, tax structures, or government policies could impact the Project's economic feasibility.

25.17.1.5.2 Environmental Risks

The deposit is located in a region with sensitive ecosystems, requiring environmental impact assessments and compliance with environmental regulations. Delays in obtaining the necessary environmental permits could hinder project development.

25.17.1.5.3 Other Risks

Market conditions, fluctuations in gold prices, and changes in global demand could significantly impact the economic viability of the Project.

Mitigating these risks requires a detailed work plan, including comprehensive legal and environmental planning, as well as engagement with stakeholders and the local community.

Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability. There is no certainty that all or any part of the Mineral Resources will be converted into Mineral Reserves. The estimation of Mineral Resources is subject to inherent uncertainties, and the results of further exploration or feasibility studies may materially affect the estimates.

25.17.1.6 Mineral Reserve Estimate and Mining Methods

Risks to the mine plan include changes to the following factors and assumptions:

- Metal prices
- Interpretations of mineralization geometry and continuity in ore zones
- Geotechnical and hydrogeological assumptions
- Ability of the mining operation to meet the annual production rate and anticipated grade
- Operating cost assumptions
- Dilution, mine operation and process plant recoveries
- Operating time, climatic factors may adversely affect achieved operating time in a given year.

25.17.1.7 Recovery Methods

The current site conditions indicate a three-month wet season characterized by significant precipitation. Operations will continue during this period; however, there is a risk of increased solution volumes passing through the heap leach pad and into the solution ponds. Also, the moisture content in the ROM can increase, which could negatively impact screening efficiency in the crushing plant and the agglomeration process.

Coarse bottle rolls leach tests on high grade samples from Machichie visible veins showed variable leach extractions. Design recoveries may not be achieved when processing this production.

25.17.1.8 Infrastructure

The follow risks have been identified for infrastructure:

- Based on a limited geotechnical investigation, the infrastructure appears stable and there is adequate low-permeability soil needed to be placed beneath the geomembrane. Ausenco did not complete an extensive investigation, including test pits or boreholes, to estimate site-specific infrastructure geotechnical parameters.
- The HLF is designed in accordance with the current mine plan. No additional capacity exists beyond the 1973 t/d design, and an increase in leach feed will require the addition of more cells. However, there is limited space due to the surrounding terrain.
- The two WSFs are designed based on the current mine plan. No additional capacity exists beyond the 2.05 Mt design, and an increase in waste rock mined will necessitate the purchase of additional property for the development of additional waste storage capacity.
- Agglomeration must be closely followed to maintain heap permeability; poor agglomeration techniques could lead to permeability issues and/or increased cement requirements.

25.17.1.9 Environmental, Permitting and Social Considerations

The Cuiú Cuiú Project faces several risks across environmental, permitting, and social dimensions. Environmentally, the sensitive Amazon ecosystem is at risk of degradation from deforestation, biodiversity loss, soil erosion, and water contamination, which could harm endangered species and aquatic systems. Delays or challenges in navigating Brazil's complex permitting framework, compounded by potential regulatory non-compliance, pose risks to project timelines and operations. Socially, the Project could encounter resistance from local communities, especially regarding environmental impacts and land use. Additionally, increased population pressures from project activities may strain local infrastructure and public health systems, potentially eroding the social license to operate if stakeholder engagement and mitigation measures are inadequate.

25.17.2 Opportunities

25.17.2.1 Geology

The geology of the Cuiú Cuiú Project presents significant opportunities for resource development and expansion. The Project is located in the Tapajós Mineral Province, a region known for its prolific gold deposits, and features diverse mineralization styles, including high-grade quartz-sulphide veins, breccias, and unconformable gold-bearing sedimentary layers. The presence of both in situ and transported gold mineralization, along with deep weathering profiles, offers the potential for low-cost, near-surface mining opportunities. Additionally, the discovery of pathfinder elements such as molybdenum and tungsten suggests the possible presence of a concealed porphyry system, which could represent a major untapped resource. The presence of numerous targets with good evidence of gold mineralization, but little drilled, is also important to expect a significant increase in Mineral Resources.

