# Technical Report on the Rio Madeira Exploration Project, Rondonia, Brazil Report for NI 43-101

**Canary Gold Corp.** 

Effective Date: July 30, 2023

Signature Date:
August 31, 2023
Prepared by:
RBM Consulting Ltda

**Qualified Person:** Rodrigo Mello, FAusIMM.



# TABLE OF CONTENTS

1.	SU	MMARY	5
2.	INT	RODUCTION	7
	2.1	TERMS OF REFERENCE	7
	2.1	.1 Qualification of the Author	7
	2.2	HISTORY AND GEOLOGICAL INTERPRETATION	7
	2.3	Exploration Model	
	2.4	INTERPRETATION AND CONCLUSIONS	8
	2.5	RECOMMENDATIONS	9
3.	REI	IANCE ON OTHER EXPERTS	9
4.	PR	OPERTY DESCRIPTION AND LOCATION	10
	4.1	Project Ownership	_
	4.2	AGREEMENTS, ROYALTIES AND ENCUMBRANCES	12
	4.3	Environmental Liabilities and Permitting	15
5.	AC	CESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY	15
	5.1	Accessibility and Infrastructure	15
	5.2	Physiography, Climate and Vegetation	16
	5.3	LOCAL RESOURCES	18
6.	HIS	TORY	19
7.	GE	OLOGICAL SETTING	20
	7.1	REGIONAL GEOLOGY	20
	7.2	PROPERTY GEOLOGY	22
8.	DE	POSIT TYPES	26
9.	MI	NERALIZATION	27
10	. EXI	PLORATION	27
	10.1	MOTIVATION	27
	10.2	Introduction	27
	10.3	Target Generation	28
	10.4	GROUND PENETRATION RADAR SURVEY	30
	10.5	REMOTE SENSING AND DATA INTEGRATION	_
	10.6	TOMOGRAPHY GEOPHYSICS	
	10.7	DRILLING AND SAMPLING PLAN	
	10.8	Target Selection	39
11	. DR	ILLING	40
12	. SAI	MPLING METHOD AND APPROACH	40
13	. DA	TA VERIFICATION	40
14	. AD	JACENT PROPERTIES	41
15	. мі	NERAL PROCESSING AND METALLURGICAL TESTING	41
16	. мі	NERAL RESOURCE AND MINERAL RESERVE ESTIMATE	41

17.	OTHER RELEVANT DATA AND INFORMATION	41
18.	INTERPRETATION AND CONCLUSIONS	42
19.	RECOMMENDATIONS	42
20.	REFERENCES	44
21.	DATE AND SIGNATURE PAGE	45
LIST	OF FIGURES	
Figui	re 1: Location Map	6
	re 2: Distribution of the Tenements	
Figui	re 3: Applications affected by the Border ZoneProperties not affected by this law are the following: $$	13
Figui	re 4: Map of the properties outside the Border Zone	14
_	re 5: Local Infrastructure	
_	re 6: Aerial view, looking NW, in the direction to the Madeira River	
	re 7: Aerial view of Porto Velho with its fluvial port in front (July 2007)	
Figui	re 8: Photo of the gold rush in the 80s, with dredging barges crowded in rich spots in the Madeira	
Fiam	re 9: Flood basin simplified schematic environmental model – Latrubesse et al	_
	re 10: Time scale for the Cenozoic Era	
	re 11: Geological Map of the SW portion of the Property	
	re 12: Photo at river bank, showing the Mocururu layer covered by a sand/clay overburden	
	re 13: Photograph of a typical block of Mocururu	
	re 14: Block diagram with the interpretation of the structural framework of the property	
	re 15: ASTER elevation data, plotted to emphasise features in the 100-150m range	
_	re 16: Isometric view, showing river course incising ESE trending resistant basement unit	
_	re 17: Domain of flat relief east of the junction between the Rio Abuna and Rio Madeira	
_	re 18: Map with the location of the GPR line paths, with the profile of the SW line	
	re 19: GPR profile of the SE segment of the NE survey line	
	re 20: GPR profile of the NW segment of the NE survey line	
Figui	re 21: Image IHS JERS-1/Landsat 7 (1994)	33
Figui	re 22: Radar image, polarization HH. Highlighted, the areas with typical features of paleochannels ( $^\circ$	
Fiau	re 23: SRTM image with the tenements in red (2023).	
_	re 24: Map of the surveyed lines (2023)	
_	re 25: Example of well-defined Mocururu horizon	
	re 26: Example of a possible paleochannel, without the presence of the Mocururu level over it	
_	re 27: Example of possible paleochannel with missing Mocururu layer over it	
_	re 28: Photograph of the sonic rig to be used at the Madeira project	
_	re 29: Examples of core obtained using Sonic drilling	
_	re 30: Mining sequence with forest restoration	
LIST	OF TABLES	
Table	e 1: Madeira Project Mineral Properties	10
	e 2: Applications affected by the Border Zone	
Table	e 3: Claims outside the Border Zone	14
Table	e 4: Average local Climate Parameters	17
Table	e 5: Gold production from Rio Madeira – estimates (Bastos, DNPM)	19
3		

Table 6: Satellite images used in this work	32
Table 7: Unit Costs for Budget	43

#### 1. SUMMARY

RBM Consultoria Mineral Ltda (RBM) was retained by Canary Gold Corp. (Canary Gold or the Company) to prepare an independent Technical Report on the Rio Madeira Exploration Project located on Canary Gold's consolidated tenement package (CTP or Property) in Rondônia, Brazil. The purpose of this Technical Report is to support the disclosure of the geological context and exploration thesis as part of the required qualifying listing requirements for the property as of the 30<sup>th</sup> of July 2023. This Technical Report conforms to National Instrument 43-101 *Standards of Disclosure for Mineral Projects* (NI 43-101). The Qualified Person (QP) signing off for this report is Rodrigo Mello, FAuslMM, who visited the properties in November 2022. Mr. Mello has extensive experience with gold exploration and development, especially in the Amazon region, thus attending to the requirement of relevant experience and professional affiliation to act as Qualified Person for the Madeira Project.

The CTP is held by New Frontiers Mineração Ltda (New Frontiers), a Brazilian exploration company. The CTP is made up of eight exploration license applications, five of those occurring within the Border Zone (the 150 km trip bordering the international frontier in Brazil, where foreigners have some limitations to operate) and three are outside. The total area of the project is 68,445 hectares. After the permit concession, Canary will be able to explore for up to six years, when a positive exploration report must be submitted to keep the mineral rights.

This Project is at the conceptual stage. No samples were collected by New Frontiers or Canary Gold, therefore no mineral resources were estimated. Historic gold production and geological reasoning are the basis for this Project. Gold production has been poorly recorded, due to smuggling, but an estimated 7 million ounces of gold have been produced since the gold fever of the 1980's. Even today, artisanal mining through dredges in the Madeira River are a common sight.

The Madeira Valley sits in the Amazon rain forest zone, although most of the area has been deforested due to logging and cattle grazing. The short proximity to the state of Rondonia, Porto Velho, and the construction of two hydroelectric dams at the Madeira River are positive factors for project development, if mineralization is found. The figure below shows the location of the project:

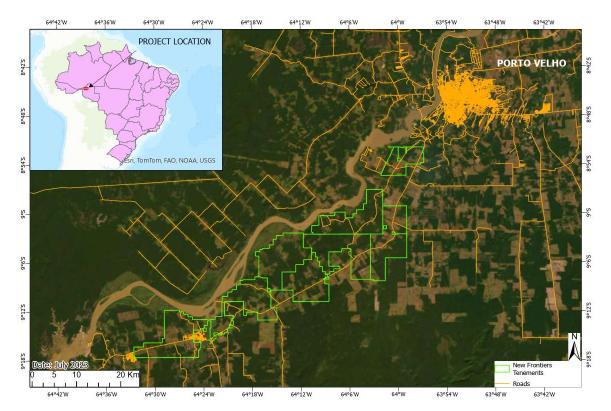


Figure 1: Location Map

The exploration targets, a duricrust bed called Mocururu and eventual paleochannels of the Madeira River, are both covered by an overburden layer in excess of 20 metres thickness. At the river, there are some outcrops of Mocururu, only accessible during the dry season. This QP collected two samples of this rock, one of them showed a grade of 1.15 g/t Au.

To define drill targets, two geophysical methods were used by the JV New Frontiers/Canary Gold:

- GPR (Ground Penetration Radar). With limited penetration, this method showed features with might be paleochannels.
- Tomography (Resistivity 2D profiles). Using the anomalies shown by GPR, 15 km of tomography lines were made, with readings at each 20 m. This method showed the stratigraphic layers, to a depth of 100 m. The Mocururu layer is interpreted as occurring over 50% of the surveyed lines. It does not occur over anomalies interpreted as paleochannels, as it can be expected.

Remote sensing studies were also performed, using a variety of active or passive sensors, like CBERS, Sentinel, Landsat and Radar missions. Some targets suggest the presence of paleochannels, which will be investigated on field.

This QP considered this Project as based on sound conceptual exploration models. It has merits and deserves follow-up activities. An exploration program is proposed, constituted of additional tomography lines, aero-magnetometry using drones and diamond drilling, using a Sonic drill rig. This rig is able to obtain very representative core from unconsolidated layers. The samples will be sent to Canada, for sedimentology and placer mineralization studies.

#### 2. INTRODUCTION

#### 2.1 Terms of Reference

This report was prepared as a National Instrument 43-101 Technical Report for Canary Gold Corp., on the Rio Madeira Gold Project (Project). The Company has an option agreement with New Frontiers for the Project, whereas Canary Gold may acquire up to 70% of the Property depending on certain payments and expenditures on explorations activities.

