CERRADO GOLD INC.

AN UPDATED MINERAL RESOURCE ESTIMATE FOR THE SERRA ALTA DEPOSIT AT THE MONTE DO CARMO PROJECT, TOCANTINS STATE, BRAZIL

Report Date: September 17, 2021
Report Effective Date: July 21, 2021
Mineral Resource Effective Date: July 21, 2021

Source: Cerrado, 2018

Report By

B. TERRENCE HENNESSEY, P.GEO.
PORFIRIO CABALEIRO RODRIGUEZ, FAIG
FABIO VALERIO CÂMARA XAVIER, MAIG

900 - 390 BAY STREET, TORONTO ONTARIO, CANADA M5H 2Y2
Telephone +1 416 362 5135 Fax +1 416 362 5763

Page

Table of Contents

Page

Page

Page

List of Tables

Page

Page

Page

List of Figures

Page

Page

Page

1.0 SUMMARY

Micon International Limited (Micon) was retained by Cerrado Gold Inc. (Cerrado) to visit (Feb. 26 to March 2, 2018 and again Sept. 4 to 8, 2018) the Monte do Carmo gold project (MDC) in Tocantins State, Brazil and to comment on the prospectivity of the project. A third site visit was conducted on May 5, 2019 to review recent exploration planning. After the first site visit, Cerrado decided to commission a National Instrument 43-101 (NI 43-101) Technical Report describing the history and work completed to date and recommending an exploration program and budget to support the listing of Cerrado on a Canadian stock exchange, as well as a financing. Later, in cooperation with Cerrado technical staff, Micon estimated an initial mineral resource compliant with National Instrument 43-101 (NI 43-101) for the project. This amended report discloses an update to that mineral resource.

Micon does not have, nor has it previously had, any material interest in Cerrado or related entities or interests. The relationship with Cerrado is solely a professional association between client and independent consultant. This report was prepared in return for fees based upon agreed commercial rates and the payment of these fees was in no way contingent on the results of the report.

This report includes technical information which requires subsequent calculations or estimates to derive sub-totals, totals and weighted averages. Such calculations or estimations inherently involve a degree of rounding and consequently introduce a margin of error. Where these occur, the Qualified Person (QP) does not consider them to be material.

This report is intended to be used by Cerrado, subject to the terms and conditions of its agreement with Micon. That agreement permits Cerrado to file this report as a National Instrument 43-101 Technical Report with the Canadian Securities Regulatory Authorities pursuant to provincial securities legislation. Except for the purposes legislated under provincial securities laws and for the reliance on the report by the TSX or TSXV, any other use of this report, by any third party, is at that party's sole risk.

The conclusions and recommendations in this report reflect the author's best judgment in light of the information available at the time of writing. The authors and Micon reserve the right, but will not be obliged, to revise this report and conclusions if additional information becomes known to them subsequent to the date of this report. Use of this report acknowledges acceptance of the foregoing conditions.

1.1 THE PROPERTY

The MDC Gold Project is located in the State of Tocantins, Brazil, immediately east of the town of Monte do Carmo. The Serra Alta Deposit, the main focus of exploration at the project, is located at 10° 45' 4" south latitude and 48° 4' 20." west longitude. Monte do Carmo (7,700 inhabitants) is located 39 km east of the city of Porto Nacional (55,000 inhabitants). Porto Nacional is 50 km (60 km by road) south of the state capital of Palmas (250,000 inhabitants) and 760 km north of Brasilia, the federal capital. (Figure 1.1)

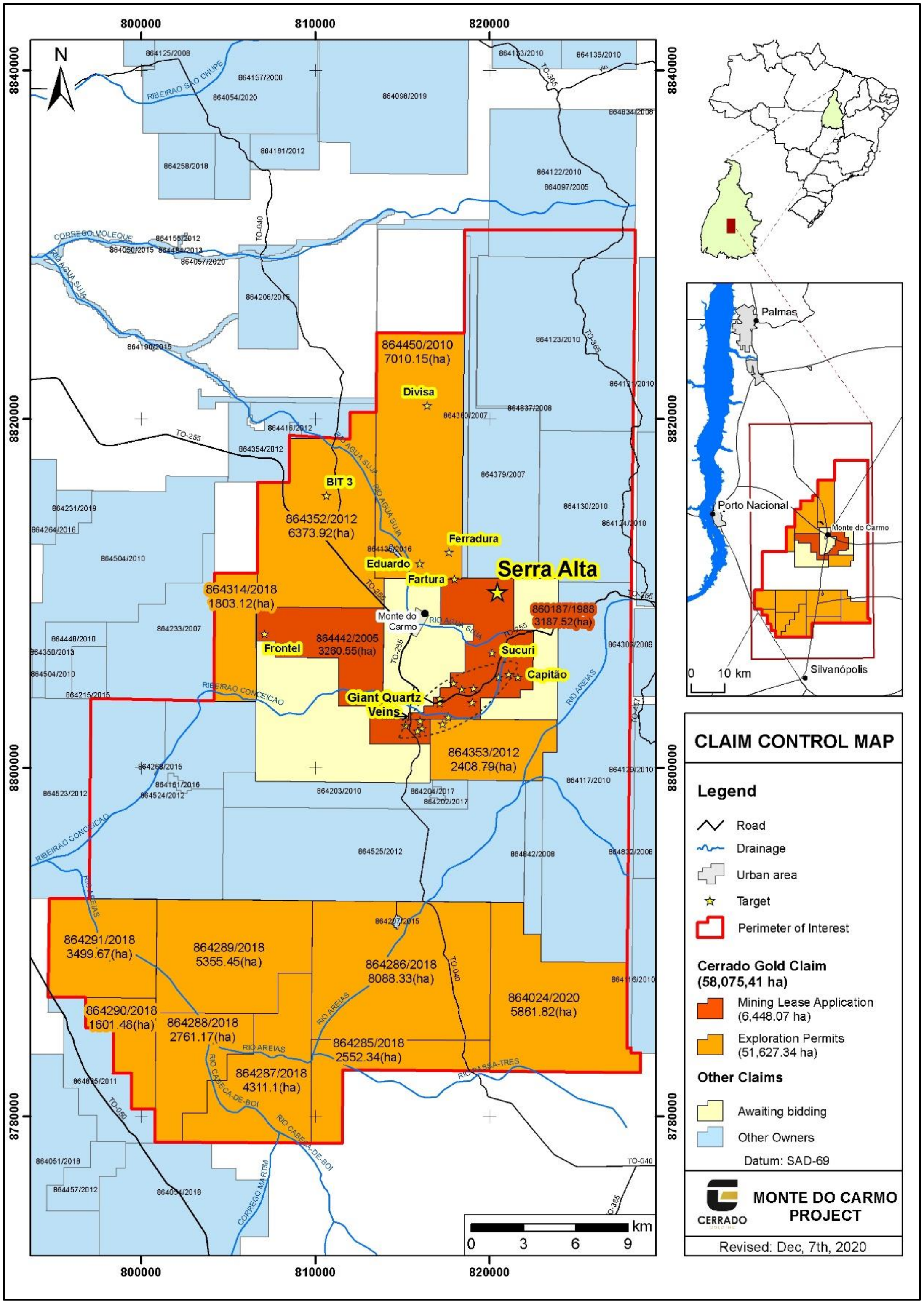
Figure 1.1
Project Location Map

Source: MSM, 2018.

The MDC project consists of five concessions, as shown on Figure 1.2. The principal mineralized targets at the project are also shown on that figure. The concessions are currently held by Monte Sinai Mineração Ltda. (MSM) but are subject to an agreement with Cerrado, discussed in Section 4.3 below.

Cerrado's agreement with MSM also includes an exploration concession in Minas Gerais state, Brazil called the Morro Vermelho project. This report concerns the MDC project. Morro Vermelho is not part of the MDC "mineral project", as that phrase is defined in NI 43-101, and will not be discussed in this report.

Figure 1.2
Concessions and Principal Exploration Targets



Source: Cerrado 2019.

1.2 GEOLOGY

The regional geology of the Monte do Carmo area is characterized by a volcano-sedimentary sequence of Upper Proterozoic age, intruded by a large granite body of Lower Proterozoic age. The gold mineralization at Serra Alta is associated with a granite cupola. It is interpreted to fit into the Intrusion Related Gold System style of mineralization, very similar to the Fort Knox Deposit, Alaska, USA.

Serra Alta gold mineralization is associated with hydrothermally altered and sheared granitic rocks with quartz vein and veinlet swarms, moderately rich in sulphides (pyrite, galena, sphalerite and chalcopyrite). Other gold mineralization in the region is often hosted in single large quartz veins within fractures (the Giant Quartz Veins target).

The mineralized granite is overlain by a quartzite (yellow unit in Figure 1.3) which caps the cupola. A much younger sequence of flat lying red bed sediments (light brown unit in Figure 1.3) overlies the quartzite. The quartzite and red beds form cuestas (mesa-like features) several hundred metres high and will likely limit any push back of a pit wall to the east.

The Giant Quartz Veins are located about 5 km to the south of Serra Alta in the same granite body. Twenty-four of these veins have been mapped. Their width varies from just under a metre to several metres.

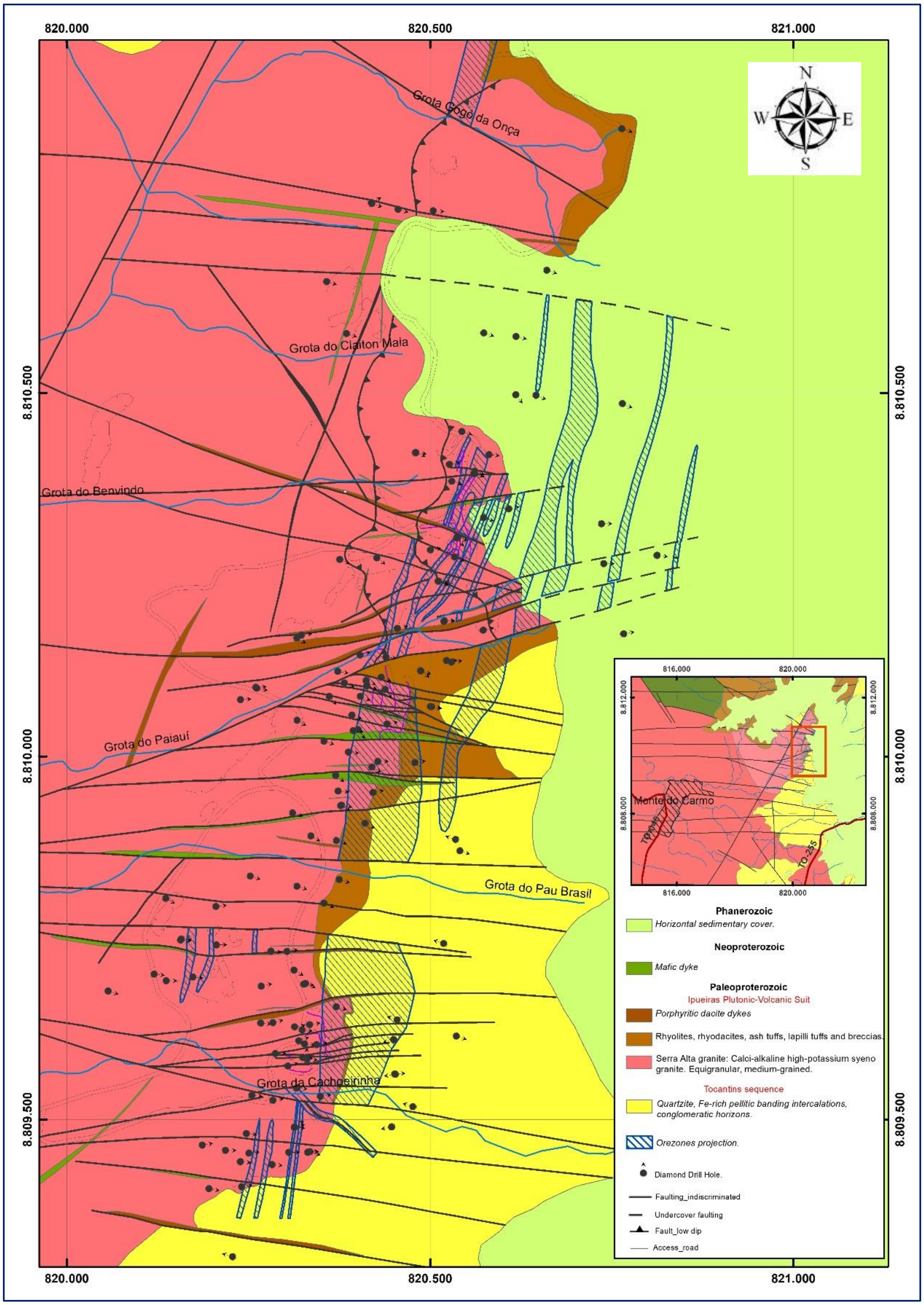
1.3 EXPLORATION HISTORY

It is understood that gold was originally discovered in the Monte do Carmo area during the 17th century. At this time early explorers and developers known as bandeirantes were opening up the interior regions of Brazil, often using river access on major waterways such as the Tocantins River. They used slave labour to recover gold, mostly from alluvial sediments and weathered saprolitic rocks. Bandeirante workings are found at Serra Alta.

During the 1980s the area experienced an influx of artisanal gold miners (garimpeiros) motivated by the recent rise in gold prices. MSM staff report that over 2,000 garimpeiros were working around Monte do Carmo at the time. Serra Alta was a major focus of garimpeiro activity. These informal miners were ultimately compensated and moved off of the concessions. No garimpeiro activity was occurring on the Serra Alta concession at the time of Micon's site visits. Modest scale artisanal mining was still active on some of the "Giant Quartz Veins" and was viewed by the QP during the site visit.

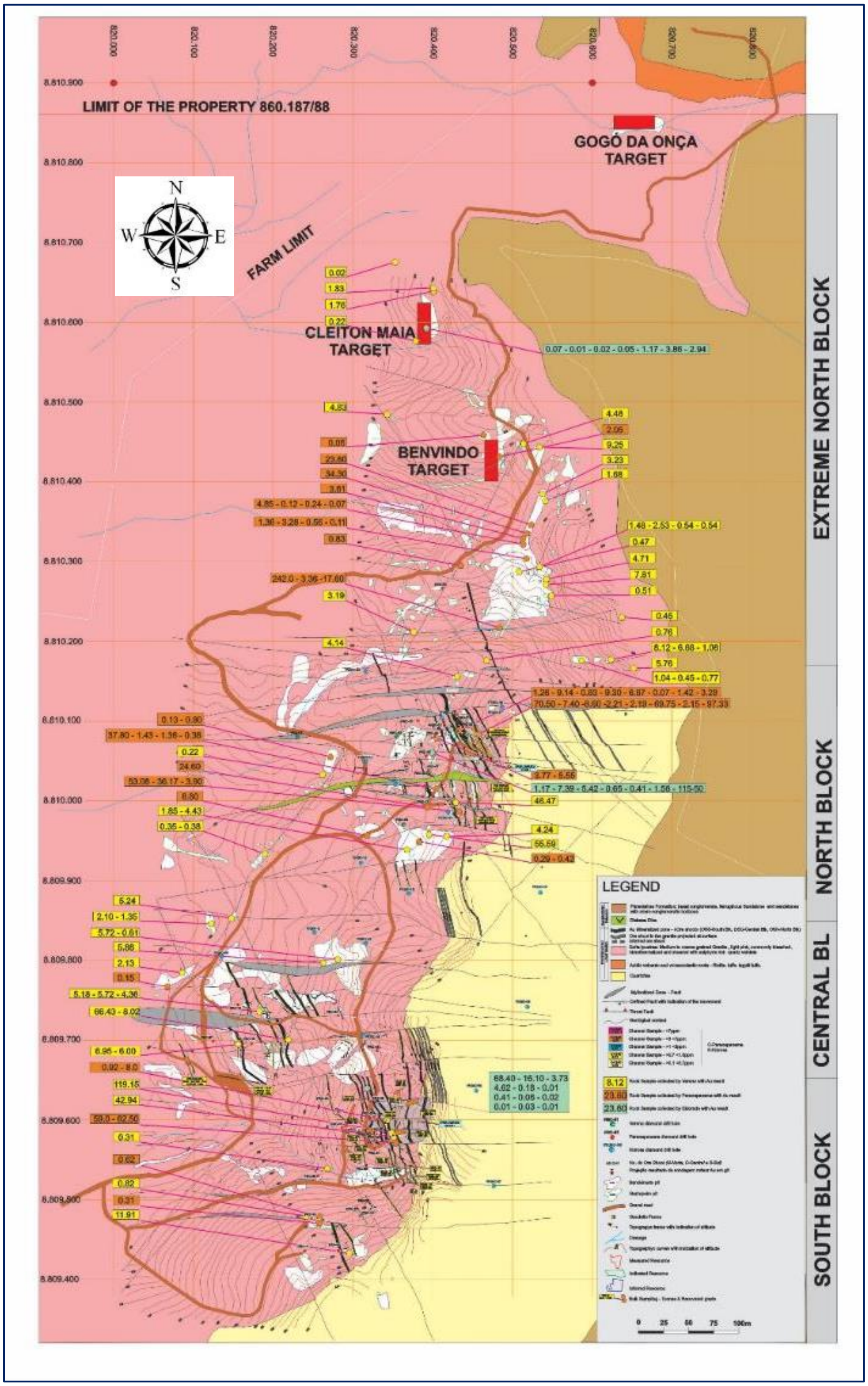
No reliable records exist for the total gold production by the bandeirantes and garimpeiros, however, the local historical workings (pits and tunnels) at Serra Alta are extensive. The white patches on Figure 1.4 show the location of mapped bandeirante and garimpeiro workings at Serra Alta.

Figure 1.3
Serra Alta Geological Map



Source: Cerrado, 2019. Scale on map grid.

Figure 1.4
Serra Alta Geological Map Showing Garimpos in White



Source: MSM, 2012. Scale on map grid.

1.3.1 Modern Exploration

Modern exploration in the area commenced in 1985 with work by Verena Mineração Ltda. (VML) and related companies. VML was incorporated in 1986 by the current directors of MSM to explore for gold in Tocantins State, particularly in the region of Porto Nacional and Monte do Carmo.

Investments in mineral exploration in the area, by entities other than Cerrado, are reported to have amounted to US$4.7 million from 1985 through 1995, and over US$20.0 million from 1996 to date. Most of the investment was applied in the Monte do Carmo Project area with many known occurrences of gold.

Modern exploration work targeted many regional targets but concentrated on the Giant Quartz Veins, and, in particular, on the Serra Alta Deposit.

The total number of holes and metres drilled, at and around the Monte do Carmo project, until the data-freeze date of this technical report (June 4, 2021), are set out in Table 1.1. The drilling campaign conducted after the last technical report is named Phase I, and was included in current mineral resource estimate. The total number of holes and meters drilled are set out in Table 1.1.

GE21 conducted a site visit aimed at data verification connected to the Phase I drilling campaign. The Phase I drilling campaign adopted the same procedures used in the 2018 campaign, including the modifications recommended by Micon in the last Technical Report. The main changes were adding oriented drilling with collection of oriented structures from core drilling and implementing a Digital Database Management System, using Seequent's MX Deposit. GE21 conducted a QA/QC analysis and concluded that the procedures are being followed using industry best practices.

Drilling, and exposures from mining, at the Serra Alta Deposit have demonstrated a wide, hydrothermally altered and gold-mineralized series of zones about 300 m wide with approximately 1,500 m of strike length, as demonstrated by the bandeirante and garimpeiro workings shown as white patches in Figure 1.4. The zone series is a corridor which contains individual veined, mineralized shoots generally striking N10° E and dipping 60° W. The structures are like ladder veins in the individual mineralized zones.

At the time of the QP's site visit, MSM and Cerrado geologists were discussing the possible interpretation of three distinct sub-corridors or trends of mineralization within this wider corridor. There are exposed bedrock sources of veining on the eastern side up against the cuesta wall. Extensions of the sheared granite cupola mineralization on the eastern side, under the quartzites, have been confirmed by drilling.

Table 1.1
MDC Project, Historical Drilling Summary

Targets	Cerrado		Verena		Paranapanema		Kinross		Rio Tinto		Total Metres	Total Holes
	Metres	No. Of Holes	Metres	No. Of Holes	Metres	No. Of Holes	Metres	No. Of Holes	Metres	No. Of Holes		
Serra Alta	13,467.54	88	449.90	5	2,713.57	31	3,083.30	17	0.00	0	19,714.31	141
Serra Alta Phase 1	20,378.37	58	0.00	0	0.00	0	0.00	0	0.00	0	20,378.37	58
Giant Qtz Veins	0.00	0.00	0.00	0	1,061.05	17	436.90	4	3,876.30	53	5,374.25	74
Capitão	0.00	0.00	0.00	0	0.00	0	1,085.95	9	0.00	0	1,085.95	9
Bit-3	493.66	4	1,924.00	14	0.00	0	0.00	0	0.00	0	2,417.66	18
Ferradura	1,286.65	8	0.00	0	0.00	0	0.00	0	0.00	0	1286.65	8
Eduardo	286.64	4	0.00	0	0.00	0	0.00	0	0.00	0	286.64	4
Total	**35,912.86**	**162**	**2,373.90**	**19**	**3,774.62**	**48**	**4,606.15**	**30**	**3,876.30**	**53**	**30,165.46**	**254**

1.4 HISTORICAL RESOURCE ESTIMATES

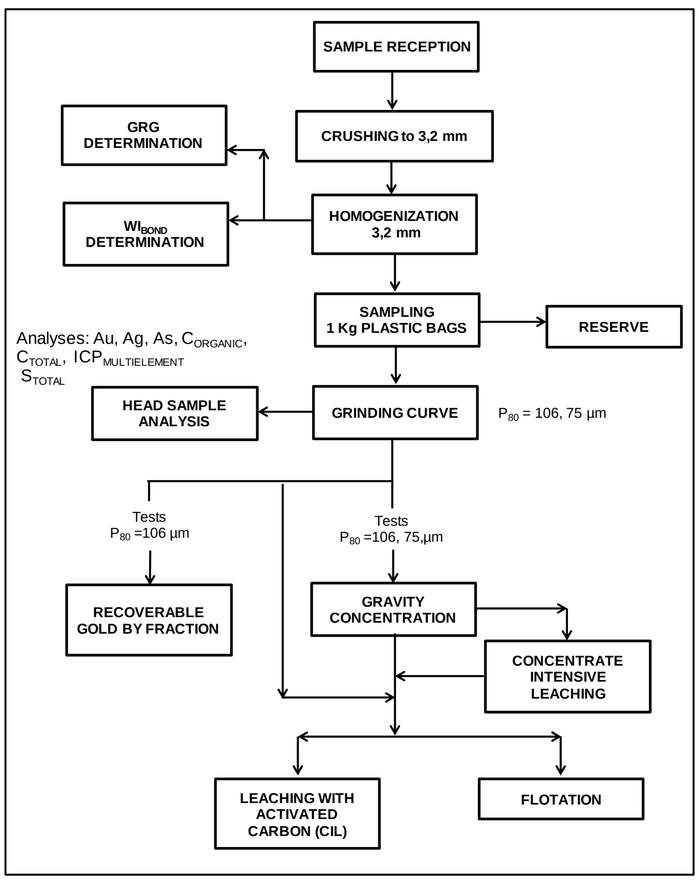
There are no known mineral resource estimates for the MDC project which have been prepared prior to the acquisition of the project by the current concession holder, MSM. An in-house estimate of resources has been prepared by a consultant to MSM (Geoprocess, 2011). This estimate is not considered to be NI 43-101 compliant and has not been reviewed by the QP. As the project concessions are still owned by MSM, it is not disclosed here.

1.5 METALLURGICAL TESTS

New process development tests were performed on four samples in 2021 by TESTWORK laboratory and described in the report entitled 'FINAL REPORT Metallurgical Tests with Samples from the orebodies of the Project: SERRA ALTA', of June 2021.

The four samples were submitted to several alternative processing routes, in two distinct grinding sizes, according to the summarized flowchart shown in Figure 1.5 below.

Figure 1.5
Flowchart of tests conducted by TESTWORK in 2021.



- The four samples were reduced to P80 = 106 µm and P80 = 75 µm were sent directly to leaching with sodium cyanide.

- The four samples were treated directly by gravity concentration, with sizes of P80 = 106µm and P80 = 75µm, and the tailings from this step were treated directly by leaching with sodium cyanide, and the concentrates subjected to intensive leaching, also with sodium cyanide.

- The tailings from gravity concentration, with sizes of P80 = 106µm and P80 = 75µm, were also concentrated by rougher stage flotation.

The results are shown in detail in Section 13.

1.6 PRODUCTION HISTORY

From 2012 to August, 2017, MSM, in partnership with the Paranaense Group from Parana State, invested approximately US$4.5 million in infrastructure and a bulk sampling gravity plant at Serra Alta which processed about 60,000 tons of ore and is reported to have produced 2,923 oz of gold. The QP has not verified any of the production claims made by MSM.

1.7 INTERPRETATION AND CONCLUSIONS

1.7.1 Giant Quartz Veins - General

One of the veins visited by the QP (Feb. 26 to March 2, 2018), the Verena vein, was being actively mined by at least three groups of garimpeiros at the time of the QP's visit. They were using small crushers and grinding machines, to recover the gold. The other veins visited were not being actively mined but had been within the last decade or so.

Total mineralized widths were generally 1 to 4 m at the workings visited, although locally they could be somewhat higher. Distances between the veins were typically at least 300 to 400 m and occasionally in excess of 1 km.

At Verena and Magalhaes 1, two of the three large quartz veins visited by the QP, the grade of the veins is believed to be low, estimated at about 2 g/t Au by MSM staff. However, the sheared wall rock on either side is of much better grade and the garimpeiros preferentially process only that material. MSM personnel estimate that the grade of the wall rock must be at least 7 to 8 g/t Au for the garimpeiros to operate successfully.

Grades of the quartz veins are reported to be too low for the garimpeiros to process. Total grade over the full mineralized width (vein plus sheared wall rock) is partially a function of the vein width, which is effectively internal dilution. The wider the quartz vein, the lower the overall grade.

Total tonnage potential at each vein is likely to be relatively low and the distance between veins will make it difficult to fully share infrastructure should mining commence. Small-scale open pits may be possible with ore trucked to a central location. Mercury contamination from previous garimpeiro operations may also be an issue.

Given the above, the QP concurs with Cerrado's decision to concentrate exploration effort on the Serra Alta Deposit where the potential for size is considered to be much greater. However, limited further exploration at the Giant Quartz Veins is considered to be justified.

1.7.2 Serra Alta Observations

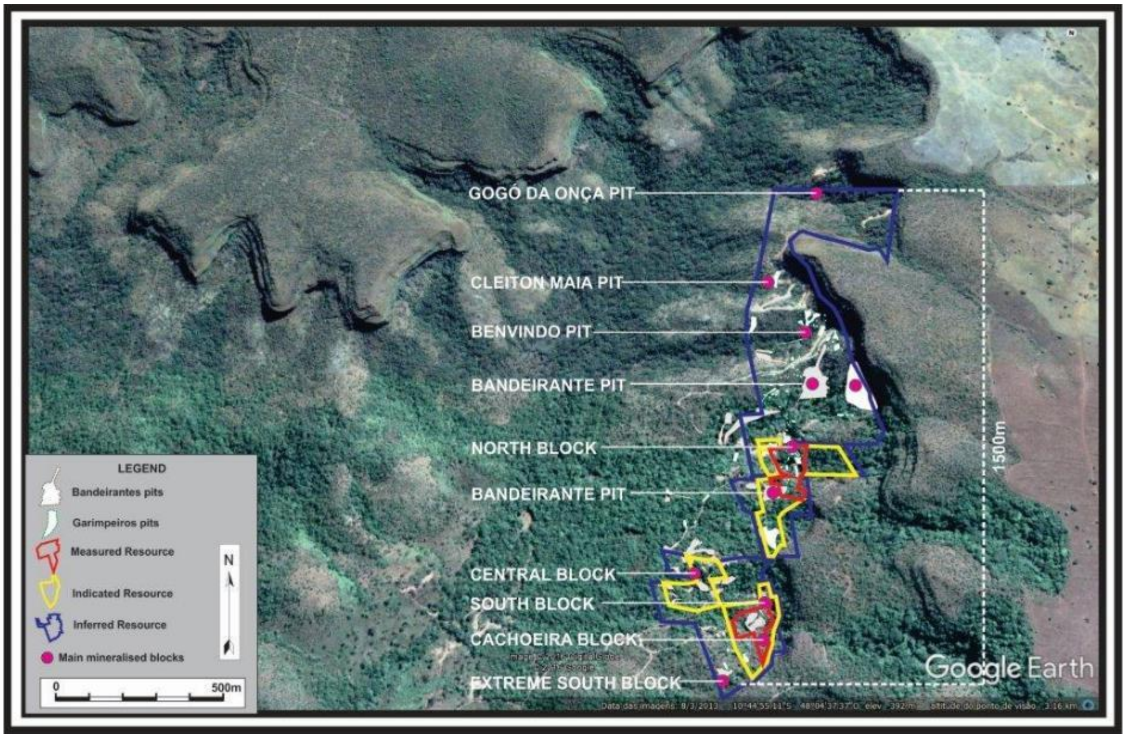
Traversing the Serra Alta portion of the property to visit mineralized exposures, the QP was struck by the extensive development of historical mine workings (bandeirante workings), more recent garimpos and the bulk sample small open pits completed by MSM. The historical workings are reported to date back over 200 years. The garimpeiros were reportedly bought out a number of years ago and have moved on. No activity is occurring on the Serra Alta portion of the property, other than that conducted by Cerrado and/or MSM.

The white patches in the pink granite of Figure 1.4 are the mapped positions of the bandeirante pits and garimpos. Except for the Gogó da Onça pit in the far north, the mapped garimpos stop at the Cleiton Maia pit (Figures 1.4 and 1.5). During the site visit, it was clear that they extended beyond this, close to the north property limit. They appear over a width of at least 200 m, and possibly 300 m, and a strike length of at least 1,500 m. Within this corridor, MSM and Cerrado geologists have interpreted three distinct sub-corridors or trends of mineralization. It is possible that the far western trend is composed largely of colluvium shed from the slope and has no immediate bedrock source. However, there are large exposed bedrock sources of veined and altered granite on the eastern side.

Clearly a large amount of mining work, over a wide area, mostly by hand, has been completed at this location over a long period of time. Intuitively, this leads to the conclusion that the recovered gold was sufficient to justify the significant effort and expense for that much activity. It is the QP's opinion that this justifies the expense of an exploration program to more fully test the true grade, depth and width of the mineralization.

The true width of the sub-corridors does not seem to be currently well defined. Figure 1.5 shows the locations of the principal pits and zones at Serra Alta.

Figure 1.6
Satellite Photo of Serra Alta Showing Principal Pits and Zones



Source MSM, 2018.

1.8 CONCLUSIONS

Serra Alta is a robust gold exploration project with a long history of artisanal mine workings and exposures over significant widths and strike length. The deposit geometry is well understood after systematic drilling, and is open along strike in both directions and down dip. The possibility exists that more mineralization will be found under the quartzite and red bed sediments to the immediate east of the known mineralization. However, grades there will likely need to justify underground mining for much of the mineralization, due to the significant amount of waste stripping of the overlying sediments which would be required for an open pit mine. The new resource estimate presented in this technical report consolidates Serra Alta as the anchor deposit in the Monte do Carmo district.

It is the QP's opinion that further exploration is justified.

The Giant Quartz Veins to the south are rather small tonnage targets and are unlikely to support a mining and milling operation on their own. However, should a mill be built at Serra Alta, they may contribute some mill feed. Other satellite targets like Capitão and Ferradura evidence similarities with Serra Alta mineralization and should be properly drill tested and modelled as they might also contribute additional mill feed.

The exploration work carried out at Serra Alta is being done to accepted industry standards.

1.8.1 Current Mineral Resource Estimate

The drilling completed to date, or relogged, resampled and validated by Cerrado is considered sufficient to interpret mineralized shells (see Section 14) and to estimate indicated and inferred mineral resource for the Serra Alta Deposit.

The mineral resource statement for the Serra Alta Deposit is summarized in Table 1.2.

Table 1.2
Statement of Mineral Resources for Serra Alta Gold Deposit
(Effective Date July 21, 2021)

Mining Method	Cut-off Grade (g/t Au)	Resource Category	Tonnage (kt)	Avg. Au Grade (g/t)	Metal Content (koz)
Open Pit	0.30	Indicated	9,063	1.85	539
		Inferred	12,128	1.82	708
Underground	1.10	Indicated	45	1.66	2
		Inferred	1,069	2.10	72
OP + UG		Indicated	9,108	1.85	541
		Inferred	13,197	1.84	780

Mineral resources which are not mineral reserves do not have demonstrated economic viability. At the present time, Micon does not believe that the Serra Alta mineral resource estimate is materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.

Micon considers that the resource estimate for the Serra Alta Deposit to have been reasonably prepared and to conform to the current 2014, CIM standards and definitions for estimating mineral resources as well as the 2019 CIM best practice guidelines.

1.9 RECOMMENDATIONS

In addition to continued exploration at Serra Alta, the QP makes the following recommendations:

- As Serra Alta progress into an advanced project, consideration should be given to making matrix-matched CRMs (analytical standards) from local mineralization.
- Complete a Preliminary Economic assessment using this resource as base of the metal endowment of the deposit
- Complete and improve flotation studies, also considering the cleaner stage, as flotation has good recovery and can be important to further reduce the mass to be leached. Evaluate the development of tests on a pilot scale.

- Complete and improve the centrifugal concentration-by-size-range (GRG) test studies, which are important to confirm the flowchart of the milling step and gravity concentration. The results are also important for improving the sizing of the following stages of plant design, intensive leaching, flotation and CIP or CIL leaching.

- Carry out a SAG (Semi-Autogenous Grinding Mill) milling study with samples from the primary crushing, as the ore characteristics seem to be appropriate for this type of milling. SAG milling can simplify and reduce the CAPEX and OPEX of the comminution steps (crushing and grinding), with a significant reduction in energy consumption, crusher linings and grinding bodies.

1.9.1 Serra Alta Proposed Exploration Program

Cerrado has initiated an exploration program designed to confirm and expand the gold mineralization at Serra Alta and to follow up other favourable targets from earlier programs. This report proposes to continue that work. The program includes definition drilling and expansion of the areas north, south and along the contact.

Also included is the follow up of favourable targets of earlier exploration programs with channel sampling, detailed geological mapping, and drilling of the extensive garimpeiro workings.

Despite the lower grades on the edges of Serra Alta the “Phase I” drilling campaign indicates that the mineralization system is still open for exploration to the North of East Zone, to the East along the contact, and to the South of Extreme South Block. The East-West fault system should be modeled in order to better understand the suggested displacement of Serra Alta mineralization and its actual limits. Also, further investigation along some faults near the High Grades zones could indicate different directions for exploratory drilling. The ultimate goal is to produce a database suitable for additional mineral resource estimates. A program comprised of 14,000 m of drilling has been proposed for exploration.

An update of the Preliminary Economic Assessment for the Serra Alta Mineral Resource is on course, this study targets a reasonable understanding of the possible mine layouts, mining methods, additional metallurgical recovery data, and the footprint of the mine project. This study will also work as guidance to keep the mineral exploration focused on the most profitable mineral resources. This study will consider the metal endowment disclosed in this report.

1.9.1.1 Exploration Budget

A total budget of $3,888,772.98 is proposed by Cerrado for the recommended 2021 Phase II exploration program as set out in Table 19.1 below. An additional $97,458.00 is budgeted for debt repayment conditions.

Table 1.3
Proposed 2021 Serra Alta Exploration Budget

Monte Do Carmo Project - Exploration	2021 Total (US$)
Serra Alta	851,307.50
Capitão/Magalhaes/Other Quartz Veins - follow up drilling	283,769.16
BIT-3 follow up - drilling	283,769.16
Fartura, Ferradura - exploratory drilling	283,769.16
Operation Expenses	1,507,227.00
G&A Expenses	603,931.00
Metallurgy test work	80,000.00
Preliminary Economic Assessment	75,000.00
Total	**3,968,772.98**

The QP has reviewed the proposed exploration program and finds it to be reasonable and justified. Should it fit with Cerrado's strategic goals, it is the QP's recommendation that the company conduct the proposed exploration program.

The data used in the preparation of this report are current as of June 4, 2021. The mineral resource estimate has an effective date of July 21, 2021.

2.0 INTRODUCTION

Cerrado Gold Inc. (Cerrado) is a gold mining and development company building projects in South America. Cerrado owns Minera Don Nicolas, located in Santa Cruz, Argentina, a newly producing high-grade gold mine which the company believes to have significant optimization, expansion, and exploration potential. In Brazil, Cerrado is focused on expanding the resource base at its Monte do Carmo gold project (MDC) in Tocantins State.

Micon International Limited (Micon) was retained by Cerrado Gold Inc. (Cerrado) to visit the MDC gold project in Tocantins State, Brazil and to comment on the prospectivity of the project. After the site visit, Cerrado decided to commission a National Instrument 43-101 (NI 43-101) Technical Report describing the history and work completed to date and recommending an exploration program and budget to support the listing of Cerrado on a Canadian stock exchange, and a financing. Later, in cooperation with Cerrado technical staff, Micon estimated an initial mineral resource compliant with National Instrument 43-101 (NI 43-101) for the project. This report discloses a 2021 update of that mineral resource.

The concessions at the project are currently held by Monte Sinai Mineração Ltda. (MSM) but are subject to a binding letter of intent for Cerrado to acquire them. The application to transfer mineral rights was filed with Brazil's National Mining Agency (ANM).

This report has been prepared using data and reports provided by MSM and Cerrado's exploration staff in Brazil. These reports and data sources are summarized in Section 20 of this report.

The main focus of Cerrado's exploration efforts at MDC is the Serra Alta Gold Deposit and this report will concentrate on that.

B. Terrence Hennessey, P.Geo., of Micon, travelled to Brazil and visited the MDC project and MSM's offices in Tocantins State during the period February 26 to March 2, 2018, to review the exploration activities, geology and mineralization. The visit was made in the company of Mr. R. A. Campbell and Mr. Kurt Menchen. This was the QP's first visit to the site. A second visit to the project was made from September 4 to 8, 2018 to review drilling, trenching and channel sampling progress. A third site visit was conducted on May 5, 2019 to review recent exploration planning.

Mr. Hennessey is a Professional Geoscientist registered in Ontario. He has over 40 years of experience in mineral exploration, mine operations, resource estimation and consulting. Mr. Hennessey is a former Vice President of Micon, now a Senior Associate Geologist, and the principal author of this report.

Porfirio Cabaleiro Rodriguez, FAIG, of GE21, visited the project site from June 14 to June 16, 2021. Mr. Rodriguez is a mining professional who has sufficient experience supervising metallurgists to be the QP for metallurgy in this report. He was supported by an experienced metallurgist.

Fabio Valerio Câmara Xavier, MAIG, of GE21, visited the project site on August 18 and 19, 2021 to review recent drill results and sampling practices. Mr. Xavier has 18 years of experience in the field of mineral exploration and mineral resource estimation. He possesses considerable experience dealing with various commodities, such as phosphate, iron ore, gold and copper ore, in addition to rare earth elements, among others. Mr. Xavier is a member of the Australian Institute of Geoscientists (MAIG)."

The authors are Qualified Persons as defined in NI 43-101 and independent of Cerrado as defined by NI 43-101.

All currency amounts in this report are stated in US or Canadian dollars (US$, CDN$), as specified, with commodity prices generally in US dollars (US$). Quantities are generally stated in SI units, the Canadian and international practice, including metric tons (tonnes, t), kilograms (kg) or grams (g) for weight, kilometres (km) or metres (m) for distance, hectares (ha) for area, litres (L) for volume and grams per tonne for gold (g/t Au) and silver (g/t Ag) grades. Historical production information may be presented using the Imperial system of measurement. Base metal grades are usually expressed in weight percent (%). Geochemical results or precious metal grades may be expressed in parts per million (ppm) or parts per billion (ppb). (1 ppm = 1 g/t). Elevations are given in metres above sea level (masl). Precious metal quantities may also be reported in troy ounces (ounces, oz), a common practice in the mining industry.

Micon is pleased to acknowledge the helpful cooperation of Cerrado's management and field staff, all of whom made any and all data requested available and responded openly and helpfully to all questions, queries and requests for material.

The QP has reviewed and analyzed data provided by Cerrado, its consultants and previous operators of the property, and has drawn his own conclusions therefrom, augmented by his direct field examination. Micon has not carried out any independent exploration work, drilled any holes or carried out any sampling and assaying on the property.

While exercising all reasonable diligence in checking, confirming, and testing it, the QP has relied upon Cerrado and MSM's presentation of the project data from previous operators and from Cerrado and MSM's mining and exploration experience at the MDC project in formulating his opinion.

The descriptions of geology, mineralization and exploration are taken from reports prepared by various companies or their contracted consultants. The conclusions of this report rely on data available in published and unpublished reports, information supplied by the various companies which have conducted exploration on the property, and information supplied by Cerrado and MSM. The information provided to Cerrado was supplied by reputable companies and the QP has no reason to doubt its validity.

The figures and tables for this report were largely reproduced, or derived, from reports written for Cerrado. Where the figures and tables are derived from sources other than Micon, the source is acknowledged below the figure or table.

Table 2.1
List of Abbreviations

Name	Abbreviation
Atomic Absorption Spectroscopy	AA, AAS
ALS Global Laboratories	ALS
Canadian Dollar	CAD
Canadian Institute of Mining, Metallurgy and Petroleum	CIM
Canadian National Instrument 43-101	NI 43-101
Canadian Securities Administrators	CSA
Centimetre(s)	cm
Certified Reference Materials (Analytical Standards)	CRM (Standards)
Copper	Cu
Degree(s), Degrees Celsius	°, °C
Digital elevation model	DEM
Digital Terrain Model	DTM
Gold	Au
Grams per metric tonne	g/t
Hectare(s)	ha
Hour	h
Inductively Coupled Plasma - Emission Spectrometry	ICP-ES
Iron	Fe
Kilogram(s)	kg
Kilometre(s)	km
Lead	Pb
Litre(s)	L
Metre(s)	m
Micon International Limited	Micon
Million (e.g. million tonnes, million ounces, million years)	M (Mt, Moz, Ma)
Milligram(s)	mg
Millimetre(s)	mm
National Instrument 43-101	NI 43-101
Not available/applicable	n.a.
Parts per billion, part per million	ppb, ppm
Percent(age)	%
Qualified Person (as defined in NI 43-101)	QP
Quality Assurance/Quality Control	QA/QC
SGS Brazil Ltd. (SGS do Brasil Ltda.)	SGS
Silver	Ag
Specific gravity	SG
Square kilometre(s)	km^2
System for Electronic Document Analysis and Retrieval	SEDAR
Thorium	Th
Three-dimensional	3D
Tonne (metric)/tonnes per day, tonnes per hour	t, t/d, t/h
Tonnes per cubic metre	t/m^3
United States Dollar(s)	USD

US Securities and Exchange Commission	SEC
Universal Transverse Mercator	UTM
Uranium	U
Year	y
Zinc	Zn

3.0 RELIANCE ON OTHER EXPERTS

The various agreements under which Cerrado and/or MSM hold title to the mineral lands for this project have not been thoroughly investigated or confirmed by the QP and the QP offers no opinion as to the description of, or validity, of the mineral title claimed. The description of the property has been presented here for general information purposes only, as required by NI 43-101.