For Central, there is not a three-dimensional model depicting geology and alteration other than the definition of the estimation domains as Blanket and Saprolite. Usable wireframes depicting more detailed geology is not available to inform the resource model. Brecciation, sulphide zones, quartz zones, faults, and barren dykes were not considered in the Central model despite being well described in the Company literature. Modeling these features will significantly improve the resource model and represents a great opportunity for the project.

25.17.2.2 Exploration

The extensive exploration conducted at Cuiú Cuiú provides significant opportunities for resource expansion and project optimization. Many targets are drill-ready, with previous geochemical and drilling data supporting their potential. The Project benefits from robust QA/QC standards and coherent geochemical follow-ups, ensuring reliable data to guide decision-making. Additionally, the Project's demonstrated capacity to integrate historical and new exploration data positions it to uncover high-value deposits efficiently. Focusing resources on developed targets while keeping greenfield opportunities in view can maximize economic returns and extend the Project's lifecycle.

25.17.2.3 Drilling

Drilling at the Cuiú Cuiú Project offers opportunities to delineate shallow, cost-effective oxide resources and expand deeper primary mineralization. Flexible rigs enable exploration in challenging terrain, while high-grade discoveries and

new targets from reconnaissance drilling highlight the potential for resource growth and refinement, supporting future development.

25.17.2.4 Mineral Processing and Metallurgical Testwork

Low-grade ore from MG and Central pits presented short leach time when compared to the high-grade samples. This can result in shorter leach cycle for part of the ore, which can contribute to a faster production and cashflow for the Project.

25.17.2.5 Mineral Resource Estimate

This geological resource update was conducted only for the eluvial/colluvial/deluvial cover (Blanket) and oxidation zones of sulphide ores (saprolites). The sulphide ores were not modeled or assessed using the new data. The subvertical bodies of gold mineralization, in most cases, remain open at depth. Updating the geological resources of the sulphide ores could significantly enhance the economic potential of the Project.

25.17.2.6 Mineral Reserve Estimate and Mining Methods

The report considers only the utilization of oxidized material, leaving out the potential of fresh rock, which could increase the reserve and extend the operation's life. In this case, a new plant for recovering this material should also be considered to validate this opportunity.

25.17.2.7 Recovery Methods

The design loaded carbon grade is 2,500 g/t, but can be increased during operations if needed, providing operational flexibility and potential cost reductions by reducing the number of acid wash and elution batches required.

Further compacted permeability testing on pre-production samples will better define cement requirements for agglomeration. This will permit cost optimization in cement costs.

25.17.2.8 Infrastructure

The layout of the on/off leach pad can accommodate an extra cell to increase throughput for the HLF, if needed in the future.

25.17.2.9 Environmental, Permitting and Social Considerations

The Cuiú Cuiú Project offers significant opportunities to set benchmarks for sustainable mining and ecological restoration in the Amazon. Environmental initiatives, including forest recovery, biodiversity conservation, and advanced mitigation programs, could enhance local ecosystems and build partnerships with conservation organizations. Successful adherence to Brazil’s permitting framework can foster trust with regulators, attract environmentally conscious investors, and establish the Project as a compliance model. Socially, the Project can deliver tangible benefits such as job creation, infrastructure development, and environmental education. Transparent communication and meaningful community engagement present opportunities to strengthen local relationships, foster long-term support, and create shared value for stakeholders.

26 RECOMMENDATIONS

26.1 Overview

The results presented in this technical report demonstrate that the Cuiú Cuiú Project is technically and economically viable. It is recommended to continue developing the Project through additional studies, including a feasibility study. Table 26-1 summarizes the proposed budget to advance the Project to a feasibility study level.

Table 26-1: Proposed Budget Summary

Program Component	Estimated Total Cost (US$M)
Drilling	1.00
Mineral processing and metallurgical testwork	0.52
Mineral resource estimation work	0.21
Hydrogeological Work – mining pit	0.05
Geotechnical Work – mining pit	0.04
Mine Planning Work	0.08
Feasibility study – process plant and infrastructure	1.40
Infrastructure - geotechnical work	0.92
Environmental studies and permitting	0.75
Total	**4.97**

26.2 Exploration

This QP does not recommend an extension of this exploration program at this time, due to the need to establish the economical feasibility of the most developed targets, specifically the Central, MG and Machichie. Resources are limited and the Project has so many attractive targets that the company could lose the financial means to advance targets that will require substantial investment before showing economical feasibility. In the QP's view, exploration for the least developed targets, should be paused until a Definitive Feasibility Study is completed for the main targets and the company has sufficient financing to continue evaluating the available data and prioritizing the best targets.