This Technical Report has been prepared in connection with Canary Gold intention in list to the TSX Venture Exchange or to the Toronto Stock Exchange. The quality of information, conclusions, and estimates contained herein are based on data supplied by New Frontiers, public available technical papers and the reports from the remote sensing and geophysical consultants engaged by Canary Gold. Previous reports consulted are listed in the Bibliography section. The Technical Report by Amazon Mining, (Velasquez, 2007) is of particular importance.

#### 2.1.1 Qualification of the Author

Rodrigo Mello is an independent consultant, based in Belo Horizonte, Brazil. He has a BSc in Geology, from the Federal University of Minas Gerais. During the last 37 years, Mr. Mello worked continuously on mineral exploration and project development, mainly for gold projects, but also for copper, nickel, titanium, zinc. Representing AusIMM in Brazil since 2000, he authored or co-authored 21 NI 43-101 published on SEDAR+, on projects in Brazil, Argentina, Colombia and Chile.

Mr. Mello visited the property from November 4<sup>th</sup> to 7<sup>th</sup>, 2022 in the company of Canary Gold and New Frontiers personnel.

#### 2.2 History and Geological Interpretation

According to Brazilian Government Records (DNPM – now ANM), more than 1.6 million ounces of gold were mined from the primary Rio Madeira drainage between 1979 and 1995. Canary Gold, based on its research, proposes that significant upside potential for further, potentially economic gold resources, exists within the influence of the current and paleo-drainages associated with the greater Madeira River System. The modern drainage area exploited between 1979 and 1995 represents only a very small percentage of the potential area for the discovery of gold and other mineralization related to sedimentary formations including abandoned paleochannels.

Available reports related to the Madeira River drainage system of Rondônia in the Amazon flood plain were reviewed and compared with sediment-hosted resources globally. The well-known Witwatersrand paleoplacers are the best analogues from a purely sedimentological perspective and their relative sedimentary characteristics, and similarities are compared. The most significant agreement is found in the orogenic control on the supply of sediments shed from mountain belts into low-lying floodplains. Low-grade gold-mineralized sediments comprising sand and small-pebble gravels were entrapped and reworked in several phases over millions of years. The metallic gold comprises fine grains and visible grains (VG) within the sediments, throughout the target area. Substantial gold grade is concentrated largely on the Miocene-Basement contact. Mineralization is substantial and only gold has been analysed systematically, to date. Structural controls on bedrock and paleo topography can be expected to have resulted in areas where heavy minerals including gold have been concentrated into potential more discrete economic zones, predicted but yet undiscovered, and may contain additional metals – minerals in addition to the targeted gold mineralization. The targeted interval

is not exposed but is predicted to occur (supported by geophysics) where it is buried beneath more recent sedimentary cover at and to depths of some 15-60 m below the current land surface and as such this style of mineralization was largely undetected and avoided by previous miners. Much of the flood plain was once buried underneath a laterally persistent bed that was turned into a durable, lateritic horizon (known locally as Mocururu) that contains finer-grained gold in potentially economic concentrations.

The underlying pre-Mocururu sedimentary interval is similarly gold bearing, also presumably at potentially mineable – economic depths for shallow surface mining activities although this clearly requires further detailed investigation. The sedimentary horizons hosting gold mineralization may also contain concentrations of magnetite or perhaps radioactive elements which may be detected by geophysical exploration techniques.

The above description outlines a viable geological scenario whereby particulate gold was likely derived from mineralized bedrock upstream over a period of tens of millions of years. This particulate gold was then distributed by the Madeira drainage system initially within braid plains, and ultimately within broader migratory meander belts during phases of lower alluvial discharge. These processes alternated throughout the past ~23 million years during seasonal or epic driven wet or dry climatic phases. The entire target area and surrounds were likely also blanketed with gold-bearing sediments that were exhumed and reworked into younger deposits, including the Mocururu terraces. The final product was left as a disconnected series of abandoned oxbow lakes and meandering stream point bars formed at low discharge. Low-grade alluvium was reworked into channels and bars throughout recent history since the Miocene. The accessible, high-grade remnants at surface were likely depleted by *garimpeiro* activity (artisanal miners) mainly within and along the current, modern Madeira River, with little evidence of this activity preserved.

#### 2.3 Exploration Model

The Canary Tenement Package has been selected and consolidated as a highly prospective terrain whereby the targeted gold bearing formations remain preserved and intact allowing their exploration with modern techniques, technology, and equipment. Preliminary and reconnaissance exploration activities completed to date over the CTP includes remote sensing, ground penetrating radar, and tomography (resistivity) geophysics, geological mapping which included some regional traverses to target the location and distribution of potentially favourable locations for gold concentration associated with bedrock unconformities, Mocururu terraces and/or paleochannels. The most significant target areas are those where the unconformity between Basement and Miocene is exposed within the bed and along the banks of the Madeira River, which is seldomly exposed and when it is it is in only the driest of months for a restricted period of only several weeks a year, generally in September or October. The entire extent of the basement unconformity appears to be prospective and requires systematic sampling by means of sonic/percussion or Air Core (AC) drilling to aid the delineation of and define where buried higher-grade concentrations of mineralization are likely to be located.

## 2.4 Interpretation and Conclusions

The Qualified Person (QP) is of the opinion that this project has merit and may contain a gold deposit with size potential to be of the order of multi million ounces. The main facts supporting this opinion are:

- The presence of alluvial gold in expressive deposits in the Madeira present course is ubiquitous.
- Rock samples from the lateritic horizon (either in situ or from artisanal mining dumps) are variably mineralized.

 Geophysical profiles (tomography) showed features of high resistivity material (interpreted as constituted of the laterite, locally called Mocururu) in the same feature as predicted by the exploration model:

- Either as continuous, horizontal layer of 2-3 m thick, under a clay/sand overburden bed of up to 10-20 m thickness
- Possibly present in large concentration of high resistivity, compatible with an accumulation of Mocururu blocks, in paleochannels several hundred meters in lateral extent. In these cases, the pervasive bed of in-situ Mocururu is not present, compatible with the paleochannel hypothesis, in which the river may eroded the Mocururu layer.

These features, if confirmed as auriferous, could, based on comparison of recorded production from the active Madeira River, represent a multi-million-ounce deposit potential. These considerations are enough to state that the project has merits and deserves a substantial investment in mineral exploration, as recommended in this report.

#### 2.5 Recommendations

- 1. Collect a magnetic and topography survey, using UAV drone technology.
- 2. To develop a Sonic drilling program with the goal of understand the sedimentology of the gold accumulation and establish the best method of drilling and sampling. Inferred resources may be defined with this drilling.
- 3. Sedimentology and heavy mineral characterization parameters will be defined as well.
- 4. Follow up drilling, Increasing the level of confidence of the Mineral Resources to the Indicated category using Acor similar drilling.
- 5. Carry out metallurgical testing programs on representative mineralized samples.
- 6. Carry out a Preliminary Economic Study based on several conceptual mining scenarios.

#### 3. RELIANCE ON OTHER EXPERTS

RBM relied on exploration and technological data supplied by New Frontiers to produce this report. RBM has reviewed and evaluated the exploration data pertaining to the Madeira project areas provided by New Frontiers and their consultants and have drawn its own conclusions.

The geological, mineralization and exploration techniques (items 5 to 13) used in this report are taken from reports and internal memorandums prepared or obtained by New Frontiers from public sources. The public reports can be accessed through the links provided in the bibliography.

The status of the exploration applications under which New Frontiers holds title to the mineral rights for these properties has been investigated by RBM only by consulting the systems of ANM (the federal agency of mineral control), which reports the properties as "regular" and belonging to New Frontiers. No further investigation was done and RBM does not guarantee that any liability or litigation could prevent New Frontiers to transfer the mineral rights of these areas to Canary Gold, as required in the terms of the agreement between the companies.

A reasonable amount of confirmatory testing and verification has been accomplished. Although RBM believes that all the information provided in this report is accurate, it is possible that some problems were not

detected, and may have been used in this evaluation. RBM does, however, represent that the information was evaluated and put together in good faith.

#### 4. PROPERTY DESCRIPTION AND LOCATION

# 4.1 Project Ownership

The Project is comprised eight (8) properties, all in the Exploration Permit Applications phase, totalling 68,445 hectares. Three of them have a temporary blocking, due to interference with power lines, this is a restriction considered easy to resolve through existing procedures available through the ANM. In general, correspondence with the ANM stating that the company will respect a security limit around the power lines suffices for the granting of an Exploration Permit. Alternatively, the company may apply for a reduction in area, corresponding to the zone possibly affected by the power lines. In any case, the possible reduction in the area due to power lines restrictions is not considered materially significant.