Micon is not qualified to provide professional opinion on issues related to mining and exploration title and land tenure, royalties, permitting and legal and environmental matters. The author has accordingly relied upon the representations of the issuer, Cerrado Gold Inc., as well as Monte Sinai Mineração Ltda., for Section 4 of this report and has not verified the information presented in that section.

The QP has also relied on information regarding royalties provided by Cerrado.

4.0 PROPERTY DESCRIPTION AND LOCATION

4.1 LOCATION

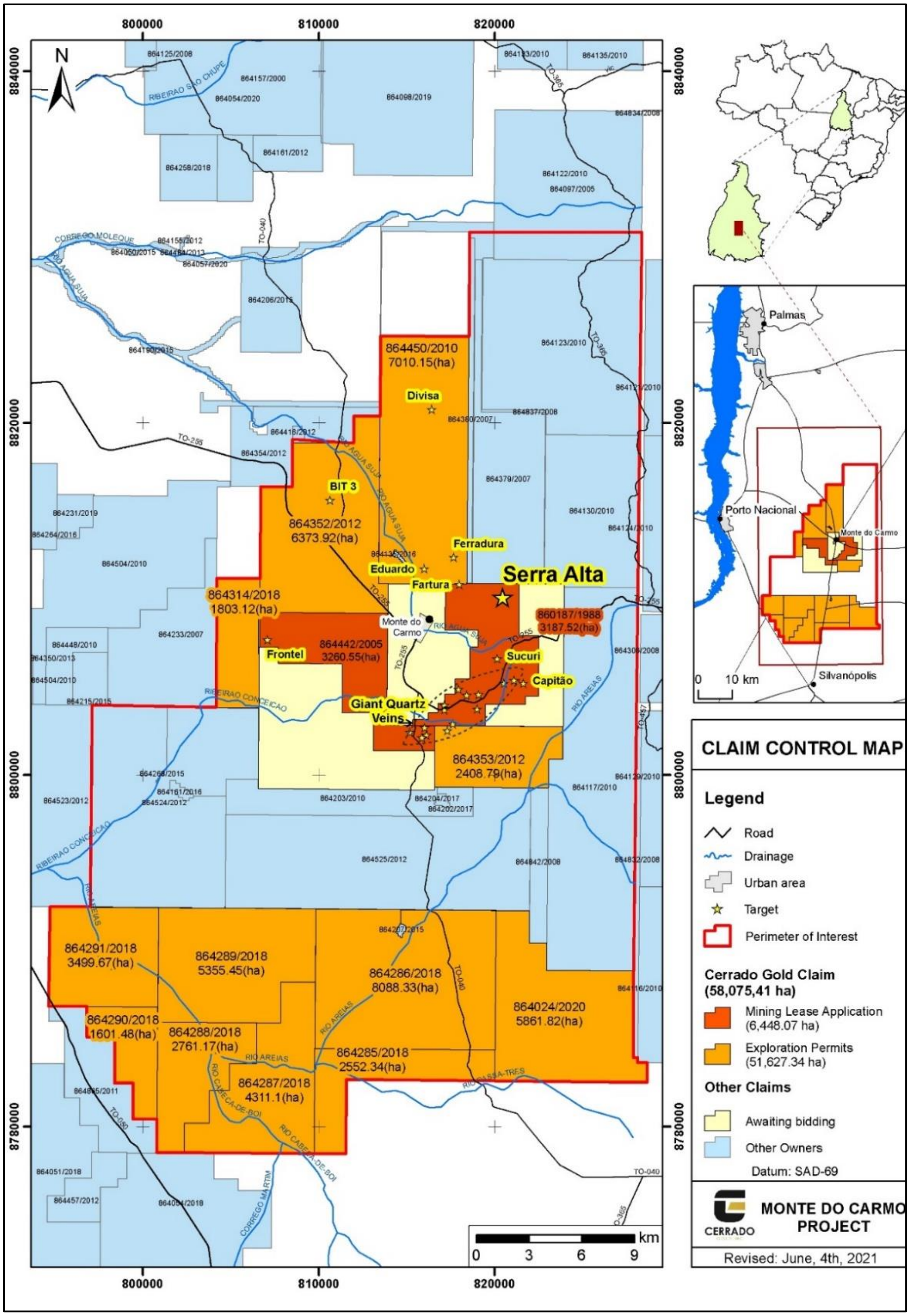
The MDC Gold Project is located in the State of Tocantins, Brazil, immediately east of the town of Monte do Carmo. The Serra Alta Deposit, the main focus of exploration at the project is located at 10° 45' 4" south latitude and 48° 4' 20." west longitude. Monte do Carmo (7,700 inhabitants) is located 39 km east of the city of Porto Nacional (55,000 inhabitants). Porto Nacional is 50 km (60 km by road) south of the state capital of Palmas (250,000 inhabitants) and 760 km north of Brasilia, the federal capital (Figure 4.1).

Figure 4.1
Tocantins State Location Map

Source: MSM 2018

Figure 4.2 shows the local details of the MDC project location.

Figure 4.2
MDC Project Location Map



Source: Cerrado 2021.

Elevation in the vicinity of the town of Monte do Carmo varies between approximately 300 and 600 m above sea level.

4.2 CONCESSIONS

The MDC project consists of fourteen concessions as shown in Table 4.1 and on Figure 4.3. The principal mineralized targets at the project are also shown on Figure 4.3. The concessions are currently held by Serra Alta Mineração Ltda. The Monte de Carmo project is owned by a Brazilian entity called Serra Alta Mineração Ltda. (SAML).

Cerrado's agreement with MSM also includes a concession in Minas Gerais state, Brazil, the Morro Vermelho project, as shown in Table 4.2. This report concerns the Monte do Carmo project. Morro Vermelho is not part of the Monte do Carmo "mineral project", as that phrase is defined in NI 43-101, and will not be discussed further in this report.

Registration of mining and exploration concessions is controlled by National Department of Mineral Production (DNPM), now known as the National Mining Agency (ANM).

Brazil has a straight forward and transparent system for issuing exploration permits. It can be accessed on line at: http://www.anm.gov.br/assuntos/ao-minerador/cadastro-mineiro.

A company can apply for any property on line but the priority of application is only guaranteed when its physical filing occurs, and a protocol number is issued.

When a property application is made, the ANM records a number for the application (e.g. 864.442/2005), which will then await approval (usually about 3 months). If the application is all in order, it will be approved and published in the Federal Official Gazette (DOU), which has a unique sequential number (Alvará, e.g. 9,239). Once published in the DOU, the application becomes a permit, and its first 3-year period begins to run. For the next 3 years, annual fees will be charged, and exploration is permitted. Sixty days before the third-year expiry date, a request for extension can be made, which must be supported by a Technical Report.

The extension may be granted in approximately one to two years, usually for an additional 3-year period, although sometimes less. For this reason, good communications with ANM is paramount.

During the Covid-19 pandemic ANM issued a resolution extending the expiry dates of valid exploration permits. Resolution 76 (Resolução ANM 76) published in the Federal Official Gazette on 30th June, 2021 extended the permits effectively adding 559 days to the expiry date.

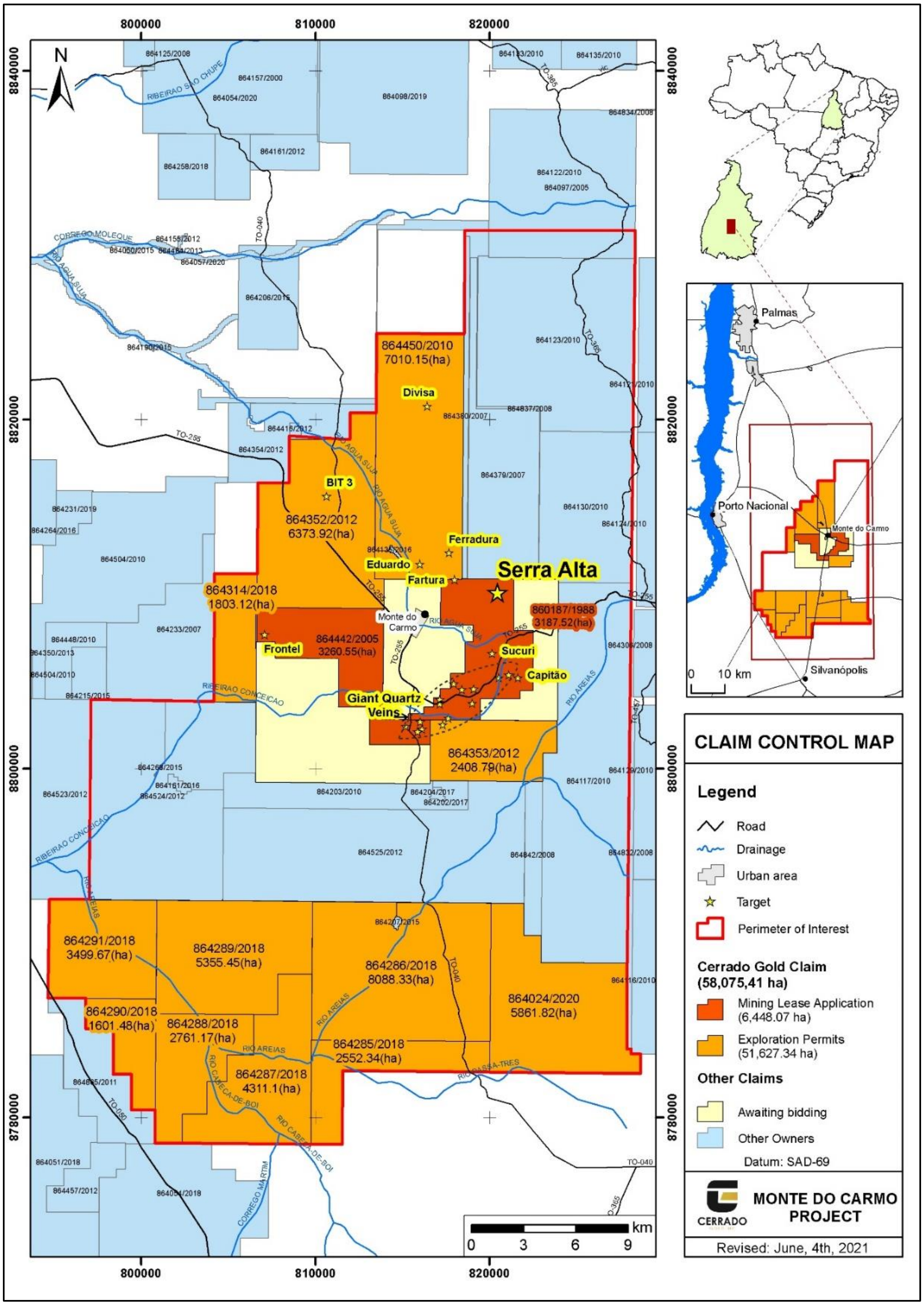
Table 4.1
MDC Project Concessions

ANM N°	Claim Date	Area (Ha)	Alvará N°	Alvará Date D.O.U	End Date of the Alvará	Owner	Annual Tax Due Date	Targets	Observations
860.187/1988	1-Mar-88	3,187.52	11124	7-Jul-09		SAML		Serra Alta, Conceição Giant Qtz Veins, Fartura	Final report approved March, 2017
864.442/2005	7-Nov-05	3,260.55	9239	8-Sep-09		SAML		Giant Qtz Veins	Final Report approved March, 2018
864.353/2012	12-Sep-12	2,408.79	1691	30-Jul-19	9-Feb-24	SAML	31/jan	Giant Qtz Veins	Renewed Concession
864.352/2012	12-Sep-12	6,373.92	1690	30-Jul-19	9-Feb-24	SAML	31/jan	Bit-03	Renewed Concession
864.450/2010	3-Aug-10	7,010.15	16921	13-Jan-15		SAML		Ferradura	Final Report Submitted (Pending ANM Approval)
864285/2018	14-Nov-18	2,552.34	1225	29-Mar-19	9-Oct-23	SAML	31/jul	Areias Zone	Concession
864.286/2018	14-Nov-18	8,088.33	1226	29-Mar-19	9-Oct-23	SAML	31/jul	Areias Zone	Concession
864.287/2018	14-Nov-18	4,311.10	2121	29-Apr-19	29-Nov-23	SAML	31/jul	Areias Zone	Concession
864.288/2018	14-Nov-18	2,761.17	1227	29-Mar-19	9-Oct-23	SAML	31/jul	Areias Zone	Concession
864.289/2018	14-Nov-18	5,355.45	1228	29-Mar-19	9-Oct-23	SAML	31/jul	Areias Zone	Concession
864.290/2018	14-Nov-18	1,601.48	1229	29-Mar-19	9-Oct-23	SAML	31/jul	Areias Zone	Concession
864.291/2018	14-Nov-18	3,499.67	1230	29-Mar-19	9-Oct-23	SAML	31/jul	Areias Zone	Concession
864.314/2018	6-Dec-18	1,803.12	2124	29-Apr-19	9-Nov-23	SAML	31/jul	Areias Zone	Concession
864.024/2020	12-Feb-20	5,861.82	2004	25-May-20	29-Sep-24	SAML	31/jul	Areias Zone	Concession
Total		**58,075.41**							

Table 4.2
Morro Vermelho Project Concessions

ANM N°	Claim Date	Area (Ha)	Alvará N°	Alvará Date D.O.U.	End Date Of The Alvará	Owner	Annual Tax Due Date	Observations
832.626/13	29/08/2013	1,999.46	14,260	31/10/2018	13/05/2023	MSM	31-Jan	Renewed Concession
Total		**1,999.46**						

Figure 4.3
Concessions and Exploration Target Locations



Source: Cerrado 2021.

At the end on the sixth year of valid title, and before the final day, a company must submit a Final Exploration Report. Once the Final Report has been approved by the ANM (which is also published in the DOU) the ANM has accepted that a potentially viable deposit has been discovered on that property. The company then has a term of one year within which to submit an Economic Assessment of the Project (PAE, which is similar to a Preliminary Economic Assessment under NI 43-101). In the case of concessions 860.187/88 and 864.442/05 from Table 4.1, the PAE was submitted in March, 2018. In the PAE, an extension to both concessions was requested and approved in October, 2018. Once the PAE has been approved by the ANM, a company may then request the Final Mining Lease, which is also issued by ANM.

After the mining lease is granted, a company has to submit a simplified production report every year, or it may ask for an extension to the mining lease, providing a reason for not being in production. Mining leases have no time limit.

Production taxes are payable on mining leases. The gold tax is now 1% of net revenue. An additional royalty equivalent to 50% of gold tax (in this case 0.5%) is paid to the land owner.

4.3 AGREEMENTS

The MDC project was acquired from Monte Sinai Mineração Ltda. ("Monte Sinai") in April 2018. Liabilities assumed on acquisition relate to expenses incurred by Monte Sinai prior to the acquisition, are payable directly to Monte Sinai, have no fixed terms of repayment and bear no interest. As at December 31, 2020 these liabilities have a balance of approximately $245,000.00.

The terms of the acquisition provide for a 2% net smelter royalty granted to the former owners of the project. The royalty can be reacquired by the Company for US$2,000,000.00. The Company did not measure or recognize a contingent liability in relation to the net smelter royalty.

In December 2020, the Company exercised its option to buy back the 2% net smelter return ("NSR") royalty for a total purchase price (aggregate cash consideration) of US$1,250,000.00 and recognized $100,000.00 advance as at December 31, 2020. The remaining payments are to be made as follows, $650,000.00 to be paid in March 2021, with the balance of $500,000.00 expected to be paid in May 2021 upon which the Company will obtain the rights to the NSR royalty.

As per the terms of the MDC Acquisition Agreement dated April 20, 2018 and the Royalty buyback agreement, the sellers of the project have the right to a payment of US$1,500,000.00 if an aggregate of 2,500,000 oz of gold are identified in a mineral resource estimate in accordance with NI 43-101. The Company has not measured or recognized a contingent liability in relation to the above payments.

4.4 PERMITS

Currently only exploration activities are taking place. Small-scale mining operated by MSM was already suspended at the time of previous Technical Report and have been totally discontinued. The License of Operation (LO, a permit issued by the state environmental agency) has been terminated. According to the State of Tocantins Environmental Board (Coema) pure exploration activities involving core drilling, trenching, mapping, etc. do not require specific permits.

4.5 ENVIRONMENT AND LIABILITIES

The principal known environmental liabilities are related to the historic gold panning activities of the bandeirantes in the 1600s and 1700s and the more recent garimpeiro/artisanal mining activities of the late 1900s. The principal issues are related to the use of mercury by the garimpeiros and their related small-scale construction, as well as the piles of rocky rubble left by the Portuguese explorers.

Currently the liabilities connected to garimpeiro activity and the historic use of mercury accrue to Cerrado due to the total transfer of concession titles. The company must formally communicate the nature of the illegal mining activities to the ANM. Cerrado will not be prosecuted for the illegal activity but may be held responsible to clean it up or arrange some compensatory measures in the future.

5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 ACCESSIBILITY

The MDC project is located in the central region of Brazil, in the State of Tocantins, 62 km southeast of the state capital Palmas. Palmas has an international airport with several daily flights to Brasilia, Goiânia and São Paulo with onward connections to most places in the world.

Monte do Carmo is accessed via a paved road (highway TO-255) east from Porto Nacional, where a field office is established at the project site (see Figure 4.2).

5.2 LOCAL INFRASTRUCTURE AND RESOURCES

The principal industry in this part of Tocantins state is agriculture. Large fields of soybeans and corn lie to the west of the town of Monte do Carmo. Cattle are also raised. MDC itself is surrounded on 2 sides by cuestas (mesa-like features) on which there is little agriculture.

The city of Porto Nacional's principal purpose is the support of the agricultural industry. All of the basic project needs can be sourced there. Permits for the project, such as those from the ANM, environmental agencies and others, can be applied for directly in Palmas.

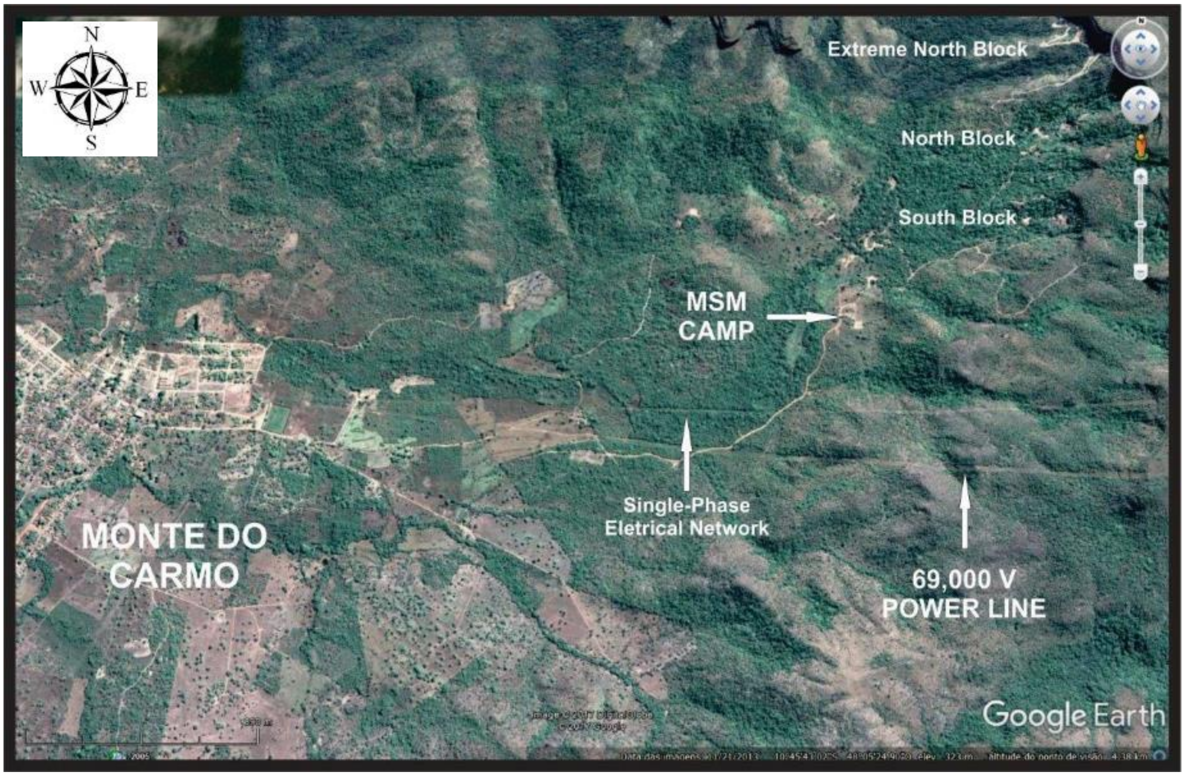
Porto Nacional has much of the basic necessary infrastructure, including a paved landing strip with capacity for landing large planes, but no refueling capacity.

The Tocantins River is dammed down-stream (north) of Palmas to feed the Lajeado Hydroelectric Power Plant. The river is flooded and quite wide from there to the south of Porto Nacional.

To the east of Monte do Carmo, near the municipality of Ponte Alta, high voltage power is available from the Izamu Ikeda power plant (30 MVA) located on the Balsas River, a tributary of the Tocantins River. A high-tension power line (69 kV) from this plant crosses the concession containing Serra Alta (860.187/88), approximately 500 m south of the main Serra Alta project facilities (see Figure 5.1).

From 2012 to 2017, MSM operated a small mill with gravity recovery and reported a processed tonnage of 60,361 t at a recovered grade of 1.508 g/t Au. The material milled was sourced from the Serra Alta Deposit. The mill has been dismantled but the foundations and tailings are still present.

Figure 5.1
Satellite View of Monte do Carmo and Serra Alta Area



Source: Cerrado, 2018. Note: Scale is in lower left corner of figure.

Cerrado has a field office at the site of the former mining operation at Serra Alta. This consists of a laboratory building, office building, cafeteria, work shop, fuel station and change house/bathroom (Figure 5.2). The tailings from the milling operation are visible in the lower left corner of the figure. Cerrado has since completed an open air, covered core logging facility with attached offices and core sawing room (Figure 5.3, also visible in Figure 5.2).

Ample labour is available in the nearby towns and cities. Some of the field labourers have been preferentially hired in the local communities, in accordance with the company's policies of providing local benefits.

While the local industry is dominated by agriculture, Brazil is a country with an extensive mining industry. Experienced mining professionals, skilled trades and labourers are available from nearby states.

Figure 5.2
Aerial View of Serra Alta Field Office Facilities (From Drone)

Source: Cerrado, 2018

Figure 5.3
Cerrado Core Logging Area and Office

Source: Cerrado, 2018

5.3 CLIMATE

A rainy tropical climate prevails in the Monte do Carmo area, equivalent to type Aw in the classification of Köppen - wet summer and dry winter (Radambrasil, 1981). Two distinct seasons are noted: rainy from September or October to April and dry from May to August. Annual rainfall varies from 1,600 to 2,100 mm. Relative humidity exceeds 80% in the rainy season, but falls to less than 30% in the dry season. Average annual temperatures range from 24 ° to 28 ° C.

5.4 WATER RESOURCES

The local drainage network reflects the lithological constitution and structure of the underlying rock units. The sedimentary rocks of the Parnaíba Basin represent an important porous aquifer, whereas in the impermeable crystalline basement rocks, small aquifers prevail, restricted to the fractured portions of the substrate (Radambrasil, 1981).

The Monte do Carmo area is drained by the headwaters of small tributaries on the east bank of the Tocantins River. Locally the streams (Sucuri, a tributary of the Água Suja, and Conceição) are tributaries of the Areias River which drains to the Tocantins.

The sandy aquifer provides strong flows of good quality, clear water. The predominant water courses are controlled by the local rock units and structure. In the Serra do Carmo (the cuestas near the town), they often occupy rugged stream beds, with small waterfalls (Figure 5.4).

Figure 5.4
Overlying Sedimentary Rock Cuesta and Water Falls.

Source: Micon, 2018

Rudimentary extraction of gold, begun in the 18th century, had severe impacts on the local waters, seen in the local stream Água Suja. Currently, in the nearby areas, there are impacts from large scale mechanized agriculture, with consumption for irrigation and contamination of surface and groundwater by soluble fertilizers and pesticides.

5.5 GEOMORPHOLOGY

The Monte do Carmo region encompasses the western border of the Parnaíba Sedimentary Basin, deposited on the crystalline basement which hosts the local gold mineralization. Two geomorphological domains, characterized by Radambrasil (1981), are identified:

- On the crystalline basement rocks, the Tocantins Depression was developed. The depression is composed of flat to gently undulating land, with elevations of approximately 200 to 300 m. There are isolated remnants of the overlying sediments with flattened tops and elevations of about 500 m or greater (e.g. Lajeado hill, east of Porto Nacional). Pediplanar surfaces occur at the western end of the domain. The drainage valleys have different orders of magnitude, usually with limited depth and flat bottom.

- Where the sedimentary rocks have not largely eroded away, lies the Residual Plateau of Tocantins. These are extensive plateaus bordered by escarpments (see Figure 5.4), with elevations between 350 and 600 m, on the tops (cuestas) of the sediments.

The boundary between the two domains is marked by a front of cuestas (an asymmetric hill with gentle slopes on one side and a steep slope on the other, looking like a mesa from the steep side). These are notable in the landscape east of Monte do Carmo. In this context lies the hydrothermally altered granite of the Serra Alta Deposit, once mined by the Portuguese bandeirantes and more recent garimpeiros. Locally, at the base of the cliffs located at the edge of the sediments (which extend eastward) is relatively rugged terrain. The elevations of on the exposed mineralized granite varies between 350 and 470 m.

5.6 SOIL

The local soils are derived from the weathering of the underlying rocks. In tropical climates, they tend to be acidic with poor fertility due to nutrient leaching. Sandstones and quartzites result in sandy soils, while granitoid rocks produce more clay-rich soils. In turn, basic volcanic rocks tend to result in more fertile soils.

In general, they are chemically poor soils with physical characteristics that are restrictive to conventional agricultural use. However, when corrected for their chemical limitations, they allow for mechanized agriculture and the production of soybeans and corn.

5.7 VEGETATION

The local vegetation cover is typical of savannas (Radambrasil, 1981). There is a great diversity of species, characteristic of the Cerrado biome. In the crystalline basement terrains, there is a predominance of grassy Cerrado (open tree savanna), with forests along the valleys and on the slopes of the Carmo mountain range (the cuestas). On the flat lying sediments to the east, only thin cover is found, without forests.

In recent decades, large areas of vegetative cover were removed for the establishment of pastures and mechanized farms. Initially these housed a rich and varied fauna: jaguars, anteaters, wolves, deer, alligators, diversified snakes, macaws, hawks, etc. Pressed by this agricultural occupation, the fauna seek shelter, although precarious, in the intact portions of savanna east of Monte do Carmo.

The original vegetation cover was characterized by Radambrasil (1981):

- Open Tree Savanna without gallery forest: Covers the Tocantins Residual Plateau. It includes low grasses and small tortuous trees with thick bark, bright coriaceous leaves or protected with hairs, suitable for vegetation adapted to low nutrient conditions (especially phosphate and nitrogen).

- Open Tree savanna with gallery forest: The dominant physiography in the crystalline terrains of the Tocantins Depression. The forests denote permanent humidity and greater accumulation of nutrients, favoured along the water courses and on the cliffs of the Carmo mountain range. The monotonous landscape of the Cerrado fields is interrupted by sinuous forest strings or by the presence of rainforest.

These forests are composed of arboreal elements with habits different from the surrounding species. They represent real forest refuges. They have variable dimensions and composition, but the vegetation is always high and dense.

6.0 HISTORY

6.1 INTRODUCTION

It is understood that gold was originally discovered in the Monte do Carmo area during the 18th century. At that time, early explorers and developers known as bandeirantes were opening up the interior regions of Brazil, often using river access on major waterways such as the Tocantins River. They used slave labour to recover gold, mostly from alluvial and weathered saprolitic rocks. Bandeirante workings are found at Serra Alta.

During the 1980s, the area experienced an influx of artisanal gold miners (garimpeiros) motivated by the recent rise in gold prices. MSM staff report that over 2,000 garimpeiros were working around Monte do Carmo at the time. Serra Alta was a major focus of garimpeiro activity. These informal miners were ultimately compensated and moved off the concessions. No garimpeiro activity was occurring on the Serra Alta concession at the time of the QP's visit. Modest scale artisanal mining was still active on some of the "Giant Quartz Veins" (the tightly clustered group of targets in concession 860187/1988 in the southern portion of Figure 4.3) and was viewed by the QP during the site visit.

No reliable records exist for the total gold production by the bandeirantes and garimpeiros, however, the local historical workings (pits and tunnels) at Serra Alta are extensive. The white patches on Figure 6.1 show the location of mapped bandeirante and garimpeiro workings at Serra Alta.

6.2 PRIOR EXPLORATION HISTORY

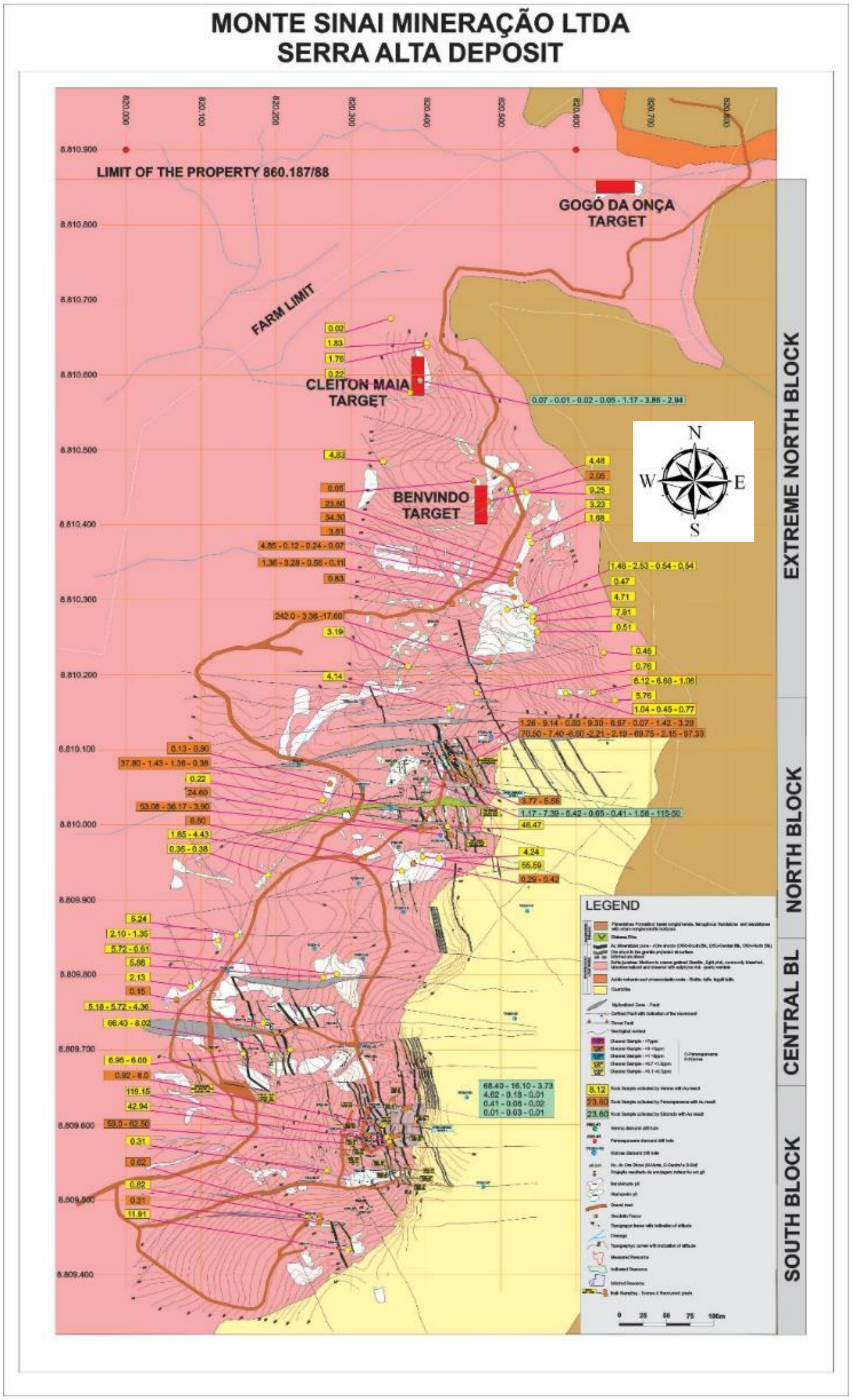
Modern exploration commenced in 1985 with work by Verena Mineração Ltda. (VML) and related companies. VML was incorporated in 1986 by the current directors of MSM to explore for gold in Tocantins State, particularly in the region of Porto Nacional and Monte do Carmo.

Investments in mineral exploration, by entities other than Cerrado, amounted to US$4.7 million from 1985 through 1995, and over US$20.0 million from 1996 to date. Most of the investment was applied in the MDC project area with many known occurrences of gold.

In the modern exploration history of the MDC project, the following events took place:

- 1985 to 1988 - Commencement of exploration in the Monte do Carmo area. Large volume sampling (900 t) of large quartz veins in the southern concessions, called Giant Quartz Veins.

Figure 6.1
Serra Alta Geological Map Showing Artisanal Workings in White



Source: MSM 2012. Scale in metres on map grid.

- 1989 - Joint venture (JV) with Rio Tinto. Investment of US$1.0 million. Work concentrated on the Giant Quartz Veins. A total of 26 veins were mapped and sampled. Four were drilled (53 diamond drill holes, totaling 3.876.30 m). Their size was considered insufficient for Rio Tinto, which, at the time, was looking for deposits with 3 million ounces or more of contained gold.

- 1989 to 1990 - Partnership with Musa Engenharia Ltda. Construction of the Torre Mine, a heap leach mining operation near Porto Nacional. The operation was abruptly interrupted by the advent of the Collor Plan (a government inflation stabilization plan, 03/15/1990), which drastically reduced the price of gold and effectively confiscated the company's working capital, making its continued operation unfeasible. About 5,000 tonnes of ore were processed.

- 1991 to 1992 - Partnership with the Paranapanema Group (PNP). Efforts focused on the Monte do Carmo region, with greater attention paid to the hydrothermally altered granite zone (Serra Alta). Investments made were equivalent to US$1.6 million, including 3,718.79 m of diamond drilling. The grades encountered were considered insufficient for continuity of the project, mainly due to the price of gold at the time.

- 1994 - Partnership with Companhia Nacional de Mineração (CNM, of the EBX Group). Invested US$1.1 million, focusing on shear zones in metavolcanic rocks, near the municipalities of Porto Nacional and Natividade.

- 1996 - Formation of Verena Minerals Corporation (VMC), aimed at attracting risk capital on a Canadian stock exchange. Investments were prioritized in the State of Tocantins, once again with emphasis on Porto Nacional and Monte do Carmo. The company remained listed on TSX-V until 2010.

- 1996 - VMC undertook an extensive and detailed 200 x 200 m magnetometer and Gama-Spectrometry Airborne Geophysics Survey covering an area of about 170 x 50 km. The data highlighted tectonic structures and mafic-ultramafic layered intrusions within the volcano-sedimentary sequence, one being the BIT-03 Target. This was partially explored by VMC. The last significant exploration work was carried out for gold in a shear zone crossing the intrusion on the property. Selected targets for gold were then mapped and soil geochemistry, terrestrial geophysics, trenching and exploratory diamond drilling were conducted (total drilled: 7,416.95 m).

- 1998 - VMC conducted a similar airborne geophysical survey in the area of the Conceição do Tocantins target.

- 2004 - Exploration work on the Serra Alta target recommenced with detailed mapping, sampling and diamond drilling (total drilled: 2,224 m).

- 2005 to 2008 - JV with Kinross at the Serra Alta target. Exploration work was conducted in the hydrothermally altered granite and quartz veins, with a further 5,043.05 m of diamond drilling. Investments made were the equivalent of US$3.5 million. However, the minimum target of 2 million ounces of contained gold was not defined and, given the uncertainties generated by the US financial crisis in 2008, the JV was undone. The properties were returned along with delivery of the technical data obtained.

- 2009 - VMC suspended investments in the Monte do Carmo region and redirected its efforts to the Volta Grande Gold Project in Para State.

- 2010 - The Forbes & Manhattan Group took over VMC, changing its name to Belo Sun Mining Corp.

- 2010 - The mineral rights to the concessions in the Monte do Carmo area were transferred to MSM, the current holder (pending formal assignment to SAML, see Section 4.2 above for clarification). MSM was engaged in the discovery and evaluation of the feasibility of operation of small to medium sized gold deposits.

- 2012 to August, 2017 - Partnership with the Paranaense Group from Parana State. Investment of approximately US$4.5 million in infrastructure and a bulk sampling gravity plant at Serra Alta which processed about 60,000 tons of ore and produced 2,923 oz of gold. The QP has not verified any of the production claims made by MSM.

The drilling at Serra Alta, outlined above, is described in more detail in Section 10 of this report.

The end of the garimpeiro mining on the granite at Serra Alta provided full access to places of interest and the observation of relevant geological features previously inaccessible. This, combined with the exposures created by the mining activities of 2012 to 2017, made it possible to better understand the geometry of, and controls on, the mineralized zone.

Cerrado became involved in the project in September, 2017.

6.3 HISTORIC DRILLING

From 1989, up to Cerrado’s involvement in the project in 2017, a total of 150 drill holes, totaling 14,630.97 m, were completed on the Giant Quartz Veins, Serra Alta, Capitão and Bit-3 targets (Table 6.1). The collar information for the holes drilled at Serra Alta is presented in Table 6.2.

Table 6.1
MDC Project, Historical Drilling Summary

Targets	Verena		Paranapanema		Kinross		Rio Tinto		Total Metres	Total Holes	ANM Concession
	Metres	No. Of Holes	Metres	No. Of Holes	Metres	No. Of Holes	Metres	No. Of Holes			
Serra Alta	449.90	5	2,713.57	31	3,083.30	17	0.00	0	6,246.77	53	860.187/88
Giant Qtz Veins	0.00	0	1,061.05	17	436.90	4	3,876.30	53	5,374.25	74	864.442/05
Capitão	0.00	0	0.00	0	1,086.30	8	0.00	0	1,086.30	8	860.187/88
Bit-3	1,924.00	14	0.00	0	0.00	0	0.00	0	1,924.00	14	864.352/12
Ferradura	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	864.450/10
Eduardo	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	864.450/10
Total	**2,373.90**	**19**	**3,774.62**	**48**	**4,606.15**	**30**	**3,876.30**	**53**	**14,630.97**	**150**	

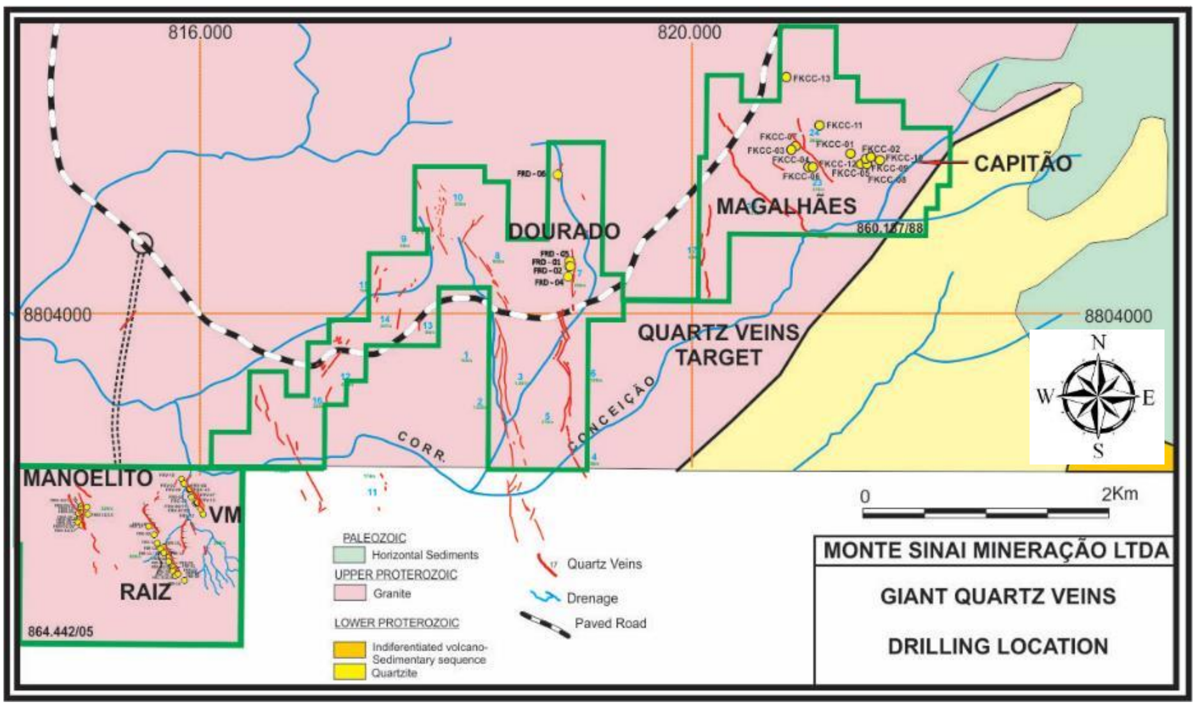
Table 6.2
Historical Drill Hole Collar Information at Serra Alta

Drill Hole	X Coordinate	Y Coordinate	Elevation	Drill Hole	Company	Period	Dip	Az.
FKMC-01	820411.33	8810104.66	199.30	454.57	Kinross	2006/2007	-45.00	199.30
FKMC-02	820316.20	8810162.92	310.20	449.19	Kinross	2006/2007	-50.00	310.20
FKMC-03	820419.31	8809985.31	163.30	458.52	Kinross	2006/2007	-50.00	163.30
FKMC-04	820316.37	8810049.58	201.90	435.17	Kinross	2006/2007	-50.00	201.90
FKMC-05	820135.80	8809804.50	164.35	415.60	Kinross	2006/2007	-50.00	164.35
FKMC-06	820312.27	8809705.91	220.10	478.49	Kinross	2006/2007	-40.00	220.10
FKMC-07	820476.43	8809517.50	148.10	541.51	Kinross	2006/2007	-50.00	148.10
FKMC-08	820454.60	8809636.86	145.10	563.38	Kinross	2006/2007	-50.00	145.10
FKMC-09	820518.62	8809742.03	220.10	564.49	Kinross	2006/2007	-50.00	220.10
FKMC-10	820535.03	8809885.39	220.10	561.66	Kinross	2006/2007	-50.00	220.10
FKMC-11	820252.02	8809835.35	92.70	445.45	Kinross	2006/2007	-45.00	92.70
FKMC-12	820370.53	8809884.19	163.10	469.88	Kinross	2006/2007	-45.00	163.10
FKMC-13	820310.36	8809922.33	157.10	452.46	Kinross	2006/2007	-45.00	157.10
FKMC-14	820353.64	8810020.89	142.10	445.64	Kinross	2006/2007	-45.00	142.10
FKMC-15	820316.33	8809821.40	77.75	464.53	Kinross	2006/2007	-45.00	77.75
FKMC-16	820486.61	8810117.80	231.80	489.72	Kinross	2006/2007	-40.00	231.80
FKMC-17	820486.88	8810117.52	226.20	489.69	Kinross	2006/2007	-50.00	226.20
FRC-01	820286.80	8809590.60	84.19	459.06	PNP	1991/1992	-60.00	84.19
FRC-02	820323.98	8809585.53	89.99	478.91	PNP	1991/1992	-60.00	89.99
FRC-03	820266.26	8809632.88	101.75	441.87	PNP	1991/1992	-60.00	101.75
FRC-04	820280.51	8809731.66	70.00	468.69	PNP	1991/1992	-60.00	70.00
FRC-05	820316.03	8809543.52	102.90	467.53	PNP	1991/1992	-60.00	102.90
FRC-06	820325.58	8809686.42	117.85	484.20	PNP	1991/1992	-60.00	117.85
FRC-07	820119.62	8809699.97	83.63	412.81	PNP	1991/1992	-60.00	83.63
FRC-08	820254.13	8809533.37	87.65	447.55	PNP	1991/1992	-60.00	87.65
FRC-09	820323.47	8809623.39	98.20	473.15	PNP	1991/1992	-60.00	98.20
FRC-10	820172.87	8809696.03	86.55	436.84	PNP	1991/1992	-60.00	86.55
FRC-11	820238.25	8809442.11	119.57	498.20	PNP	1991/1992	-50.00	119.57
FRC-12	820412.20	8810096.84	102.53	455.00	PNP	1991/1992	-50.00	102.53
FRC-13	820156.92	8809748.46	91.08	425.71	PNP	1991/1992	-50.00	91.08
FRC-14	820281.81	8809438.06	100.52	507.35	PNP	1991/1992	-50.00	100.52
FRC-15	820381.56	8810100.71	125.43	449.54	PNP	1991/1992	-50.00	125.43
FRC-16	820313.03	8809489.61	121.65	487.69	PNP	1991/1992	-50.00	121.65
FRC-17	820386.97	8810005.65	120.75	452.25	PNP	1991/1992	-50.00	120.75
FRC-18	820246.64	8809480.67	105.90	482.69	PNP	1991/1992	-50.00	105.90
FRC-19	820426.49	8810273.22	137.30	531.95	PNP	1991/1992	-60.00	137.30
FRC-20	820438.83	8810136.47	36.15	462.81	PNP	1991/1992	-50.00	36.15
FRC-21	820432.19	8810108.54	100.70	455.00	PNP	1991/1992	-50.00	100.70
FRC-22	820313.03	8809489.61	67.11	487.69	PNP	1991/1992	-50.00	67.11
FRC-23	820313.03	8809489.61	73.84	487.69	PNP	1991/1992	-60.00	73.84
FRC-24	820403.42	8810082.35	104.35	455.86	PNP	1991/1992	-50.00	104.35
FRC-25	820391.96	8810056.55	82.86	451.63	PNP	1991/1992	-50.00	82.86
FRC-26	820437.91	8810092.37	79.75	454.72	PNP	1991/1992	-50.00	79.75
FRC-27	820393.80	8810035.18	74.87	451.68	PNP	1991/1992	-50.00	74.87
FRC-28	820330.17	8809583.30	70.24	480.13	PNP	1991/1992	-45.00	70.24
FRC-29	820330.17	8809583.30	65.21	480.13	PNP	1991/1992	-90.00	65.21

Drill Hole	X Coordinate	Y Coordinate	Elevation	Drill Hole	Company	Period	Dip	Az.
FRC-30B	820326.58	8809603.99	11.05	479.55	PNP	1991/1992	-70.00	11.05
FMC-01	820372.56	8810116.76	85.90	445.00	Verena	1997	-45.00	85.90
FMC-02	820400.76	8810036.86	86.25	456.77	Verena	1997	-45.00	86.25
FMC-03	820361.06	8810082.56	85.45	447.73	Verena	1997	-45.00	85.45
FMC-04	820370.06	8809974.06	103.30	458.42	Verena	1997	-45.00	103.30
FMC-05	820234.16	8810081.36	89.00	429.20	Verena	1997	-45.00	89.00

The first drilling was carried out by Rio Tinto in a JV with VML in 1989. Rio Tinto completed 53 RC drill holes totaling 3,876.30 m at three of the Giant Quartz Veins, Raiz (20 holes), VM (16 holes) and Manoelito (17 holes) (Figure 6.1 and 6.2).