26.3 Drilling

The Cuiú Cuiú Gold Project has benefited from a robust drilling program, with over 116,116 m drilled across 929 holes. This comprehensive effort has provided a substantial database to support geological modeling, resource estimation, and project advancement.

Drilling has confirmed mineralization at key targets, including Central, MG, PDM, and the Machichie Complex, revealing various gold styles in saprolitic weathering, unweathered basement rocks, and unconformable Blanket deposits. These findings have refined the prioritization of high-potential areas for further exploration and development.

This QP recommends infill drilling to achieve Measured Resource status all deposits – MG, Machichie, and Central – in advance of mining. This type of mineralization is erratic in grade, tends to pinch and swell, and therefore will be highly variable over short distances. The current Pre-feasibility level models based primarily on Indicated Resources have a potential variance of +10% to -25%. This can be improved with infill drilling to Measured Resource status.

The estimated cost for implementing the recommendations described above is US$1.0M.

26.4 Mineral Processing and Metallurgical Testwork

Metallurgical work requirements for advancing the Cuiú Cuiú Project to a feasibility study level are estimated at US$260,000, which includes the following tests:

- Costs are exclusive of drilling costs to acquire the sample.
- Sample preparation and column leach variability tests at KCA – US$180,000.
- Larger column leach test with a representative sample of Year 1 of production; - US$15,000.
- Agglomeration and cement requirements optimization with composite samples from Year 1 and Year 2 of production – US$10,000.
- Compacted permeability variability tests with samples representative of the first years of production – US$50,000.

26.5 Mineral Resource Estimation

The following work related to Mineral Resource estimation is recommended for the next project phase:

- Upgrade the database structure; the current drill assay database in MS Access should be migrated to a superior database program, one specifically designed to house exploration data and perform quality control checks. Cost estimate: US$40,000.
- Standardize lithological codes in geological descriptions. There are some 50 or more rock types, over 30 different codes for alteration, and several descriptive codes which should be grouped to simplify modeling geological zones. Cost estimate: $5,000.
- Conduct a detailed topographic survey of the Central and Machichie sites. Cost estimate: $50,000.
- Develop and use a detailed three-dimensional geological framework to support gold estimation. The MG, Central, and Machichie deposits contain several rock units that affect the resource estimation process but are not specifically modelled in the detail necessary. This includes rock units such as breccia zones that contain higher

grade than surrounding rocks as well as rock units such as mafic and aplite dykes which may be barren. Proper identification and modeling of these units will improve the estimation. Cost estimate: $45,000.

- Resource Modeling: updated resource models are recommended following the infill drilling and the three-dimensional geological modeling noted above. Cost estimated at $30,000.
- Geo-metallurgical (delineating the various metallurgical ore types) should be completed at all deposits to improve prediction of estimated metal recovery and to outline various metallurgical process characteristics. The current Pre-feasibility level geo-metallurgical models should be improved to define the smaller individual units that could potentially cause process recovery problems such as lake bed clays or relict artisanal mine workings (garimpeiro dumps). Geo-metallurgical modeling should include information relative to comminution (sizer, crusher) such as hardness and material sizing. Cost estimate for this is $35,000.

Total cost for this Mineral Resource Estimation work is US$205,000.

26.6 Mineral Reserves and Mining Methods

For the feasibility study, engineering efforts in open-pit slope design should aim to enhance the confidence level of design criteria, establish interim pit slope designs, and refine the final optimized pit configuration. Future studies should include modeling of surface and groundwater inflows expected to report to the open pits throughout the mine's operational life. Developing a pit dewatering plan is essential and should be integrated into the comprehensive water management strategy. Additionally, infrastructure and power needs associated with the dewatering system should be estimated to ensure seamless implementation and operation. Mine planning should be revised to incorporate potential extensions to the Project's life, taking into account additional satellite orebodies, results from updated drilling campaigns, revised metallurgical recovery rates, and updated price and cost assumptions. These factors may positively impact resource availability, economic viability, and overall project longevity, necessitating a reassessment of current mine design and scheduling to optimize long-term value.