**Table 1: Madeira Project Mineral Properties** 

Title AREA Ha		Phase	Last event		
886196/2017	9,992.30	Exploration Permit Application	Information request published		
886198/2017 9,441.94		Exploration Permit Application	Information request published		
886199/2017	7,796.61	Exploration Permit Application	Information presented		
886010/2023	9,023.45	Exploration Permit Application	Information request presented		
886009/2023	4,133.33	Exploration Permit Application	Information request presented		
886197/2017	8,815.65	Exploration Permit Application	Information presented		
886011/2023	9,762.60	Exploration Permit Application	Information presented		
886012/2023	9,479.51	Exploration Permit Application	Information presented		

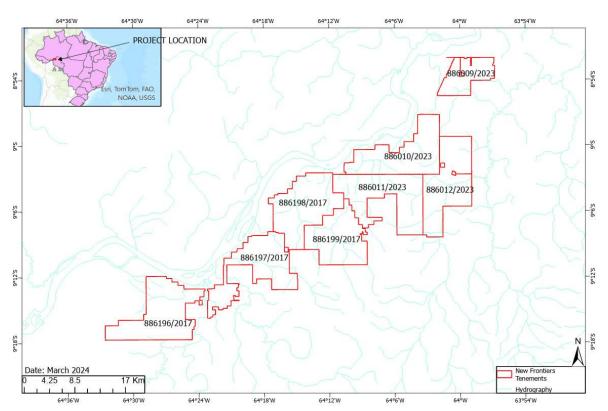


Figure 2: Distribution of the Tenements

According to the Brazilian regulations, an application for an Exploration Permit assures the exploration right for the area, unless someone has applied before, for the same property. There is no expiration date for the Permit.

All applications were made in the name of New Frontiers Mineração Ltda. From the public information available, at the ANM site, it can be verified that the areas are regular. RBM has verified in the ANM cadastre that there are no other applications over the same areas occupied by the processes listed in Table 1. Consequently, it is reasonable to assume that all the Exploration Permits will be issued in name of New Frontiers Mineração Ltda.

The first step in the Brazilian mining license process is to file an Exploration Permit application (*Requerimento de Pesquisa*). This application must include a project for the exploration work to be undertaken, which must be prepared. The application is reviewed by the National Mining Agency (ANM) and, if approved, the applicant will be granted an Exploration Permit (*Autorização de Pesquisa*).

Exploration Permits are granted for an initial period of one to three years. Three years is the most common term used for new Exploration Permits. During this time, the applicant can conduct exploration activities such as geological mapping, sampling, and drilling. At the end of the period, the applicant must submit a partial report, requesting an additional period of up to three years. Therefore, a total term of six years is the most likely scenario for all areas, after publication.

A final report (*Relatório Final de Pesquisa*) must be presented to the ANM after this period. If the report is positive and the mineral resources are deemed to be potentially economically viable, the applicant can apply for a Mining License (Lavra). If the applicant does not find any mineral resources during the exploration phase,

they can submit a negative final report (*Relatório Final de Pesquisa Mineral Negativo*) and relinquish the exploration license.

Mining Licenses are granted for an indefinite period of time. However, the license holder must meet certain conditions in order to keep the license valid. These conditions include paying government annual licensing fees and meeting environmental regulations.

## 4.2 Agreements, Royalties and Encumbrances

Canary Gold and New Frontiers entered into an option agreement on March 6, 2023, which was amended on April 1, 2024. All monetary values are expressed in Canadian dollars.

- Canary Gold has the option to acquire up to an undivided 70% indirect interest in the Properties.
- Canary Gold may acquire an initial 49% undivided interest in the Properties by:
  - a. Over a four (4) year period, in four instalments, initially, upon completion of the IPO, by April 1, 2026 and April 1, 2027
    - Paying \$25,000 cash to New Frontiers and issuing shares to it with an aggregate fair market value of \$50,000 (paid).
    - Paying \$125,000 cash and issuing shares to it equivalent to \$100,000
    - Paying \$200,000 cash and issuing shares to it equivalent to \$200,000
    - Paying \$500,000 cash and issuing shares to it equivalent to \$500,000
  - Incurring \$5,000,000 in Exploration Expenditures.
- Canary Gold may acquire an additional 21% indirect undivided interest in the Properties (for a total of 70%) by:
  - Funding 100% of the costs associated with a Development Program required for delivery of a preliminary economic assessment.
- If Canary Gold spends less than the specified Exploration Expenditures, it may pay the difference to New Frontiers to satisfy the condition.
- Canary Gold must provide a technical report prepared in accordance with NI 43-101 that includes a mineral resource estimate in respect of the Property to New Frontiers.

Due to the requirements of the Brazilian law 6.634/1979, this option to acquire an additional 21% indirect undivided interest will be formalized through a separate instrument. This law oversees the rules for activities occurring in a belt of 150 km from the international border, called Border Zone (*faixa de fronteira*). In this zone, foreign companies cannot possess more than 49% of the equity.

Other requirements for enterprises in the Border Zone are:

- The CSN (acronym in Portuguese for National Security Council) must approve the project;
- 2/3 of the workers must be Brazilians; and
- The majority of the management must be made by Brazilians.

Two thirds of the property seat within this zone, as depicted in the figure below. One third of the property has no special restriction.

Table 2: Applications affected by the Border Zone

Process	AREA Ha
886196/2017	9,992.30
886198/2017	9,441.94
886199/2017	7,796.61
886197/2017	8,815.65
886011/2023	9,762.60

Total 45,809

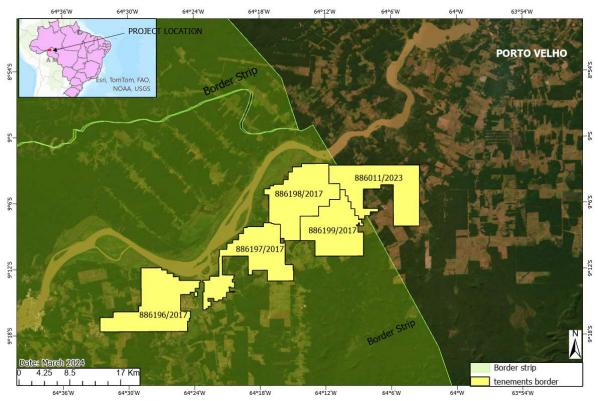


Figure 3: Applications affected by the Border Zone

# Properties not affected by this law are the following:

**Table 3: Claims outside the Border Zone** 

Process	AREA Ha
886010/2023	9,023
886009/2023	4,133
886012/2023	9,479

Total 22,636

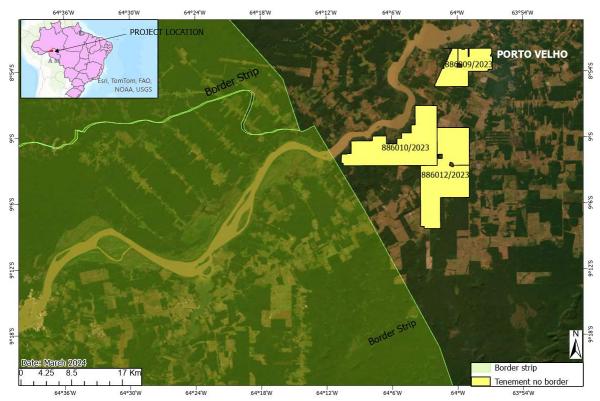


Figure 4: Map of the properties outside the Border Zone

There is no royalty clause in this agreement.

#### 4.3 Environmental Liabilities and Permitting

According to our search results, there is no evidence that New Frontiers or Canary Gold have caused any environmental liabilities. The deforestation in the area is mostly due to agriculture, specifically cattle grazing. Timber extractions were also observed. Artisanal mining has been observed in the neighbourhood, but it has had a limited impact.

The exploration activities developed by New Frontiers were of low impact on the environment. Therefore, no past environmental liabilities are expected to affect this project.

In regard to the areas outside the Border zone, the single permitting process necessary is the permit to drill, a process usually simple, except if deforestation is required. The initial drilling activities will be planned for deforested areas. According to the results, deforestation requests will be filled, to construct access roads and drilling pads. The deforestation will be kept as minimum as possible, and any areas impacted will be remediated promptly.

According to preliminary assessment, the surface ownership is held by a number of individuals. Each one will be contacted and an agreement with each is necessary to have access to the area. Brazilian law assures access to the title owner, however a judicial path is the last resort, since it can delay significantly the exploration work. Usually, this type of agreement is reached without problem.

For the areas inside the Border Zone, besides the requirements listed above, a special approval is necessary from the National Security Council. This QP is not aware of any project which was delayed by such Council.

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

#### 5.1 Accessibility and Infrastructure

The Property's limit sits 10 km southwest of Porto Velho. All areas can easily be accessed using the federal road BR-364.

The main source of energy in the region is hydroelectric power. The Jirau and Santo Antônio hydroelectric power plants are located near Porto Velho, and they provide a significant amount of the region's electricity.

The figure below shows the distribution of power lines and roads, in relation to the tenements held by Canary Gold. It is noted that two high-capacity power lines, 600 kv and 230 kv, are located at short distance to all areas of the project. The energy supply, obtained from the Madeira River is reliable and constant along the whole year.

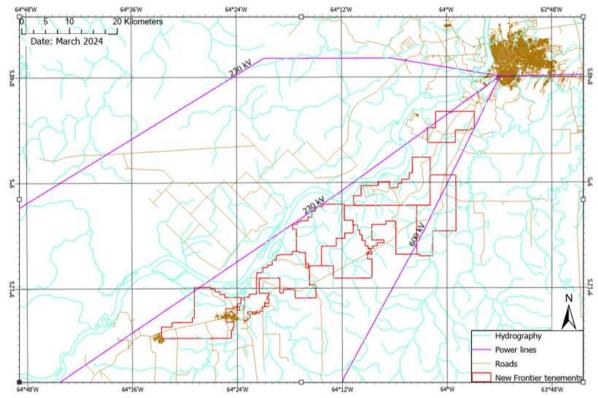


Figure 5: Local Infrastructure

# 5.2 Physiography, Climate and Vegetation

The project is located in the state of Rondônia, Brazil, which is part of the Amazon rainforest. The region is characterized by its flat topography, with an average elevation of 200 m. The climate is tropical, with average temperatures ranging from 25 to 30 degrees Celsius (77 to 86 degrees Fahrenheit). The vegetation is mostly rainforest throughout the state.