Figure 6.2
Giant Quartz Veins Map Showing the Location of the Rio Tinto and PNP Drill Hole Locations



Source: MSM, 2018

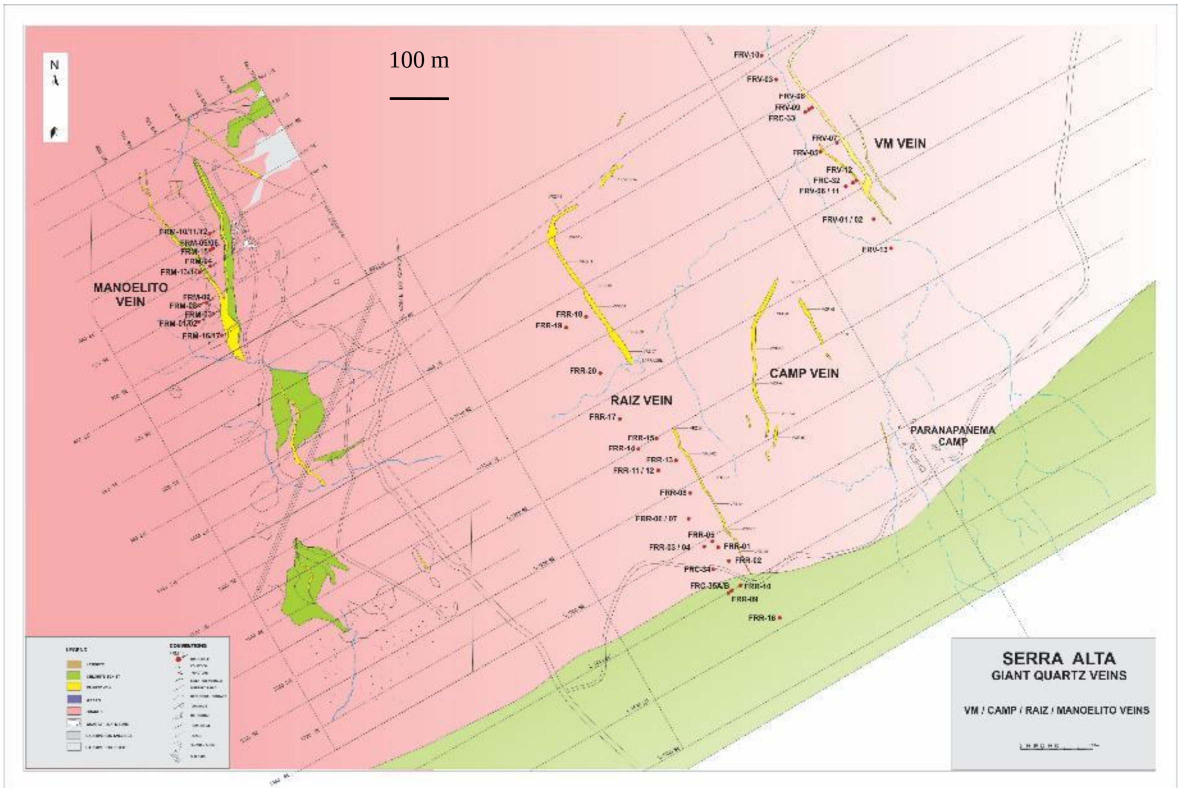
At the Capitão target, the surface auriferous potential was first confirmed through channel sampling. The objective of the work was to test the potential in the gold bearing granite zones and in the Magalhães giant quartz veins system. Table 6.3 presents the better drill hole intercepts from drilling at Capitão (Kinross 2007).

Table 6.3
Capitão Drilling Summary

Hole Number	From (m)	To (m)	Width (m)	Au (g/t)	Peak Value (Au g/t)
FKCC-01	20.70	24.52	3.82	0.30	21.45
	52.20	73.90	21.70	1.76	
	60.40	68.74	8.34	3.73	
	64.50	68.74	4.24	6.13	
	75.70	76.60	0.90	0.97	
	94.60	96.80	2.20	1.12	
	110.44	111.34	0.90	7.91	
FKCC-02	33.55	45.50	11.95	0.36	1.29
	80.51	81.24	0.73	0.73	
FKCC-03	Nothing Over 0.5 g/t				
FKCC-04	54.51	55.27	0.76	2.86	
FKCC-05	44.29	44.79	0.50	2.86	
FKCC-06	Nothing Over 0.5 g/t				
FKCC-07	19.63	20.25	0.62	5.96	
FKCC-08	2.90	5.30	2.40	1.77	4.67
FKCC-09	18.50	31.45	12.95	0.84	3.23
	51.09	61.45	10.36	0.51	
	51.09	54.20	3.11	1.13	
	59.93	60.70	0.77	0.70	
FKCC-10	Nothing Over 0.5 g/t				
FKCC-11	Nothing Over 0.5 g/t				
FKCC-12	33.10	34.10	1.00	4.07	4.07
	43.10	44.10	1.00	0.77	
	86.10	93.10	7.00	0.24	
FKCC-13	Nothing Over 0.5 g/t				

Figure 6.3 presents a geological map of the Raiz, VM and Manoelito veins.

Figure 6.3
Geology and Drill Hole Locations, Raiz, VM and Manoelito Veins



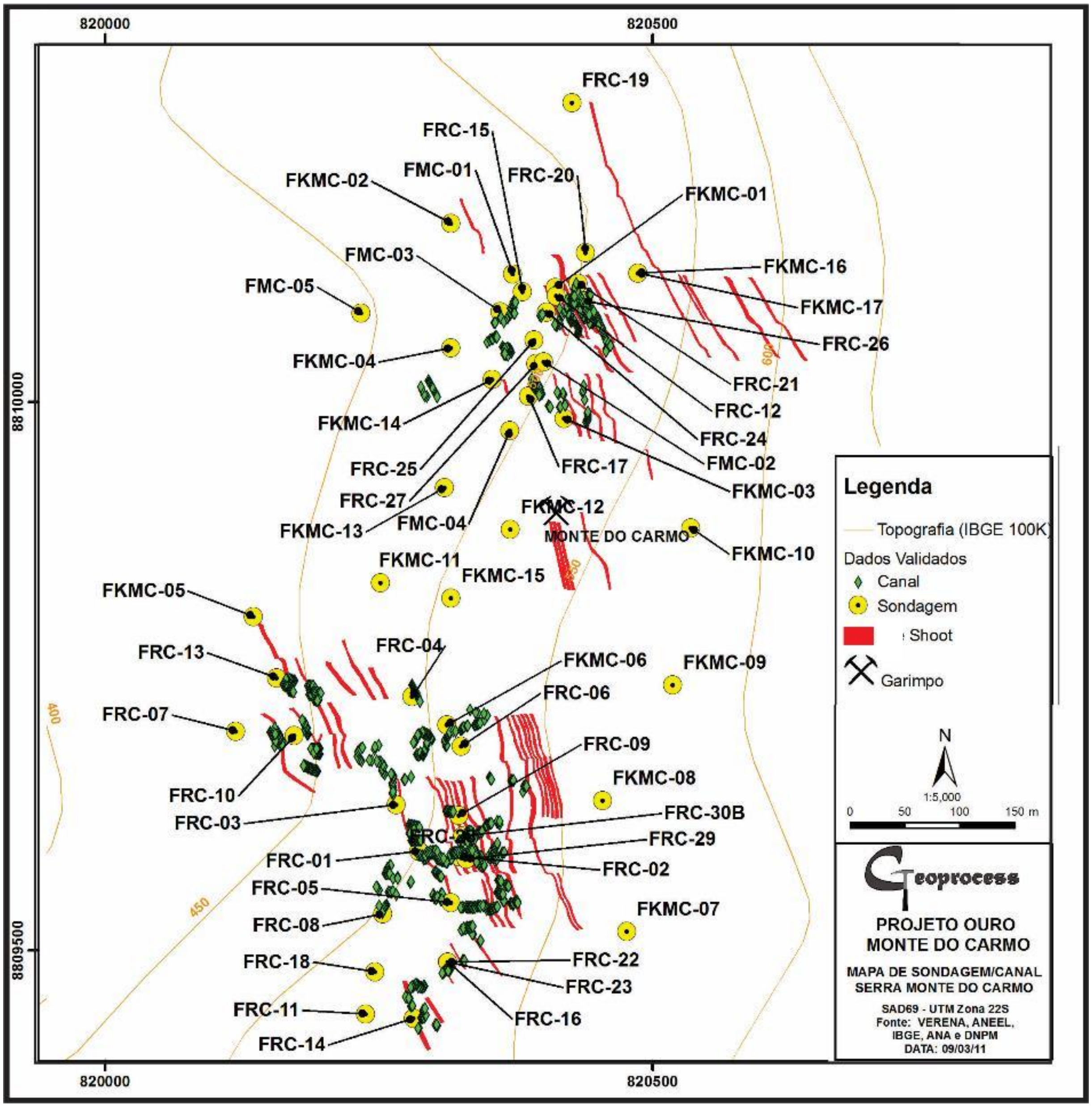
Source MSM, 2018

In 1991 and 1992, the PNP Group, through its subsidiary Mineração Taboca, in a JV with VML, completed 47 diamond drill holes. 31 holes were drilled at the Serra Alta target (2,713.57 m, Figure 6.4) and 17 at the Giant Quartz Veins (Figure 6.1), of which two drill holes targeted the VM Vein (96.53 m), four targeted the Raiz Vein (247.79 m), six targeted the Dourado Vein (378.19 m, Figure 6.5) and five targeted the Frontel Vein (338.54 m, Figure 6.6).

In 1997/98, VMC drilled 20 holes, totaling 2,373.90 m, 14 at the Bit-3 target (1,924.0 m, Figure 6.7) and 5 holes at the Serra Alta target (449.90 m, Figure 6.4).

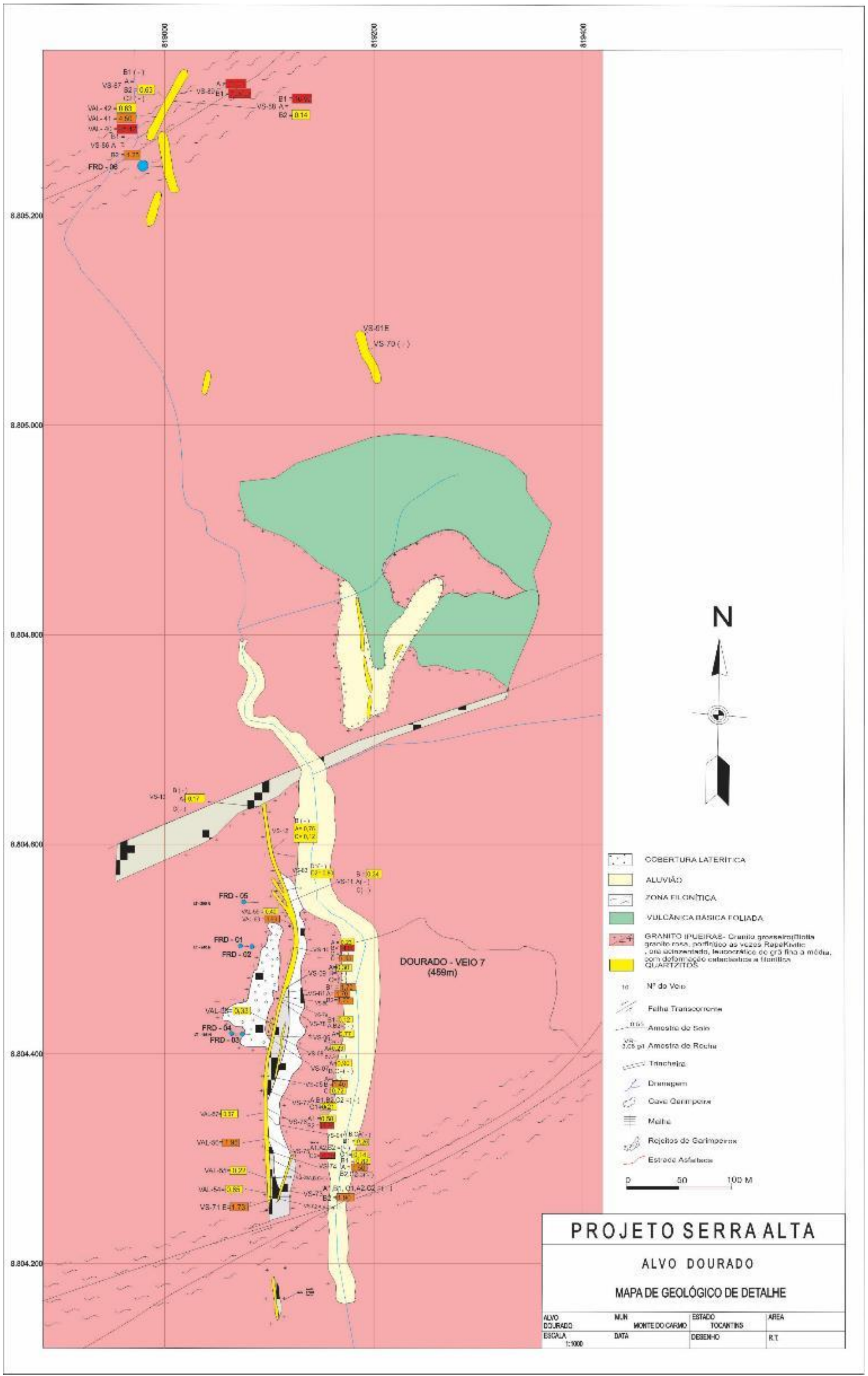
In 2006 and 2007, Kinross, in a JV with VMC, completed 30 drill holes totaling 4,606.15 m, 17 of which were at the Serra Alta target (3,083.30 m Figure 6.3), 9 holes were at the Capitão target (1,085.95 m - Figure 6.1) and four holes were on the Giant Quartz Veins target (436.90 m, Figure 6.8).

Figure 6.4
Serra Alta Drill Hole Locations



Source: MSM. Paranapanema holes (FRC), Kinross holes (FKMC) and Verena holes (FMC)

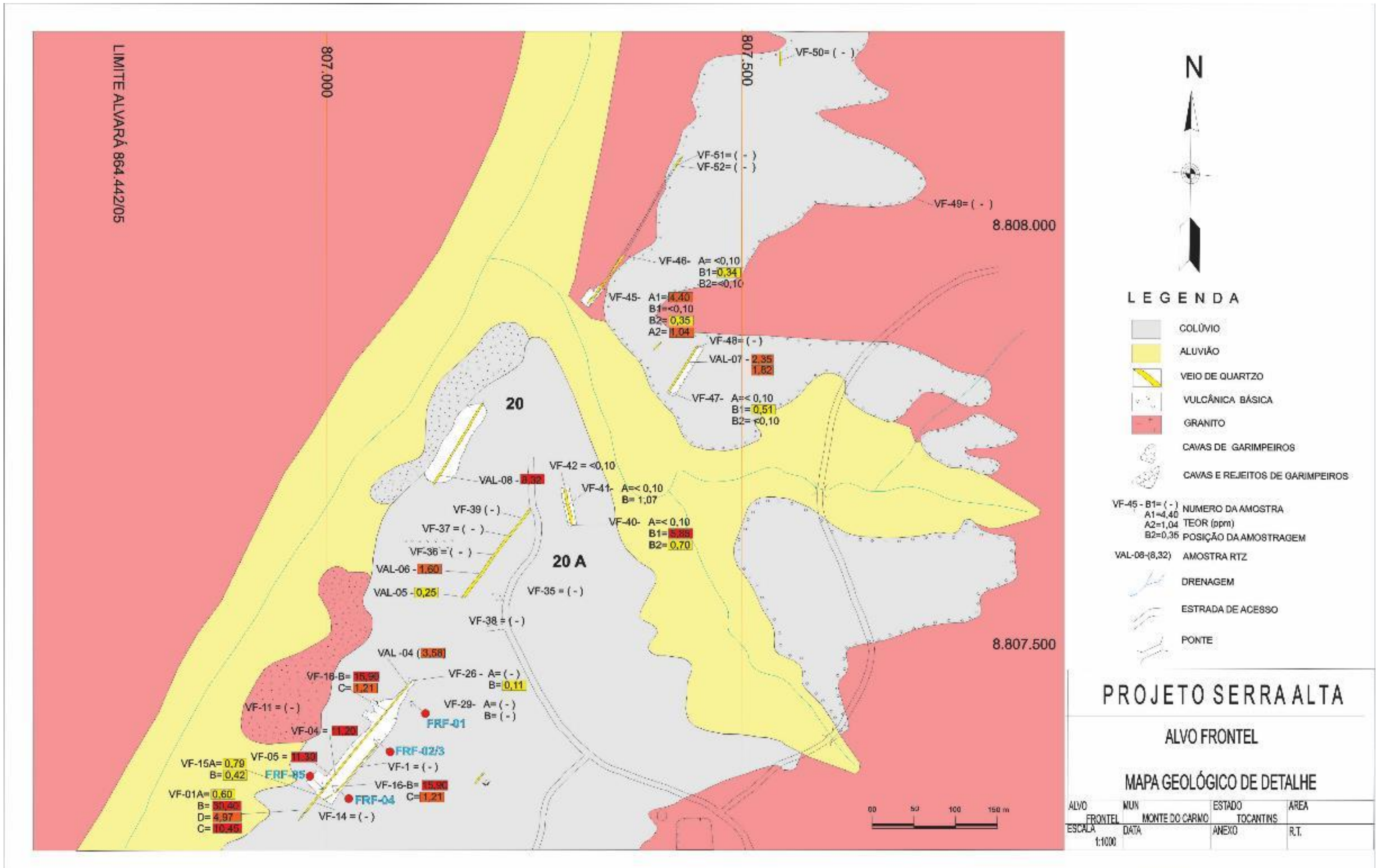
Figure 6.5
Dourado Vein Details, Geology and Paranapanema Hole Locations



Source: MSM 2018.

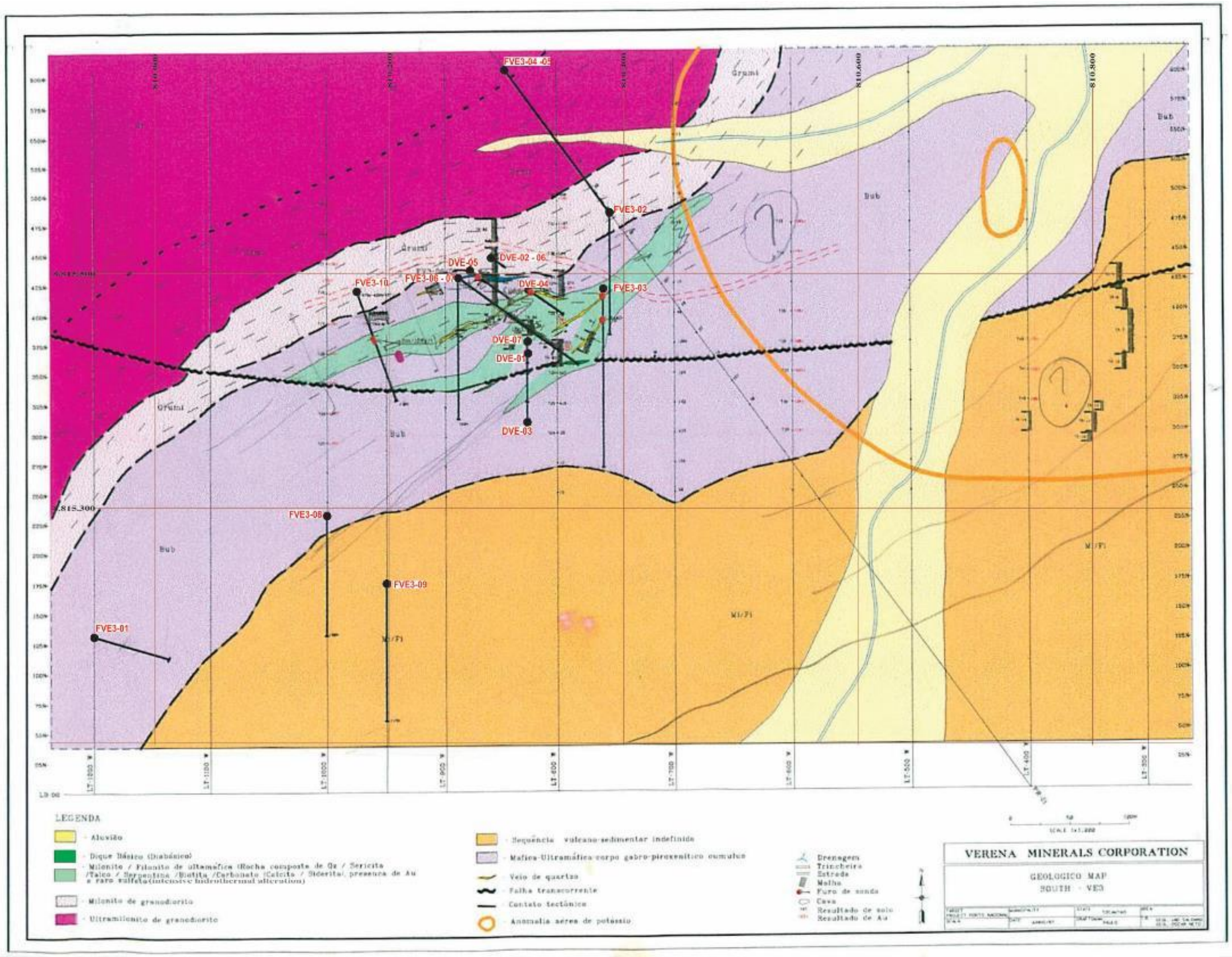
micon INTERNATIONAL LIMITED | mineral industry consultants

Figure 6.6
Frontel Vein - Geology and Drill Hole Locations



Source: MSM 2018

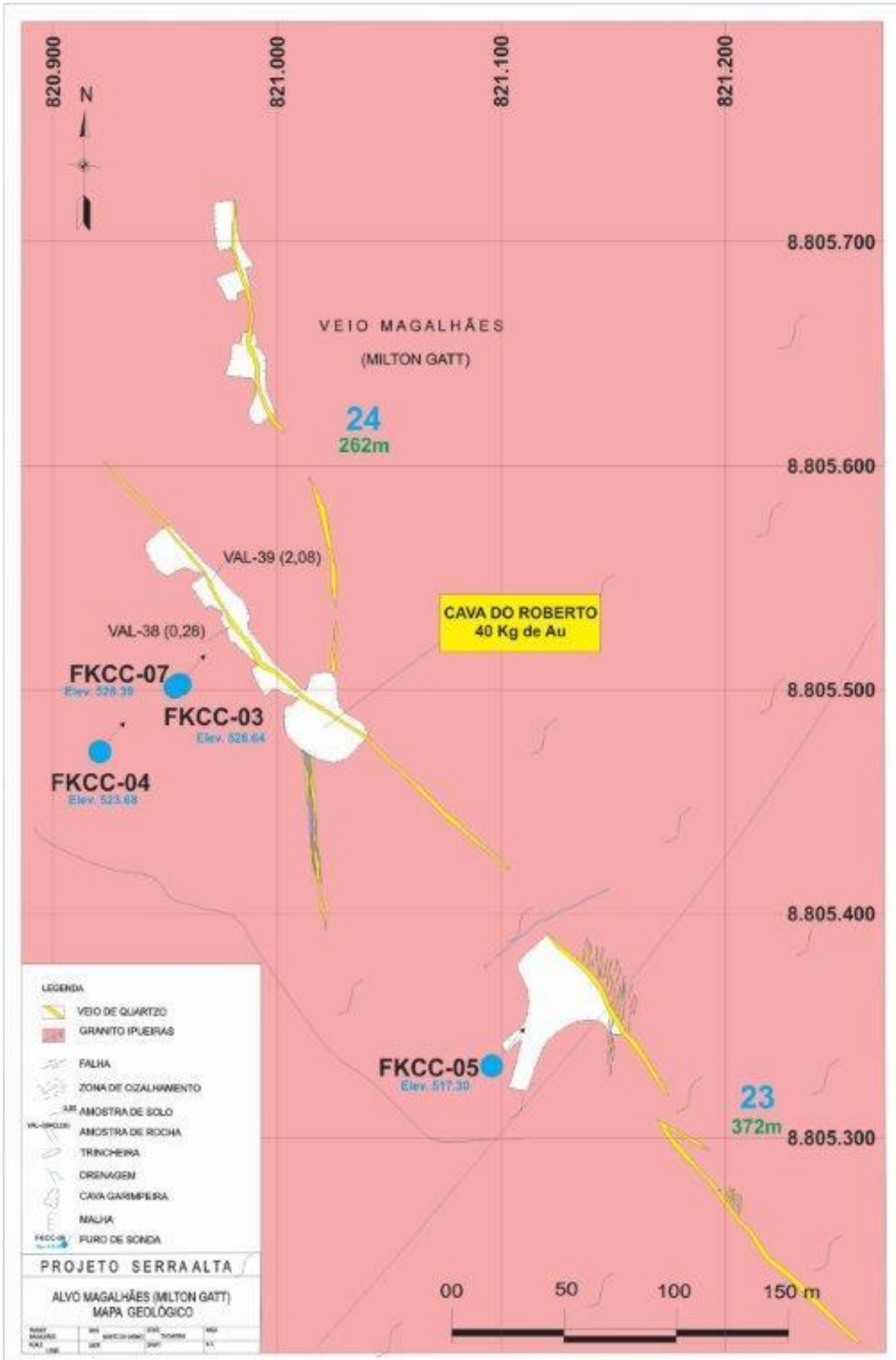
Figure 6.7
Bit-3 Geology and Verena DDH location



Source: MSM 2018

micon INTERNATIONAL LIMITED | mineral industry consultants

Figure 6.8
Magalhães Vein Showing Kinross Drill Hole Locations



Source: MSM 2018

Table 6.4 shows a summary of the drill methods and core sizes used by the various companies at the MDC project.

Table 6.4
Drilling Type Summary

Company	Drill Contractor	Drilling Method	Core Size		Analytical Method
			Weathered Rock	Fresh Rock	
Rio Tinto	Geosol	RC	HX	NX	Fire Assay/AAS
PNP	Geosol	Diamond	NX	BX	AAS/MIBK collector
Verena	Isoagua	Diamond	NX	BX	Fire Assay/AAS

AAS = atomic absorption spectroscopy (AAS)

Table 6.5 presents a list of significant intersections from the historical drilling at the Serra Alta Deposit. As Serra Alta is the focus of Cerrado's exploration activity going forward, results from drilling at the other targets will not be discussed further.

Table 6.5
Significant Historical Drill Intersections from Serra Alta

Hole Number	From	To	Length	Au (g/t)
FKMC-01	0.85	4.00	3.15	1.62
FKMC-01	9.88	32.00	22.12	3.62
FKMC-01	34.00	35.00	1.00	1.12
FKMC-01	55.00	63.50	8.50	0.19
FKMC-01	64.50	71.38	6.88	0.63
FKMC-01	85.90	87.40	1.50	0.39
FKMC-01	110.55	113.05	2.50	1.13
FKMC-01	171.15	173.15	2.00	0.38
FKMC-02	1.80	5.20	3.40	0.64
FKMC-02	31.28	34.50	3.22	1.54
FKMC-02	53.70	61.50	7.80	0.49
FKMC-02	77.70	83.50	5.80	0.47
FKMC-02	97.60	99.20	1.60	0.23
FKMC-03	3.10	4.10	1.00	0.84
FKMC-03	10.45	23.45	13.00	1.08
FKMC-03	38.21	39.30	1.09	4.21
FKMC-03	61.15	62.68	1.53	0.48
FKMC-03	73.82	76.82	3.00	0.51
FKMC-03	89.30	91.38	2.08	2.66
FKMC-03	135.30	136.80	1.50	1.23
FKMC-04	0.00	7.57	7.57	0.90
FKMC-04	48.40	49.14	0.74	0.49
FKMC-06	23.49	24.75	1.26	1.61
FKMC-06	40.25	54.50	14.25	0.60
FKMC-06	57.60	75.57	17.97	0.49
FKMC-06	77.55	89.93	12.38	0.02
FKMC-06	108.60	109.60	1.00	0.88
FKMC-07	83.71	95.40	11.69	1.22
FKMC-07	106.81	109.81	3.00	0.50
FKMC-07	143.00	144.10	1.10	0.60
FKMC-08	74.23	84.01	9.78	2.00
FKMC-08	94.60	107.02	12.42	5.37

Hole Number	From	To	Length	Au (g/t)
FKMC-08	116.92	124.36	7.44	0.56
FKMC-10	151.84	152.80	0.96	0.90
FKMC-10	193.10	196.90	3.80	0.74
FKMC-12	31.10	37.97	6.87	1.29
FKMC-12	42.00	57.80	15.80	1.82
FKMC-12	57.80	65.40	7.60	0.13
FKMC-12	65.40	70.77	5.37	0.61
FKMC-12	70.77	72.00	1.23	0.08
FKMC-12	80.15	82.10	1.95	0.12
FKMC-12	82.10	86.10	4.00	0.95
FKMC-12	149.66	150.47	0.81	2.10
FKMC-13	46.70	47.70	1.00	2.79
FKMC-13	57.74	59.74	2.00	1.33
FKMC-13	76.27	80.20	3.93	0.82
FKMC-13	96.10	98.10	2.00	0.54
FKMC-13	121.10	122.15	1.05	6.92
FKMC-13	140.10	141.10	1.00	0.39
FKMC-14	11.60	13.39	1.79	3.35
FKMC-14	90.53	94.49	3.96	0.31
FKMC-16	44.40	50.40	6.00	1.64
FKMC-16	63.00	64.00	1.00	1.29
FKMC-16	96.00	102.00	6.00	2.16
FKMC-16	121.60	135.80	14.20	2.76
FKMC-17	41.73	47.40	5.67	3.10
FKMC-17	78.35	79.52	1.17	0.69
FKMC-17	110.90	120.00	9.10	0.68
FMC-01	17.00	19.00	2.00	0.52
FMC-01	42.00	51.00	9.00	1.18
FMC-01	54.00	56.00	2.00	3.16
FMC-01	63.00	73.00	10.00	0.33
FMC-02	1.00	3.00	2.00	2.51
FMC-02	34.00	39.00	5.00	1.73
FMC-02	41.00	59.00	18.00	0.96
FMC-02	78.00	81.00	3.00	1.48
FMC-03	0.00	1.00	1.00	0.09
FMC-03	12.00	13.00	1.00	0.44
FMC-03	46.00	51.00	5.00	1.26
FMC-03	68.00	69.00	1.00	0.66
FMC-04	30.00	36.00	6.00	0.62
FMC-04	42.00	47.00	5.00	0.53
FMC-04	56.00	60.00	4.00	0.52
FRC-02 *	23.00	26.00	3.00	0.52
FRC-02 *	28.00	31.50	3.50	2.29
FRC-02 *	48.00	49.00	1.00	0.41
FRC-02 *	66.00	72.00	6.00	5.05
FRC-04 *	12.00	14.00	2.00	0.74
FRC-05 *	0.00	0.80	0.80	2.84
FRC-05 *	80.00	81.00	1.00	0.54
FRC-06 *	21.00	22.00	1.00	0.72
FRC-06 *	33.00	46.00	13.00	0.99
FRC-06 *	49.00	65.00	16.00	1.34

Hole Number	From	To	Length	Au (g/t)
FRC-06 *	68.00	78.55	10.55	0.47
FRC-09 *	0.00	0.80	0.80	4.09
FRC-09 *	5.00	8.00	3.00	0.59
FRC-09 *	23.00	28.00	5.00	0.62
FRC-09 *	51.00	53.00	2.00	0.97
FRC-09 *	67.00	68.00	1.00	0.76
FRC-09 *	77.00	80.00	3.00	0.92
FRC-10 *	14.00	15.00	1.00	1.17
FRC-11 *	16.00	18.00	2.00	1.09
FRC-11 *	32.00	33.00	1.00	2.48
FRC-12 *	0.00	5.00	5.00	2.36
FRC-12 *	7.60	32.00	24.40	1.39
FRC-12 *	49.00	50.00	1.00	5.13
FRC-12 *	61.00	72.00	11.00	0.93
FRC-13 *	9.00	13.00	4.00	0.68
FRC-13 *	18.00	20.00	2.00	0.97
FRC-13 *	22.00	24.00	2.00	4.15
FRC-13 *	34.00	35.00	1.00	1.62
FRC-14 *	3.00	4.00	1.00	0.32
FRC-14 *	8.00	9.00	1.00	0.65
FRC-15 *	12.00	33.00	21.00	1.35
FRC-15 *	49.00	54.00	5.00	2.88
FRC-15 *	68.00	69.00	1.00	0.40
FRC-17 *	7.00	14.00	7.00	1.42
FRC-17 *	27.00	28.00	1.00	2.53
FRC-17 *	33.00	35.00	2.00	1.64
FRC-17 *	39.00	40.00	1.00	5.58
FRC-17 *	48.00	49.00	1.00	1.35
FRC-17 *	67.00	68.00	1.00	0.88
FRC-17 *	85.00	86.00	1.00	0.56
FRC-18 *	3.00	4.35	1.35	0.45
FRC-18 *	16.00	17.00	1.00	0.81
FRC-21 *	22.00	26.00	4.00	2.60
FRC-21 *	29.00	31.00	2.00	1.21
FRC-21 *	52.00	53.00	1.00	1.50
FRC-24 *	9.00	29.00	20.00	0.92
FRC-24 *	37.00	40.00	3.00	0.77
FRC-24 *	50.00	51.00	1.00	0.61
FRC-25 *	0.00	1.00	1.00	0.75
FRC-26 *	0.00	5.00	5.00	0.70
FRC-26 *	11.00	15.00	4.00	1.23
FRC-27 *	0.00	1.70	1.70	0.47
FRC-27 *	7.50	9.00	1.50	1.55
FRC-27 *	17.00	18.00	1.00	1.71
FRC-27 *	62.00	63.00	1.00	1.04
FRC-28 *	4.00	7.00	3.00	1.64
FRC-28 *	9.00	13.00	4.00	2.14
FRC-28 *	15.00	19.00	4.00	1.05
FRC-28 *	20.00	27.00	7.00	0.93
FRC-28 *	35.00	38.00	3.00	1.12
FRC-28 *	55.00	58.00	3.00	0.91

Hole Number	From	To	Length	Au (g/t)
FRC-29 *	7.50	14.00	6.50	3.54
FRC-29 *	17.00	22.00	5.00	1.23
FRC-29 *	29.00	32.00	3.00	0.92
FRC-29 *	45.00	46.00	1.00	0.24
FRC-29 *	53.40	62.00	8.60	6.57
FRC-30B *	4.00	11.05	7.05	0.45

* - PNP assays performed by AAS analysis at their own laboratory. See cautionary language in Section 11.1.
FRC holes - PNP, FKMC holes - Kinross, FMC holes - Verena, FSA holes - Cerrado Gold

Cerrado has access to the assay certificates for the Kinross drilling. No PNP certificates are available. However, there is a PNP assay report with no sample numbers provided.

6.4 HISTORICAL RESOURCE ESTIMATES

There are no known mineral resource estimates for the MDC project which have been prepared prior to the acquisition of the project by the current concession holder, MSM. An in-house estimate of resources has been prepared by a consultant to MSM (Geoprocess, 2011). This estimate is not considered to be NI 43-101 compliant and has not been reviewed by the QP. It is not disclosed here.

7.0 GEOLOGICAL SETTING AND MINERALIZATION

This chapter describes the regional and local geological setting and is taken from a summary provided by MSM. The main lithostratigraphic units and structures, metamorphism, hydrothermal alteration and weathering are discussed.

7.1 REGIONAL GEOLOGY

7.1.1 Main Litho-Stratigraphic Units

The regional scale geological map, edited by IBGE (2007), provides the best reference for description of the regional geology, as shown in Figure 7.1 below. It is a re-evaluation of information collected by Radambrasil, updated based on data obtained from third parties (CPRM, 2004, among others).

The synthesis incorporates information collected by MSM and related companies during the course of exploration in the region. As discussed below, the detailing of some targets added important data for understanding the geological context and the controls on the mineralization. There are also geochronological data derived by several researchers.

The regional geological framework is marked by a complex polyphase evolution. The region is the basement of the Araguaia Belt, which represents a Neoproterozoic orogenic belt, developed on the eastern edge of the Amazon Craton, in the zone of interaction with the São Francisco Craton. It is composed of metamorphic pelitic and psammitic sediments, felsic alkaline plutons, mafic-ultramafic bodies and granitic rocks (Schobbenhaus et al., 1984; Bizzi et al., 2003).