Cost estimate for hydrological work (dewatering and water management) is estimated at $45,000.

Cost estimate for geotechnical work is estimated at $35,000.

Cost estimated for mine planning related work is $80,000.

26.7 Recovery Methods

More detailed process and site-wide water balance is required better define pregnant and barren solution flows. This information is required to define solution volumes will require cyanide detoxification and possible discharge to the environment. The work described in this section will be performed during the Feasibility Study stage. The estimates cost for engineering development is approximately US$1.4M.

26.8 Project Infrastructure

The final GA for infrastructure includes the HLF, spent ore stockpile and pond, and the two WSF facilitiesy and ponds. Based on the limited geotechnical program completed for the PFS and the HLF and the spent ore stockpile and ponds change location, the following recommendations are made for site geotechnical and laboratory programs in the next phase.

- Completion of thirty-two boreholes for a total length of 425 m, 9 CPTu for a total length of 225 m, 26 test pits, and 10 geophysics lines in the areas of the infrastructure identified above to confirm foundation conditions, specifically the extent of the saprolite and colluvium units along with depth to groundwater and bedrock (if encountered).
- Laboratory index testing, including compaction tests, mechanical strength tests, and permeability tests on foundation soils and potential borrow materials.
- Additional laboratory testing to confirm the physical characteristics of the agglomerated ore, compacted spent ore, waste materials, including mechanical strength, trafficability, and permeability tests.
- Using the new data to recommend designs for foundations, borrow sources, construction materials for infrastructure, and DSTF, WRSF, filter plant, and process plant, along with supporting infrastructure.
- A geohazard and seismic hazard investigation needs to be performed required for the next phase of the Project.

The estimated cost is approximately US$545,000, including the drilling and excavator rental.

To bring the design and analysis of the HLP and ponds, spent ore stockpile and pond, waste storage facilities and ponds to a feasibility-study level of detail, the following activities are recommended:

- Review and update meteorological and hydrology information, updating surface water. and sediment management for the facilities above.
- Update chemical characterization of spent ore, waste and construction materials.
- Develop seepage predictions and seepage control measures for the spent ore and waste materials.
- Optimize the HLP, spent ore stockpile and pond, waste storage facilities and ponds including handling and staking strategy, including trafficability of material handling equipment for the DSTF.
- The stability model should be reviewed and updated, as required, with consideration of the final stacking plan using updated data about the material properties of the waste using laboratory results along with foundations for the SOS and WSF.
- Develop FS level design of HLP and ponds, SOS and Pond, and WSFs and ponds, including stacking, site surface water management.
- Develop material takeoff estimates for capital, sustaining capital, and operating costs.

The estimated cost for the recommended work is approximately US$375,100.

26.9 Environmental Studies and Permitting

The following work related to environmental studies and permitting is recommended for the next project phase:

26.9.1 Environmental Management

- Strengthen biodiversity conservation programs, focusing on the protection of endangered species and ecological restoration of degraded areas.
- Enhance water quality monitoring and develop targeted mitigation strategies for contamination risks, particularly in aquatic ecosystems.
- Expand environmental education programs for local communities to foster awareness and support for conservation efforts.

26.9.2 Permitting

- Maintain close coordination with regulatory agencies to ensure timely approvals of pending licenses, while addressing any gaps identified during reviews.
- Leverage compliance with stringent permitting requirements to build trust with stakeholders and attract environmentally conscious investors.

26.9.3 Social Engagement

- Deepen community engagement initiatives by involving local populations in project planning and decision-making processes.
- Develop targeted social programs to address infrastructure needs, capacity building, and economic opportunities for local communities.
- Implement communication strategies that prioritize transparency and actively address community concerns.

26.9.4 Closure and Reclamation

- Develop detailed, phased reclamation plans that prioritize short-term erosion control and long-term ecosystem recovery.
- Conduct periodic assessments of reclamation progress to ensure alignment with ecological and regulatory goals.
- Collaborate with environmental experts and local stakeholders to integrate traditional ecological knowledge into reclamation efforts.

The estimated cost of permitting and environmental studies is approximately US$750,000.

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