The region where the Project is located sits close to the state capital, the city of Porto Velho. Extensive deforestation is observed in that zone, due to agriculture and timber extraction.



Figure 6: Aerial view, looking NW, in the direction to the Madeira River

A summary of climate parameters is given in the table below.

**Table 4: Average local Climate Parameters** 

	January	February	March	April	May	June	July	August	September	October	November	December
Avg. Temperature °C (°F)	25.6 °C	25.5 °C	25.5 °C	25.5 °C	25.4 °C	25.6 °C	26.2 °C	27.5 °C	27.5 °C	27 °C	26.2 °C	25.8 °C
	(78.1) °F	(77.9) °F	(78) °F	(78) °F	(77.7) °F	(78) *F	(79:1)°F	(81.5) °F	(81.5) °F	(80.6) °F	(79.2) °F	(78.5) °F
Min. Temperature °C (°F)	23.4 °C	23.3 °C	23.4 °C	23.4 °C	23 °C	22.4 °C	22.1 °C	23 °C	23.9 °C	24 °C	23.8 °C	23.6 °C
	(74.1) °F	(74) °F	(74.1) °F	(74.1) *F	(73.4) °F	(72.3) °F	(71.8) °F	(73.4) °F	(74.9) °F	(75.2) °F	(74.8) °F	(74.5) °F
Max. Temperature °C	29.4 °C	29.2 °C	29:3 °C	29:2°C	29 °C	29.8 °C	31.4 °C	33.3 °C	32.7 °C	31.6 °C	30.2 °C	29.6 °C
(°F)	(84.9) °F	(84.6) °F	(84.7) °F	(84.6) *F	(84.2) °F	(85.8) °F	(88.5) °F	(91.9) °F	(80.8) °F	(88.9) °F	(86.4) °F	(85.3) °F
Precipitation / Rainfall	311	321	323	224	137	48	23	44	96	164	230	297
mm (in)	(12)	(12)	(12)	(8)	(5)	(1)	(0)	(1)	(3)	(6)	(9)	(11)
Humidity(%)	90%	91%	91%	91%	88%	84%	74%	66%	76%	83%	88%	90%
Rainy days (d)	21	19	<b>a</b> )	19	18	7	4	6	11	16	18	20
avg. Sun hours (hours)	7.6	7.3	7.0	6,5	6.7	8.1	9.4	9.9	9.2	8.7	7.9	7.6

Data: 1991 - 2021 Min. Temperature °C (°F), Max. Temperature °C (°F), Precipitation / Rainfall mm (in), Humidity, Rainy days. Data: 1999 - 2019: avg. Sun hours

The month of maximum warmth in a year is August. The average temperature during this period reaches up to 27.5 °C. In May, the average temperature is 25.4 °C. It is the lowest average temperature of the whole year.

The variation in precipitation between the months with the lowest and highest levels of rainfall is 300 mm, as observed. The average temperatures vary during the year by 2.1 °C.

The month with the highest relative humidity is March (90.85 %). The month with the lowest relative humidity is August (65.55 %). The month with the highest number of rainy days is March (27.80 days). The month with the lowest number of rainy days is July (5.00 days).

#### 5.3 Local Resources

The target areas stretch over 80 km, parallel to the Madeira River. The closest point of the property to the state capital, Porto Velho, is 8 km. The farthest is 88 km. Therefore, all resources required for exploration and for project development will be obtained from Porto Velho, which has the following characteristics:

- 540,000 inhabitants, with an economy based on services and commerce.
- The city itself is relatively well-connected, with a good road network and an airport with daily flights to the major cities in Brazil. No international flight is available.
- There are a few major highways that connect Porto Velho to other parts of Brazil, including the BR-364, which runs from Cuiabá to Rio Branco.
- The city of Porto Velho has a good public transportation system, with buses and taxis available.
- Good infrastructure of hotels, telecommunications, hospitals, water treatment and other necessary items for a mining project.



Figure 7: Aerial view of Porto Velho with its fluvial port in front (July 2007)

#### 6. HISTORY

History is here described as applying to the Madeira River Valley as a whole. The Property has no particular historical events which can be reported here. These areas were selected using the ANM official tool for application for an Exploration Permit, over free ground. No previous ownership is recorded in this system. Mineral production reported below are not related to the property. RBM and the JV partners have no information regarding previous production or mineral resources defined in the property. For the purposes mentioned in the National Instrument, this Property has no history to be reported.

Informal alluvial and colluvial gold mining in the Amazon region began in the late 1970s, when thousands of *garimpeiros* (informal miners) rushed into the Eastern Amazon basin in search of gold. In 1973, *garimpeiro* gold production from the Eastern Amazon basin was recorded at 5.9 tonnes. Just five years later, production had increased to 18 tonnes. Several new discoveries were made throughout the basin during this time, including those along the Rio Madeira. Some historical records of gold production from the Rio Madeira area are available, as shown in the table below.

Table 5: Gold production from Rio Madeira – estimates (Bastos, DNPM)

Year	Kg
1979	1,500
1980	1,200
1981	2,400
1982	4,500
1983	6,000
1984	4,000
1985	3,800
no info	
1990	9,610
1991	5,606
1992	4,285
1993	3,424
1994	3,400
1995	1,935
Total	51,660

Total recorded, as 1.66 million ounces of gold, is considered underestimated due to:

- The lack of records for several years since the start of the gold rush. Even today there is a substantial number of dredges operating in the river, as this QP was able to observe during the visit.
- Illegal selling of the gold produced by garimpeiros is a well-known problem for the authorities, with many police operations targeting gold smuggling.
- Low metallurgical recovery of the rudimentary extraction methods used.

Modern exploration methods were used with low intensity from the 1980s to the 1990s, by major gold companies which did regional recognisance on the Madeira River Valley.

The first systematic work with public results performed on the vicinity of the Madeira River, searching for gold mineralization in its flood plains, was performed by the junior exploration company Amazon Inc. A Technical Report under the standard NI 43-101 format was published in 2007 by the WGM Ltd. Company. The exploration concept Amazon Inc. used is somewhat like the one envisaged with the present work with some differences in target modelling parameters. This company, however, had financial difficulties during the 2008-2012 financial crisis and was not able to complete sufficient exploration work to confirm or refute the potential for the large size potential discoveries that Canary Gold is targeting.



Figure 8: Photo of the gold rush in the 80s, with dredging barges crowded in rich spots in the Madeira River

#### 7. GEOLOGICAL SETTING

# 7.1 Regional Geology

The regional geology is characterized by sedimentary rocks that were deposited on the northwestern edge of the Central Brazilian Shield (Guaporé Craton). The sediments were formed during the Miocene to Pliocene periods, when the Andean Cordillera was uplifted during mountain building.

The underlying Precambrian basement is the Jamari Complex, which is composed of older granitoid intrusive and subordinate gneissic rocks. The older intrusive rocks belong to the Serra da Providencia Suite and are made up of monzogranite, biotite-syenogranite, charnockite, mafic rocks, and augen gneisses. The younger crystalline rocks (circa 1,387 Ma) are part of the Teotônio Intrusive Suite and are composed of alkaline intrusive (microcline granite, microcline quartz syenite, and syenogranite).

Much of the Jamari Complex is covered by Cenozoic sediments, locally called the Içá Formation. These sediments are composed of semi-consolidated arenite (locally ferruginous) interlayered with silt, clay, and sands. Holocene alluvium, composed of sands, silts, and gravel, overlies the Içá Formation.

The Figure 9 depicts the environmental model used for the sediments expected to host the auriferous mineralization at the Madeira project.

The Figure 10 shows the time scale for the Cenozoic Era, where the Miocene, the period where the sediments of the unconsolidated sediments at the Madeira project were deposited. The main unconformity, at the base of the Miocene/top of the basement rocks, is the stratigraphic level supposedly concentrating gold mineralization.

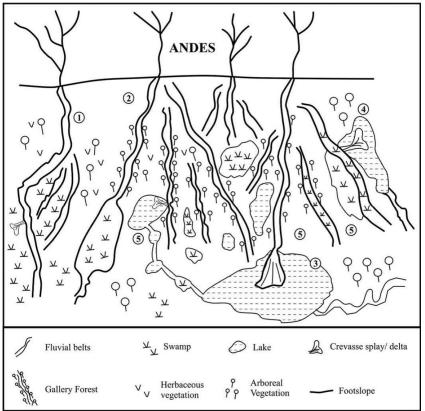


Figure 9: Flood basin simplified schematic environmental model – Latrubesse et al

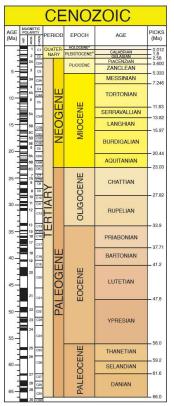


Figure 10: Time scale for the Cenozoic Era

## 7.2 Property Geology

The study area is predominately covered by unconsolidated sediments of Holocene age. The thickness of these sediments as well as the underlying geology is inferred from available geophysical data calibrated with geological information from mapped and regionally correlated exposures along the banks of the active Madeira River extrapolated into this area.

In the mapped profiles along the active Madeira Riverbanks, the unconsolidated sediments are light grey to brownish in colour and comprise intervals of sand, silt, and clay which unconformably overlie variably ferruginized, semi-consolidated and indurated sedimentary rocks of the Içá Formation which in turn overlie crystalline basement. Near the active Madeira River the sedimentary profile is generally between 10-20m in thickness while away from the river margins the geophysical data suggests these formations may attain a thickness of up to a maximum of 50m from surface to crystalline basement.