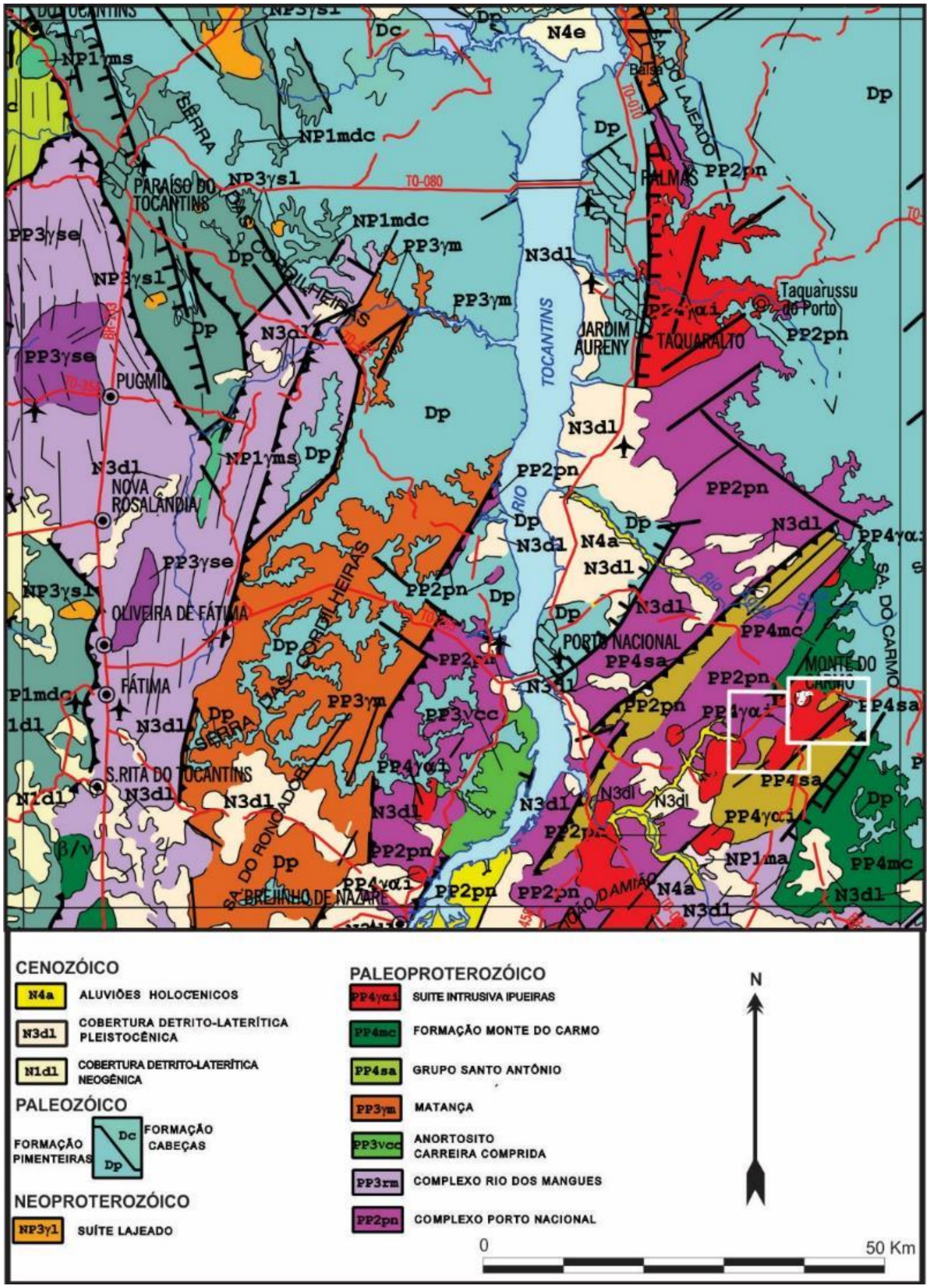
In the area of interest, the following units, from the base to the top, stand out:

a) Porto Nacional Granulite Complex: These are high grade metamorphic rocks: orthogranulites and supracrustal rocks. The orthogranulites cover enderbite, meta-hornblende gabbro-norite, charno-enderbite and charnockite. The supracrustal set is formed from aluminous gneiss, sillimanite-kyanite gneiss, garnet gneiss, kinzigite and gondite (CPRM, 2004). It is Paleoproterozoic in age, estimated between 2,300 and 2,050 MY (IBGE, 2007).

b) Rio dos Mangues Complex: Composed of orthogneiss, tonalitic to partially migmatized granodiorite, amphibolite and granitoids. Paleoproterozoic age, lead-lead dating: 2,127 to 2,050 MY (CPRM, 2004).

c) Carreira Comprida Gabbro (Anorthosite): Mafic-ultramafic layered complex composed of meta-norite, meta-diorite, meta-anorthosite, meta-quartz-diorite, meta-tonalite, meta-gabbro, meta-gabbro-norite and pyroxenite. Paleoproterozoic in age, uranium-lead dating: 2072 MY (CPRM, 2004).

Figure 7.1
Regional Geology (IBGE, 2007)



d) Monte do Carmo Formation: Volcano-sedimentary sequence formed by metamorphosed rhyolite, rhyodacite, dacite, tuffs, basic volcanic rocks, quartzites, pelites and conglomerate. Paleoproterozoic age, lead-lead dating: 2,130 to 2,020 MY (CPRM, 2004).

e) Grupo Santo Antonio: Volcano-sedimentary sequence separated by IBGE (2007), but ignored in CPRM (2004). In the course of the work reported by MSM, it was informally called the Porto Nacional Sequence (or Tocantins Sequence) and compared to the Natividade Group, which occurs to the south. It is composed of metapelites, meta-psammites, gondites, banded iron formation, carbonaceous schists and meta-basites (an obsolete group name for all basic igneous rocks) (Veiga and Latorraca, 1997; MSML, 2011a). Paleoproterozoic age, estimated between 1,800 and 1,600 MY.

f) Ipueiras Intrusive Suite: Large granitic intrusion in the Monte do Carmo area. It was described by IBGE (2007) as Paleoproterozoic, but attributed by CPRM (2004) to the end of the Neo-Proterozoic, under the name Suíte Lajeado (see item g). During MSM exploration, this granite was also called Lajeado, but referred to the Paleoproterozoic.

   This 1,000 Ma discrepancy is perhaps a sign of confusion in the names of granites. However, the existing granite in the Monte do Carmo area seems to be older than the Brazilian bodies known in the region, since it is affected by shearing and hydrothermal events associated with auriferous mineralization (MSML, 2011a).

   More recently however, in a master's thesis specifically on the Serra Alta Deposit area and sponsored by the University of Brasilia with the support of MSM, the following observation stands out:

   > "The Serra Alta gold Deposit is Intrusion Related type associated to the Carmo Granite, which is the more evolved and fractioned phase of a type I sienogranitic (sic) magmatism. It is present alkaline-calcium to high potassium calci-alkaline (sic) and peraluminous geochemical characteristics, as well as moderate fractionation between ETRL and ETRH. It presents yet cordillera type geotectonic environment geochemical signature most likely to oceanic-continental plate collision. The crystallization age uranium-lead is 2083 ± 21 Ma, with TDM values between 2.05-2.15 MY and εNd (2.083) positive, belonging to the Intrusive Suite Ipueiras, within the context of the Araguaia Belt, Tocantins Province." (Gomes, Jessica - 2016)."

g) Lajeado Suite: Granite intrusions syn to late Trans-Brazilian orogeny, comprising granite, alkali-granite, porphyritic granite and granitoids. Neoproterozoic in age, lead-lead dating cited by CPRM (2004): Matança Granite - 564 to 552 MY; Lajeado Granite - 546 MY; Palmas Granite - 548 MY.

h) Pimenteiras Formation: Argillites and siltstones with intercalations of ferruginous sandstone and basal conglomerate lenses. Part of the Parnaíba Sedimentary Basin. Devonian in age, between 400 and 380 MY, approximately (CPRM, 2004; IBGE, 2007).

i) Detritus-Lateritic Cover: Detritus-laterite cover developed on flat terrain, comprising sandstones and conglomerates. Age attributed to the end of the Neogene and early Pleistocene, estimated around 1.75 MY (CPRM, 2004).

j) Alluvial deposits: Unconsolidated sediments deposited along river valleys, comprising sands, clays and gravel lenses. Pleistocene to Holocene in age (IBGE, 2007).

7.2 REGIONAL LITHOLOGICAL AND STRUCTURAL MAPPING

Regional geological mapping, carried out by VML and MSM at a 1:100,000 scale covers most of the municipalities of Porto Nacional, Monte do Carmo, Ipueiras and Brejinho do Nazaré. In the northern portion of the block, mapping was conducted at 1: 25,000 scale. Sites of interest were described by VML, its JV partner companies, and more recently by MSM (2011a). The geological context has been characterized by different professionals throughout the work carried out, with different purposes and degrees of detail. Figure 7.2 illustrates the main features of the areas under consideration.

Airborne geophysical surveys and interpretation of aerial photographic images were integrated with the field acquired data. In general, the geological exposure is impaired by the deep weathering and the destruction of some characteristics occurring in the garimpeiro-mined areas (garimpos). However, the garimpos and other old workings facilitate the location of mineral occurrences.

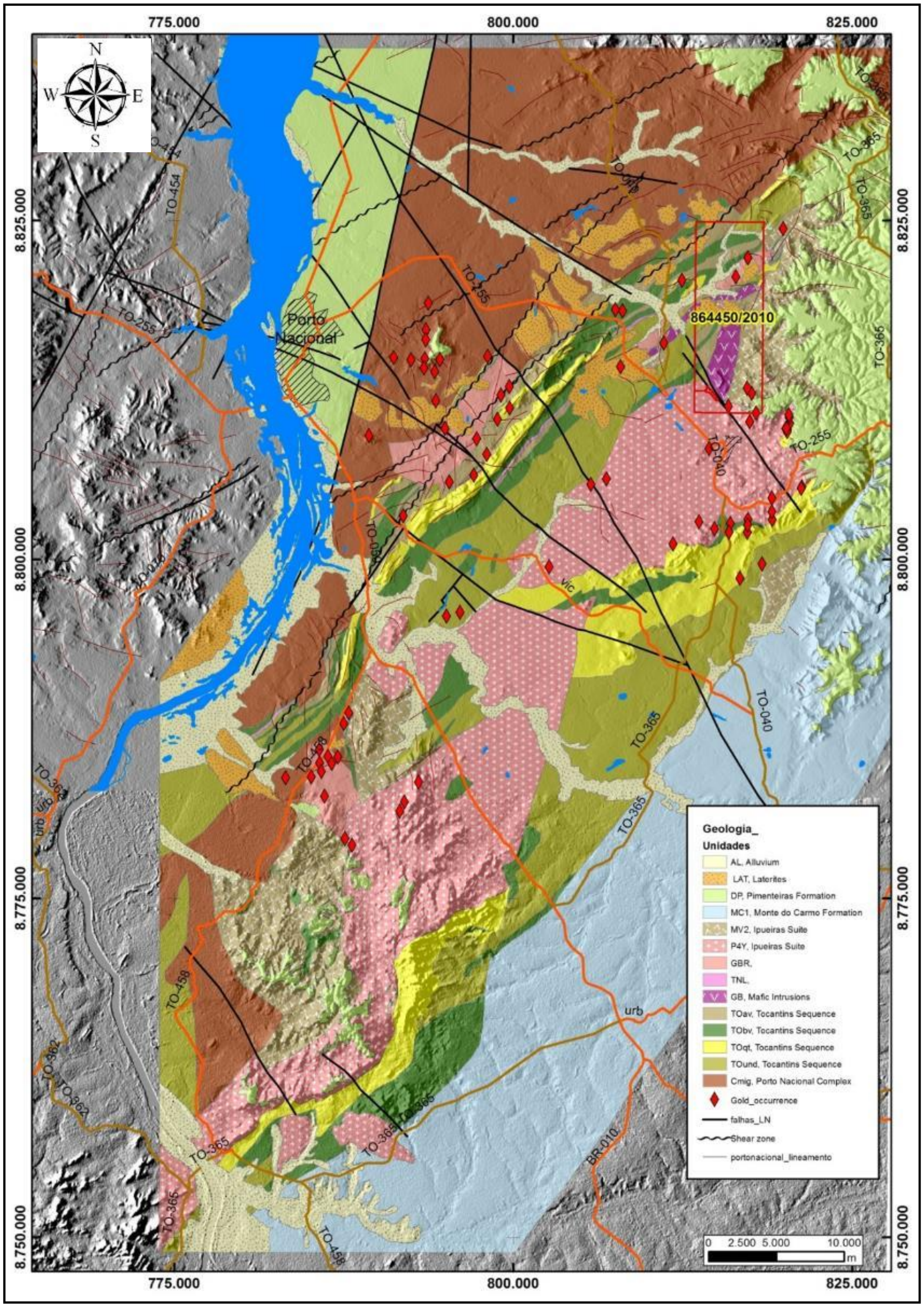
The depiction of the lithological and structural diversity is understood to be superior to the regional syntheses available from sources such as the IBGE (2007) map (Figure 7.1). Suggestions of the economic potential of the areas is evidenced by the numerous occurrences of gold catalogued in the surveys (MSM, 2011a).

At the same time as the mapping and compilation, other scientific studies, supported by several universities, resulted in masters and doctoral theses focusing on the petrologic and metallogenic evolution of the area.

Mapping was assisted by three masters' theses and one doctoral thesis, which incorporated VMC's accumulated knowledge of the region. MSM believes that this aided in the generation of new geological concepts to guide regional exploration work. A final geological map, at 1:100,000 scale, of the most important portion of the belt is shown in Figure 7.2. This map covers most of the principal target areas, the concessions, the principal lithostratigraphic units and the geotectonic features of the region.

The Porto Nacional region, which covers an entire gold province, is geotectonically packed onto a transcontinental shear belt known as the Trans-Brazilian Lineament. In this area, the shear/lineament as a whole has an elliptical shape and is over 170 km long and up to 40 km wide.

Figure 7.2
Regional Geologic Map of Porto Nacional



Source: VMC, 2010

As shown in Figure 7.2, from west to east, the geological packages can be defined as follows: the Porto Nacional Complex, the Archean Porto Nacional Volcano-Sedimentary Sequence intruded by the Lower Proterozoic Ipueiras Granite and other acidic and mafic-ultramafic layered intrusions, and the continental volcano-sedimentary sequence of the Monte do Carmo Formation of Upper Proterozoic age. All of these units, formations and intrusions have been subject to the Trans-Brazilian deformation. Due to the large central granite intrusion, the structure is characterized as a great anticlinorium.

Structural control is well defined and regionally expressed by the disposition of the above-mentioned units, which are elongated subparallel to each other in a north-northeast-south-southwest direction. Each unit is frequently limited, and internally affected, by a brittle-ductile shear model, associated with predominantly transcurrent movement.

The interpretation above identifies a system of shear zones that defines the Porto Nacional Belt. Although the shear zones exhibit a somewhat anastomosing nature, they may be grouped into four main belts, named from east to west: the Matança, Cachimbo, Mutum and Conceição Shear Zones.

7.3 PROPERTY GEOLOGY

Based on the work completed and results obtained, MSM reduced the exploration area for gold to 5 concessions on a cupola over, and related targets derived from, the Ipueiras Granite, using the Reduced Intrusion-Related Gold Systems model. Figure 7.3 shows the Monte do Carmo regional geological context and the MSM properties, as well as the main targets.

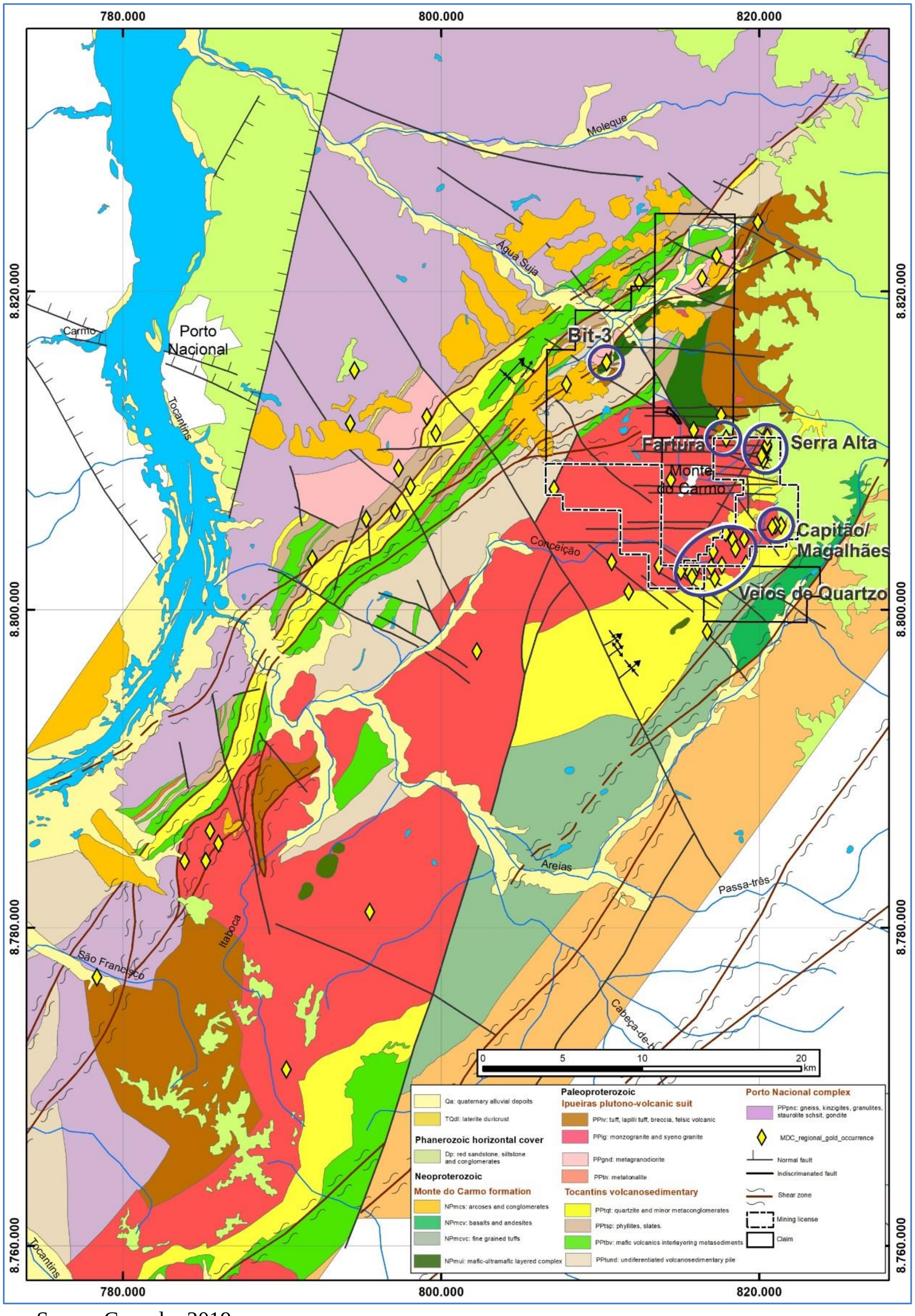
Cerrado’s principal target of interest is the Serra Alta Deposit which appears to have the best potential for the development of significant tonnage.

The remainder of this report will concentrate largely on observations about, and opinion on, the Serra Alta area, with only brief descriptions of the other targets.

7.3.1 Serra Alta Geology

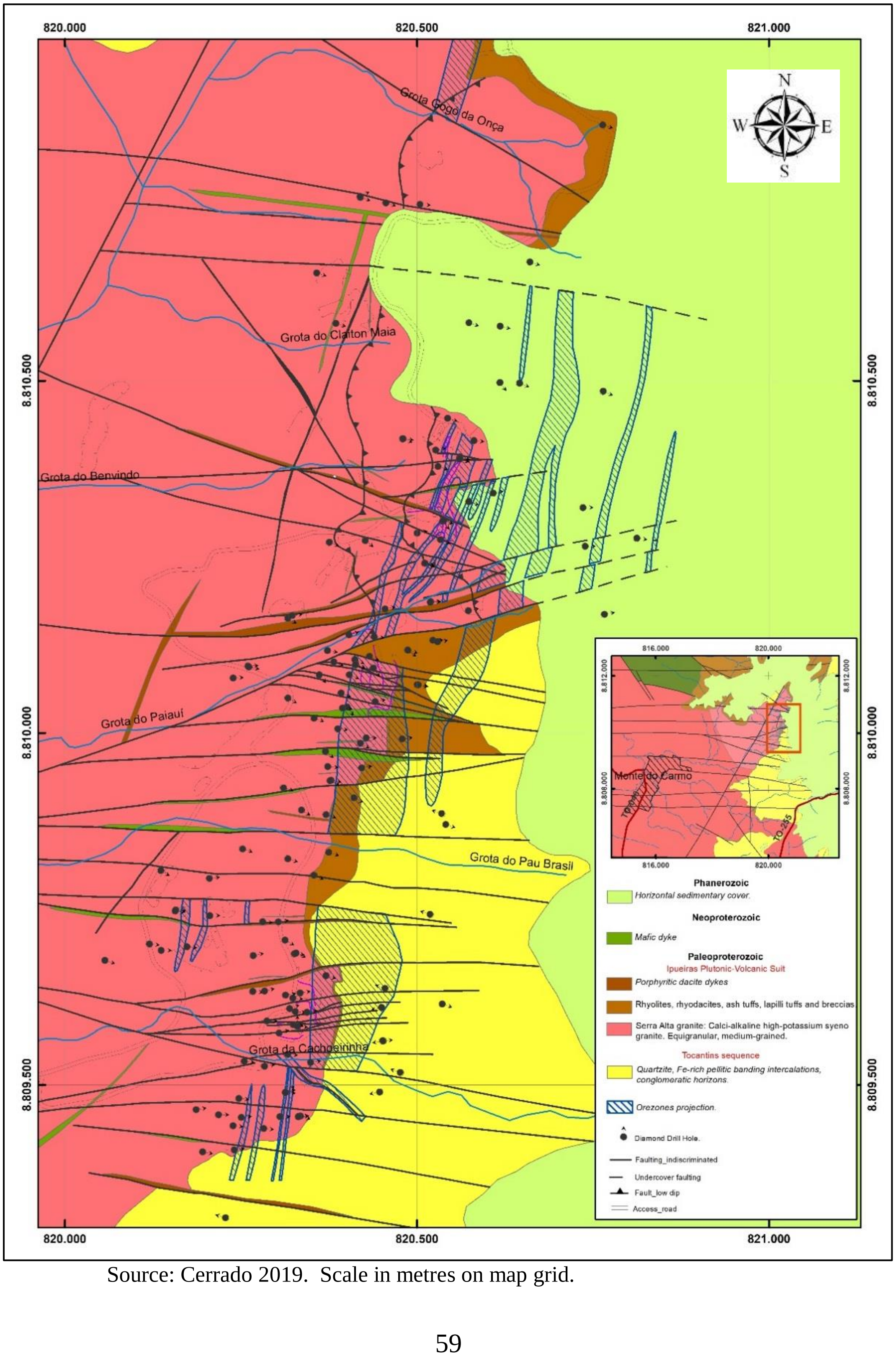
Figure 7.4 shows the geology of the Serra Alta target.

Figure 7.3
Monte do Carmo Region Geologic Map Showing Property Boundaries and Important Targets



Source Cerrado, 2019.

Figure 7.4
Serra Alta Geology

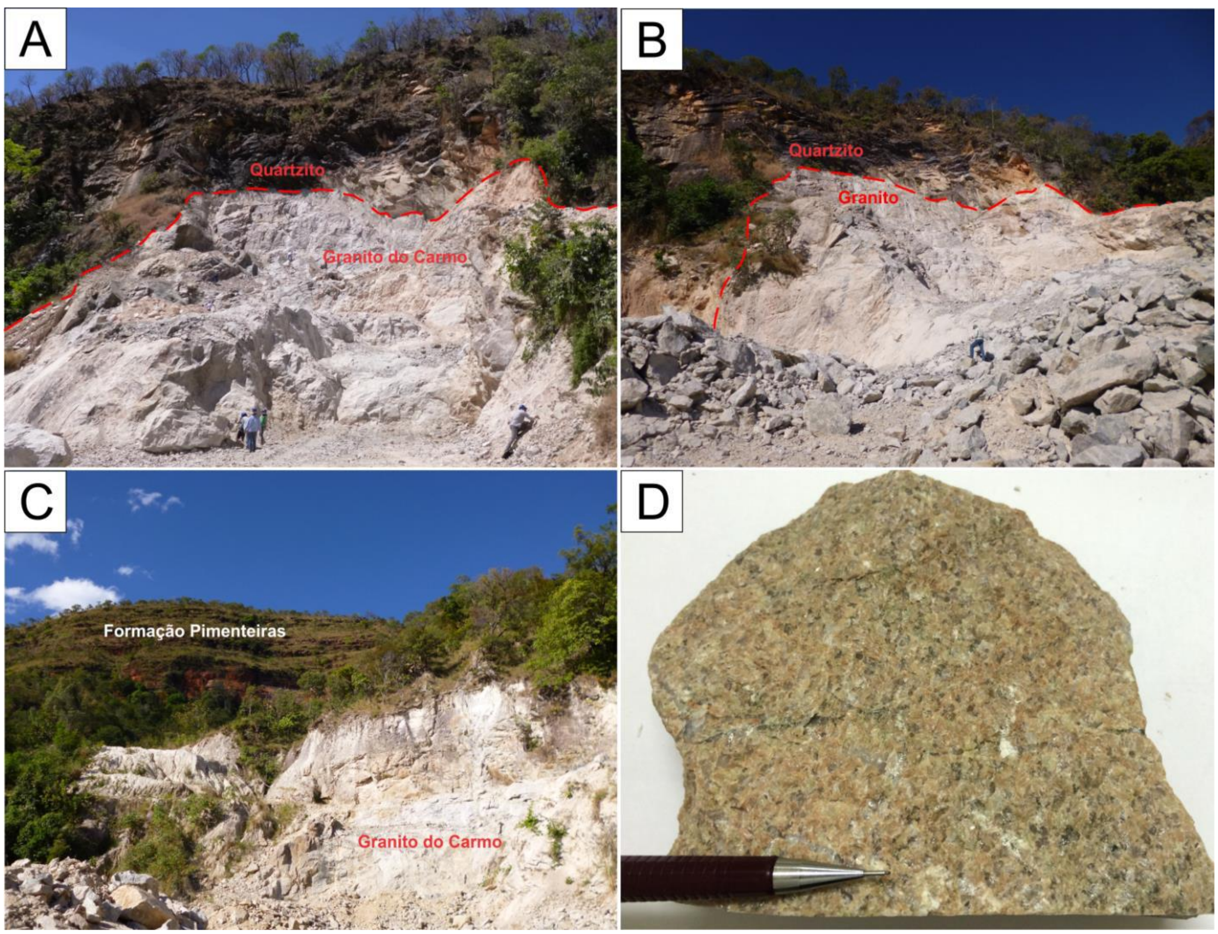


Source: Cerrado 2019. Scale in metres on map grid.

The geology of the Serra Alta target area is relatively monotonous, composed largely of a potassic granite (pink unit in Figure 7.4) of the Ipueiras Suite of upper Proterozoic age. The granite is partially covered by a remnant of quartzite (yellow unit in Figure 7.4) of the lower Proterozoic volcano-sedimentary sequence which, in turn, is covered by the Paleozoic horizontal sediments (light brown).

The granite is a large intrusive body aligned in a northeast-southwest direction and intruded into rocks of the Monte do Carmo Volcano Sedimentary sequence. This sequence is locally represented only by a discontinuous remnant of quartzite. To the east and north, there is more continuous cover of the Paleozoic Parnaíba Basin, represented by the Pimenteiras Formation of Meso-Neo Devonian age (Figure 7.5 A to C). The altered granite disappears under these overlying rocks.

Figure 7.5
Serra Alta Granite Exposures



Source: MSM 2018. Figure 7.5 - A) and B) Photographs of the South Block mining front (Serra Alta Project small scale mining) where it is possible to observe the contact between the dome of the local granite and the older quartzite; C) Photograph of the North Block mining front showing the Pimenteiras Formation covering the granite; D) Representative sample of the Monte do Carmo area granite in more preserved condition, where macroscopically the phaneritic texture of the rock can be observed.

In the Serra Alta region, the granite, in its less altered form, shows a homogeneous colour from light green to slightly pink, exhibiting inequigranular, isotropic and medium to coarse grain size (Figure 7.5 D).

The granite is composed of potassic feldspar (40 to 60%), quartz (20 to 40%) and plagioclase (albite, An 6 to 12, 10 to 20%). Rare crystals of zircon and a few of white mica are included in some quartz crystals (<1%). Secondary or replacement minerals occur such as muscovite, chlorite and carbonate. The estimated modal proportion of the essential mineralogy allowed for the classification, using a QAP diagram (Streckeisen, 1976), as syenogranitic composition (Maia, Jessica, 2016).

The granite has abundant zones richer in gold, which have been mapped as mineralized shoots, mostly oriented N10-15E and dipping 60° to 80° to the northwest (Figure 7.6 A and B).

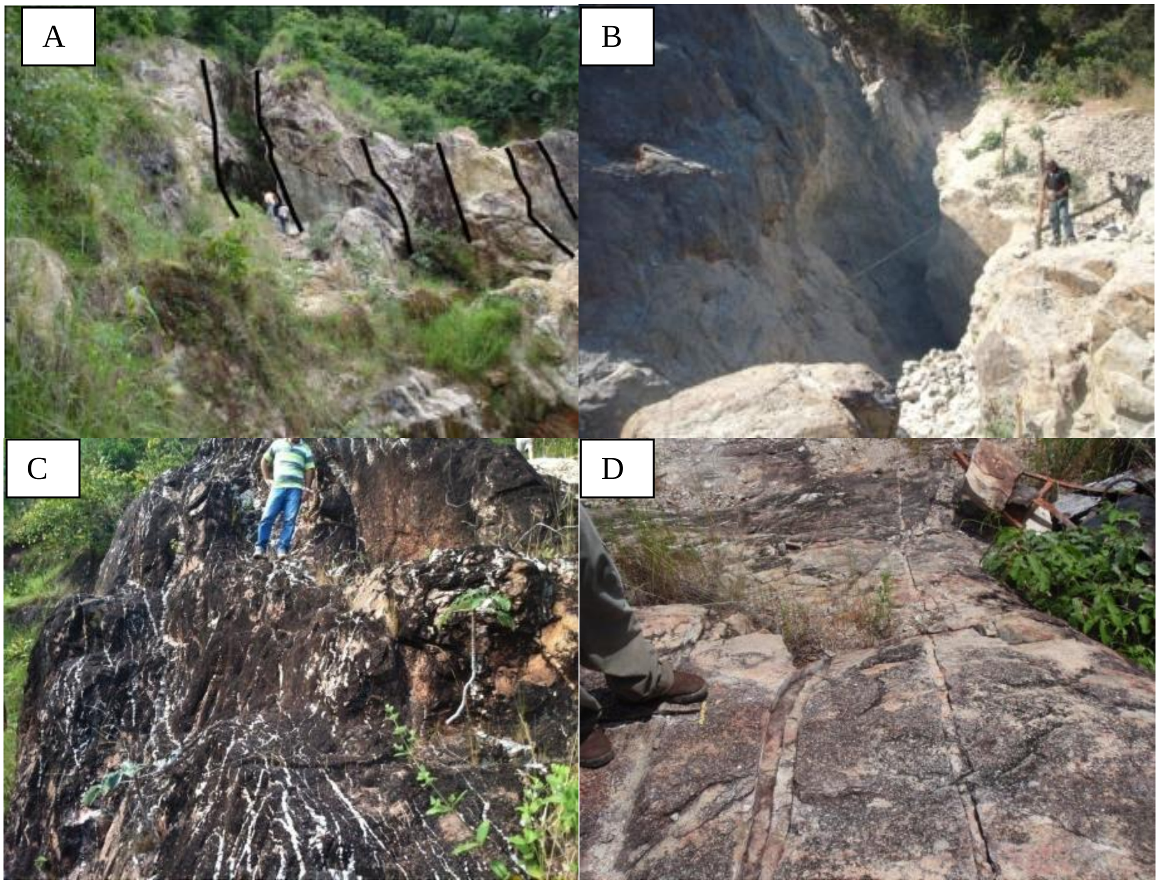
They vary in thickness from 0.5 m up to 67 m. The presence of more prominent gold grades, quartz veinlets and sulphides are the main difference between the normal granite and the mineralized shoots (Figure 7.7 A). The shoots were defined from the interpretation of drilling results, projected to surface based on the mapping of the outcropping mineralization and the mining pits of the garimpeiros, as well as the results of channel samples in hard rock. These samples were collected with a diamond saw, by both Paranapanema and Kinross, and analyzed every metre. Cerrado is continuing with the process of channel sampling of exposures and trenches.

Within the immediate area the main fault systems are oriented N30E and east-west. These faults can affect the mineralized shoots with small displacements (Figure 7.7 B) or slightly larger ones seen in vein offsets in Figure 7.4. Locally, they may promote development of a barren zone, but only a few of these are thick, up to a maximum of 15 m. The granite has been sheared along an azimuth of N10 - 15E where important quartz stringers were developed.

The lode gold vein system is set within fracture systems running N10E, representing sub vertical vein systems dipping steeply to the northwest. Dikes of younger diabase are present, cutting the granite within the fault zones.

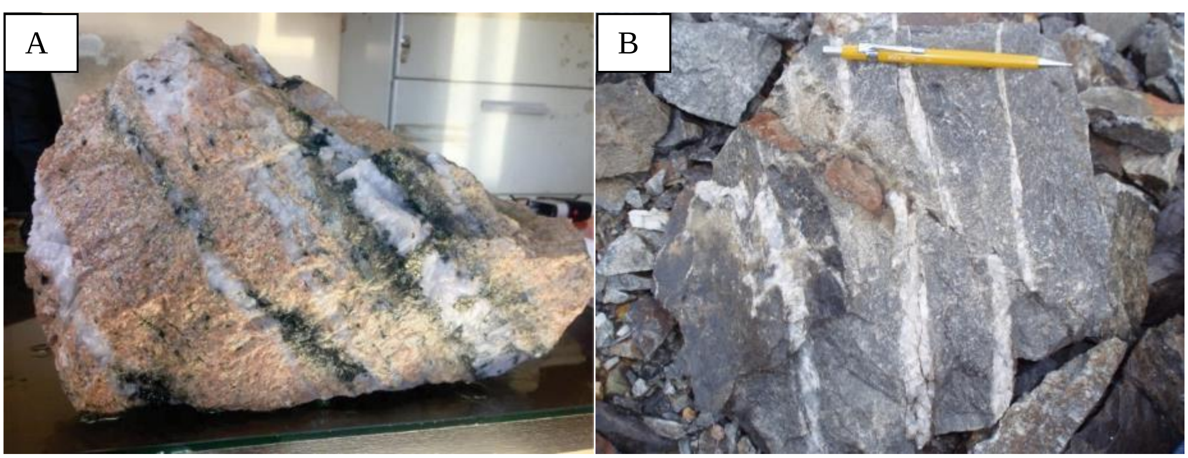
Covering the southern portion of the east edge of the granite, Proterozoic quartzites dipping 30°SE are in contact with a "cooked" intrusive contact. The northern portion of the deposit is covered directly by the Devonian sediments. A number of shoots are believed to extend, and be trapped, under the quartzites. These may represent possible underground mining targets should their grade justify it. Mining them by open pit would involve a higher stripping ratio.

Figure 7.6
Serra Alta Mineralized Exposures



Source MSM 2018. Figure 7.6 A and B - Garimpeiro pits and typical mineralized shoots; C - Veining system within the mineralized shoot; D - Chanel sample location collected with a diamond saw (on the left by PNP, on the right by Kinross)

Figure 7.7
Mineralized Serra Alta Boulders



Source MSM 2018. Figure 7.7 A - Hand sample representing large scale steeply dipping mineralized shoots within the granite; B - Example of and east-west fault offsetting veins.

The lode gold hydrothermal mineralization is characterized by the presence of epidote, chlorite, tourmaline, galena, sphalerite, arsenopyrite, pyrite and chalcopyrite. The sulphide content in the mineralized zones is typically around 0.5 to 1.0% by volume. The presence of galena is generally an indicator of higher grade gold.

7.3.2 Serra Alta Mineralization

The Serra Alta Deposit is a wide mineralized zone about 300 m wide with approximately 1,500 m of exposed strike length, as demonstrated by the bandeirante and garimpeiro working shown as white patches in Figure 7.4. The zone is a corridor which contains veined, mineralized shoots generally striking N10°, dipping 60° to 80° W.

At the time of the QP's site visit, MSM and Cerrado geologists were discussing the possible interpretation of three distinct sub-corridors or trends of mineralization within this wider corridor. It is possible that the far western trend is composed largely of colluvium shed from the slope and the artisanal workings there may have no immediate bedrock source. There are exposed bedrock sources of veining on the eastern side up against the cuesta wall. Extensions of the sheared granite cupola mineralization on the eastern side, under the quartzites, have been confirmed by drilling.

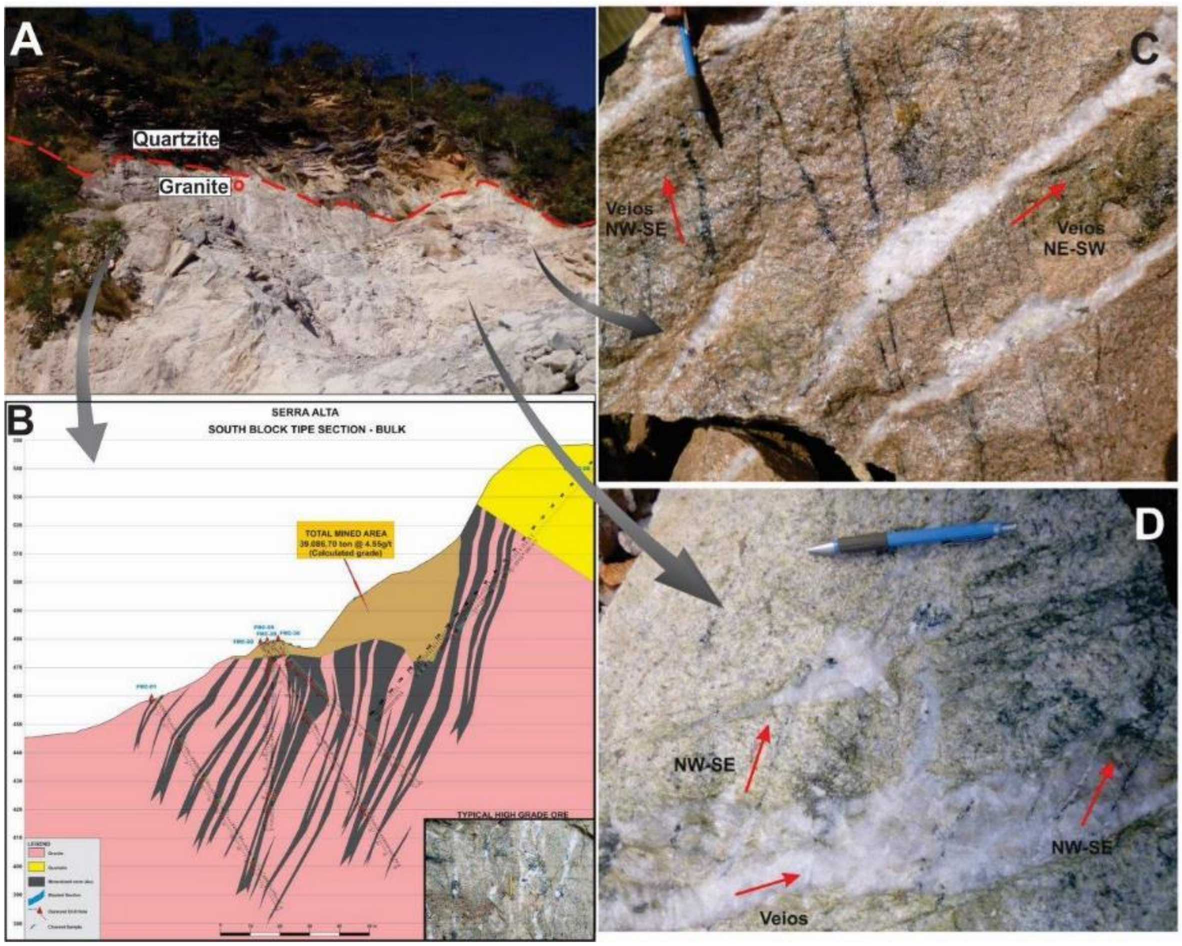
The field information obtained in the Serra Alta Deposit small pits mined by MSM caused it to classify the gold mineralization hosted in the cupola portion of the granite under the Reduced Intrusion Model. The mineralization occurs within a system of veins and veinlets commonly associated with zones of hydrothermal alteration. This system of veins and veinlets is characterized by quartz associated with gold and sulphides (pyrite, arsenopyrite galena, sphalerite and chalcopyrite), whereas the hydrothermal alteration is characterized by phyllic and propylitic alteration zones, as well as sulphidation and silicification.

The granite hosts a system of intersecting northeast-southwest- and northwest-southeast-trending veinlets, which occur in most areas of the deposit. (Figure 7.8).

The northeast-southwest-oriented vein system is millimetre- to centimetre-scale, but tends to be thicker and truncates the veins and veinlets of the older system (Figure 7.8C). These veins are predominantly composed of milky quartz crystals, moderately fractured and medium to coarse grained. However, they exhibit borders and internal zones of expansion, often filled by sulphide minerals and gold, as well as rare aggregates of white mica + chlorite + carbonate. In this system, free gold can also occur, filling cracks in the quartz veins.

Occasionally a re-opening and filling phase of the northwest-southeast system is identified, passing through the northeast-southwest milky quartz vein system (Figure 7.8D). This represents the last stage of dilation recorded in the granite dome. It is filled with aggregates of chlorite + white mica + carbonate ± pyrite as veinlets.

Figure 7.8
Serra Alta Vein Orientations



Source: MSM 2018. Figure 7.8 - A) Photograph of the cupola portion, where the granite is in contact with the quartzite, observed at the South Block; B) Type Section of the mineralized zone showing the mineralized shoots within the granite, covered by the quartzite; C) Photograph showing the relation of northwest-southeast veinlets being cut by northeast-southwest ones; D) Photograph of the northwest-southeast veins being truncated by northeast-southwest veins, as well as the re-opening and filling of veinlets of the northwest-southeast system on northeast-southwest veins.

The presence of different phases of dilation is interpreted to be indicative of successive episodes of reopening and filling of cracks, which are independent, but can occur almost simultaneously or separated by short intervals of time. This characteristic refutes the model of effective and prolonged convective circulation of hydrothermal fluids, favouring the combination of successive fracture events in the cupola, the product of increased pressure of confined hydrothermal fluids (Jensen & Bateman, 1981; Guha et al., 1983; Foxford et al., 2000).

The hydrothermal system is likely due to the exsolution of aqueous solutions from the granitic magma.

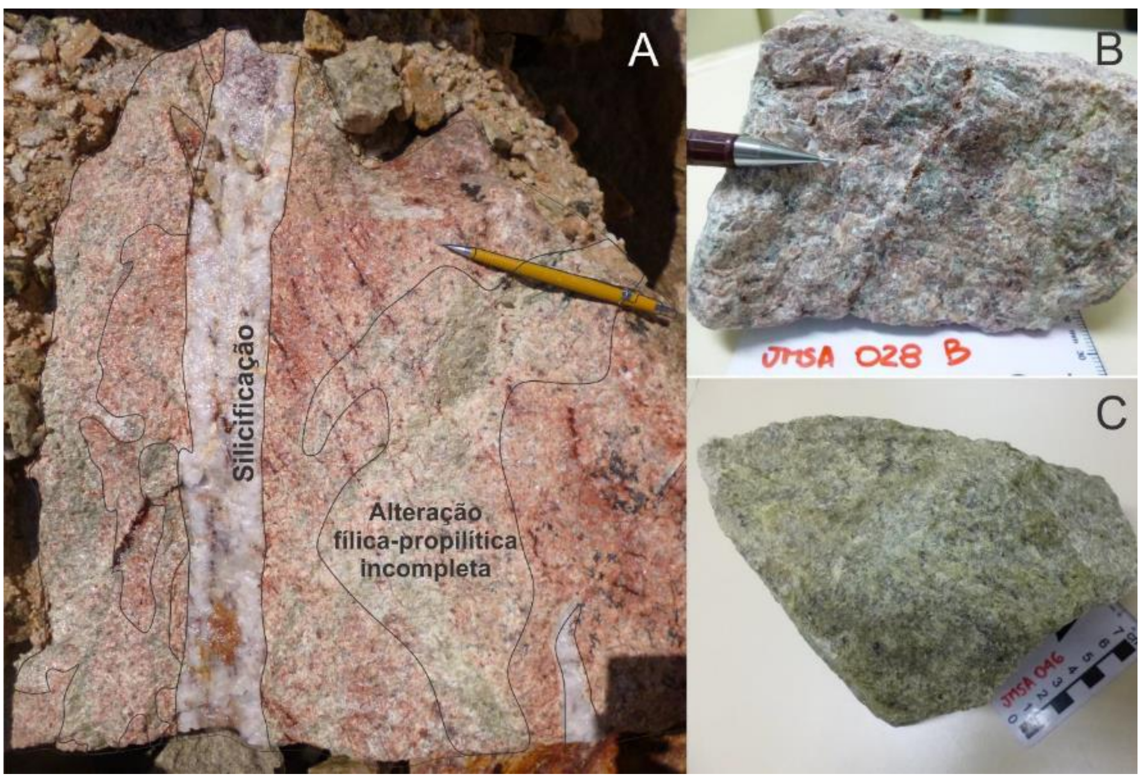
7.3.2.1 Hydrothermal Alteration

Three types of hydrothermal alteration, propylitic alteration, sulphidization and silicification, occur at Serra Alta. However, these hydrothermal zones usually appear overlapping each other, making it difficult to determine a better temporal analysis of the events.

The occurrence of hydrothermal minerals is marked by two distinct patterns. The first pattern is related to the formation of neo-minerals as a substitution of primary minerals, mainly feldspars. The second pattern is characterized by the presence of these hydrothermal minerals filling veins and veinlets generated during the fracturing phase.

Propylitic alteration is apparently the first phase of alteration that occurred, with the pervasive substitution of primary minerals of the granite by hydrothermal minerals (Figure 7.9). The feldspars were replaced by aggregates of muscovite + chlorite + carbonate ± albite ± Ti minerals (ilmenite, rutile and titanite). This hydrothermal mineral paragenesis forms the propylitic style of alteration. This hydrothermal mineral association also occurs filling millimetre to centimetre scale veinlets, corresponding to the first fracturing event in the granite cupola.

Figure 7.9
Examples of Alteration Styles



Source: MSM 2018. Figure 7.9 - A) Sample from the South Block mining front where propylitic alteration is observed acting pervasively on the granite; B) and C) Samples where it is possible to macroscopically observe the essential mineralogy that composes the propylitic alteration. Muscovite and chlorite are more prominent in the green areas.

Hydrothermal white mica occurs in two distinct forms: 1) aggregates of lamellar microcrystals, the most common form, and 2) disseminated euhedral crystals. Microlamellar aggregates of muscovite are observed both in the alteration of primary minerals and in the filling of cavities (mainly veins and veinlets), whereas euhedral crystals essentially occur filling cavities.

Chlorite occurs in a very similar pattern to the hydrothermal white mica 1) as aggregates of microlamellae that replace primary minerals and fill veins, veinlets and cavities and 2) rarely as euhedral crystals, with sizes ranging from 0.1 to 0.3 mm, as well developed, generally radially-shaped lamellae.

Carbonate occurs as an alteration product of the primary albite, as well as in alteration masses and infilling veins, veinlets and cavities. It normally occurs in subhedral to euhedral forms. The carbonate crystal grain size varies from very fine to up to 0.5 mm. Analysis indicates that the carbonates are mainly calcite and dolomite, with subordinate siderite.

Titanium minerals occurs occasionally, typically ilmenite ($FeTiO_2$), rutile (TiO_2) and titanite ($CaTiOSiO_4$).

Sulphidation is marked by the presence of pyrite, galena, sphalerite and chalcopyrite ± covellite ± quartz, usually filling veins and veinlets. In this alteration phase gold can occur associated with and/or included in the pyrite.

Sphalerite occurs as nodules or irregular masses on which the other sulphide minerals develop. Inclusions of chalcopyrite are commonly observed. This marked presence of chalcopyrite in sphalerite is usually attributed to exsolution (Barton & Bethke, 1987), however, this may be the result of the substitution of iron in the sphalerite by chalcopyrite crystal aggregates and sphalerite with low iron content, at moderate temperatures, ranging from 200 to 400°C.

Chalcopyrite occurs mainly in association with sphalerite, as inclusions and exsolutions. It also occurs intermixed with, and next to, pyrite-galena-sphalerite aggregates, forming irregular masses. Occasionally, chalcopyrite is replaced by covellite along fractures.

Galena occurs distributed in a widespread manner. It may also occur as inclusions in pyrite, sphalerite and gold. Galena crystals may have subhedral shapes, but they often occur as irregular masses.

Pyrite is present in the deposit in three phases, usually with coarse grain sizes between 70 μm to greater than 3 cm. The most significant occurrence is as aggregates of euhedral to subhedral cubic crystals filling veinlets and fissures. Pyrite may contain gold, galena and chalcopyrite inclusions. Pyrite also occurs filling zones of dilation within and/or at the edges of quartz veins, usually along with gold, galena, sphalerite and chalcopyrite. Another less common occurrence is as euhedral pyrite disseminated in the rock, usually near quartz-sulphide veins.

Gold (or electrum) may occur associated with and/or included in pyrite and, rarely, sphalerite crystals. It also may be associated with silicification and sericitization-propylitization processes. Electron microprobe analyses indicated compositions of gold and silver ranging from 67 to 72% and 27 to 32%, respectively with associated content of cadmium, molybdenum and iron ± copper, sulphur selenium cobalt and nickel totalling 0.1 to 1.2%

Silicification appears to have been one of the last phases of the alteration and is characterized by the formation of veins and veinlets from millimetre to centimetre thickness, and metre to decimetre length. They are formed essentially of euhedral to subhedral milky quartz crystals ranging from 0.1 to 2.0 mm in size. They are without sign of recrystallization. The silicification may be accompanied by sulphides (pyrite - galena - sphalerite - chalcopyrite) and may have phengite ± carbonate ± chlorite formation at the edges of the veins. It occurs in more intensively in highly fractured areas.

Native gold in this phase usually occurs as isolated disseminations of free form grains with irregular shapes. Electron microprobe analyses indicate homogeneous compositions and higher concentrations of gold compared to grains associated with sulphide paragenesis (Au = 88% and Ag = 11%), in addition to trace amounts of copper and molybdenum ± cobalt, selenium, iron and cadmium totalling 1%.

7.3.2.2 Chronology of the Hydrothermal Events

A fluid inclusion study led to a proposed chronological sequence for the hydrothermal events identified in the area of the Serra Alta Deposit.

The first stage of alteration is marked by the generation of fluids released during the final phase of magmatic crystallization, which are responsible for the alteration of the primary minerals, leading to phyllic, and to incomplete propylitic alteration. Titanium, probably released from silicate minerals under oxidizing conditions, would be present, allowing the crystallization of ilmenite, rutile and titanite, as well as some sulphides, mainly pyrite (Lobato, 1993).

Subsequently, with the lowering of temperature and increase of pressure, ruptures occurred at the cupola interface, generating cracks in a northwest-southeast direction that were filled by fluids from the phyllic to propylitic phases, characterizing the second stage of alteration (the infilling phase).

With the continuous circulation of fluids at this interface zone, the fluids are progressively fed with cyclic sulphur and metal (copper, zinc, gold, lead and iron) inputs. In this phase, the interaction between distinct fluids of magmatic and meteoric derivation increases, favouring the lowering of temperature and changing the pH, Eh, FO_2 and S conditions, making for a hydrothermal environment with more reducing characteristics. In this phase, subsequent tension events occur that promote the re-opening of the northwest-southeast cracks, as well as the opening of new cracks. This, in turn, leads to new filling phases, forming veins, some formed essentially of sulphides. They may also contain minerals from the phyllic to propylitic alteration, especially on the edges of these veins.

The later phases are marked by the action of silica-rich fluids under conditions of lower temperature (Jensen & Bateman, 1981). These fluids were then channeled into northeast-southwest oriented fracture systems, forming quartz veins that may still contain some of the constituents of the previous phases (sulphide minerals and phyllic to propylitic alteration minerals at the edges).

The final phase is marked by reactivation of the northwest-southeast system forming veinlets superimposed on the northeast-southwest veins.

The circulation of hydrothermal fluids of magmatic derivation, interacting with meteoric fluids, has been intense and constant for a period of some time. This process favoured the overlapping of these hydrothermal alteration styles.

7.3.3 Other Zones

Figure 7.3 shows the location of several other targets on the concessions, including the Bit-3, Divisa, Eduardo, Ferradura, Fartura, Capitão, Conceição and Giant Quartz Veins.

During the site visit, the QP went to the southern edge of the Monte do Carmo granite intrusion and visited the Giant Quartz Veins and Conceição targets. At Giant Quartz Veins only, the Verena vein was seen as it was actively being mined by garimpeiros.

The Verena vein is a single quartz vein, of substantial width, in the granite. Total mineralized widths were generally 1 to 4 m at the workings visited, although locally they could be somewhat higher. MSM reports that the veins reach a maximum width of 16.9 m. Distances between the veins at Giant Quartz Veins are typically at least 300 to 400 m and occasionally in excess of 1 km.

The veins themselves were somewhat poorly mineralized but the sheared wall rock is reported to contain a substantial amount of gold. Therefore, total grade over the full mineralized width (vein plus sheared wall rock) is partially a function of the vein width, which is effectively internal dilution. The wider the quartz vein, the lower the overall grade.

Total tonnage potential at each vein is likely to be relatively low and the distance between veins will make it difficult to fully share infrastructure should mining commence. Small-scale open pits may be possible with ore trucked to a central location. Mercury contamination from previous garimpiero operations may also be an issue.

For these reasons, and the potential for much higher tonnages, Cerrado has chosen to concentrate its exploration efforts on Serra Alta.

8.0 DEPOSIT TYPES

Within the properties at the MDC Project, MSM has recognized three types of gold deposits, using the 10 class system promoted by the website www.911Metallurgist.com (https://www.911metallurgist.com/blog/classification-of-gold-deposits-auriferous):

1. Class 1 - Auriferous Coarse Grained Granitic Deposits.
2. Class 5 - Auriferous Veins, Lodes, sheeted zones in faults and fractures.
3. Class 6 - Gold veins, lodes in silicified zones associated with basic to ultrabasic intrusives and complex volcano-sedimentary environments.

Class 1 - These deposits are representative of those classified as the intrusion-related cupola mineralization model, the Serra Alta target being the most important one. The Capitão and Fartura targets are similar. As mentioned below, these targets have similarities with Fort Knox and Dublin Gulch.

Class 1 targets are typically open pit deposits but, because all of the local targets are partially covered by quartzites and/or flat-lying younger Devonian sediments with steep slopes and mesa-like tops, it is possible that parts of any deposit outlined will have to be mined by underground methods, should the grades allow.

Class 5 deposits are often associated with the same Serra Alta granitic environment. The Giant Quartz Vein targets can be classified as Class 5, since they represent sheeted veins penetrating into faults and fractures of the final phase of the granite intrusion. The Eduardo, Divisa and Frontel targets fit this type.

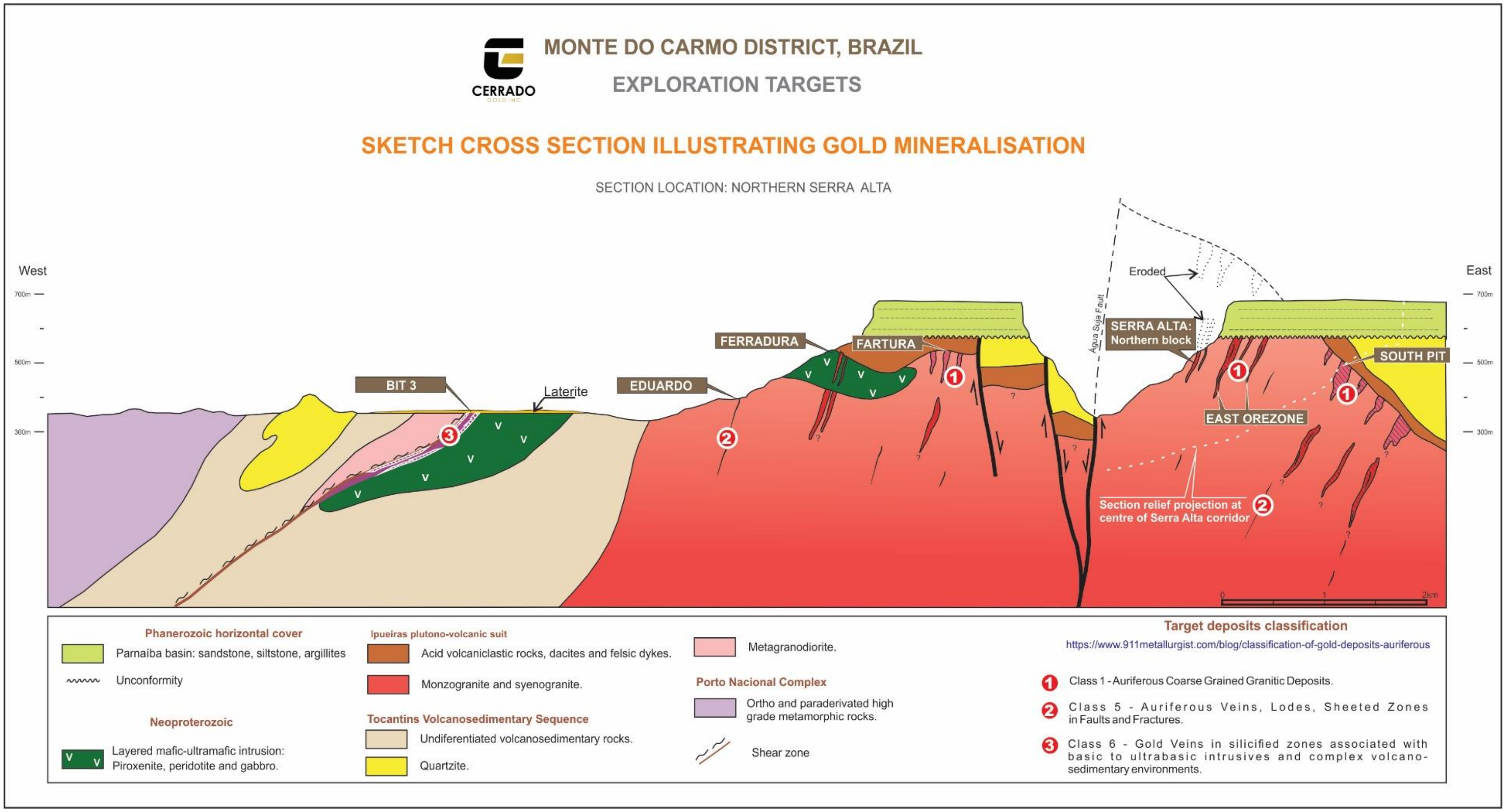
Class 6 - The Bit-3 target is associated with mafic-ultramafic layered intrusions. Ferradura is associated with mafic volcanic/volcanoclastic rocks in a very complex environment where quartz vein-hosted lode gold occurs and, therefore, can also be considered as a Class 6 type.

The major mineralization types are shown schematically in Figure 8.1.

8.1 SERRA ALTA

The intrusive at Serra Alta is a syenogranite, composed predominantly of orthoclase, quartz and albite, with a peraluminous character. It has a moderate alkali content with high potassium, indicating a subalkaline composition. Despite the fact that it possesses certain affinities with A-type granites, the samples of the granite studied also have characteristics of highly fractionated I-type granites, whose petrographic and geochemical characteristics may be confused with the former. The hypothesis is that such similarities are derived from multi-stage actions involving reworked protoliths submitted to extensive fractionation.

Figure 8.1
Geological Section Showing Major Mineralization Types



Source: Cerrado, 2019.

Formed in a volcanic arc to post-collisional environment, the Serra Alta granite has geochemical and petrographic similarities with granites observed in the Western Cordillera of the Andes. These granites are also distributed in the second phase of volcanic arc to post collisional environments, proposed by Pearce et al. (1984). They are comprised of intruded bodies in active continental margins, due to the subduction of oceanic crust under continental crust.

Geochronological data (uranium-lead and samarium-neodymium) define an age of 2,083 ± 21 Ma (MSWD = 3.3) for the crystallization of the Serra Alta granite. The calculated crystallization age can be related to late phases of the great tectono-magmatic event which occurred on the South American craton in the Transamazonic Cycle (2,100 - 1,800 Ma).

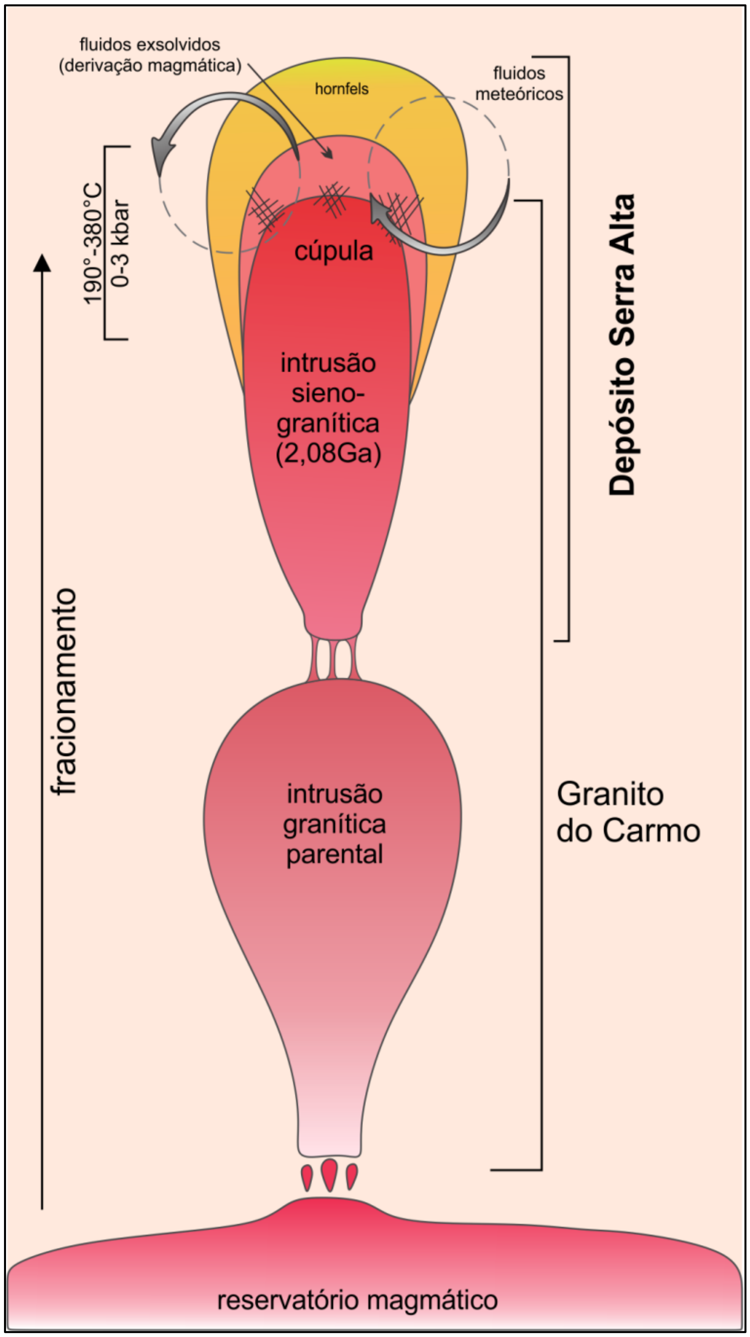
Fluid inclusion studies indicate the action of heterogeneous fluids during the formation of the northeast-southwest mineralized veins. This hydrothermal process is late to post magmatic, involving fluid systems of different compositions with a wide variety of salinity and density, which indicates the interaction of magmatic fluids with meteoric fluids. The conditions of entrapment of these fluids occurred at a temperature between 194° and 382° C and a pressure between 0.02 and 3 Kbar, indicating an epi- to mesozonal environment for the formation of the deposit.

MSM proposes that the Serra Alta granite formed during the Paleoproterozoic and was generated under epi- to mesozonal conditions, from the extensive fractionation of a parental I-type magma.

This process of magmatic evolution involved the exsolution of fluids rich in volatiles, which were hypersaline and contributed metals (gold + iron + lead + zinc + copper) to the granite cupola. The hydraulic pressure resulting from the actions of these confined fluids allowed for the cracking of the cupola, and consequently, the formation of fractures and cavities. These fluids maintained their gold content as ionic complexes, probably as AuS- or AuHS-2 species (Seward, 1984). The interaction with the meteoric solutions of low salinity favoured the lowering of temperature and changes in the composition of the fluid, which led to the precipitation of its metallic contents in the open spaces, as the gold-sulphide mineralization of the Serra Alta Deposit.

Figure 8.2 is a schematic representation of the hypothetical model of formation of the Serra Alta Deposit.

Figure 8.2
Schematic Drawing Representing the Hypothetical Model of Formation of the Serra Alta Deposit.



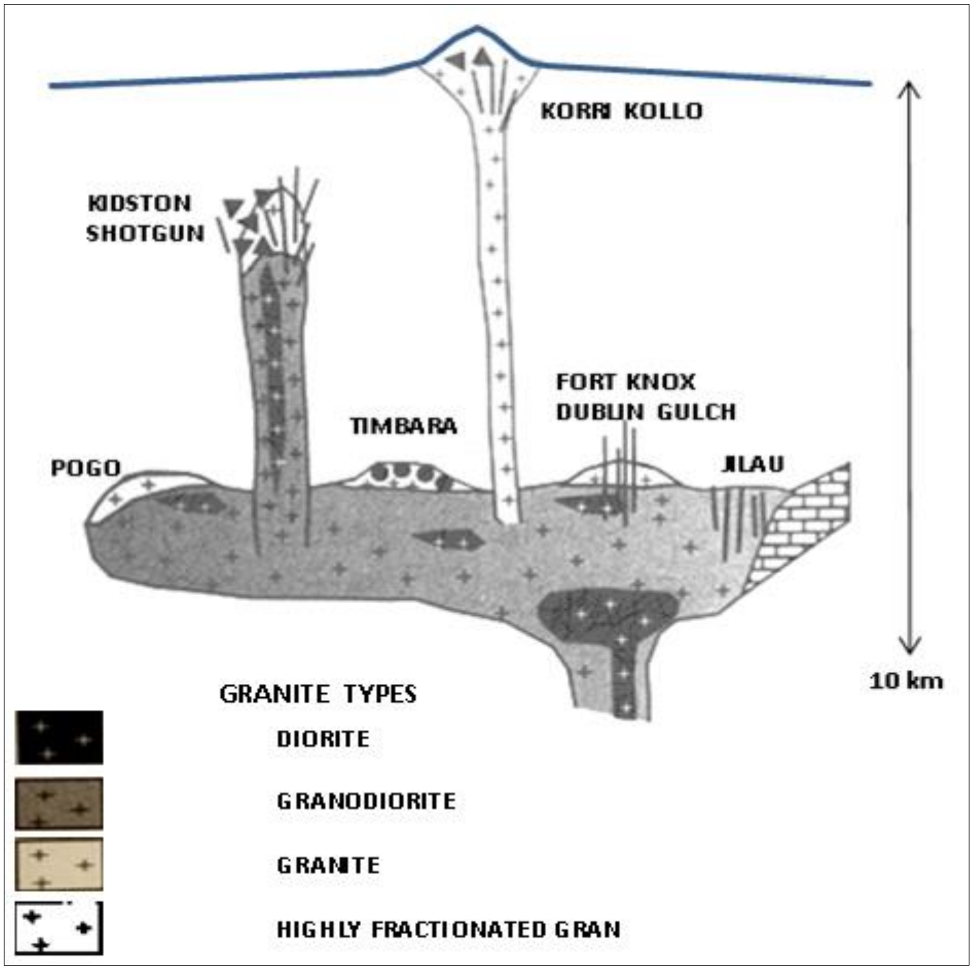
(Adapted from Hart, 2007)

MSM believes that the best model fit is the Fort Knox intrusion-related deposit in Alaska (Figure 8.3 and Figure 8.4). Table 8.1 shows a selection of granite-related gold deposits. All are younger in age than Serra Alta. Fort Knox and Dublin Gulch are believed to be the most closely related to Serra Alta.

Table 8.1
Selected Granite - Related Gold Deposits

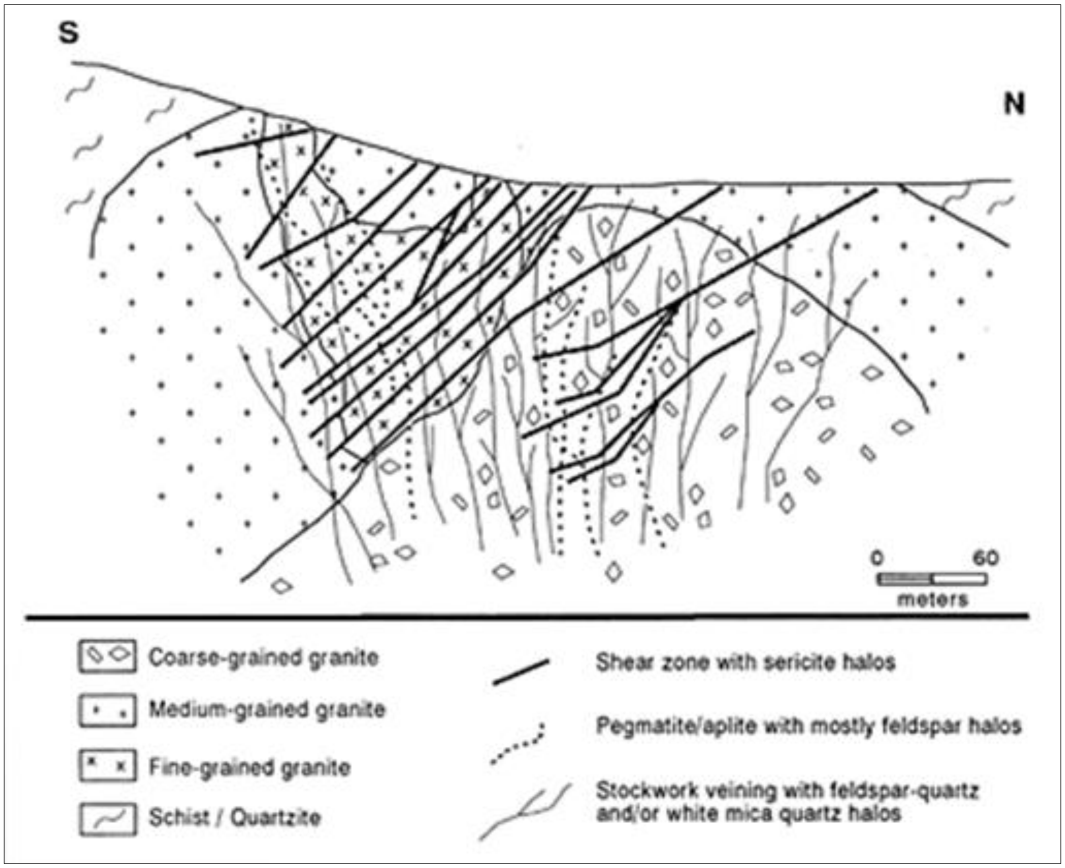
Deposits	Age	Region
Fort Knox	Cretaceous	Alaska
Pogo	Cretaceous	Alaska
Dublin Gulch	Cretaceous	Alaska
Kidston	Palaeozoic	Australia
Jilau	Palaeozoic	Tajikistan
Serra Alta	Proterozoic	Brazil

Figure 8.3
Schematic Models of Granite Related Gold Deposits



Source MSM, 2017

Figure 8.4
Cross Section of the Fort Knox Granite-Hosted Gold Deposit



Source: Bakke (1991).

9.0 EXPLORATION

Exploration work at the MDC project and other targets in the region has been ongoing since 1985, conducted by MSM, its predecessors and associated companies, as described in Section 6 of this report. This chapter concentrates on work at the Serra Alta Deposit, the planned focus of Cerrado's exploration activity.

9.1 EXPLORATORY APPROACH ADOPTED FOR THE PROJECT

The exploration work targeted hydrothermal concentrations of gold, located within a granite dome, as well as nearby large quartz veins and shear zone-hosted gold. There are no known significant alluvial deposits in the region.

The project area is marked by deep weathering, in a tropical regime. Locally thick soils may reduce geological exposures and weathering of the exposed rock favours the remobilization of gold in saprolite, laterite and soils (Veiga, 1990).

The region is marked by extensive artisanal mining dating back to the 17th century when bandeirantes first explored and developed Brazil's interior. Later in the 20th century, with the increasing price of gold, artisanal miners returned to the sites mined by the bandeirantes. Once the garimpeiros had been compensated and moved out, it was possible to inspect the mined sites and commence modern exploration.

The exploration activities carried out on the Monte do Carmo area properties by MSM, associated companies and JV partners can be summarized as follows:

- 1985 - Beginning of exploration work, on the VM Vein and other Giant Quartz Vein targets (MSML, 2011a). At that time, Marex was searching for gold in the region. The data obtained by Marex were subsequently incorporated into the company files.

- 1989 - JV with Rio Tinto - investigation of 26 Giant Quartz Veins: detailed mapping; opening of large trenches; chip sampling; gold analyses by fire assay; processing of excavated material in small gravity plant (crusher, hammer mill, sluice box); exploratory drilling by reverse circulation (RC) drilling.

- 1991 - Partnership with the PNP Group. Exploration work focused on the Serra Alta granite and four of the Giant Quartz Veins (Raiz, VM, Dourado and Frontel), comprising: detailed mapping; sampling of hard rock (channel and chips); diamond drilling and assaying by atomic absorption (with MIBK analyses).

- 1994 - JV with the EBX Group. Work restricted to other targets in the area. In the Monte do Carmo area, informal mining continued to be common.

- 1996 to 1998 - Creation of VMC and fund raising in Canada. Regional exploration scope, comprising pioneering airborne geophysical surveys (magnetometer, radiometrics); geological mapping; geochemical stream sediment sampling (fine fraction and pan concentrates). At the Serra Alta target, detailed mapping was carried out; soil sampling on a regular grid; terrestrial geophysics (magnetometer and induced polarization (IP) dipole-dipole).

- 2004 - Focus of exploration work returned to the Serra Alta target: diamond drilling (5 new holes and re-drill of 3 holes by PNP). Gold analyzed by 30 g fire assay. The Giant Quartz Veins were not explored at this time.

- 2005 to 2008: JV with Kinross. Kinross took over the project's technical data. The previous work in the area was systematically verified and, to a large extent, replicated, with the confirmation of results: stream sediment and soil sampling, trench sampling (hard rock, channel and chips), diamond drilling, gold analysis by fire assay. Adoption of accurate record keeping and technical controls, to what Kinross considered to be NI 43-101 compliant (Kinross, 2008).

- 2009 - Exploration effort concentrated on the Serra Alta target, with land acquisition and cessation of informal mining. Full access to the target made it possible to review geological modelling more carefully and, for the first time, the internal evaluation of the mineral resources (Geoprocess, 2011).

- 2012 to August, 2017 - Partnership with a group from Parana State. Construction of infrastructure and a bulk sampling gravity plant at Serra Alta. Processing of about 60,250 tons of ore and production of 2,923 oz of gold.

9.2 METHODOLOGY ADOPTED

The exploration work completed covered the entire concession area and other permits in the region. This included:

- environmental inspection and data integration.
- interpretation of aerial photographs and satellite images.
- airborne geophysical surveys.
- regional geological mapping.
- alluvial geochemical prospecting (stream sediment fine fraction and pan concentrates).

The known promising areas and newly revealed targets were systematically investigated to verify their gold mineralization potential. The work completed covered:

- detailed geological mapping.
- soil geochemistry.
- terrestrial geophysics (magnetometer and induced polarization).
- opening of pits and trenches.
- sampling of excavations and mining faces in the garimpos.

- various exploratory drilling programs - motorized auger, RC and diamond drilling.

The internal mineral resource evaluation was carried out, based on the following:

- RC and diamond drilling data.
- statistical and geostatistical analysis of the results.
- three-dimensional modeling of mineralized bodies.
- estimation of the content of the block model.

MSM reports that the planning and control of the exploration work followed guidelines to minimize local impacts, ensure the recovery of affected sites and protect the health and safety of workers, in accordance with Brazilian law.

An environmental inspection was carried out on the exploration properties and surrounding areas, with preliminary evaluation of the state of the vegetation cover, soil and water. The observations made covered the sites occupied by garimpeiros, pastures, houses and roads. At the same time, collection of socioeconomic data was initiated at the properties and in the region. In 2007, the environmental consulting company Brant Meio Ambiente Ltda. was contracted to perform a preliminary environmental assessment in the area of ANM concession 860.187/1988 (Kinross, 2008).

Detailed topographic surveys of the areas were completed with the establishment of 7 auxiliary landmarks in the MDC Project area (4 at Serra Alta and 3 at Capitão). A more recent topographic survey completed with modern drone-type equipment was also conducted by MSM.

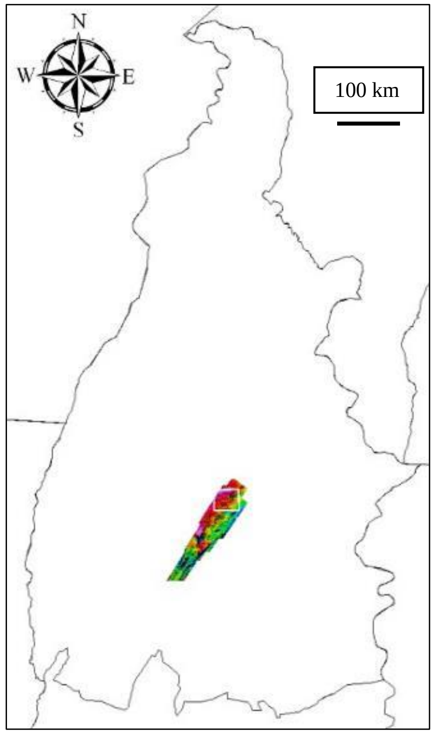
9.3 Airborne Geophysical Survey

Airborne geophysical surveying was conducted in the area of interest around Porto Nacional and Monte do Carmo, in order to discriminate the lithologies, structures and potentially auriferous hydrothermal zones.

The survey was performed with a magnetometer and gamma-spectrometer (MAG-GAMA) in an area covering approximately 4,500 km² (Figures 9.1 and 9.2). The service was contracted by VML with Geomag SA. Prospecções Geofísicas, in 1996 (MSML, 2011a).

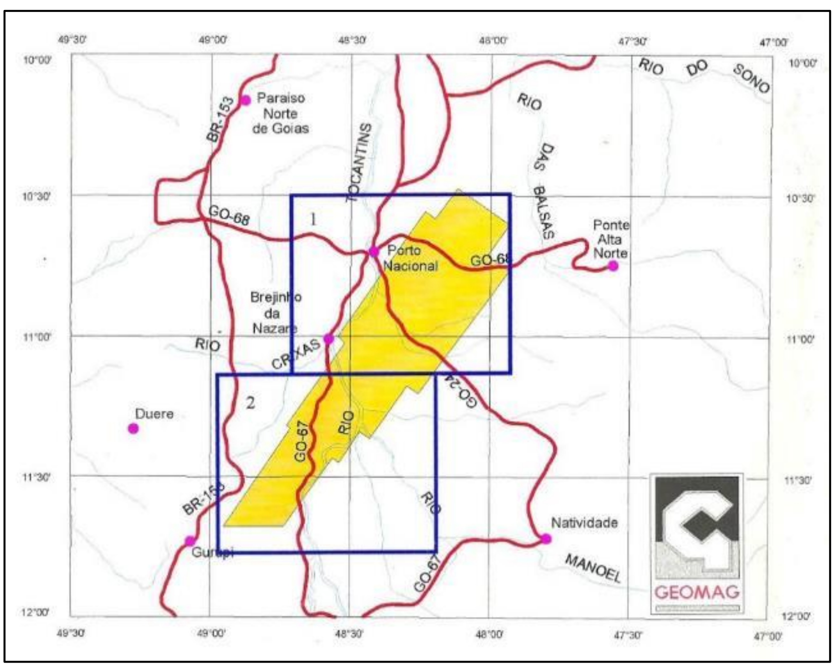
The survey recorded total field magnetics and discriminating radiometrics with a line spacing of 220 m and a ground clearance of 100 m, for a total of 21,520 line-km.

Figure 9.1
Airborne Geophysical Survey Area within Tocantins State



Source: MSM 2018

Figure 9.2
Airborne Geophysical Survey Limits - Geomag, 1996



Source: MSM 2018. North at top of grid. Scale on grid labels.

The final products of the survey were presented on maps at 1: 100,000 scale:

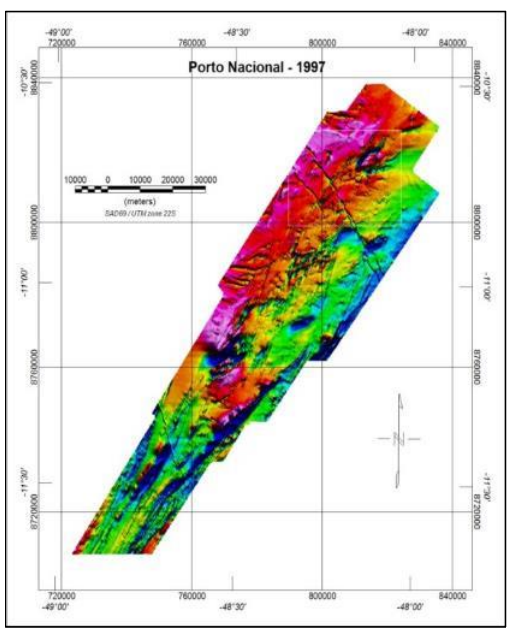
- Outline of the total magnetic field (corrected for IGRF variation).
- Pseudo-illumination of the total magnetic field.
- Total count radiometric contour map.
- Potassium radiometric contour map.
- Uranium radiometric contour map.
- Thorium radiometric contour map.
- Ternary distribution of the radiometric channels of thorium, uranium and lanthanum.
- Elevation of the terrain

The surveys confirmed the main geological features of the area surveyed. The northeast-southwest regional structuring is clear (Figures 9.3 to 9.8). Known gold occurrences coincide with lineaments marked by high magnetic responses.

Interpretation performed by RTDM (Rio Tinto) (1997) highlighted 68 anomalous prospective targets. Those considered to be the most important ones were systematically investigated in the course of exploration work. Many of them have confirmed occurrences of gold.

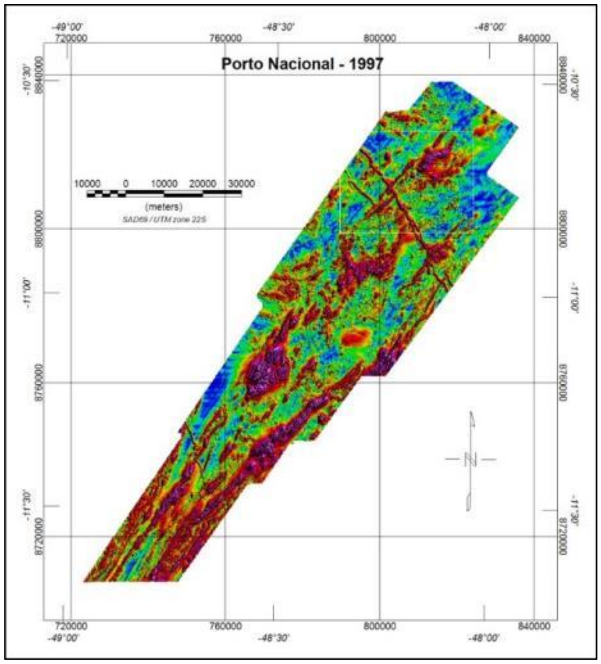
In 1999, the results of the regional work were reprocessed by De Beers, in order to detect potential diamond-hosting bodies (kimberlites and lamproites). Sixty-six anomalies were detected, of which 19 were followed up in detail, but without confirmation of the desired host lithologies (MSML, 2011a).

Figure 9.3
Total Magnetic Field - Geomag, 1996



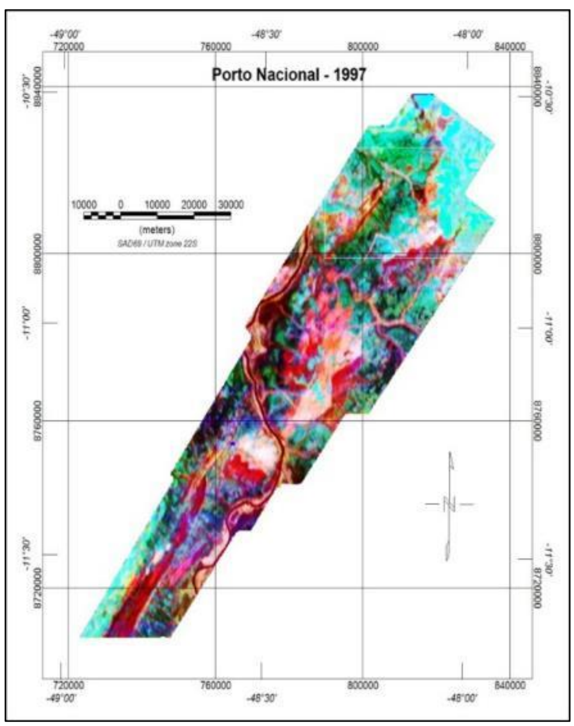
Source MSM, 2018

Figure 9.4
Amplitude of the Analytical Signal



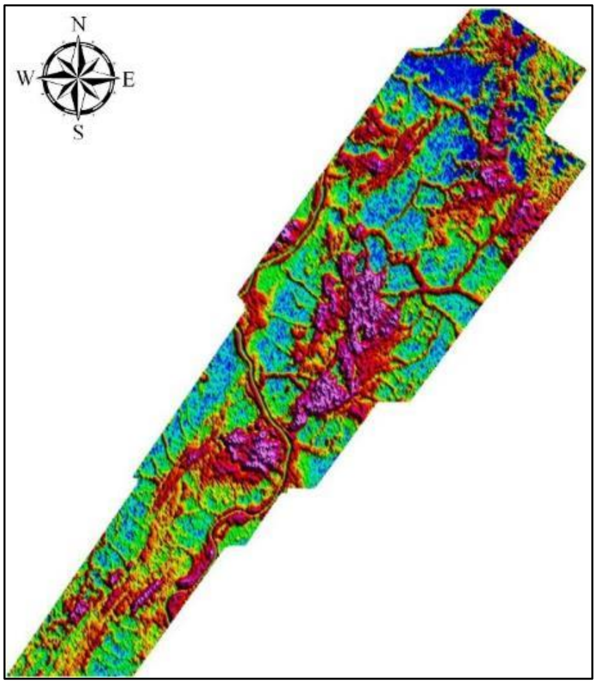
Source MSM, 2018

Figure 9.5
Gamma Spectrometry Ternary Plot



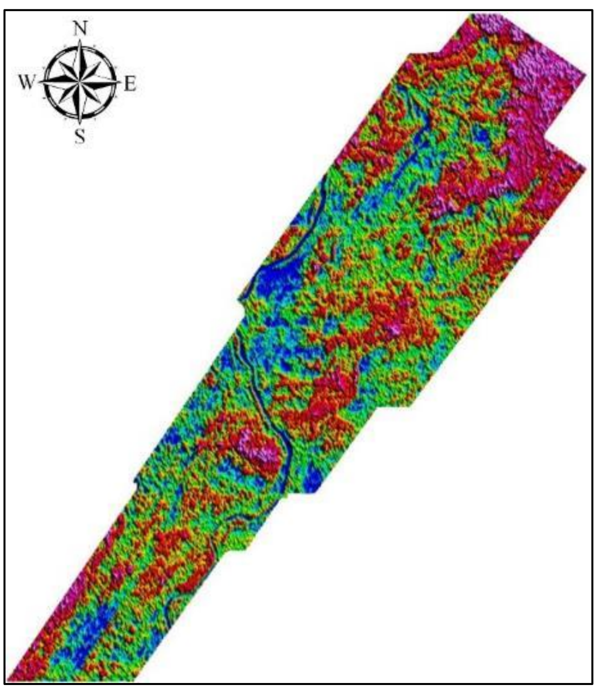
Source MSM, 2018

Figure 9.6
Potassium Count



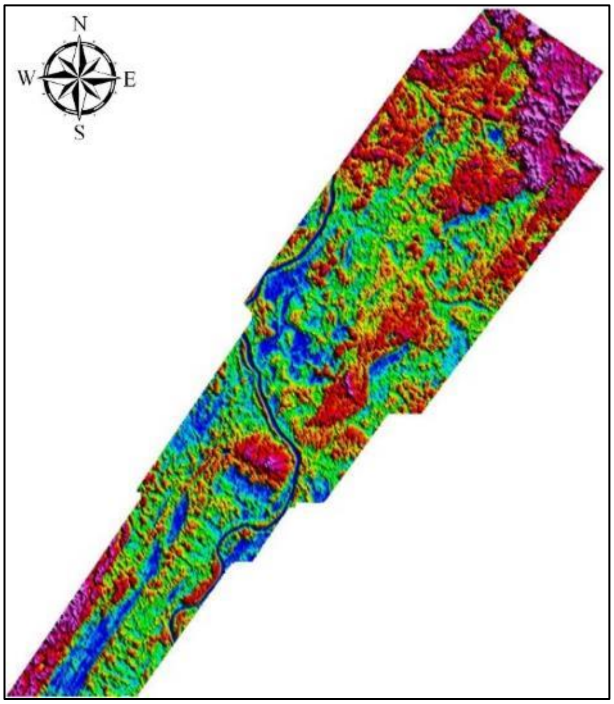
Source MSM, 2018. Scale of survey block on Figure 9.4.