Regionally, the presence of gold has been reported from various intervals through the entire recent – unconsolidated sedimentary profile and the underlying indurated sequence. Of particular interest, especially economically, is gold associated with the basal unconformity (Miocene on Basement), which at present manifests itself as either braid-plain facies polymictic to oligomictic conglomeratic and related arenitic formations (distal to source) and polymictic alluvial fan – pebble to cobble conglomerates and associated channel – point bar and over bank arenitic and argillitic deposits (more proximal to source) all of which have been variably, reworked, ferruginized (especially where they have been influenced by shallow) – lateritic processes related to ground-water fluctuation to form laterally persistent horizons, some two to five meters thick known locally as Mocururu.

Mocururu is described by various authors, where observed in exposures occurring within the bed of the active Madeira River as either:

- A carbonaceous arenite/conglomerate formation, a compact rock, poly mineral, with angular to subrounded grains of quartz (abundant), micas (biotite/muscovite), feldspar and chlorite cemented by carbonate (manganiferous siderite) with the surface often with a film of iron hydroxide and,
- A manganiferous to a manganiferous carbonaceous formation with manganese in the form of oxide-hydroxides along with significant kaolinite and goethite with rare feldspar while chlorite is absent.
   Texturally the rock is finely banded (0.5 to 0.8 mm) comprising oxide-hydroxides interbedded with sub millimetric, angular, quartz and metamorphic rock fragments (schist) or,
- A ferruginous arenite/conglomerate formation.

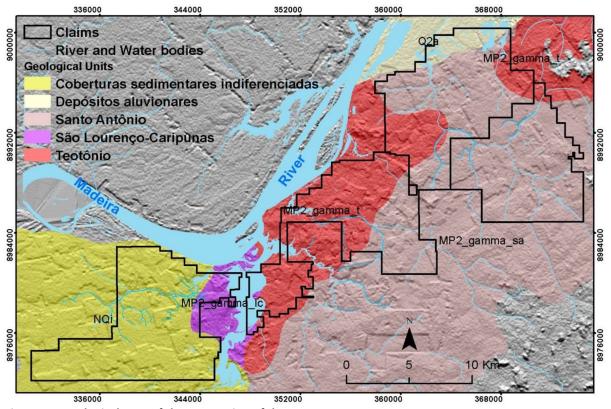


Figure 11: Geological Map of the SW portion of the Property

\_\_\_\_\_

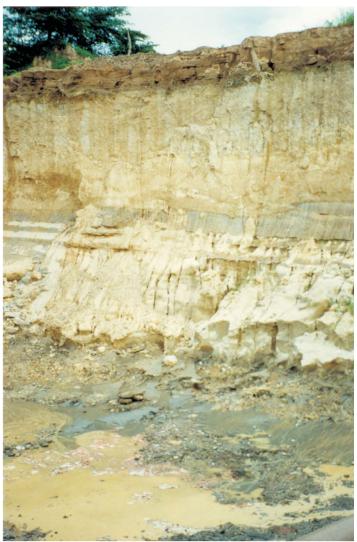


Figure 12: Photo at river bank, showing the Mocururu layer covered by a sand/clay overburden



Figure 13: Photograph of a typical block of Mocururu

The Mocururu is made by hard, carbonaceous to manganiferous, or ferruginous, sandstones or conglomerates often some two to three metres in thickness occurring along the edges or in the beds of the paleo river channels.

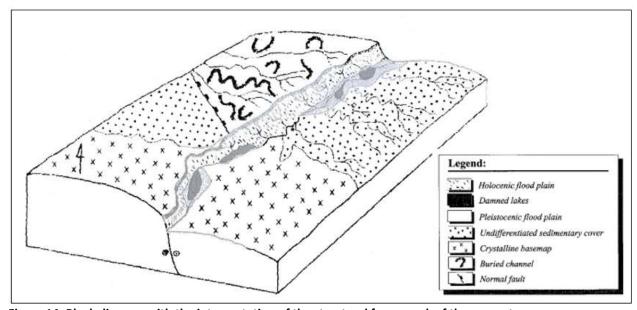


Figure 14: Block diagram with the interpretation of the structural framework of the property

The Figure 14 is a block diagram showing the holocenic flood plain of the Madeira River, with mid-channel and lateral accretion bars, besides residual and dammed lakes. To the northwest corner one can see the presumed gold-bearing ration fluvial meanders, once abandoned and later shallowly buried. The Madeira River is strongly controlled by the Madre de Dios-Itacoatiara lineament. (Source: Souza Filho et al., 1999).

#### 8. DEPOSIT TYPES

Many important gold occurrences and economic deposits of various ages throughout geological time, hosted in sedimentary basins and associated with conglomerates have been documented. The stratiform distribution of gold in conglomerates is suggestive of a syngenetic origin, and for the deposits most studied (Witwatersrand and Tarkwaian), despite compelling evidence of modifying factors over time suggestive of other possible genetic influences, the weight of evidence favours a paleoplacer interpretation. From an exploration and mining perspective studies of mineralogy and grain size have clearly demonstrated that the primary genetic factors of gold accumulation are sedimentary, and, in this context, sedimentological studies of these sediment hosted gold deposits become an essential tool of exploration.

The economically important Witwatersrand and Tarkwa gold deposits are both contained within conglomerates related to fluvial sedimentary sequences which were formed in environments consistent with modern braided stream systems.

In the context described above the Primary Exploration Targets within the study area can best be described as:

- 1) The basal unconformity (Miocene on Basement), which at present manifests itself as either braidplain facies polymictic to oligomictic conglomeratic and related arenitic formations (distal to source)
  Polymictic alluvial fan pebble to cobble conglomerates as well as associated channel point bar
  and over bank arenitic and argillitic deposits (more proximal to source) all of which have been
  variably, reworked, ferruginized (especially where they have been influenced by shallow) lateritic
  processes related to ground-water fluctuation (same as for Bauxite deposits) to form the deposits
  locally known as Mocururu. It should be noted that this tectono-stratigraphic horizon crops out in
  the bed of the active Madeira River and is known to occur at, close to or within 50m of surface over
  a wide area extending several hundreds of kilometres from the active Madeira River in Rondônia
  state (Brazil) and Bolivia.
- 2) A secondary but unconstrained target is associated with sedimentary formations which occurring immediately below the Mocururu horizon which are reported to be gold-bearing and possibly reflect paleo depressions within the pre-Mocururu basement that have been preserved. The distribution of these targets is an unknown, but they would certainly be important if their presence can be confirmed within the depth limitations of the envisaged mining method.
- 3) A further third target, but by no means of lessor importance would be the reworked and reconcentrated products of the primary Mocururu. These targets would be manifested in alluvial deposits within the areas influenced by the meander migration of the Madeira River and its tributaries, examples of which are identified on air photos- vegetation maps aster images etc as oxbow scars with vegetation anomalies. The location of these target areas has been highlighted on maps provided by previous workers where they were considered to be primary targets. They remain vitally important to the targeting process as their shape and curvature can clearly be used to define paleocurrent directions which is a vital vector for targeting areas of higher mineral concentration within sedimentary systems.

#### 9. MINERALIZATION

As described in the previous section, the company is targeting economic gold mineralization associated with buried and or preserved associated with the various favourable sedimentary depositional sites (including Mocururu horizons, paleochannels and reworked material) interpreted to exist within the consolidated and unconsolidated 0-50 m thick sedimentary profile identified by the various reconnaissance geophysical programmes.

From an economic perspective the various targets, ranging from within, immediately below and above the laterally persistent flat lying 2-5 m thick Mocururu horizon and, volumetrically significant preserved paleochannels associated with the migration of modern braided Madeira River system and manifestations of the reworked products of the above deposits may potentially contain sufficient gold content to justify the mining – earth moving (dredging) activities required for economic extraction to the maximum targeted depth of less than 50 m over considerable areas. Gold occurring in the semi-consolidated quartz rich sands that occur with overly the Mocururu and spatially related paleochannels up to the current surface can only improve production and reduce operating costs.

#### 10. EXPLORATION

#### 10.1 Motivation

The significant historical gold produced in the region is described as recovered primarily from the bed of the active, modern Madeira River and its immediate margins with most of the gold being associated with unconsolidated recent alluvial deposits with a minor contribution from the harder Mocururu when it was encountered during dredging operations.

The broader potential for additional economic mineralization contained with the 0-50 m thick sedimentary packages, largely concentrated within the extensive Mocururu layer and preserved paleochannels and other favourable sedimentary deposition sites across a much more extensive area, well away from the influence of the current Madeira River, however, has not seen wide recognition.

Building on a full review of academic and exploration reports published by previous explorers, New Frontiers was formed and completed regionally focused generative exploration to develop the current exploration thesis. The results of this work have culminated in the staking of the tenement package which is described in this report.

The areas originally staked by NF were selected as priority palaeodrainage targets after a detailed review of Aster elevation data and imagery over areas influenced by the active, modern Madeira River System.

#### 10.2 Introduction

As stated above, the present Rio Madeira drainage represents a very small percentage of the total area with potential for gold mineralization associated with paleochannels and Mocururu.

The Mocururu, given its physical characteristics which are dissimilar to the sediments containing them are viable targets for shallow geophysical techniques such as Ground Penetrating Radar and tomography methods.