Figure 9.7
Uranium Count



Source MSM, 2018. Scale of survey block on Figure 9.4.

Figure 9.8
Thorium Count



Source MSM, 2018. Scale of survey block on Figure 9.4.

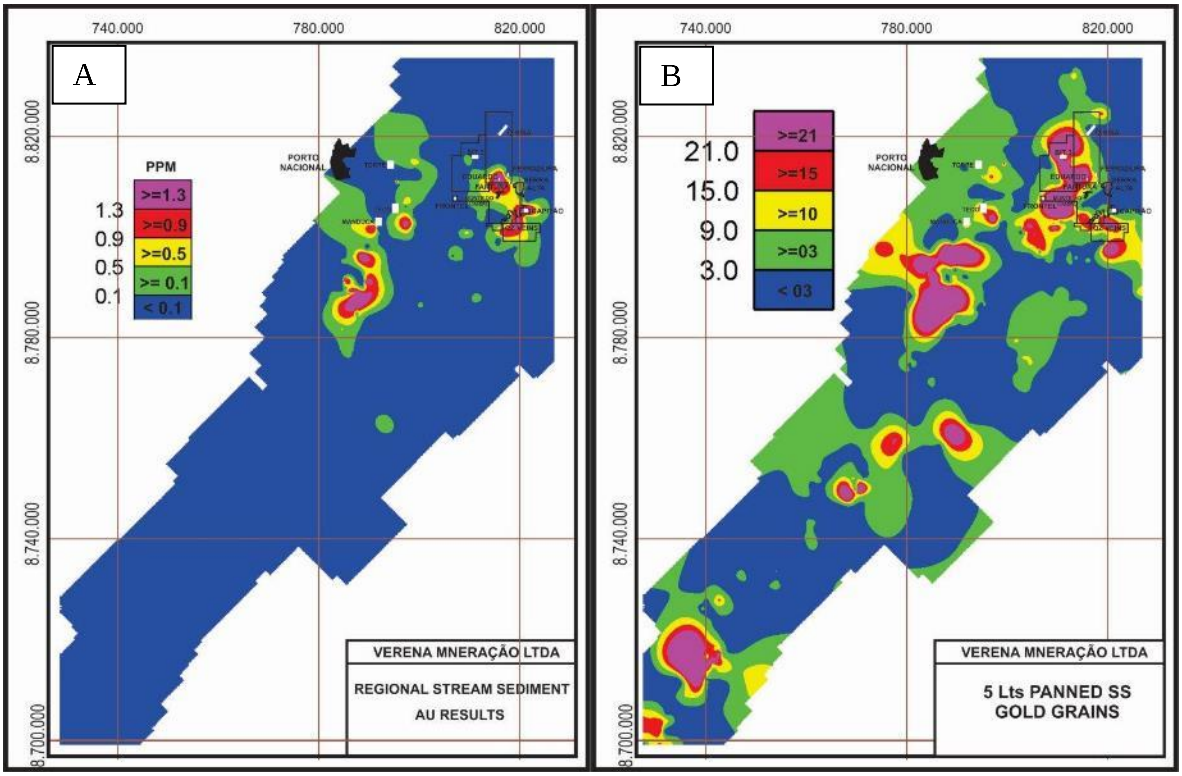
9.4 STREAM SEDIMENT SURVEY

Regional and detailed stream sediment surveys were carried out in 1996 by VMC, after the airborne geophysical survey. The regional work covered an area of about 1 million hectares and the results, particularly those for gold, were used to define the areas with the most potential.

A total of 369 5-litre samples were collected regionally. Two litres were split off and analyzed for gold by 30 g fire assay (Figure 9.9 A), as well as for copper, lead, zinc and arsenic (Figure 9.10 C, D, E and F). The remaining material from each sample point was panned and the number of gold "colours" were counted (Figure 9.9 B).

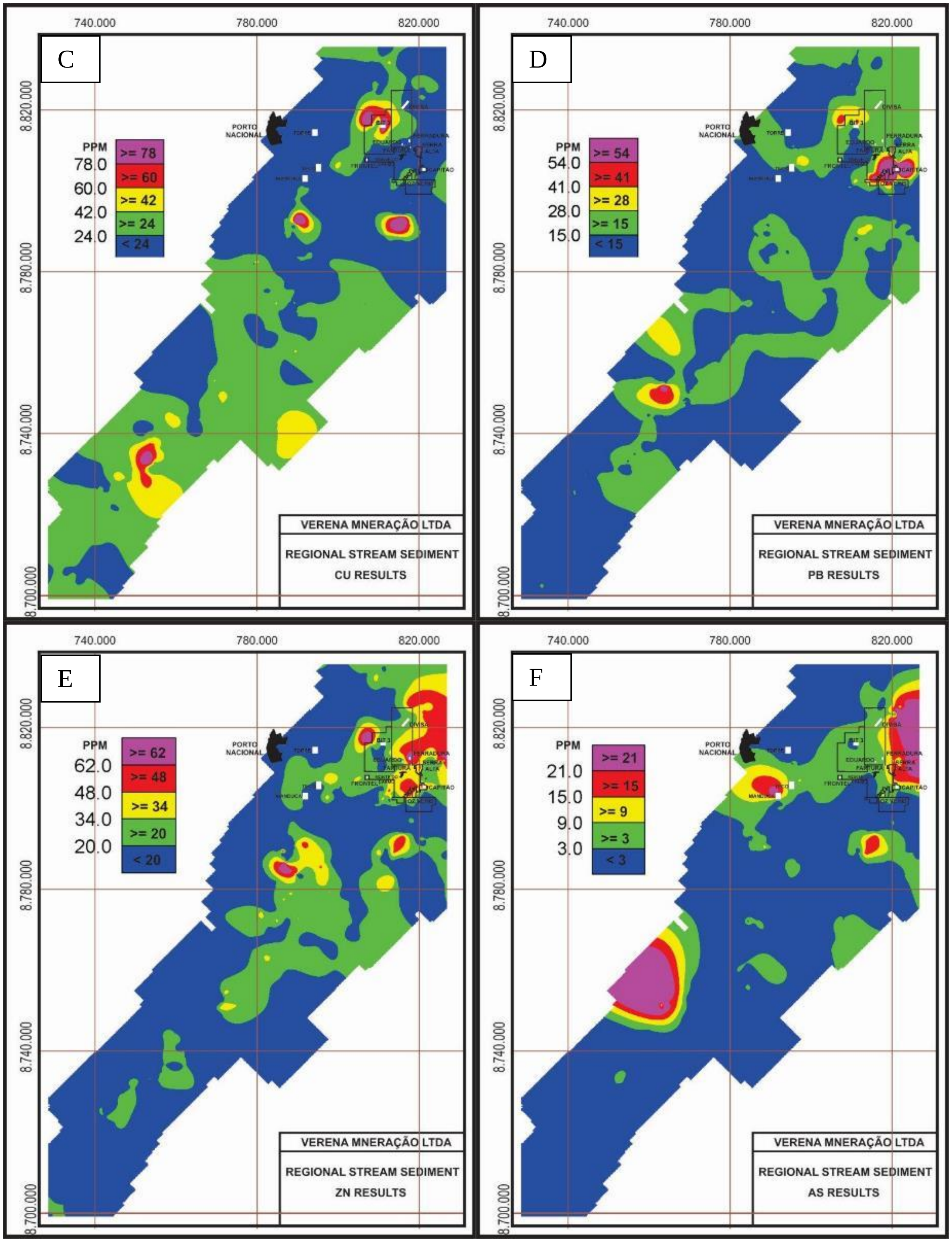
For each element, the results were interpreted after statistical studies.

Figure 9.9
(A)-Stream Sediment Au Results, (B) Au Colour Count



Source: MSM 2018. North at top of figure. Scale in metres on map grid.

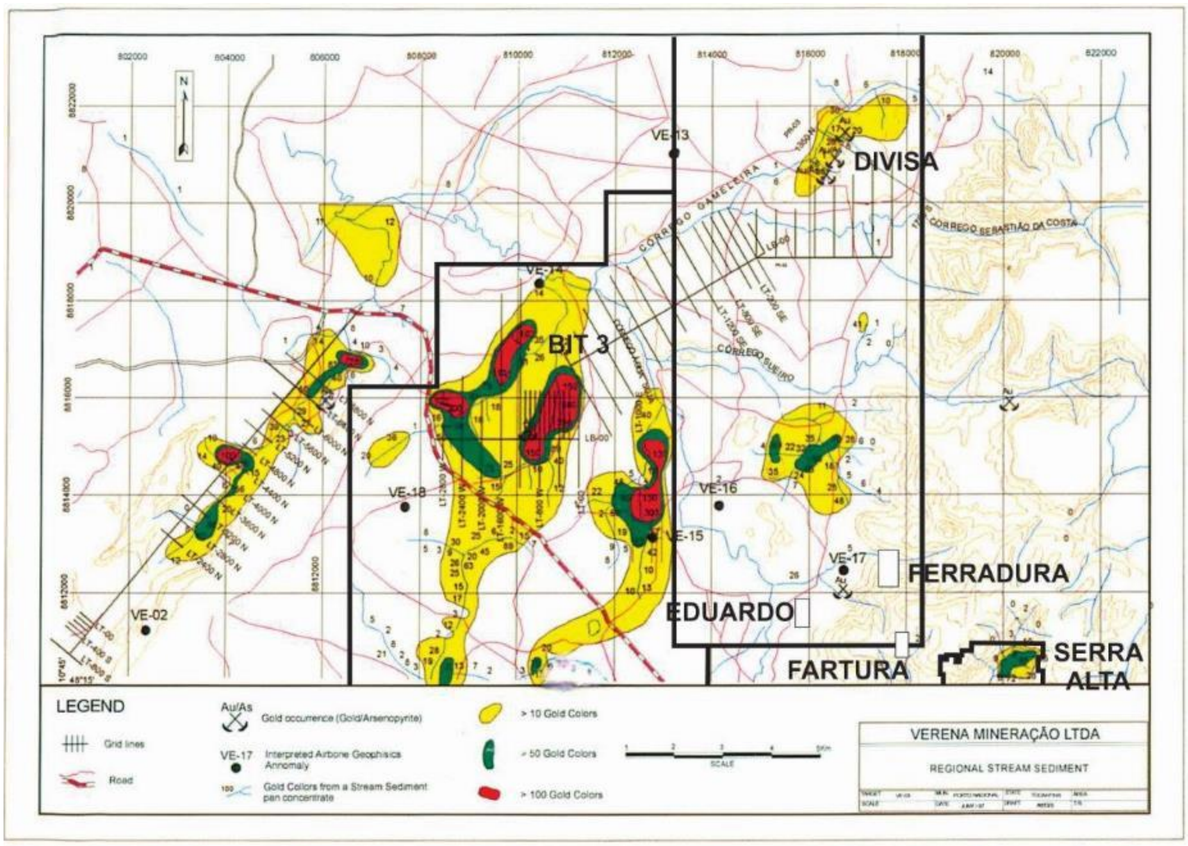
Figure 9.10
Regional Stream Sediment Interpretation Cu, Pb, Zn and As



Source MSM, 2018. North at top of figure. Scale in metres on map grid.

The most important drainages were sampled in detail, but only for gold colours (Figure 9.11). The Bit-3 target stood out as the most anomalous by the stream sediment survey.

Figure 9.11
Detailed Stream Sediment Survey Showing Bit-3 as the Most Anomalous Target



Source MSM, 2018

9.5 TOPOGRAPHIC SURVEYS

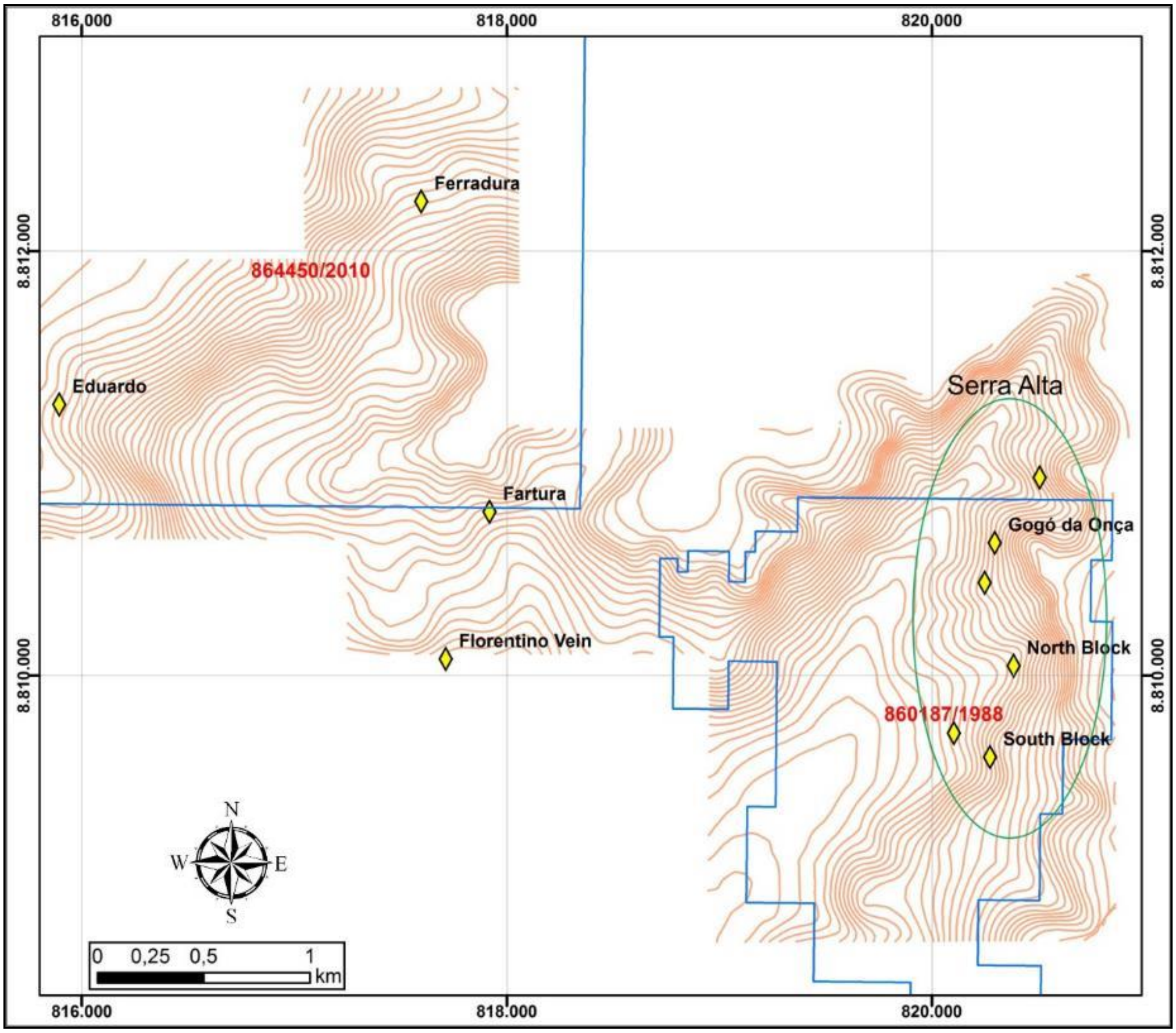
Several terrestrial topographic surveys were completed at the Serra Alta target and one at Ferradura.

The first topographic survey in the Serra Alta area was carried out by PNP in 1991, only partially covering the target area with contour lines every 5 m. This survey also plotted the location of many of the artisanal pits.

Later, in 2013, a detailed topographic survey was carried out on the South Block, North Block and the camp area at Serra Alta, this time with contour lines every 1 m.

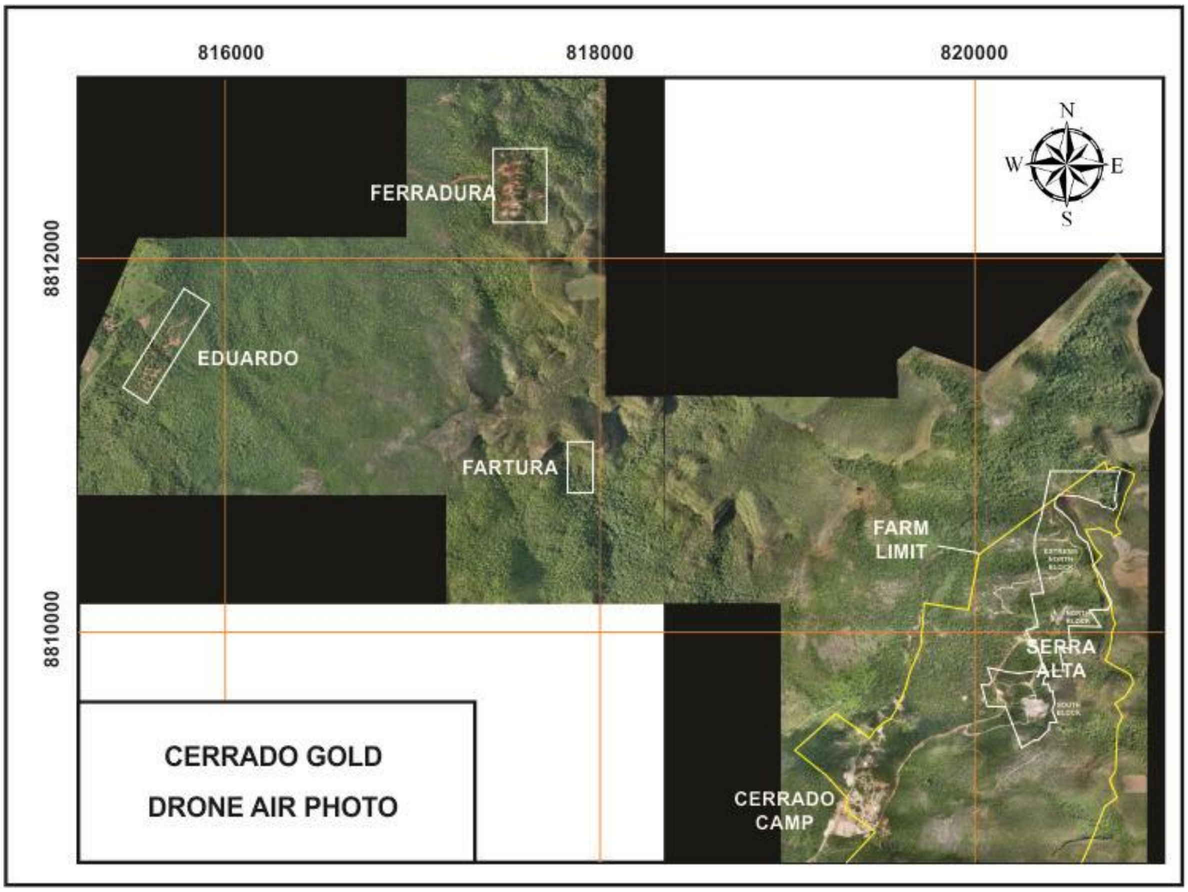
In January, 2018, the services of Drone Records were contracted to carry out topographic surveys of the Serra Alta, Fartura, Ferradura and Eduardo targets, followed by a second survey over the Capitão and Giant Quartz Veins targets using a Lidar-equipped drone. This most recent survey captured the recent small-scale open pit mining completed by MSM. The drone also captured aerial photography (Figure 9.12 and 9.13).

Figure 9.12
2018 Drone Topography of Serra Alta and Ferradura



Source MSM, 2018

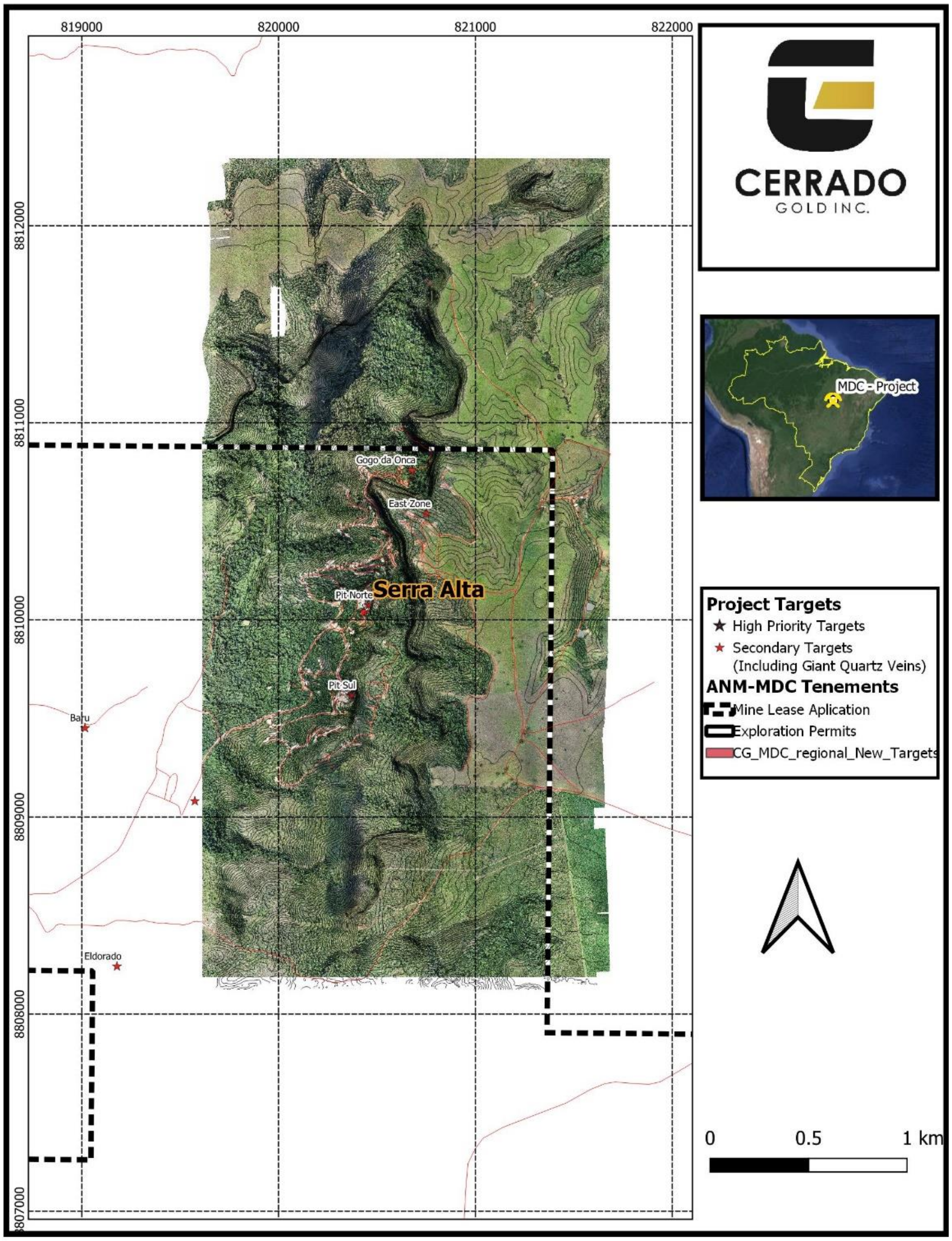
Figure 9.13
Drone Air Photo of Serra Alta and Ferradura



Source MSM, 2018. Scale in metres on photo grid.

In May 2021, the MDC field team conducted a topographic survey of the Serra Alta area using a "DJI Phantom 4 Pro V2.0 Plus" drone (Figure 9.14). This survey captured the current access roads, drilling pads, and provided a good resolution image from the Serra Alta surface in an area of approximately 840 ha. The topographic surface was interpolated by aero photogrammetric calculations using ten control points and several auxiliary points surveyed with an RTK GNSS T20 GPS. The same GPS unit surveyed all the Serra Alta drill holes from "Phase I". The MDC field team also checked the collars of past drilling campaigns and observed no divergences.

Figure 9.14
2021 Drone Base Topo and Imaging Survey



9.6 CHIP CHANNEL AND GRAB SAMPLING

Channel sampling was first carried out by the PNP Group in 1991. A total of 1,146 approximately one metre samples were collected. In 2006, Kinross, under a JV with VMC, collected a total of 1,345 channel samples, but only 596 were collected within the Cerrado properties. In December, 2017, MSM collected 121 channel samples in hard rock limited to the Serra Alta south pit. Lara Resources also collected some grab and chip samples on the occasion of a due diligence visit.

Most of the channel samples in fresh rock were collected using an electric saw with a diamond disk blade, powered by a portable generator (Figure 9.15).

Figure 9.15
PNP Channel Samples Collected in Hard Rock Using Electric Saw with Diamond Blade

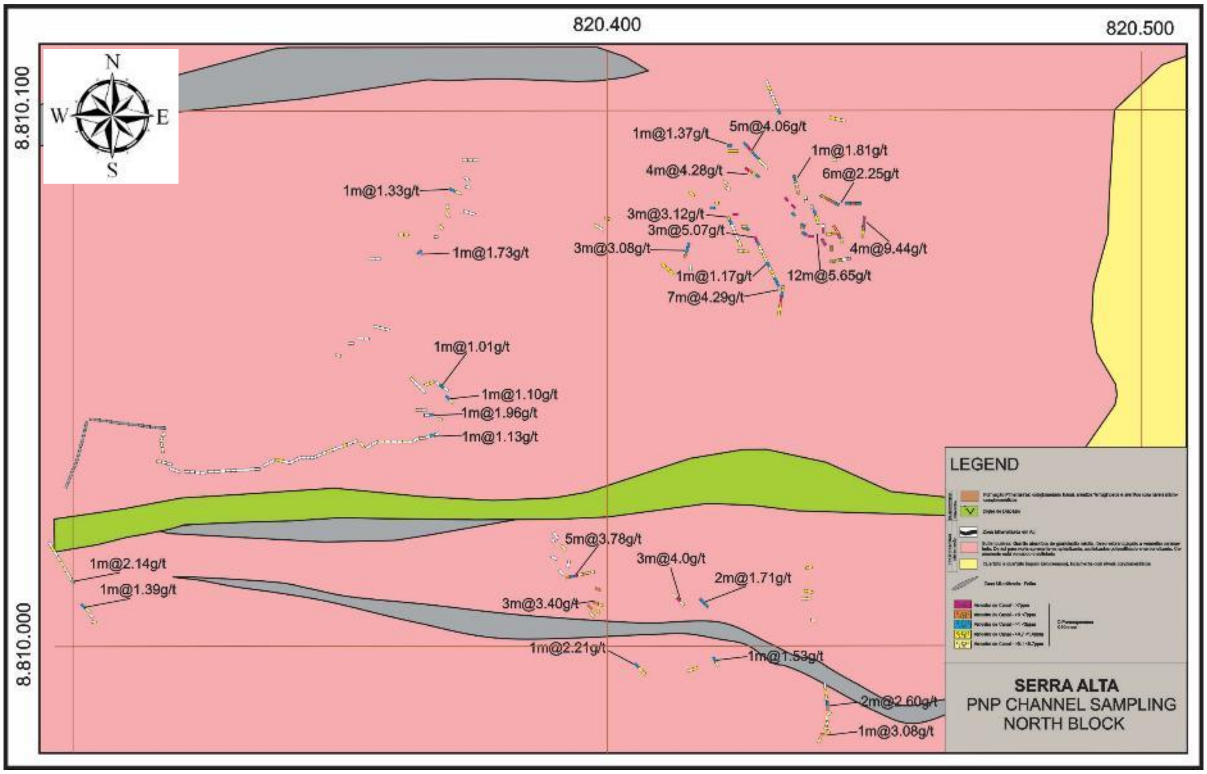
Source MSM, 2018

The PNP channel sampling was limited to the Serra Alta target, North, Central and South Blocks. Sampling at the Extreme North Block was only done by chip and grab samples, discussed below.

The 1,146 PNP channel samples were analyzed only for gold, by atomic absorption (MIBK finish). It is not known what the size of the sample aliquot was.

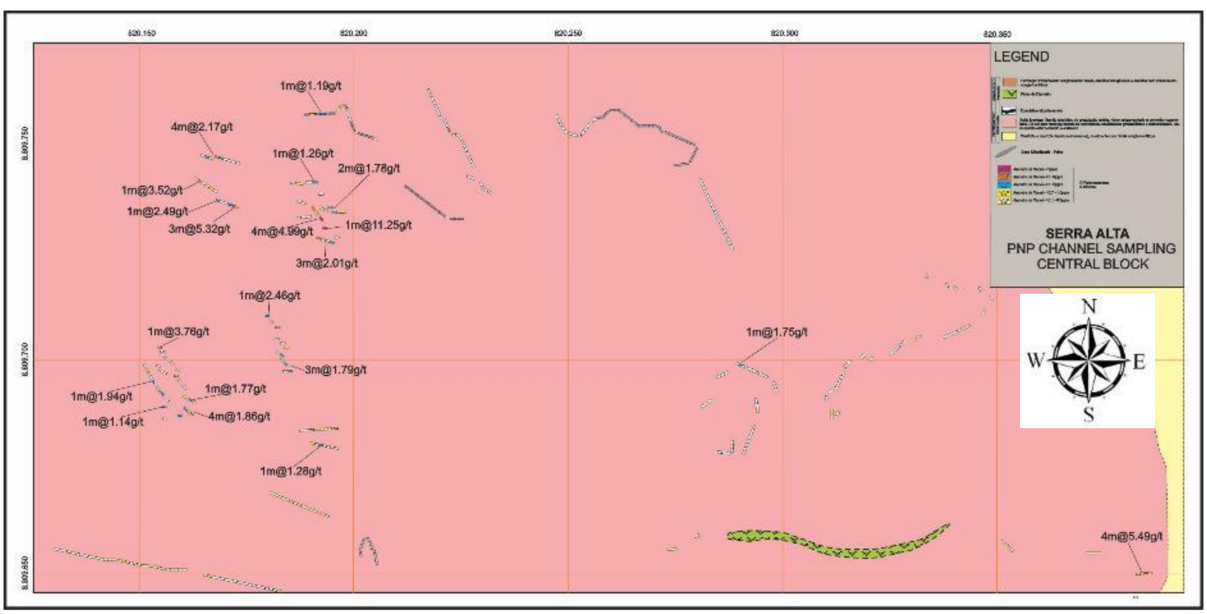
Figure 9.16 to Figure 9.18 show the samples locations and results above 1.0 g/t Au for the North, Central and South Block channel samples respectively. Figure 9.19 shows an example of a PNP channel in hard rock, sized 4 cm by 3 cm.

Figure 9.16
PNP North Block Channel Sample Locations Showing Important Au Results



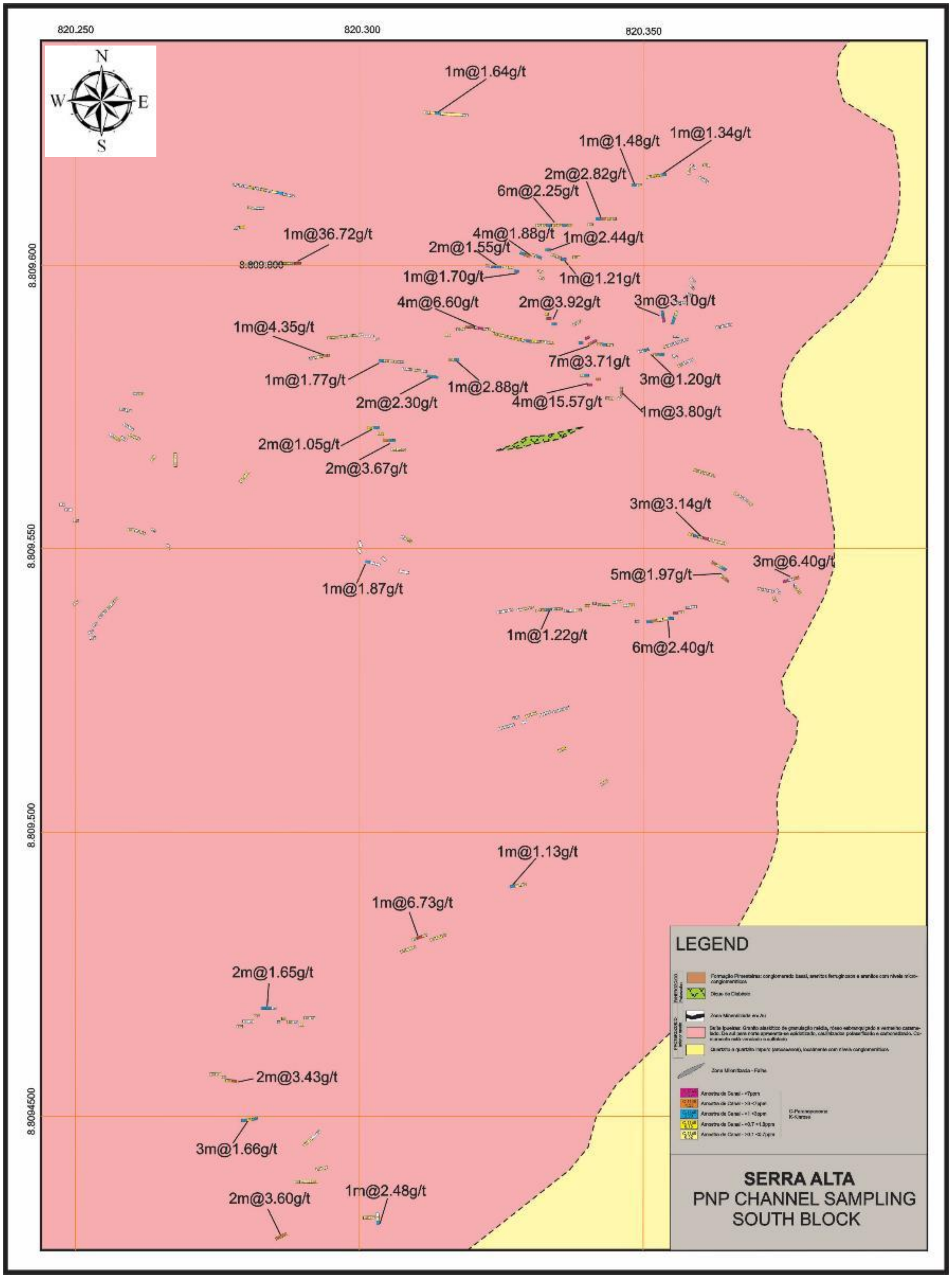
Source: MSM 2018. Scale in metres on grid lines.

Figure 9.17
PNP Central Block Channel Sample Locations Showing Important Au Results



Source: MSM 2018. Scale in metres on grid lines.

Figure 9.18
PNP South Block Channel Sample Locations Showing Important Au Results (>1g/t)



Source: MSM 2018. Scale in metres on grid lines.

Figure 9.19
PNP Channel Sampling in Hard Rock

Source: MSM 2018.

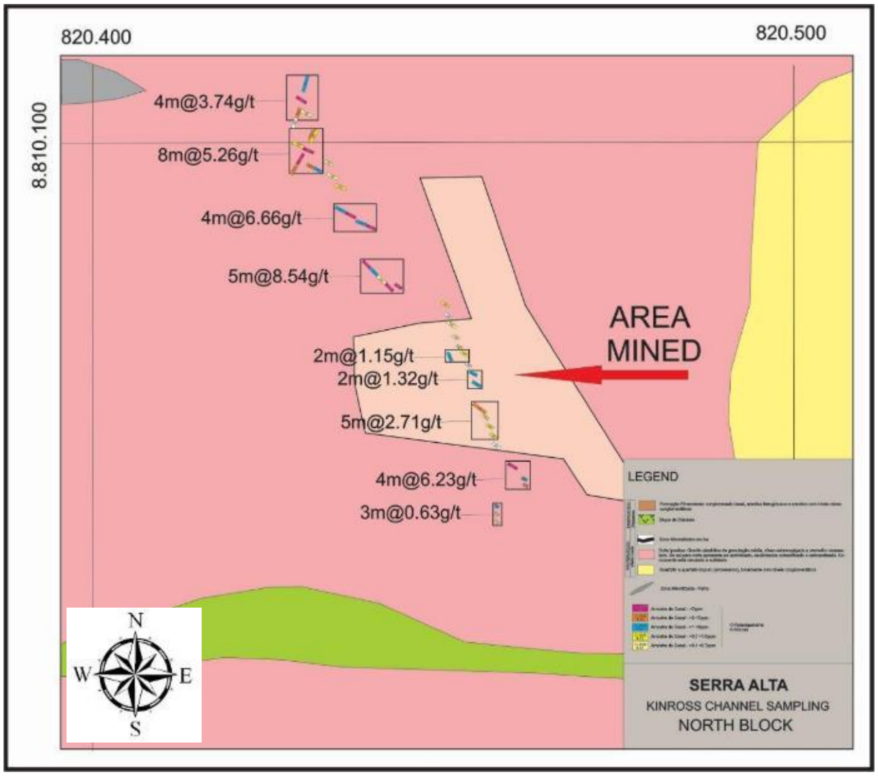
In 2006, Kinross collected a total of 618 channel samples of which 110 were collected at Serra Alta, 45 in the North Block and 65 in South Block. Additionally, 293 samples were collected at the Capitão target and 215 at the Giant Quartz Veins.

The cut channels were 5 cm in width and 4 cm in depth, with lengths between 1 and 2 m, selected in an attempt to honour lithological changes. All were assayed for gold by fire assay and by a multi-element determination.

The channels collected at Serra Alta and Capitão were located with a total station survey instrument. At other targets the samples were located by GPS.

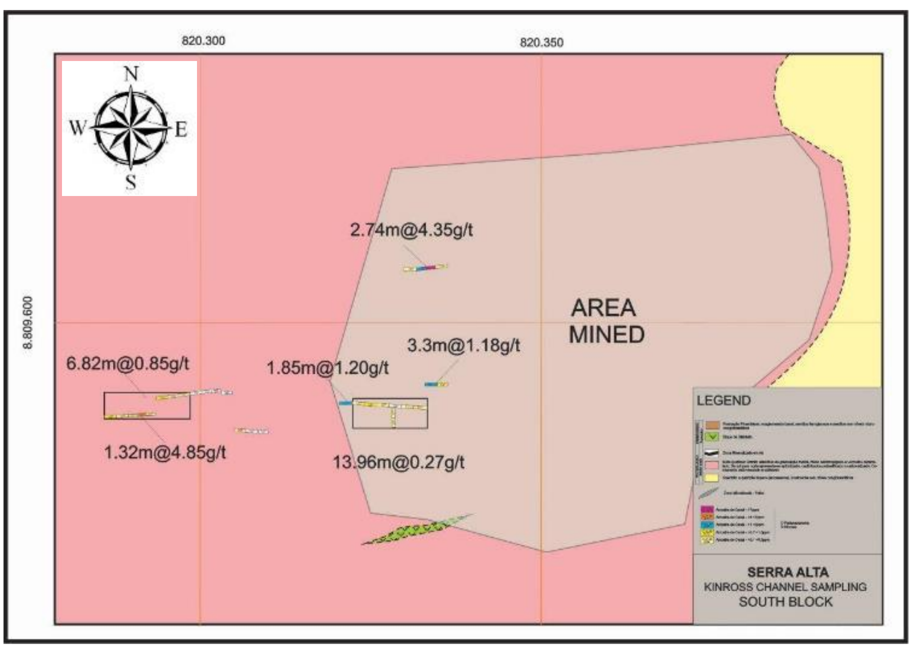
Figure 9.20 and Figure 9.21 show the best results from the channel samples at the North and South Blocks respectively. Sampling results from the Capitão and Giant Quartz Veins targets are not shown.