The primary exploration targeting criteria included identification of areas where palaeodrainage may have been constrained between basement "highs" as well as areas where palaeodrainage may have migrated and meandered over a broader area. It was considered, from a sedimentological and geographical perspective that both target types were favourable sites for gold deposition.

The elevation data showed some geological units (basement features) that were clearly more resistant to erosion. These trends were assessed for "breach" points, which were interpreted to potentially mark potential palaecourses.

In addition, the migrated "meander" areas were constrained within wider contemporaneous elevation highs. It was considered possible that the location of paleochannel positions could be constrained under cover by Ground Penetrating Radar in these areas.

Following fenement staking NF completed a series of reconnaissance Ground Penetrating Radar traverses which successfully identified the presence of the targeted stratigraphy and responses considered to be consistent with the Miocene/Basement unconformity as well as features with the geometry and signature consistent with paleochannels.

On the basis of these preliminary results further targets and prospective areas were identified and staked resulting in the consolidated land package covered by this report.

Subsequent ground reconnaissance, remote sensing and trial reconnaissance tomography has been progressed over the areas during 2022 – 2023 and these are described below in addition to a review of the initial target generation and ground penetration profile results.

#### **10.3** Target Generation

A review of ASTER elevation data and aerial imagery has highlighted palaeodrainage targets:

- a. Areas where palaeodrainage may have been constrained between basement "highs".
- b. Areas where palaeodrainage may have meandered over a broader area.

The elevation data shows some geological units that are resistant to erosion. These trends were assessed for "breach" points, which may mark potential palaecourses. The flat "meander" areas are constrained within wider contemporaneous elevation highs. It is possible that more constrained channel positions are present under cover in these areas.

This work led to the prioritization of some 100,000 hectares. This was prioritised with further work (field truthing, auger drilling, GPR, land-access considerations). Final application areas focussed on pasture (or mixed pasture-timber where separation is not been feasible).

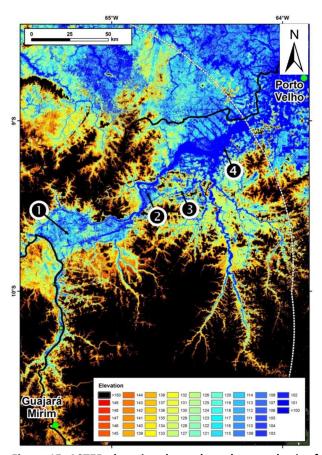


Figure 15: ASTER elevation data, plotted to emphasise features in the 100-150m range.

The following points are highlighted in the Figure 15:

- Areas 1 and 2 mark localised flats where the Rio Madeira may have migrated.
- Area 3 has a series of embayment's which may mark constrained paleochannels
- Area 4 has flats where the channel position may have migrated widely.



Figure 16: Isometric view, showing river course incising ESE trending resistant basement unit

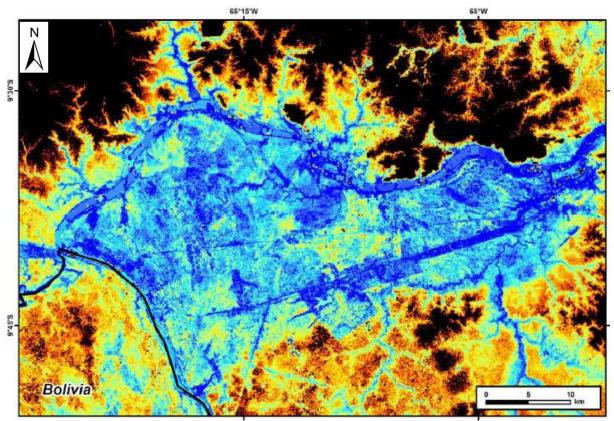


Figure 17: Domain of flat relief east of the junction between the Rio Abuna and Rio Madeira.

## 10.4 Ground Penetration Radar Survey

A survey using GPR (Ground Penetration Radar) was made along roads. An UltraGPR device with a 30 MHz antenna was used. The result, as shown in the figures below, is interpreted as indicative of several paleochannels of the Madeira River and smaller tributaries. These images were used to select the targets to use a more powerful method of geophysical survey, which is tomography. The zones highlighted with letters were selected as targets for paleochannel detection.

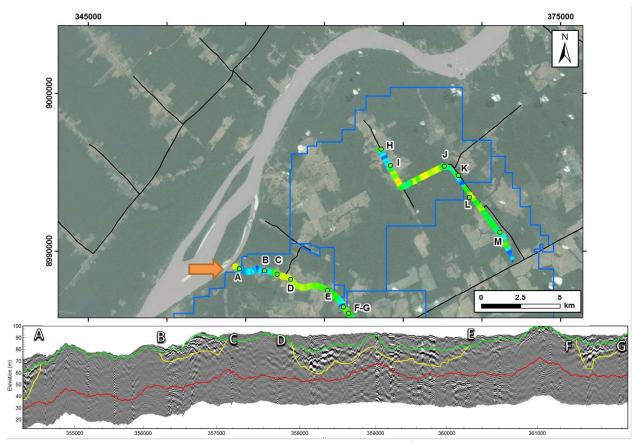


Figure 18: Map with the location of the GPR line paths, with the profile of the SW line

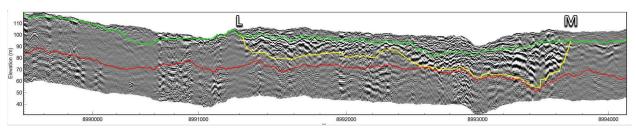


Figure 19: GPR profile of the SE segment of the NE survey line

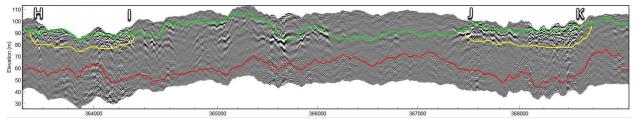


Figure 20: GPR profile of the NW segment of the NE survey line

In the Figure 18, the line SW showed features suggesting the presence of two narrow paleochannels (intervals B-C and F-G) and a large one, between lines D and E, with two kilometres width, compatible with the present river course width.

Figure 19 is the GPR profile of the Southeast part of the NE line. A large zone, with 2 km width, is interpreted as a paleochannel of the Madeira River, can be inferred between letters L and M.

Figure 20, showing the GPR profile of the Northwest of the NE line, is interpreted as having two zones depicting minor branches of a paleo course of the Madeira River, with some 500 m in width, each (intervals H-I and J-K).

These profiles were considered as positive and were important in the decision for further investments in the Property.

## 10.5 Remote Sensing and Data Integration

A comprehensive analysis of several remote sensing images was performed, with the objective of selecting possible paleochannels zones. Secondary objectives were finding *garimpo* zones and zones with high clay and Fe <sup>3+</sup> presence (which might be associated with gold mineralization) and also to produce a better hydrography map, to assist field operations.

The Table 6 shows the remote sensors used, with some details.

Table 6: Satellite images used in this work

Mission	Sensor	Image date	Spatial resolution (m)	Source
Landsat 1	MSI	09/1972	60	https://earthexplorer.usgs.gov/
Landsat 5	TM	07/1984	30	https://earthexplorer.usgs.gov/
Landsat 7	$ETM^{\dagger}$	08/1999	15	https://earthexplorer.usgs.gov/
Sentinel 2	MSI	08/2022	20	https://scihub.copernicus.eu/dhus/#/home
CBERS – 4A	WPM	11/2022	2	http://www.dgi.inpe.br/
ALOS	RADAR	02/2007		https://search.earthdata.nasa.gov/
JERS - 1	RADAR	06/1994	17	https://gportal.jaxa.jp/gpr/
SRTM	RADAR	02/2000	30	http://www.dsr.inpe.br/topodata/

Few areas favoured by the occurrence of deposits indicative of the presence of paleochannels were found in the project areas. It is likely that the intense human activity de-characterized the landscape, especially deforestation, cattle grazing and artisanal mining. Radar images, however, were considered more effective in showing patterns which may be linked to paleochannels. These features were more evident on zones where the forest was not degraded.

The Figure 21 shows a composition between a JERS-1 and Landsat 7 bands, where some features resembling abandoned meanders are highlighted (ellipses in yellow) using the brightness and texture analysis. At the left margin of the Madeira River, where the forest is preserved, these features are easier to see.



Figure 21: Image IHS JERS-1/Landsat 7 (1994)

An example is Figure 18 that shows, in the HH polarization, areas with features that suggests the occurrence of the paleochannels.

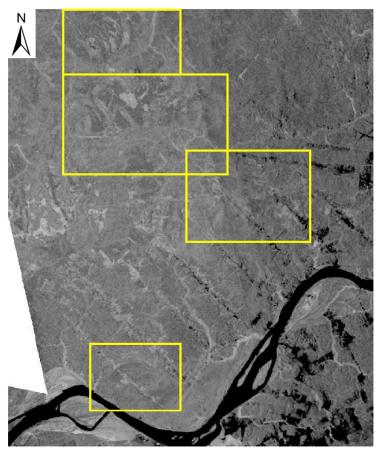


Figure 22: Radar image, polarization HH. Highlighted, the areas with typical features of paleochannels (1994)

Figure 23: SRTM image with the tenements in red (2023).

In the Figure 23, in yellow, the areas with high concentration of Fe+3 and clay minerals can be distinguished. The green lines represent a possible model for the paleochannel of the Madeira River.

The areas with the greatest potential, considering the concentrations of Fe+3 and Hy, the morphology of the drainage and the behaviour of the surface to the radar signal, are represented by Figure 23.