Figure 9.20
Kinross Channel Sample Locations and Best Results at Serra Alta North Block



Source: MSM 2018. Scale in metres on grid lines

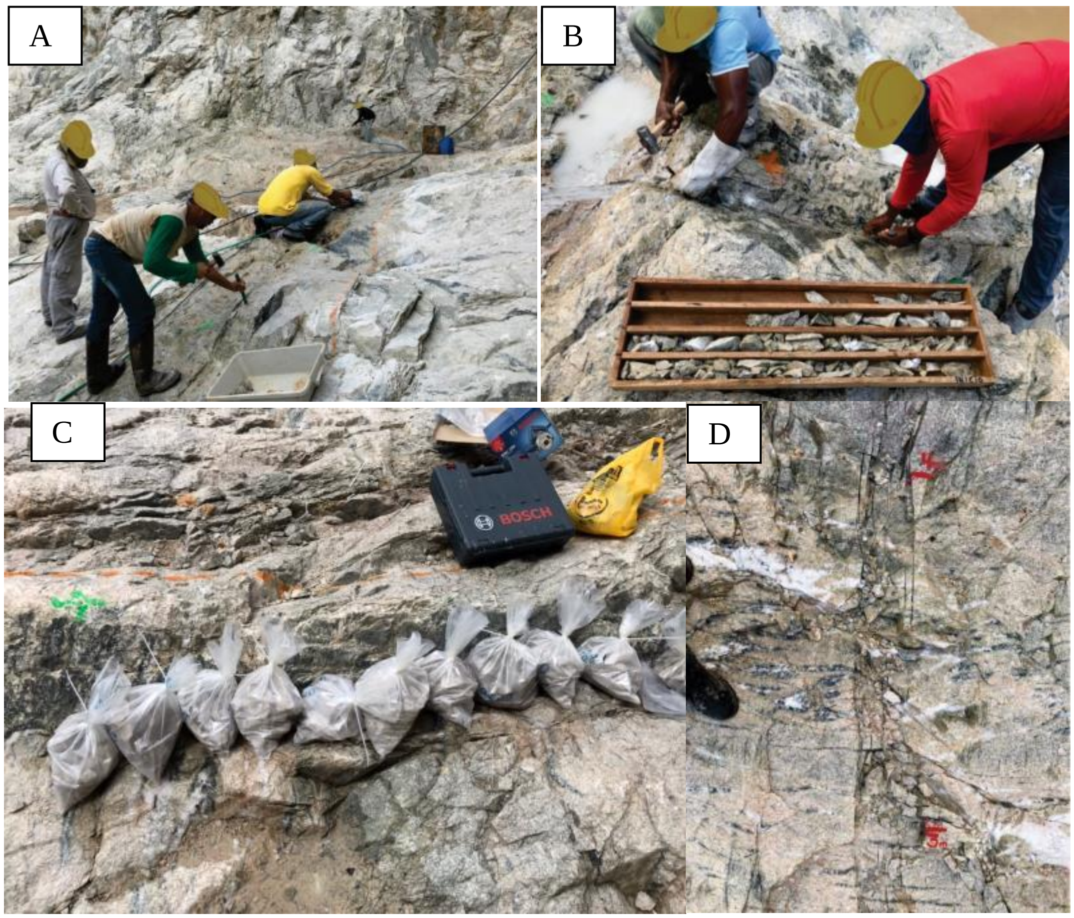
Figure 9.21
Kinross Channel Sample Location and Best Results at Serra Alta South Block



Source: MSM 2018. Scale in metres on grid lines

In December, 2017, MSM washed much of the floor of the South pit, and cut four parallel channels, 10 m apart and collected 121 samples from them. The channels were laid out on an azimuth of N75E, perpendicular to veining. The channels cut were 9.0 cm wide by 2.5 cm deep, with samples taken every metre. (Figure 9.22 A and D). Half of the sample was sent to the laboratory and the right half was stored in core boxes (Figure 9.22 B and C).

Figure 9.22
MSM Channel Sampling

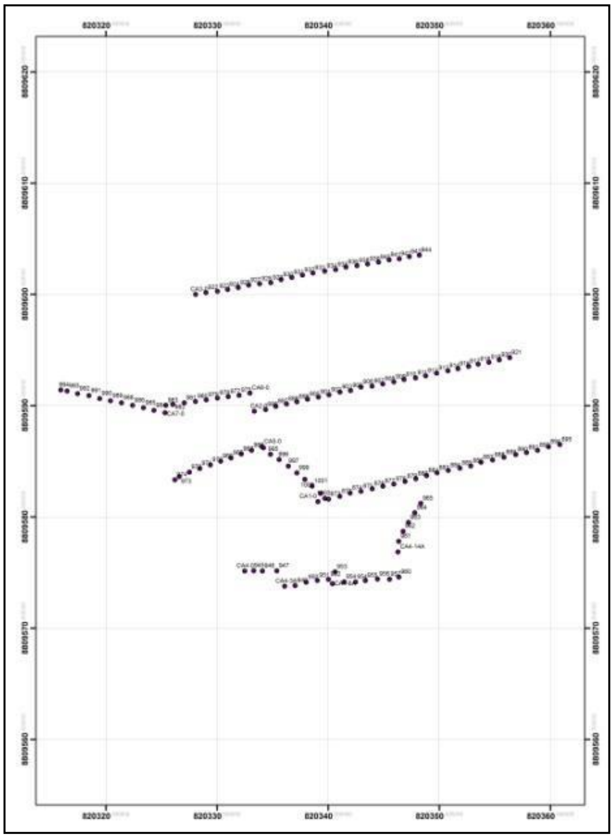


Source: MSM 2018. (A and B) Channel samples being collected and stored in core box; (C) 1-m samples stored in plastic bags; (D) 1 m channel after sampling.

The samples were analyzed by SGS using the screen metallics method. The channel locations are shown in Figure 9.23. The individual results of the four channels are shown in Figure 9.24 with a simple arithmetic mean for the intervals.

Channel sampling at Serra Alta was ongoing by Cerrado at the time of the QP's first visits.

Figure 9.23
MSM Channel Locations



Source MSM 2018. North at top of figure. Scale in metres on map grid.

Figure 9.24
Individual Results of the South Pit Channels 1, 2, 3 and 4

CHANNEL 1

Sample n°	Au (ppm)
00872	4,68
00873	1,70
00874	0,47
00875	1,51
00876	7,99
00877	0,88
00878	0,88
00879	0,06
00880	0,13
00881	2,41
00883	0,13
00884	3,14
00885	1,53
00886	1,15
00887	1,12
00888	0,30
00889	0,22
00890	0,49
00891	1,05
00892	4,31
00894	0,02
00895	<0,01

20 @ 1,71

15 @ 1,85

12 @ 2,00

CHANNEL 2

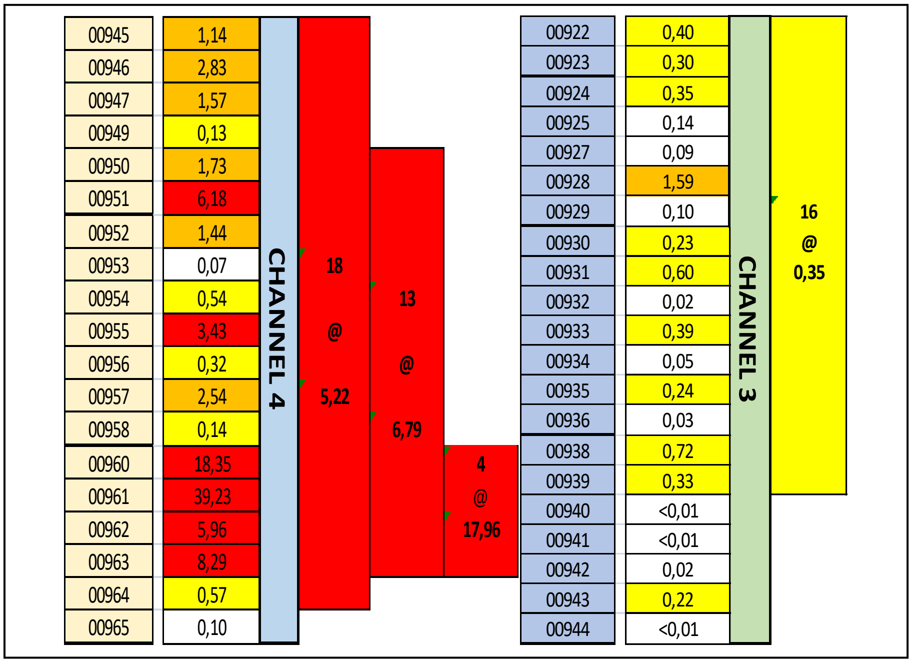
Sample n°	Au (ppm)
00896	0,23
00897	5,17
00898	0,10
00899	0,20
00900	2,36
00901	0,09
00902	0,27
00903	0,47
00905	0,03
00906	0,92
00907	0,18
00908	2,90
00909	1,40
00910	0,25
00911	0,74
00912	0,23
00913	0,07
00914	0,06
00916	0,07
00917	0,61
00918	1,42
00919	0,03
00920	0,07
00921	10,24

24 @ 1,17

15 @ 1,02

12 @ 1,17

Figure 9.24 (cont'd.)



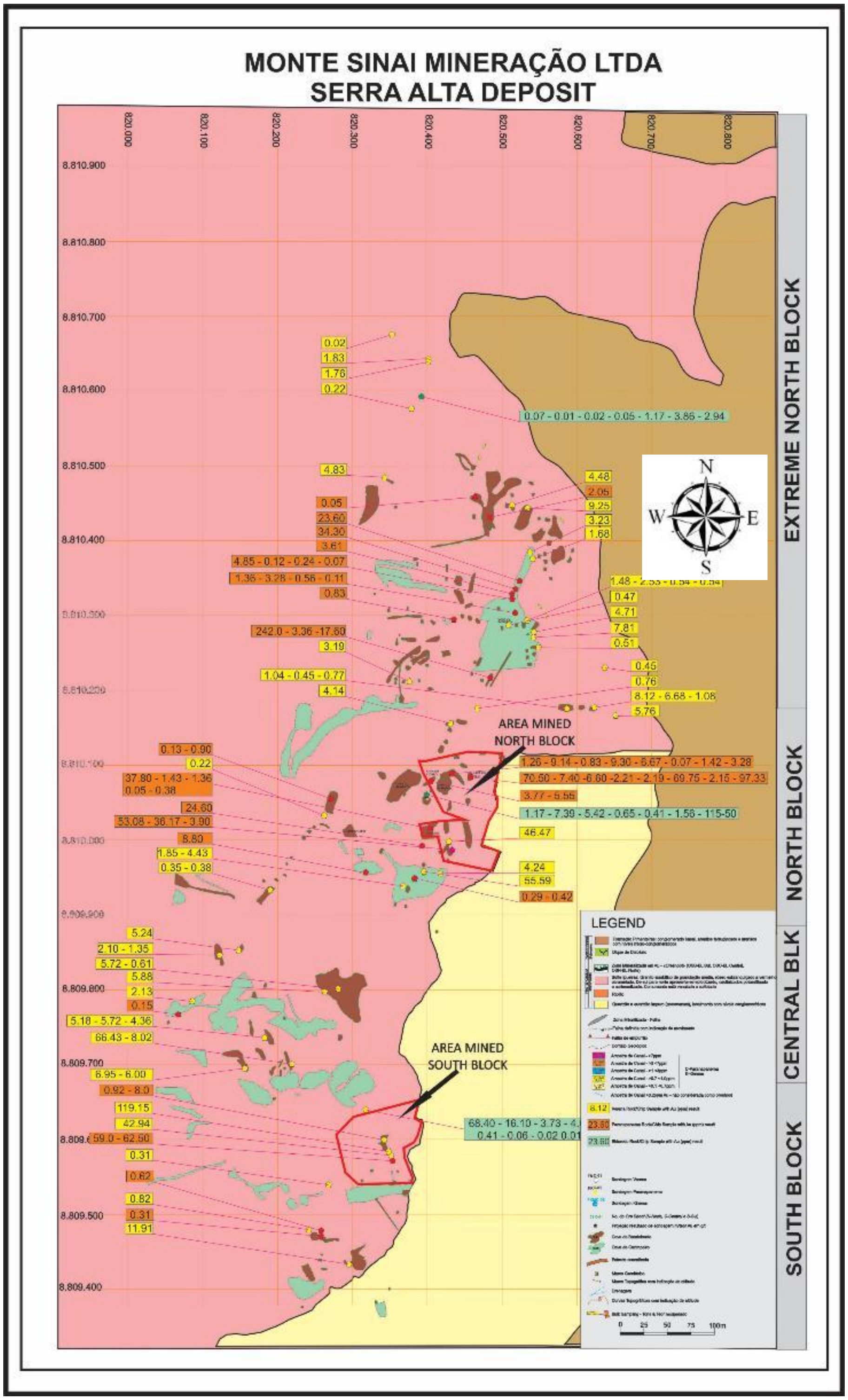
Source MSM, 2018

A total of 129 grab and chip samples were collected within the Serra Alta Deposit by PNP, Verena/MSM and Eldorado (the latter during due diligence), distributed as shown in Table 19.1. The results are shown on Figure 9.25. The figure also highlights the garimpeiro and bandeirante pit locations.

Table 9.1
Grab/Chip Samples Collected at Serra Alta

Location	No. of Samples			Total
	PNP	VML	Eldorado	
South Block	5	5	12	22
Central Block	1	14	0	15
North Block	32	8	0	40
Extreme North Block	17	28	7	52
Total	**55**	**55**	**19**	**129**

Figure 9.25
Serra Alta Grab/Chip Sample Locations and Results



Source: MSM 2018. North at top of figure. Scale in metres on map grid.
Source: MSM, 2018.
Samples collected by PNP (orange) VML (yellow) and Eldorado (green).

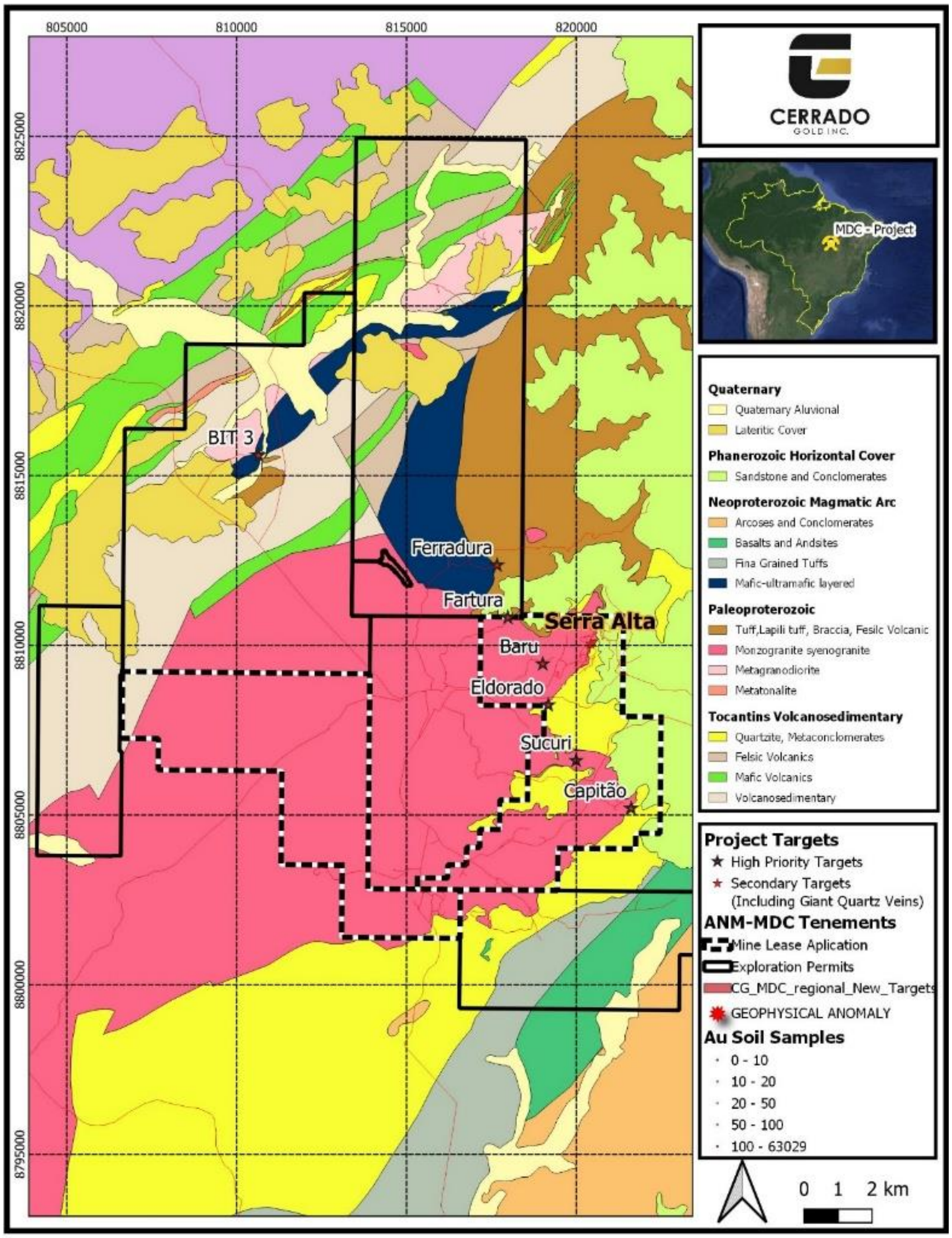
9.7 EXPLORATION COMPLETED IN LATE 2018

Monte do Carmo exploration activities have focused on the Serra Alta deposit. However, several gold occurrences up to about 15 km to the south, west, and north had been identified, mapped, sampled and in some cases drilled in the past by other parties. Field work in these areas since 2018 has included geological mapping, geochemical surveys, structural inversion programs and trenching.

The new resource estimate presented in this technical report, consolidates Serra Alta as the anchor deposit in the Monte do Carmo district. Cerrado is evaluating the presence of the relevant satellite mineralized centres.

A new phase of drilling commenced in H2 2021 targeting an additional 14,000 m of drilling at Serra Alta and other satellites targets including Capitão, Fartura, El Dorado, Ferradura, Baru, Bit 3 and Sucuri (see Figure 9.26). This program is ongoing, and results are pending. The scope of the planned drilling (Phase 2) is to delineate new mineralization and follow up with resource definition efforts over the most endowed targets.

Figure 9.26
Monte Do Carmo District Target Location



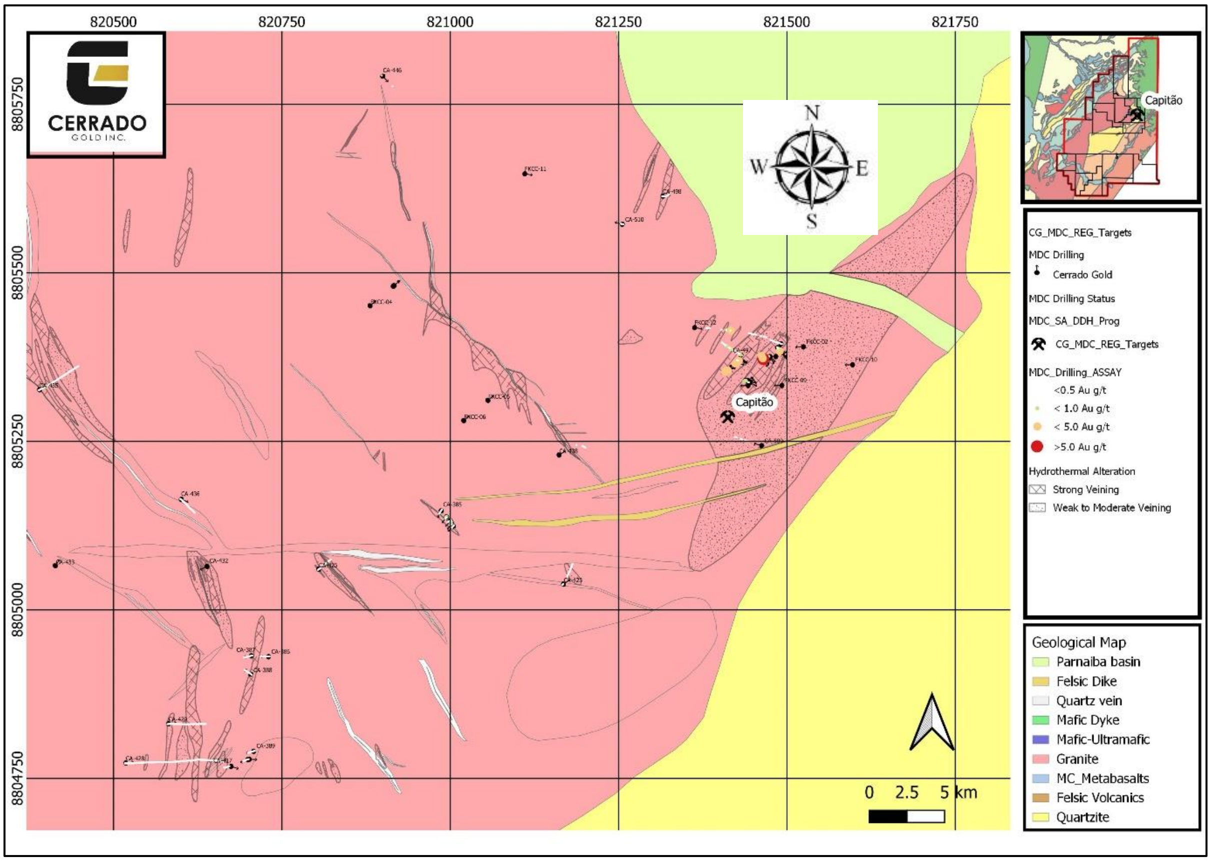
Source: Cerrado 2021

9.7.1 Capitão Target

The Capitão Target is located 6 km to the south of Serra Alta along the same granite complex contact zone. As at the Serra Alta deposit, Capitão mineralization is associated with the same granite intrusion in contact to equivalent quartzite and Devonian horizontal sediments (Figure

9.27). This target was partially drilled by Kinross in 2007 (9 Drill holes, totaling 1085.95 m) and has been mined by garimpeiros along a minimum exposed strike distance of 300 m.

Figure 9.27
Capitão/Magalhaes Geological Map



Source: Cerrado, 2021

At Capitão/Magalhães a sampling program was conducted by Cerrado in 2018 totaling 22 trenches. The work was completed to re-evaluate this area and to update a proposed drilling program. The geological map of this area includes the Capitão target, Magalhaes Vein, Galena Vein and another 11 unnamed veins located at the north portion of Giant Quartz Vein Area. The samples have few sulphides, mostly box work textures from oxidized pyrite. The veins are classified as shear veins and a quartz veinlet system is observed in the hanging wall and footwall.

Field and core descriptions show a resemblance with the Serra Alta granite intrusion-hosted quartz/gold. Mineralized granite areas in Capitão are also proximal to the intrusive contacts with equivalent quartzite and Devonian horizontal sediments. As is the case at Serra Alta, mineralization is associated with quartz veins and sulphides (pyrite + galena + chalcopyrite) with a chloritic dominated alteration assemblage. Mineralization is believed to extend over 500 m along strike.

Work completed at Capitão, since the last technical report, prior to the Phase 2 regional drilling by Cerrado includes:

- Detailed structural mapping over the Capitão target.
- 3D Modeling of the main structures.
- Several structural measurements over the sheeted veins were collected and the main directions analyzed on stereograms.
- Collection of structural data over non-oriented historical drill holes for structural inversion. Data to be analyzed by Ore Node software (Vektore consultancy) to estimate real orientation of the core sections and geopositioning the structural measurements.

The area between Capitão and Serra Alta, along the noted contact zone is characterized by a few other targets including Sucuri and El Dorado where current exploration efforts include trenching, mapping, and geochemical soil sampling. Follow up drilling is planned, subject to the results of the current work programs. El Dorado has the potential to extend Serra Alta to the southwest as it is directly along strike

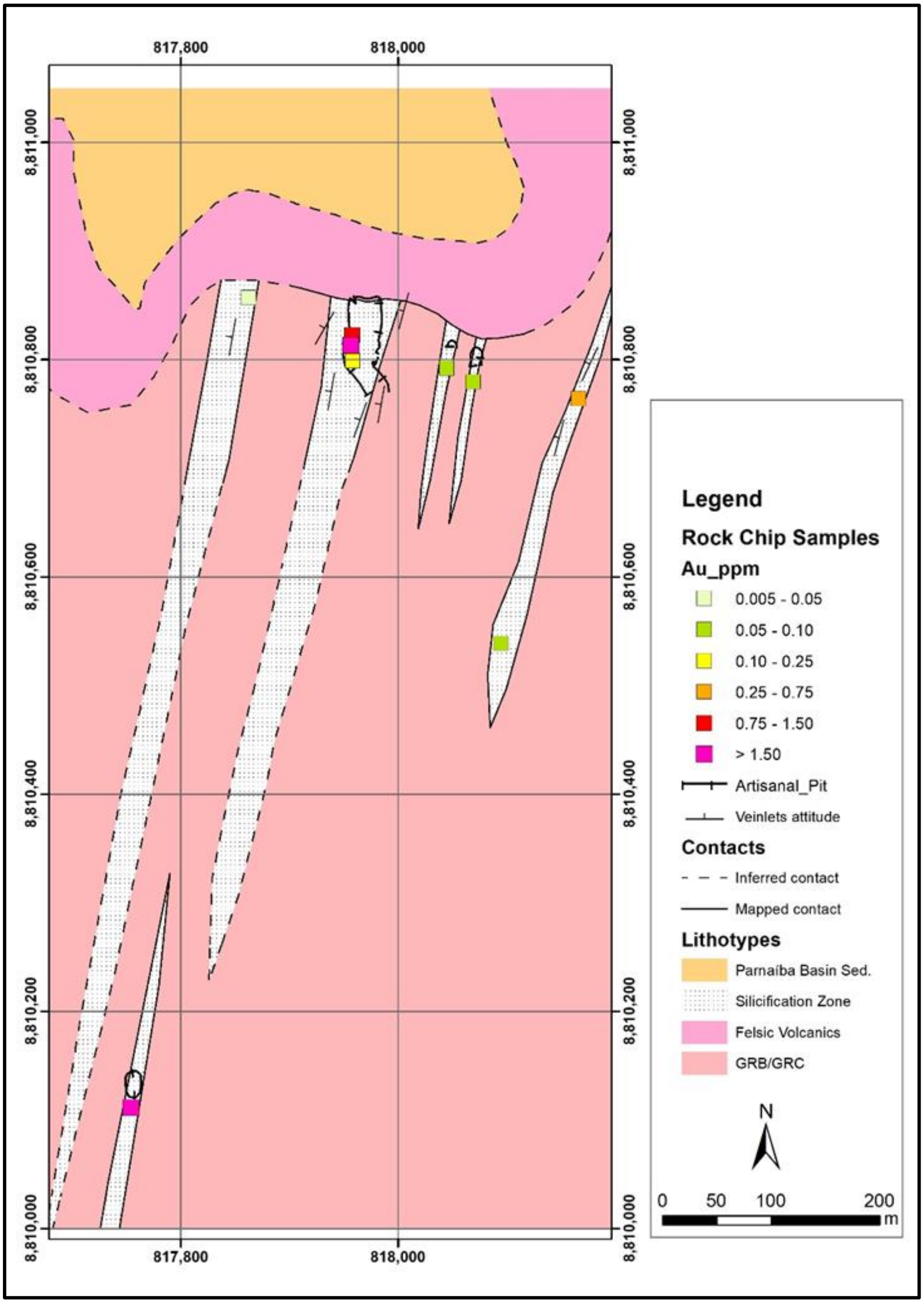
9.7.2 Fartura Target

This target is located about 3 km west of the Serra Alta Deposit, associated with the same granite intrusion. It is also similar to the Capitão Target. It was superficially mined by the Bandeirantes (17th century Portuguese explorers) and garimpeiros (1980s and 1990s). It has the same features (geological, mineralization and gold grades) as the Serra Alta Deposit.

Rock chip sample assay results from 9 samples returned encouraging grades, confirming the presence of gold mineralization at the Fartura silicification zones. The best grades are 2.18, 1.99, 1.03 0.33 and 0.20 g/t Au, as shown on Figure 9.28. Most of them are from old artisanal pits except one which came from a newly discovered and unmined zone about 200 m east of the Fartura main pit, which returned 0.33 g/t Au. Geological maps of the Fartura target are presented in Figures 9.29 and 9.30. Figure 9.31 is a photograph of the trench in the unmined zone 200 m east of the Fartura main pit.

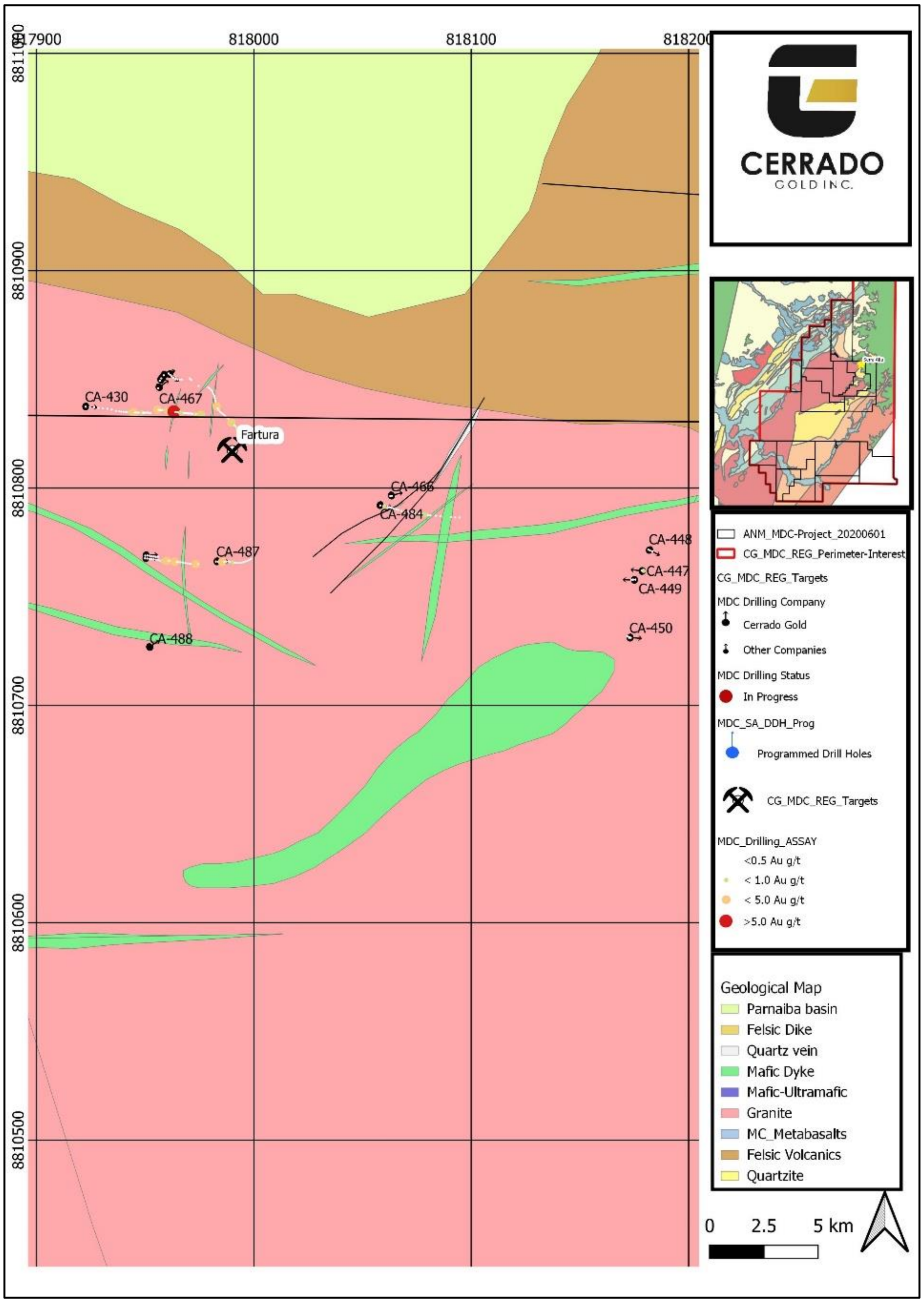
The fact that relevant quartz veining and visible gold is found in porphyritic rocks is very encouraging as the intensity of mineralization is expected to increase in underlying granitic rock. Planned drilling will target a possible contact zone underneath the feslsic volcanic, following the Serra Alta model that has demonstrated that better grades and continuity are expected in the more permissive granitic rock, especially in proximal intrusive contact zones.

Figure 9.28
Fartura Target Chip Samples Anomalies



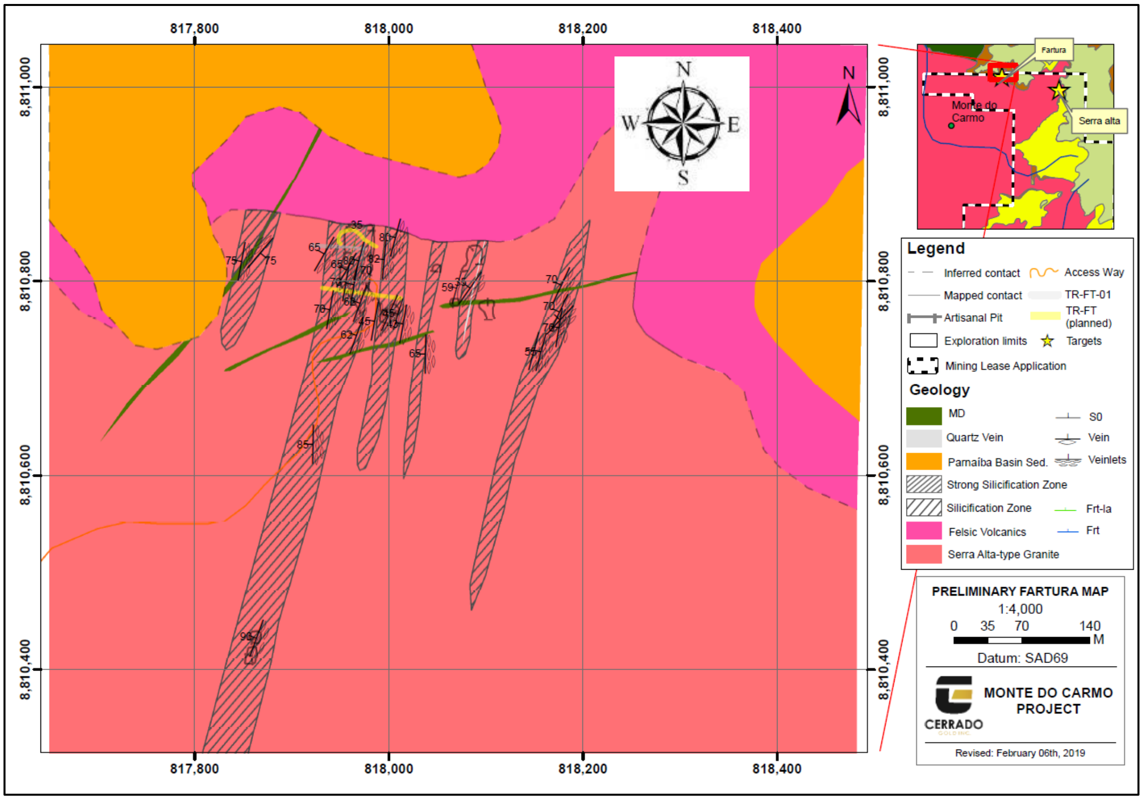
Source: Cerrado, 2019

Figure 9.29
Fartura Target Geology



Source: Cerrado, 2021

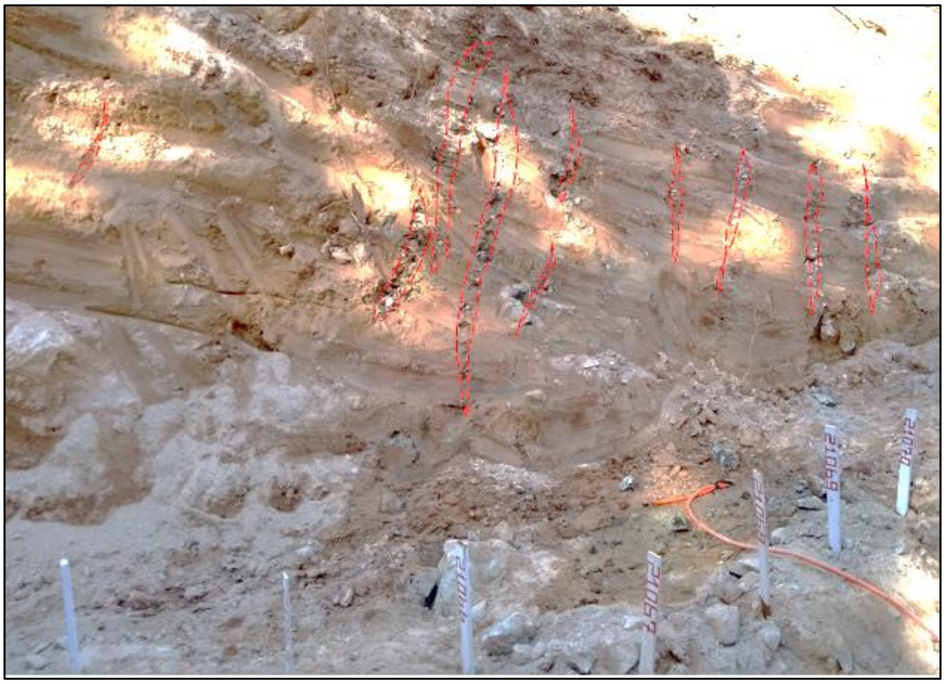
Figure 9.30
Fartura Target Detailed Geological Map



Five trenches were opened and sampled, and it was possible to map strong hydrothermal alteration. Figure 9.32 shows a close-up view of a mineralized vein.

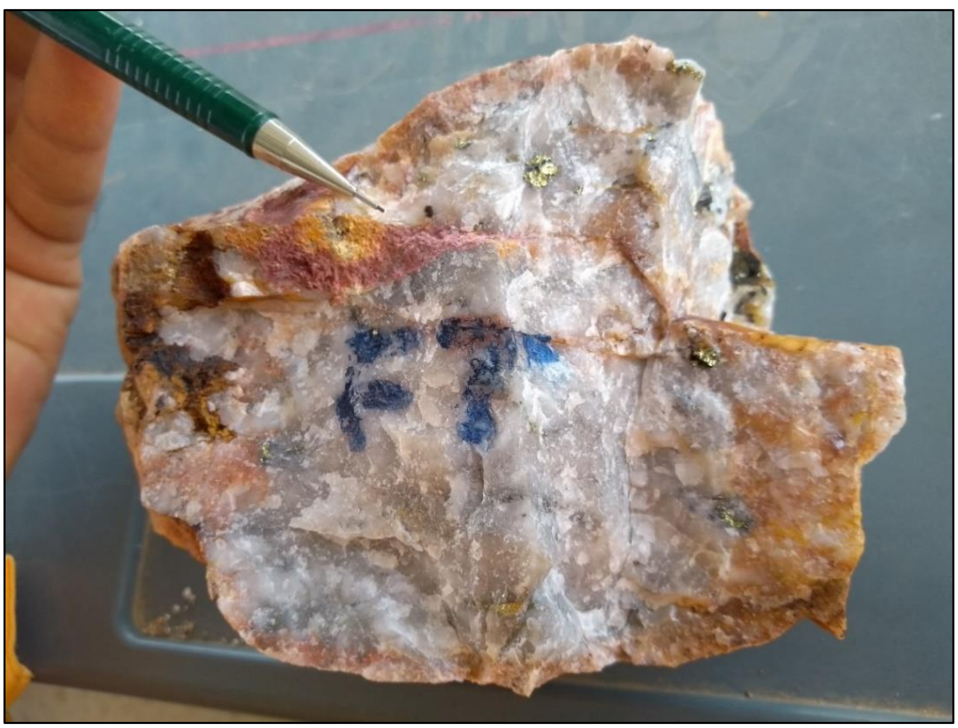
Further work is needed to follow up the Fartura silicification zones (veins and veinlets).

Figure 9.31
Swarms of Quartz Veins in Wall of Trench



Source: Cerrado 2019.

Figure 9.32
Close-up View of Partially Weathered Pyrite-Chalcopyrite-Bearing Quartz Vein at Fartura



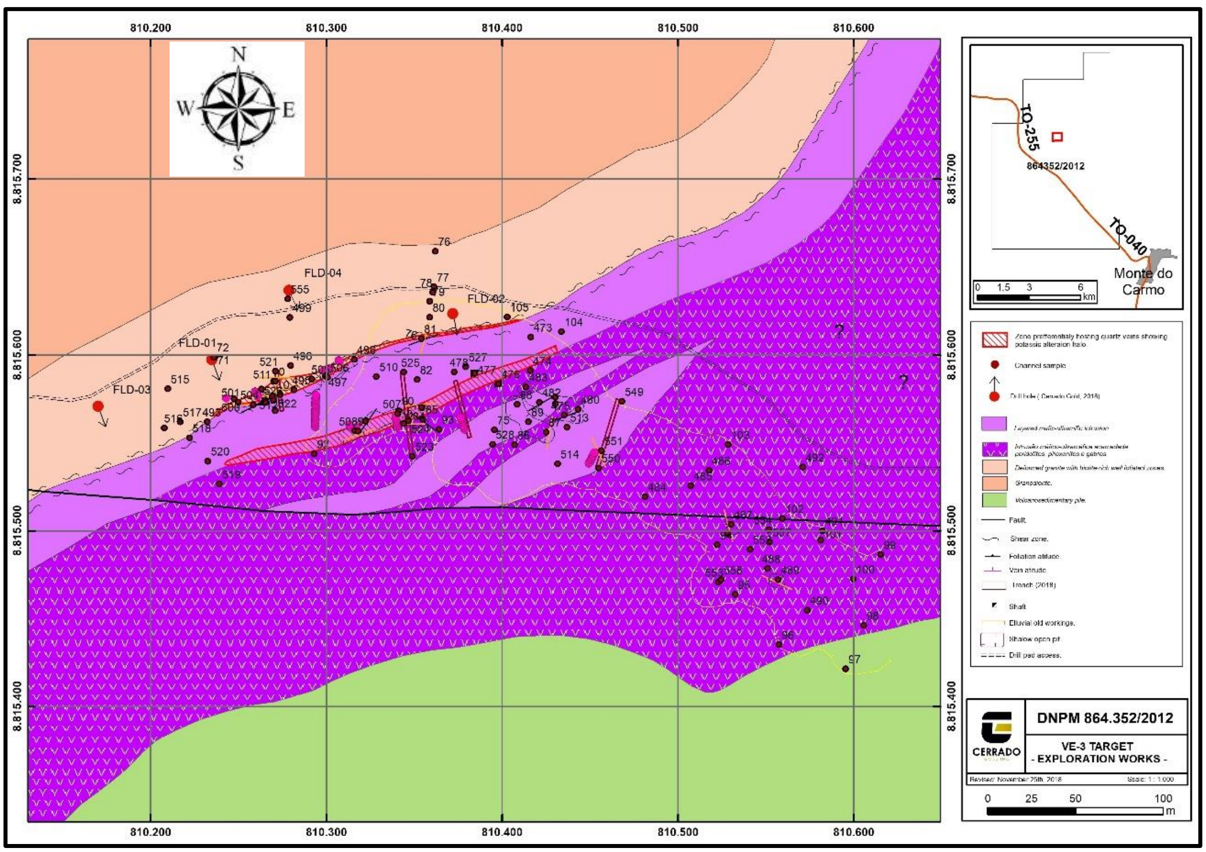
Source: Cerrado 2019.

9.7.3 Bit-3 Target

The Bit-3 target was developed by Verena in the 1980s following up on an airborne geophysical anomaly that indicated a large mafic/ultramafic unit in sheared contact with intermediate intrusive rocks. Initial drilling by Verena led to some positive results but due no QA/QC was conducted with the sampling. Cerrado is only using those results for general guidance. In 2018, five trenches and 4 drill holes were completed, and positive assays were produced.

Also in 2018, the geological map of this target was revised, and detail improved, as shown in Figure 9.32. The results indicate that the main mineralized structure is continuous to the northeast and southwest and warrant further exploration.