In general, each satellite type, after the digital processing, showed different responses and characteristics of the items of interest. Therefore, it can be concluded that the combined use of orbital data from different sensors, covering different regions of the electromagnetic spectrum, provided satisfactory results for the detection of two paleochannels.

#### 10.6 Tomography Geophysics

In the period between May and June 2023, a geophysical survey was carried out, using the resistivity method, in an area located near the Jaci-Paraná city, in the state of Rondônia. The method of analysing resistivity data along 2 D or 3 D sections is called Tomography. The objective of this work was the exploration of Au in paleochannels and in duricrust horizons. Considering that the duricrust horizon (*Mocururu* beds) have expected higher resistivity that the clay and sandstone material that hosts it, the exploration hypothesis was that this level can be easily defined in contrast with the barren material. On the same line, paleochannels are expected to contain a significant amount of *Mocururu* blocks, therefore presenting a high resistivity anomaly. To be confirmed by drilling, the following figures appear to confirm these hypotheses.

Three geophysical lines were executed (Figure 24). These lines were planned to use the same GPR profiles. Zones with anomalies interpreted as paleochannels were selected, with some margin of operation, to verify the behaviour or the *Mocururu* layer.



Figure 24: Map of the surveyed lines (2023)

The results obtained allowed identifying anomalous resistivity patterns interpreted as possibly associated with gold-bearing paleochannels and duricrust horizons.

A surface pattern of resistivities greater than 2,000 Ohm.m (Figure 25, in red colour) was identified that could be related to the intermediate layer of the Rio Madeira Formation, composed of cemented gold-bearing gravels and sandstones, called *Mocururu* layer by prospectors. These anomalous patterns were considered targets of interest to be tested through drillings. The resistivity profile confirms the stratigraphy describe by Rizzoto et. All., whereas a low resistivity layers, with predominance of plastic clays, underly the Mocururu bed. A sandstone/silt layer, with average resistivity, covers this layer, with a thickness in the order of 10 – 20 m.

Areia cimentada
Cascalho cimentado e/ou areia endurecida
(Mucururu ?)

2000

Argila plástica

Figure 25: Example of well-defined Mocururu horizon

Anomalies of high to very high resistivities, occurring at greater depths than the Mocururu and with great lateral extension (300 meters to 1,000 meters), initially interpreted as associated with the presence of crystalline basement rocks, were suggested, in an alternative interpretation, as possibly related to the occurrence of extensive and deep paleochannels of the Madeira River. These anomalies are also indicated targets to be investigated by drilling. Figure 26 shows an example of this type of anomaly, deep and high resistivity pattern (in red colour). Its position can be seen in the Figure 18, in the southern line, between the points F and E. This anomaly has 1000 m in width.

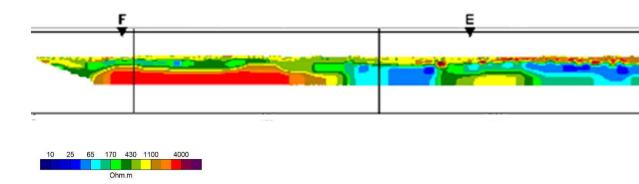


Figure 26: Example of a possible paleochannel, without the presence of the Mocururu level over it.

A significant feature to Support the hypothesis of these large anomalies of high resistivity being paleochannels, is the fact that the ubiquitous high anomaly level, interpreted as Mocururu, is absent from the zones immediately above these anomalies. Figure 27 shows this feature, with the Mocururu easily seen at the right of the figure, parallel to surface, and no such feature can be seen over the interpreted paleochannel.

This is compatible with the hypothesis that the river eroded the Mocururu level and reached depths but deeper than it, probably due to a higher energy period. The high resistivity is interpreted as due to the significant presence of Mocururu blocks in the paleochannel.

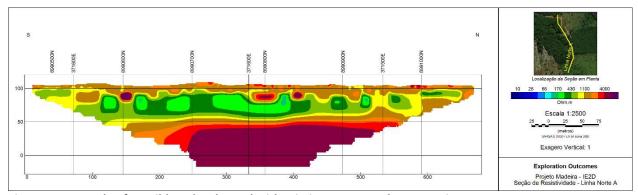


Figure 27: Example of possible paleochannel with missing Mocururu layer over it

# 10.7 Drilling and Sampling Plan

At the Project, the early generative exploration phases completed to date as well as those which are ongoing are aimed at generating and defining targets that can be tested for "proof on concept" by drilling and sampling the complete prospective sedimentary profile.

Sonic Drilling has been selected as the best technique available to fulfil the requirement of full, continuous, undisturbed sample recovery from surface to bedrock, which is estimated to be to a maximum of 50m depth from surface. Preliminary negotiations were already made in order to use the rig depicted in the Figure 28 at the project.



Figure 28: Photograph of the sonic rig to be used at the Madeira project

38

The continuous core recovered through the Sonic Drilling method is ideal for both the detailed sedimentological logging required to characterise the sedimentary environments controlling deposition and distribution of heavy minerals included gold and also importantly providing large samples suitable for qualitative and quantitative evaluation of the economic mineral content associated with heavy minerals through the profile. The photographs below show the quality of the core obtained using this method, on sand and clay, materials with poor recovery if using conventional methods.



Figure 29: Examples of core obtained using Sonic drilling

Other available methods for drilling and sampling like Reverse Circulation, Open Hole Percussion and Air Core Drilling have been considered but are not deemed suitable for the first reconnaissance stage of drilling and sampling as samples are disturbed and mixed by these techniques disqualifying the use of this technique for logging the in-situ sedimentary bedding and structural characteristics. Clearly once the geological and grade characteristics of the mineralization are determined these faster and more cost-efficient drilling and sampling techniques can be reconsidered in subsequent exploration and evaluation phases.

## 10.8 Target Selection

It is envisaged that generative exploration comprising the completion of further tomography profiles across the tenement package will continue into the 4<sup>th</sup> quarter of 2023.

A series of priority targets for drill testing to establish "proof on concept" are being developed from work completed to date as well as planned work over the remainder of the land package. As described earlier in this report several priority drill targets have already been defined.

The mobilization date of the Sonic Drill Rig is dependent on permitting but is expected in the 4<sup>th</sup> quarter of 2023.

To maximise the information derived from material recovered from the planned Sonic Drill Programme the cores produced will firstly be photographed, dried, and laid out for detailed geological logging focusing on recording the sedimentological characteristics of the profile including sedimentary structures, composition, grain sizes and other important measures.

Following logging selected continuous intervals will be selected, either entirely or split for batching and submission to the Overburden Drilling Management (ODM) (https://www.odm.ca) for specialist analysis of heavy minerals and conventional analyses. This will also allow careful consideration of sampling protocols for subsequent exploration and evaluation of the specific targets identified.

ODMs mineral processing techniques are versatile and have been utilized for qualitative and quantitative evaluations of heavy mineral sands, placers and tailings including:

- Economic mineral content of heavy mineral sands.
- Recoverable grade and grain size of gold in placers and tailings
   Grade and purity for a variety of industrial minerals.

## 11. DRILLING

Not applicable. The property has not been drilled to date, as far as we are aware.

# 12. SAMPLING METHOD AND APPROACH

There are no samples collected at the area at this moment. Since the mineralization is expected to be completely covered by sterile sediments, the lack of samples is expected for this stage of the work.

This QP collected two samples from outcrops outside the tenements but located at short distance to them. Both from Mocururu exposures at the riverbank. One was negative and the second showed a grade of 1.15 g/t Au, as assayed at the SGS/Geosol laboratories, at Vespasiano, MG.

#### 13. DATA VERIFICATION

The Author has reviewed geological reports and miscellaneous technical papers including other public information as listed in Section 20 - References.

The two rock samples mentioned in Section 12 were collected and sent to the laboratory by the undersigned Certified Professional (CP).

The Geophysical work was preceded by meetings between this CP and the contractor *AFC Geophysics* when the technique to be applied, equipment and all other requirements were discussed. The raw data interpretation was also performed with this CP participation. Data processing was not followed by the CP but given the good reputation of the contractor, it is expected that it was done to a high standard.

#### 14. ADJACENT PROPERTIES

There is no other formal exploration activity in region. Only artisanal mining (*garimpos*) is observed, specially using barges in the river. Some low intensity *garimpos* were observed outside the present river course.

#### 15. MINERAL PROCESSING AND METALLURGICAL TESTING

As this is an early stage, this section is not applicable. There are no samples available for metallurgical testing.

## 16. MINERAL RESOURCE AND MINERAL RESERVE ESTIMATE

Not applicable, due to the lack of drilling or sampling.

#### 17. OTHER RELEVANT DATA AND INFORMATION

Canary Gold is aware of the environmental impact of mining in a rain forest zone. Although most of the area has already been deforested by agriculture and timber activities, Canary Gold plans to buy the land and restore the forest after the mine is exhausted.

The company plans to use the bauxite mine at Trombetas, Pará, as a model. This mine has been in operation for 41 years and has restored some 8,000 hectares of forest, planting over 14 million trees from 450 different species.

Canary Gold will build a large tree nursery to produce millions of seedlings, using as many native tree species as possible. The mining process will involve transporting waste material to expose the ore, mining the ore, and then moving the waste back to the same position. The topsoil will then be reconstituted and native trees will be planted. Figure 30 shows this sequence of work.

Canary Gold is committed to using sustainable mining practices that minimize environmental impact. The company plans to work with local communities to develop a plan for restoring the forest.

Canary Gold believes that mining can be done in a way that is both profitable and environmentally responsible.

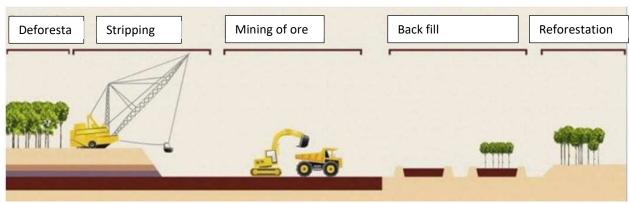


Figure 30: Mining sequence with forest restoration

#### 18. INTERPRETATION AND CONCLUSIONS

The Qualified Person (QP) is of the opinion that this project has significant merits. The main facts supporting this opinion are:

- The presence of alluvial gold in expressive deposits in the Madeira present course is ubiquitous.
- Rock samples from the lateritic horizon referred to as Mocururu (either in situ or from artisanal mining dumps) showed that it may be mineralized.
- Geophysical profiles (tomography) showed features of high resistivity material (interpreted as constituted of the laterite, locally called Mocururu) in the same feature as predicted by the exploration model:
  - Either as continuous, horizontal layer of 2-3 m thick, under a clay/sand overburden bed of 10-20 meters thickness
  - Possibly present in large concentration of high resistivity, compatible with an accumulation of Mocururu blocks, in paleochannels several hundred meters large. In these cases, the pervasive bed of in-situ Mocururu is not present, compatible with the paleochannel hypothesis, in which the river may eroded the Mocururu layer.
- These considerations are enough to state that the project has merits and deserves a substantial investment in mineral exploration, as recommended in this report.
- However, it must be stressed that this project is in early conceptual stage, with no assay evidence that mineralized material of reasonable prospects of economic extraction is present at the areas. It is possible that the geophysical interpretation is not confirmed by drilling. And that the geological features which are believed to be auriferous, if confirmed by drilling, might have marginal or uneconomical grades. Other risks are related to the surface owners, which may not be receptive to the presence of the company on their land, requiring the force of the state to allow the access the area, what is time consuming and risky.

#### 19. RECOMMENDATIONS

A work program made up of six months of work is recommended to untap the perceived potential of the Madeira project. A number of targets have already been defined by the geophysical survey. A sonic drilling campaign will investigate these targets, with 2,000 metres of drilling to be performed, in four months of work. 25% of the drilling core is expected to be of interest for mineralization controlled by placer style mechanism. The company ODM (<a href="https://www.odm.ca/">https://www.odm.ca/</a>) is specialized in this type of mineralization and has capabilities on a number of techniques related to heavy minerals accumulation: jigging, panning, gold grain counting and sizing, SEM and MMSIMs methods, etc.

The samples will be shipped to Ottawa, Canada, for evaluation. 100% of the samples should also be tested by metallic screen method of gold analysis, at the SGS-Geosol, in Vespasiano, Minas Gerais, Brazil.

The results will be interpreted with the help of a consultant expert in alluvial mineralization, using models like the Witwatersrand, in South Africa, or Tarkwa, in Ghana.

A suitable QA-QC program will be developed, concomitant with the drilling and assaying.

At the end of this work, a new NI 43.101 should be written, possibly reporting inferred resources. As this drilling is intended to be exploratory, over a very large area, this resource evaluation will be very limited and will be used only for decision to go ahead with further investments.

The unit costs used for the budget is shown in the Table 7 and the timing of such expenditures is depicted in the Table 8. Unit costs are normally obtained in Brazilian reais (except for ODM costs, which are in Canadian dollar) and transformed using an exchange rate of R\$ 3.67/Can\$.

If this program is successful, a follow up program would contain the following items, as a minimum requirement:

- Follow up drilling, Increasing the level of confidence of the Mineral Resources to the Indicated category using AC drilling;
- Carry out metallurgical testing programs on representative mineralized samples; and
- Carry out a Preliminary Economic Study.

**Table 7: Unit Costs for Budget** 

Budget	Item	Unit	Number	Cost R\$/unit	Total R\$	Total CAD
	Overall Management	vb / month	1	60,000	60,000	16,349
	Operations management / Database	vb / month	1	50,000	50,000	13,624
HR	Geologist	vb / month	1	25000	25,000	6,812
ПК	Technician	vb / month	2	9,000	18,000	4,905
	Helper	vb / month	4	5,000	20,000	5,450
	Legal & admin	vb / month	1	25,000	25,000	6,812
	Air tickets	unit	10	3,500	35,000	9,537
	Car	month	4	8,500	34,000	9,264
	Fuel & extras	vb / month	4	3,500	14,000	3,815
Logistics	Hotel	day	70	120	8,400	2,289
	Meals	day	70	70	4,900	1,335
	Admin support at Porto Velho	vb / month	1	15,000	15,000	4,087
	Field material / other	νb	1	2,000	2,000	545
	Drilling	m	750	1,800	1,350,000	367,847
	Drilling (mob/demob)	vb	2	135,000	270,000	73,569
	Analysis (ODM)	vb /assay	500	918	458,750	125,000
Services	Sample transport (to Otawa)	vb per 800 kg	2	17000	34,000	9,264
	Consultant Sedimentology	day	4	9,175	36,700	10,000
	Sample transport (to Belo Horizonte)	vb per 800 kg	4	16300	65,200	17,766
	Chemical Analysis	MS assay	750	250	187,500	51,090

Table 8: Chronogram of the exploration program proposed with expenditures per item.

		Months					
	1	2	3	4	5	6	Total CAD
Management							\$ 149,864
Field team							\$ 119,891
Air tickets							\$ 47,684
Pickup							\$ 52,316
Hotel / meals							\$ 14,496
Other field expenses							\$ 18,529
Drilling							\$ 331,063
Analysis ODM							\$ 125,000
Analysis SGS							\$ 51,090
sample transport							\$ 108,120
Consultants							\$ 10,000
Total							\$1,028,052

#### 20. REFERENCES

Bastos, J.F.S. 1988 Depósitos de Ouro do Rio Madeira, Rondônia in Carlos Schobbenhaus, and Carlos Eduardo Silva Coelho (Eds.) Principais Depósitos Minerais do Brasil, v. III DNPM, pp. 575-580.

Brito Neves, B.B., 2002. Main stages of the development of the sedimentary basins of South America and their relationships with the tectonic supercontinents. Gondwana Research 5 (n1), 175–196.

Crosta, A.P., Carneiro, C.C., 2006. Rio Madeira Project – Mapping of Paleo-Drainage channels from remote sensing Images. Instituto de Geociências, UNICAMP. Campinas.

Rizzotto, G.J. & Quadros, M.L. do E.S. (2005). Geologia do Sudoeste do Craton Amazônico. In: Horbe, A>M.C. & Souza, V. da S. (Coords.). Contribuições à Geologiada Amazônia. Belém: SBG-Núcleo Norte, 2005. V.4, p. 69-84.

Souza Filho, W.M., Quadros, M.L.E.S., Scandolara, J.E., Silva Filho, E.P., and Reis, M.R. 1999. Compartimentação morfoestrutural e neotectônica do sistema fluvial Guaporé-Mamoré-Alta Madeira, Rondônia, Brazil. Revista Brasileira de Geociências, v. 29, No 4, pp. 469-476.

Latrubesse, E.M., Cozzuol M., Silva-Caminha, Rgsby, Absy, Jaramillo, 2010. The Late Miocene paleogeography of the Amazon Basin and the evolution of the Amazon River system. Earth Science Reviews, 99-124.

Velasquez Spring, 2007, Technical Review of the Rio Madeira Project. Watts, Griffis and McOuat Limited.

#### 21. DATE AND SIGNATURE PAGE

I, Rodrigo Mello, FAusIMM, principal of RBM Consultoria Mineral, as author of the report entitled "Rio Madeira NI 43-101 Technical Report", dated 31th August, 2023, do hereby certify that:

- 1. I am currently employed as principal at RBM Consultoria Mineral, with office at Rua Engenheiro Senna Freire 193, São Bento, Belo Horizonte, MG, Brazil.
- 2. I hold the following academic qualifications:
  - Graduation in Geology, at the Minas Gerais University, in 1985
  - Specialization (Computing), in the Goiás Catholic University, in 1999
- I am a Fellow of the Australasian Institute of Mining and Metallurgy (membership number 209332) and I am a registered Geologist with the Regional Council of Engineering, Minas Gerais, Brazil.
- 4. I have worked as a geologist and project manager for the minerals industry for 37 years, since my graduation.
- 5. I have read the definition of "qualified person" set out in National Instrument 43-101 and certify that by reason of my education, affiliation and past relevant work experience, I fulfil the requirements of a Qualified Person as defined in this Instrument. My work experience includes 15 years as exploration geologist/manager working in Archean, Proterozoic, and Tertiary environments, 13 years as a mineral resource analyst working in the evaluation of gold, copper, zinc, nickel and silver deposits in nine different countries.
- I am responsible for the preparation of all items in this report, entitled "Technical Report on the Rio Madeira Exploration Project, Rondonia, Brazil", dated August, 31<sup>th</sup>, 2023, and effective date July, 30<sup>th</sup>, 2023. I visited the Rio Madeira property from November 4th to 7th, 2022.
- 7. I have no previous involvement with the Madeira Project nor with Canary Gold and New Frontiers Mineração.
- 8. I am not aware of any material fact, or change in reported information, in connection with the subject properties, not reported or considered by me, the omission of which makes this report misleading.
- 9. I am independent of the issuer, applying all of the tests in section 1.5 of National Instrument 43-101.
- 10. I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with both documents.

<sup>&</sup>quot;signed"
Dated this August, 31, 2023