Figure 9.33
Bit-3 Geological Map



In 2018, Bit-3 was drilled and interesting gold grades from a biotite-quartz altered zone were returned from drill holes FLD-01 and FLD-04 (see Table 9.2). Drill holes FLD-02 and FLD-03 failed to extend the main mineralized intersection to north and south, respectively. The geological model of the mineralized zone indicates potential to down dip extension. Also, four trenches totaling proximately 100 m were excavated and sampled indicating interesting gold anomalies.

Table 9.2
Bit-3 2018 Drill Hole Results

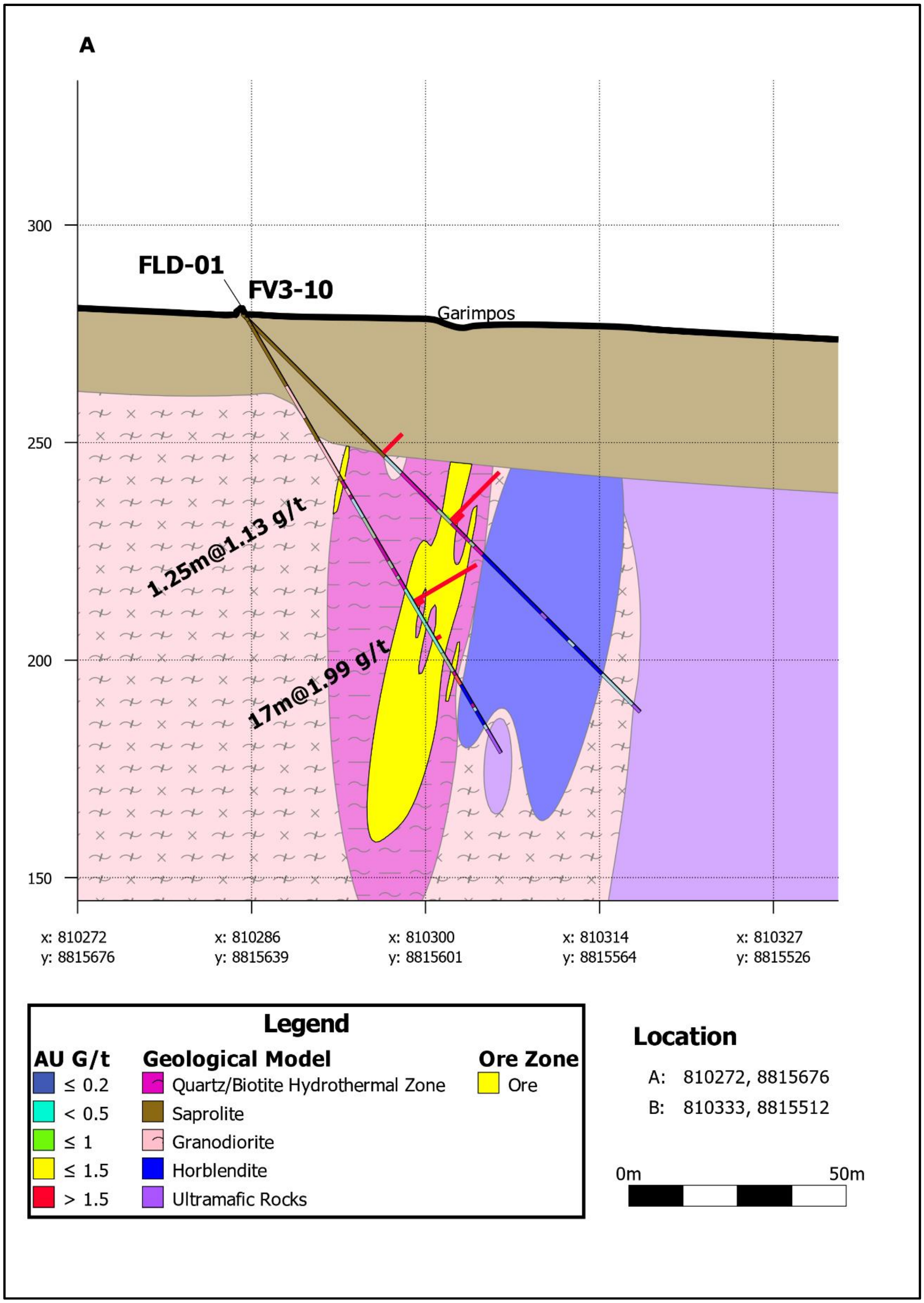
DDH	From (m)	To (m)	Length (m)	Au (ppm)	True Width (m)
FLD-01	42.50	43.75	1.25	1.13	0.88
FLD-01	72.50	89.50	17.00	1.99	12.00
FLD-02	No significant values				
FLD-03	No significant values				
FLD-04	76.00	78.00	2.00	1.07	1.41
FLD-04	94.40	97.50	3.10	1.25	2.19
FLD-04	110.77	114.2	3.43	1.31	2.42

FLD-01: This hole was planned to extend mineralization from historical drill hole FV3-10 down dip. FLD-01 successfully intercepted 17 mineralized metres. The down-dip extension of this new drill hole is interpreted to have good exploration potential.

FLD-04: This hole was planned to intercept the down dip extension of garimpos mapped at surface. The results indicated weak mineralization. The lithologies encountered are the same as observed in FLD-01, indicating a northward continuity of the mineralized zone.

Figure 9.34 shows a geological section through drill hole FLD-01.

Figure 9.34
FLD-01 Geological Section



Source: Cerrado, 2019

9.7.4 Other Targets

Other Targets in the area that will be incorporated into the planned district drilling program include Eldorado, Baru and Ferradura

Table 9.3
Monte Do Carmo District, Other Targets

Target	Distance to Serra Alta	Target Description	Work Completed
Eldorado	1 to 2 km	Granite/ Quartzite contact zone, Structural block located immediately to the south of Serra Alta	Geological Mapping
Baru	1.5 km	Granite/ Sheeted Vein zone, Structural block located immediately to the west of Serra Alta. Follow up historical soil sampling anomalies	Geological mapping
Ferradura	3.6 km	No outcropped Granite/ Felsic Volcanics contact zone intercepted at historical drill holes, Structural block located to the northwest of Serra Alta.	Historical drill hole Structural data collection for Vektore structural inversion.
Sucuri	3.7 km	Granite/ Sheeted Vein zone and Shear veins Zones, Structural block located to the south of Serra Alta. Follow up of panning sample anomalies	7 trenches in 2021 open and mapped (Assays pending)

10.0 DRILLING

Drilling at the MDC project took place in six different stages. The first four stages were completed by earlier operators in 1989 to 2008 and are discussed in Section 6. The remaining two programs were conducted by Cerrado:

- 2017 - Diamond drilling by Cerrado at the Ferradura and Eduardo Targets;
- 2018 - Ongoing diamond drilling by Cerrado at Serra Alta since January, 2018.

10.1 PRE-2019 DRILLING AVAILABLE FOR 2018 MINERAL RESOURCE ESTIMATE

10.1.1 2017 Other Targets

Late in 2017 Cerrado drilled 12 holes, 8 at Ferradura for 1,286.65 m and 4 at Eduardo for 286.64 m (Table 10.1).

Table 10.1
2017 Cerrado Drilling, Other Targets

Targets	Total Metres	Total Holes	ANM Concession
Ferradura	1,286.65	8	864.450/10
Eduardo	286.64	4	864.450/10
Total	**1,573.29**	**12**	

The collar information for the holes drilled at Ferradura and Eduardo is shown in Table 10.2.

Table 10.2
Ferradura and Eduardo Hole Collar Data

Drill Hole	X Coordinate	Y Coordinate	Elevation	Depth	Target	Az.	Dip
FED_01	815780.343	8811366.993	N.D	N.D	Eduardo	115	-60.31
FED_02	815805.023	8811285.224	N.D	N.D	Eduardo	290	-50.08
FED_03	815900.193	8811439.195	N.D	N.D	Eduardo	290	-49.09
FED_04	815965.012	8811625.527	N.D	N.D	Eduardo	270	-61.16
FFE_01	817538.33	8812271.2	453.94	161.04	Ferradura	90	-50.36
FFE_02	817564.52	8812325.31	445.75	160.93	Ferradura	90	-48.8
FFE_03	817570.45	8812217.38	469.39	133.93	Ferradura	90	-49.54
FFE_04	817574.56	8812173.43	476.62	151.96	Ferradura	90	-50.56
FFE_05	817596.32	8812123.27	485.77	160.68	Ferradura	90	-48.69
FFE_06	817599.56	8812074.93	495.17	154.58	Ferradura	90	-50.09
FFE_07	817726.81	8812171.13	473.65	152.07	Ferradura	270	-49.02
FFE_08	817666.81	8812135.8	475.49	212.46	Ferradura	90	-70.27

No significant intercepts were encountered at Eduardo. The significant intercepts from Ferradura are shown in Table 10.3.

Table 10.3
Significant Cerrado Drill Intersections from Ferradura

Hole	From	To	Length	Au (g/t)	Composite
FFE_01	57.00	67.00	10.00	0.51	10 m @ 0.51 g/t Au - from 57 m
FFE_01	67.00	69.15	2.15	5.35	2.15 m @ 5.35 g/t Au - from 67 m
FFE_01	78.00	85.00	7.00	0.92	7 m @ 0.92 g/t Au - from 78 m
FFE_03	92.50	94.50	2.00	0.67	2 m @ 0.67 g/t Au - from 92.5 m
FFE_03	98.50	103.50	5.00	1.57	5 m @ 1.57 g/t Au - from 98.5 m
FFE_04	87.50	89.00	1.50	0.77	1.5 m @ 0.77 g/t Au - from 87.5 m
FFE_05	28.00	29.00	1.00	1.60	1 m @ 1.6 g/t Au - from 28 m
FFE_05	81.00	82.23	1.23	0.72	1.23 m @ 0.72 g/t Au - from 81 m
FFE_05	111.00	112.00	1.00	5.95	1 m @ 5.95 g/t Au - from 111 m
FFE_05	126.00	127.00	1.00	3.33	1 m @ 3.33 g/t Au - from 126 m
FFE_05	134.50	144.00	9.50	1.67	9.5 m @ 1.67 g/t Au - from 134.5 m
FFE_06	72.00	73.00	1.00	4.02	1 m @ 4.02 g/t Au - from 72 m
FFE_06	100.00	101.00	1.00	1.17	1 m @ 1.17 g/t Au - from 100 m
FFE_07	134.56	135.21	0.65	1.94	0.65 m @ 1.94 g/t Au - from 134.6 m
FFE_07	146.65	147.62	0.97	1.00	0.97 m @ 1 g/t Au - from 146.7 m
FFE_08	95.26	97.40	2.14	5.10	2.14 m @ 5.1 g/t Au - from 95.3 m
FFE_08	193.18	194.00	0.82	1.54	0.82 m @ 1.54 g/t Au - from 193.2 m

For the time being, exploration work at Eduardo and Ferradura has ceased.

10.1.2 2018 Serra Alta Drilling

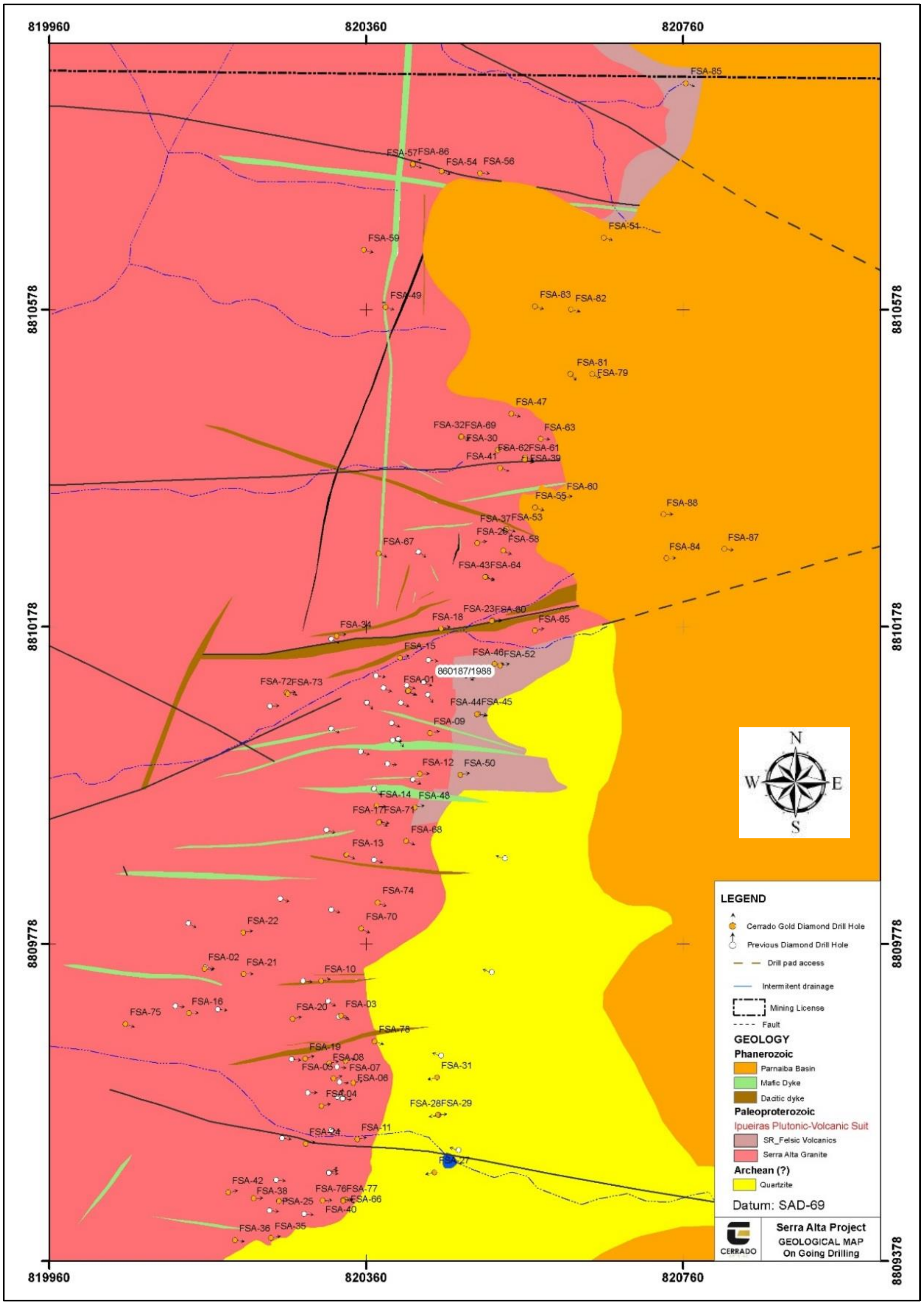
In January, 2018, Cerrado commenced drilling at the Serra Alta Deposit. The Company planed a program of about 10,000 m of diamond drilling in 2018. As of the data-freeze date for the 2018 mineral resource, Cerrado had completed 88 drill holes and received assays for 87 diamond drill holes (up to hole FSA-87) totalling 13,178.93 m (Table 10.4).

Table 10.4
2018 Serra Alta Drilling Summary

Targets	Total Metres	Total Holes	ANM Concession
Serra Alta	13,467.54	88	860.187/88
Total	**13,467.54**	**88**	

The drill hole collar locations are shown on Figure 10.1. The collar information for the holes drilled by Cerrado at Serra Alta is shown in Table 10.5.

Figure 10.1
Serra Alta Drill Hole Locations



Source: Cerrado, 2019, Scale in metres on grid lines.

Table 10.5
Cerrado Drill Hole Collar Information at Serra Alta as of the 2018 Data Freeze Date

Drill Hole	X Coordinate	Y Coordinate	Elevation	Depth	Date Finished	Az.	Dip
FSA-01	820412.72	8810097.4	454.26	104.31	15/01/2018	112	-50.07
FSA-02	820156.15	8809746.9	425.79	92.07	18/01/2018	97	-50
FSA-03	820327.95	8809687.4	482.23	118.05	24/01/2018	112	-61.07
FSA-04	820304.01	8809574	469.93	93.08	29/01/2018	75	-50.91
FSA-05	820318.91	8809608.2	466	94.96	01/02/2018	70	-54.62
FSA-06	820343.81	8809603.2	467.66	115.69	05/02/2018	80	-45.87
FSA-07	820334.02	8809630.6	472.12	85.99	06/02/2018	80	-50.31
FSA-08	820313.47	8809627.7	469.92	103.87	09/02/2018	80	-51.96
FSA-09	820440.76	8810044.3	467.78	123.35	15/02/2018	80	-50.9
FSA-10	820303.1	8809731.6	479.36	78.5	17/02/2018	80	-45
FSA-11	820348.98	8809531.7	471.09	160.75	27/02/2018	80	-44.66
FSA-12	820427.94	8809993	459.34	127.73	21/02/2018	90	-46.09
FSA-13	820335.59	8809890.4	462.79	122.54	24/02/2018	120	-65.12
FSA-14	820373.35	8809952.3	455.83	70.12	27/02/2018	95	-50.6
FSA-15	820403.18	8810139.3	445.99	103.97	01/03/2018	75	-50
FSA-16	820136.53	8809691.1	413.93	94.83	06/03/2018	90	-53.79
FSA-17	820377.54	8809932.5	460.11	109.93	05/03/2018	100	-49.96
FSA-18	820454.58	8810176.1	459.99	100.91	07/03/2018	80	-44.63
FSA-19	820283.2	8809633.3	452.02	31.62	07/03/2018	73.54	-43.63
FSA-20	820266.93	8809683.7	447.84	115.74	10/03/2018	78.7	-43.52
FSA-21	820205.43	8809740.7	442.29	100.57	10/03/2018	90.73	-44.62
FSA-22	820205.22	8809792.9	438.03	124.79	13/03/2018	80.95	-46.1
FSA-23	820519.3	8810186.8	478.42	234.96	16/03/2018	90.73	-44.42
FSA-24	820283.59	8809526.4	456.08	97.74	15/03/2018	80	-44.73
FSA-25	820250.11	8809454	499.01	97.28	17/03/2018	85	-46.51
FSA-26	820500.36	8810283.9	522.24	97.96	23/03/2018	80.36	-45.3
FSA-27	820446.8	8809490.2	541.34	151.22	20/03/2018	257.64	-55.03
FSA-28	820451.8	8809562.2	546.92	146	23/03/2018	260.46	-54.17
FSA-29	820450.68	8809562.7	546.99	121.85	26/03/2018	86.1	-79.83
FSA-30	820526.46	8810401.4	542.96	123.49	27/03/2018	77.44	-45.55
FSA-31	820449.77	8809609.9	558.85	122.22	28/03/2018	255.41	-54.9
FSA-32	820479.52	8810418	537.56	130.69	29/03/2018	112.2	-49.73
FSA-33	820227.72	8809311.3	537	175.77	03/04/2018	285.96	-45.46
FSA-34	820322.75	8810166.5	452.96	145.23	05/04/2018	79.78	-50.88
FSA-35	820240.05	8809407.5	508.74	109.21	05/04/2018	81.03	-49.47
FSA-36	820195.04	8809404.8	498.32	62.39	06/04/2018	99.46	-44.48
FSA-37	820536.48	8810300.7	539.73	94.95	06/04/2018	139.61	-81.05
FSA-38	820218	8809457.6	488.37	77.46	10/04/2018	89.1	-44.29
FSA-39	820560.88	8810392.1	548.78	68.32	10/04/2018	109.09	-60
FSA-40	820305.07	8809454.7	504.06	91.84	12/04/2018	88.79	-45.2
FSA-41	820529.73	8810378.6	541.66	58.05	12/04/2018	110	-60
FSA-42	820186.2	8809465	474.48	71.49	16/04/2018	80	-45
FSA-43	820511.22	8810240.9	506.65	160.02	19/04/2018	111.78	-43.97
FSA-44	820501.5	8810068.3	504.1	34.81	16/04/2018	100	-45
FSA-45	820500.43	8810068.5	504.17	106.56	18/04/2018	101.59	-70.64

Drill Hole	X Coordinate	Y Coordinate	Elevation	Depth	Date Finished	Az.	Dip
FSA-46	820522.24	8810131.8	490.46	57.48	20/04/2018	90.67	-45.06
FSA-47	820543.51	8810446.8	554.22	105.16	23/04/2018	108.19	-49.53
FSA-48	820421.61	8809950.3	473.57	109.76	24/04/2018	80.24	-44.6
FSA-49	820384.72	8810581.6	527.62	73.72	25/04/2018	109.16	-44.93
FSA-50	820479.1	8809991.3	476.12	100.89	26/04/2018	79.66	-44.95
FSA-51	820660.33	8810668.9	558.73	195.34	07/05/2018	109.03	-45.05
FSA-52	820529.22	8810129.3	490.84	85.27	02/05/2018	79.6	-70.12
FSA-53	820537.58	8810301.7	539.98	226.62	14/05/2018	108.74	-46.4
FSA-54	820455.39	8810752.9	565.05	121.79	15/05/2018	108.42	-43.53
FSA-55	820573.6	8810328.5	570.13	263.07	25/05/2018	107.51	-44.9
FSA-56	820503.99	8810750.6	551.36	153.66	23/05/2018	92.5	-46.97
FSA-57	820419.47	8810760.8	554.69	150.22	04/06/2018	109.71	-48.42
FSA-58	820533.06	8810274.3	523.48	263.33	07/06/2018	111.97	-70.84
FSA-59	820357.3	8810653.5	523.11	164.03	13/06/2018	106.94	-46
FSA-60	820608.4	8810340.6	581.34	250.42	20/06/2018	79.92	-45.55
FSA-61	820559.76	8810389.3	548.62	31.19	15/06/2018	107.93	-45.87
FSA-62	820560.7	8810389.1	548.78	169.54	23/06/2018	107.49	-44.25
FSA-63	820580.44	8810415.3	554.13	232.65	02/07/2018	96.13	-61.44
FSA-64	820510.74	8810241.1	507.97	210.83	05/07/2018	106.43	-64.53
FSA-65	820572.74	8810173.5	506.74	55.61	09/07/2018	78.79	-47.02
FSA-66	820334.43	8809456	514.63	251.13	21/07/2018	110.82	-64.57
FSA-67	820375.32	8810270.9	520.6	367.73	26/07/2018	112.18	-55.79
FSA-68	820410.33	8809907.6	485.06	193.37	27/07/2018	113.26	-54.8
FSA-69	820480.28	8810418	537.56	284.63	14/08/2018	97.77	-44.68
FSA-70	820353.5	8809797.5	482.09	243.73	04/08/2018	112.71	-50.27
FSA-71	820376.29	8809932.1	459.68	283.85	11/08/2018	115.94	-57.78
FSA-72	820259.75	8810095.2	430.33	38.45	07/08/2018	87.92	-46.24
FSA-73	820261.24	8810093.9	430.55	190.5	11/08/2018	100.91	-45.19
FSA-74	820374.96	8809830.6	467.63	319.82	24/08/2018	110.39	-43.71
FSA-75	820056.37	8809677	394.01	169.78	20/08/2018	108.13	-46.28
FSA-76	820331.48	8809455	513.69	25.45	22/08/2018	85.91	-45
FSA-77	820331.32	8809454.8	513.73	228.7	29/08/2018	85.42	-49.68
FSA-78	820370.67	8809655.4	493.92	258.74	01/09/2018	107.5	-46.15
FSA-79	820645.54	8810496.9	667	274.75	12/09/2018	111.42	-65.14
FSA-80	820518.77	8810185.7	478.48	203.49	11/09/2018	91.36	-79.93
FSA-81	820618.05	8810497.5	667.89	315.19	24/09/2018	141.1	-49.95
FSA-82	820618.45	8810578	661.18	268.63	21/09/2018	104.65	-49.69
FSA-83	820573.57	8810582.4	663.28	253.77	28/09/2018	109.12	-54.91
FSA-84	820739.14	8810265	682.46	273.69	03/10/2018	90	-90
FSA-85	820763.84	8810863.7	541.9	96.7	02/10/2018	110.04	-45.75
FSA-86	820418.95	8810762.2	554.65	330.86	12/10/2018	63.95	-49.33
FSA-87	820812.47	8810276.5	678.99	432.49	18/10/2018	97.73	-85.79
FSA-88	820735.66	8810320.2	678.18	288.61	30/10/2018	90.6	-86.15

Since January, 2018, the drilling has been carried out by Servitec Foraco Serviços de Sondagem using two modern, diesel-hydraulic CS-14 drill rigs.

Holes are started with HQ-size rods and down-sized to NQ when in fresh rock.

All drill hole collars are surveyed by a technician specialized in the use of total station survey instruments. Surveys are completed using the SAD 69 datum with collection of coordinates in UTM format. Some spot checking of old drill holes has been performed with no significant errors found.

Drill hole deviation is monitored with a Devi Flex non-magnetic electronic multishot tool from Devico, which can survey inside the drill rods. The Devi Flex tool consists of two independent measuring systems. Three accelerometers and four strain gauges are used to calculate inclination and change in azimuth. All of the surveys were performed with 2 runs (in and out of the hole) with deviations systematically measured every 3 m. To date, the approximate average deviation is reported to be 1.04° per 100 m.

When a drill hole is completed, the collar is marked by a 1.5-m long plastic pipe placed in the hole and set in a concrete monument (Figure 10.2). The monument is marked with a metal tag containing basic information about the hole.

Figure 10.2
Drill Hole Collar Monument

Source: Cerrado 2019

The significant intersections received as of the data-freeze date (November 21, 2018), from the Cerrado drilling at Serra Alta, are set out in Table 10.6.

Table 10.6
Significant Cerrado Drill Intersections from Serra Alta

DDH		From (m)	To (m)	Length (m)	Au (ppm)
FSA-01		8.00	31.50	23.50	3.07
	Includes	11.90	23.00	11.10	9.57
	Includes	29.00	30.50	1.50	3.66
FSA-02		11.50	36.00	24.50	0.45
	Includes	16.50	28.00	11.50	0.81
FSA-03		15.02	76.00	60.98	0.74
	Includes	65.00	74.00	9.00	2.90
FSA-04		8.00	48.50	40.50	0.93
	Includes	39.00	48.50	9.50	1.89
	and	75.00	84.00	9.00	1.25
FSA-05		0.00	31.00	31.00	0.65
	Includes	18.50	30.25	11.75	1.10
FSA-06		41.00	76.00	35.00	0.50
FSA-07		15.00	52.00	37.00	0.42
	Includes	44.00	52.00	8.00	1.27
FSA-08		0.00	82.00	82.00	1.31
	Includes	0.00	28.90	28.90	3.03
	Includes	67.85	71.00	3.15	2.27
FSA-09		0.00	23.00	23.00	0.37
FSA-11		7.00	48.36	41.36	1.43
	Includes	36.00	48.36	12.36	3.11
	Includes	44.00	48.36	4.36	7.45
FSA-12		8.80	81.00	72.20	0.99
	Includes	53.75	66.00	12.25	3.94
	Includes	53.75	60.00	6.25	6.56
FSA-15		38.00	51.77	13.77	0.41
FSA-17		19.19	35.84	16.65	0.51
FSA-18		4.21	23.00	18.79	0.50
FSA-23		21.25	89.00	67.75	1.85
	Includes	34.00	71.50	37.50	3.11
	Includes	47.00	71.50	24.50	4.38
	Includes	57.00	71.50	14.50	6.45
	Includes	58.00	63.00	5.00	14.95
FSA-26		27.00	30.50	3.50	2.11
	and	55.40	60.00	4.60	1.14
FSA-27		117.50	122.82	5.32	0.99
FSA-28		71.00	73.50	2.50	4.22
	and	82.00	91.50	9.50	1.51
	and	106.00	123.50	17.50	0.38
FSA-30	and	60.85	69.28	8.43	0.84
	Includes	64.50	66.03	1.53	3.88
	and	100.75	111.00	10.25	0.51
FSA-31		73.00	73.80	0.80	6.75
	and	81.21	89.00	7.79	1.99
	Includes	81.21	83.12	1.91	3.75
	and	102.50	110.30	7.80	0.88
FSA-35		8.50	13.05	4.55	1.47

DDH		From (m)	To (m)	Length (m)	Au (ppm)
FSA-37		2.70	15.42	12.72	1.50
	Includes	11.50	15.42	3.92	3.48
FSA-39		1.90	17.30	15.40	0.78
	Includes	4.50	8.78	4.28	1.79
FSA-40		11.91	15.10	3.19	4.77
	and	84.55	86.87	2.32	3.48
FSA-43		84.43	146.75	62.32	1.59
	Includes	84.43	87.73	3.30	17.92
FSA-47		48.75	49.36	0.61	12.27
FSA-48		54.08	89.30	35.22	1.44
	Includes	54.08	64.79	10.71	2.44
FSA-50		58.00	78.05	20.05	2.20
	Includes	58.00	65.05	7.05	4.60
FSA-53		102.60	170.85	68.25	1.78
	Includes	133.70	144.00	10.30	5.75
	and	184.00	203.10	19.10	0.69
FSA-55		12.55	17.00	4.45	1.17
	and	24.45	33.52	9.07	0.61
	and	62.00	73.00	11.00	0.79
	and	98.22	124.80	26.58	2.48
	Includes	100.00	109.50	9.50	2.03
	Includes	111.50	124.00	12.50	3.63
	and	198.97	202.59	3.62	2.06
FSA-57	and	119.97	120.52	0.55	43.52
FSA-58		12.91	26.11	13.20	2.24
FSA-60		77.00	92.70	15.70	1.32
FSA-62		0.15	9.79	9.64	1.49
	and	20.00	24.62	4.62	1.31
FSA-63		5.00	7.85	2.85	2.06
	and	132.50	144.56	12.06	2.27
	Includes	143.75	144.56	0.81	26.11
FSA-64	and	54.26	60.73	6.47	1.06
	and	90.50	104.00	13.50	2.16
FSA-66		45.95	47.57	1.62	7.80
FSA-68		42.97	48.06	5.09	2.35
	and	63.76	69.25	5.49	0.93
	and	96.23	106.40	10.17	2.54
	and	129.09	130.00	0.91	7.65
FSA-71	and	25.73	37.62	11.89	0.81
FSA-77		122.63	123.35	0.72	8.15
FSA-78		31.28	41.60	10.32	4.20
	and	45.25	51.53	6.28	3.07
	and	62.87	71.83	8.96	4.85
FSA-79		120.25	174.00	53.75	2.18
FSA-80		30.60	32.51	1.91	5.22
	and	45.65	59.75	14.10	2.42
FSA-81		141.59	196.45	54.86	0.89
	and	220.34	237.83	17.49	2.05
FSA-82		140.26	156.76	16.50	1.03
FSA-83		137.63	146.20	8.57	1.58

DDH	From (m)	To (m)	Length (m)	Au (ppm)
and	150.90	159.71	8.81	0.76
and	177.54	193.92	16.38	1.68
FSA-84	178.75	234.00	55.25	3.81
FSA-87	207.10	258.00	50.90	1.44
Includes	207.10	217.86	10.76	5.93
FSA-88	193.75	221.63	27.88	6.14
Includes	215.52	216.36	0.84	100.03

10.1.3 Logging and Sample Layout

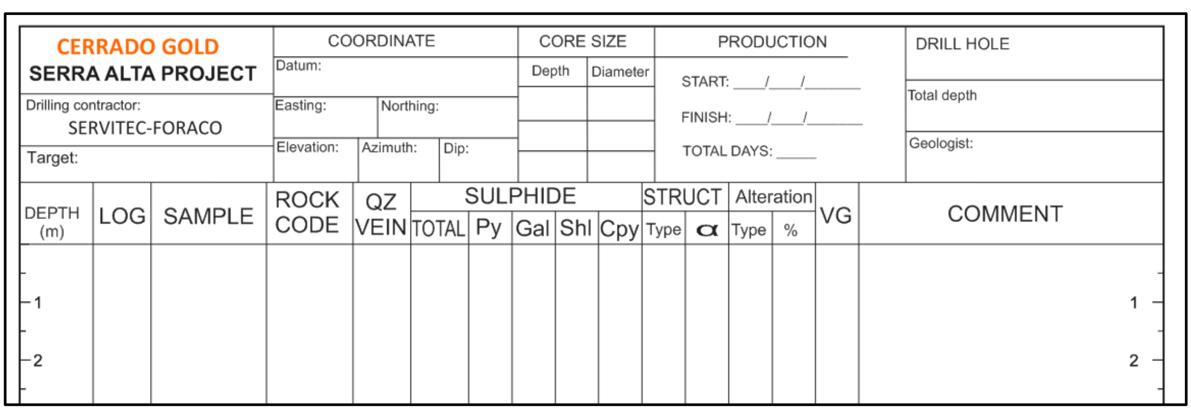
Core is delivered to the core shed at the end of each shift, or first thing in the morning, by the drillers. Upon arrival, the core boxes are checked for correct labelling and placement of the from/to footage blocks for the drilled intervals. A quick log is then made for daily “flash reports” to management.

The core is photographed while wet, both prior to logging, and after being sawn and sampled.

Drill holes are logged by the geologist on a paper logging form (Figure 10.3) using the legend and standard codes shown on Figure 10.4. The Serra Alta granite is logged with a series of alteration codes (GRA = granite with low/no alteration, protolith, GRB = granite weakly altered with chlorite, GRC = potash altered pink granite, GRD = altered red granite, intensely fractured, iron altered and GRN = unclassified granite, from Kinross logs). Type examples of each rock are available for reference at the core shed. It is hoped that the use of standard alteration codes will help in the geological modelling of the deposit.

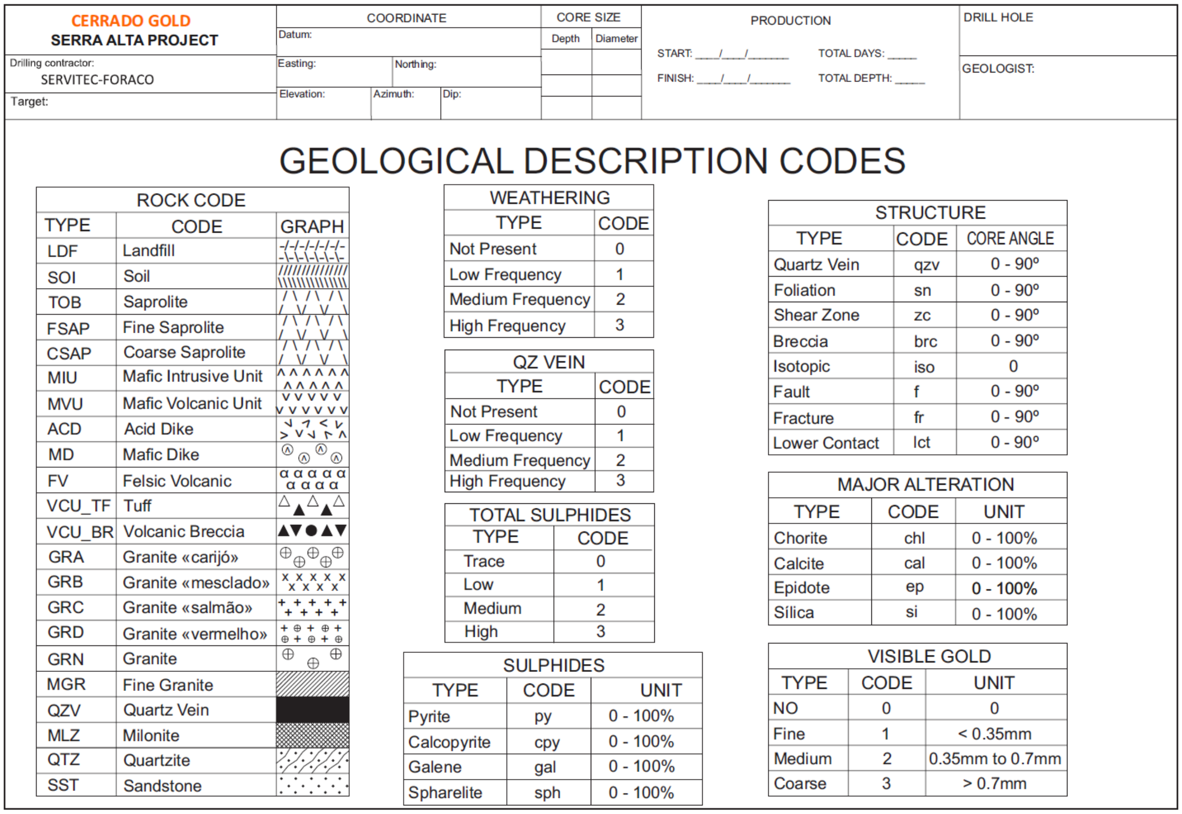
In addition to the standard naming conventions of Figure 10.4, detailed descriptions of the interval are made emphasizing the amount of sulphides, presence of quartz veins, granite classification, observable oxidation, possible structures and hydrothermal alteration minerals such as, epidote, chlorite, sericite, tourmaline, as well as the presence of visible gold.

Figure 10.3
Drill Log Header


CERRADO GOLD
SERRA ALTA PROJECT
Drilling contractor:
SERVITEC-FORACO
Target:
COORDINATE
Datum:
Easting: Northing:
Elevation: Azimuth: Dip:
CORE SIZE
Depth Diameter
PRODUCTION
START: ___/___/______
FINISH: ___/___/______
TOTAL DAYS: _____
DRILL HOLE
Total depth
Geologist:
DEPTH (m) | LOG | SAMPLE | ROCK CODE | QZ VEIN | SULPHIDE: TOTAL, Py, Gal, Shl, Cpy | STRUCT: Type, α | Alteration: Type, % | VG | COMMENT
1
2

Source: Cerrado 2019.

Figure 10.4
Serra Alta Logging Legend



CERRADO GOLD SERRA ALTA PROJECT	COORDINATE			CORE SIZE		PRODUCTION	DRILL HOLE
	Datum:			Depth	Diameter	START: ___/___/___ TOTAL DAYS: ___	
Drilling contractor: SERVITEC-FORACO	Easting:	Northing:				FINISH: ___/___/___ TOTAL DEPTH: ___	GEOLOGIST:
Target:	Elevation:	Azimuth:	Dip:				

GEOLOGICAL DESCRIPTION CODES

ROCK CODE		
TYPE	CODE	GRAPH
LDF	Landfill	
SOI	Soil	
TOB	Saprolite	
FSAP	Fine Saprolite	
CSAP	Coarse Saprolite	
MIU	Mafic Intrusive Unit	
MVU	Mafic Volcanic Unit	
ACD	Acid Dike	
MD	Mafic Dike	
FV	Felsic Volcanic	
VCU_TF	Tuff	
VCU_BR	Volcanic Breccia	
GRA	Granite «carijó»	
GRB	Granite «mesclado»	
GRC	Granite «salmão»	
GRD	Granite «vermelho»	
GRN	Granite	
MGR	Fine Granite	
QZV	Quartz Vein	
MLZ	Milonite	
QTZ	Quartzite	
SST	Sandstone	

WEATHERING	
TYPE	CODE
Not Present	0
Low Frequency	1
Medium Frequency	2
High Frequency	3

QZ VEIN	
TYPE	CODE
Not Present	0
Low Frequency	1
Medium Frequency	2
High Frequency	3

TOTAL SULPHIDES	
TYPE	CODE
Trace	0
Low	1
Medium	2
High	3

SULPHIDES		
TYPE	CODE	UNIT
Pyrite	py	0 - 100%
Calcopyrite	cpy	0 - 100%
Galene	gal	0 - 100%
Sphalerite	sph	0 - 100%

STRUCTURE		
TYPE	CODE	CORE ANGLE
Quartz Vein	qzv	0 - 90º
Foliation	sn	0 - 90º
Shear Zone	zc	0 - 90º
Breccia	brc	0 - 90º
Isotopic	iso	0
Fault	f	0 - 90º
Fracture	fr	0 - 90º
Lower Contact	lct	0 - 90º

MAJOR ALTERATION		
TYPE	CODE	UNIT
Chorite	chl	0 - 100%
Calcite	cal	0 - 100%
Epidote	ep	0 - 100%
Sílica	si	0 - 100%

VISIBLE GOLD		
TYPE	CODE	UNIT
NO	0	0
Fine	1	< 0.35mm
Medium	2	0.35mm to 0.7mm
Coarse	3	> 0.7mm

Source: Cerrado 2019. GRA = granite with low/no alteration, GRB = granite weakly altered with chlorite, GRC = potash altered pink granite, GRD = altered red granite, intensely fractured, iron altered, and GRN = unclassified granite, from Kinross logs.

For the mineralogy noted above, the following detailed descriptions are made.

- Degree of weathering, extent and relative amount.
- Presence of visible gold, noting the footage of occurrence, size, shape, number of spots/flecks, mode of occurrence and associated mineralogy.
- Lithological classification of the core.
- Hydrothermal alteration minerals present.
- Primary structures and tectonic effects on the rock types noting:
  - dip angle and arrangement of foliation,
  - dip and thickness of quartz veins,
  - dip and thickness of breccias and shear zones,
  - dip, fill type, shape and description of the walls of faults and fractures,

- graphical presentation of structure and lithology on the logging form using pre-defined symbols.

Samples are laid out by the logging geologist and detailed descriptions are made of each. All granite is sampled, and sampling extends for 5 to 10 m into wall rock. The standard sample length is 1 m in hydrothermally altered granite, but sampling does not cross lithological or alteration boundaries. The minimum sample length used is 30 cm. In unaltered granite and unmineralized wall rock the standard sample length is 2 m.

During logging, a reference cut line is marked on the core indicating the orientation of the saw cut to be made when sampling. The beginning and end of each sample is also marked on the core and the core box.

Once logging is complete the paper logs are transcribed to an electronic database to which the assay results can later be appended. The database is backed up to a portable hard drive on a regular basis.

10.1.3.1 Density Determination

Cerrado is using Archimedes principle to determine the density of core samples. A piece of core is systematically collected every 10 samples and its density determined. The dry core sample is weighed (m_1), then is totally immersed in distilled water and weighed again (m_2) (see Figure 10.5). The density (ρ) is determined with the following formula:

$$\rho = \frac{m_1}{m_1 - m_2}$$

Figure 10.5
Density Determination Equipment

10.1.4 Summary and Interpretation of Results

Cerrado's work at Serra Alta has been ongoing for one year and now initial modelling and interpretation of the drilling results has been completed. It has become apparent that relogging of the historical core using the new granite alteration codes (GRA, GRB, GRC, GRD and GRN) was necessary before modelling or interpretation began in earnest. This has now been completed.

The current drilling clearly shows a number of gold mineralized intercepts in the altered granite. There are no significantly higher grade intervals in the drill results received so far.

Core recovery is generally quite good in fresh rock (Figure 10.6). Therefore, no drilling, sampling, or recovery factors that could materially impact the accuracy and reliability of the results are known to be present.

Figure 10.6
Mineralized and Altered Granite Showing Good Recovery

Source Micon, 2018.

10.1.5 Conclusions Micon 2018

Micon's QP has examined the logging procedures used and described above. In the opinion of the QP, Cerrado personnel have used industry standard best practices in the collection, handling and management of drill core and assay samples.

The QP is not aware of any drilling, sampling, or recovery factors that could materially impact the accuracy and reliability of the results presented in this report.

10.2 PHASE 1 DRILLING REVIEW, GE21

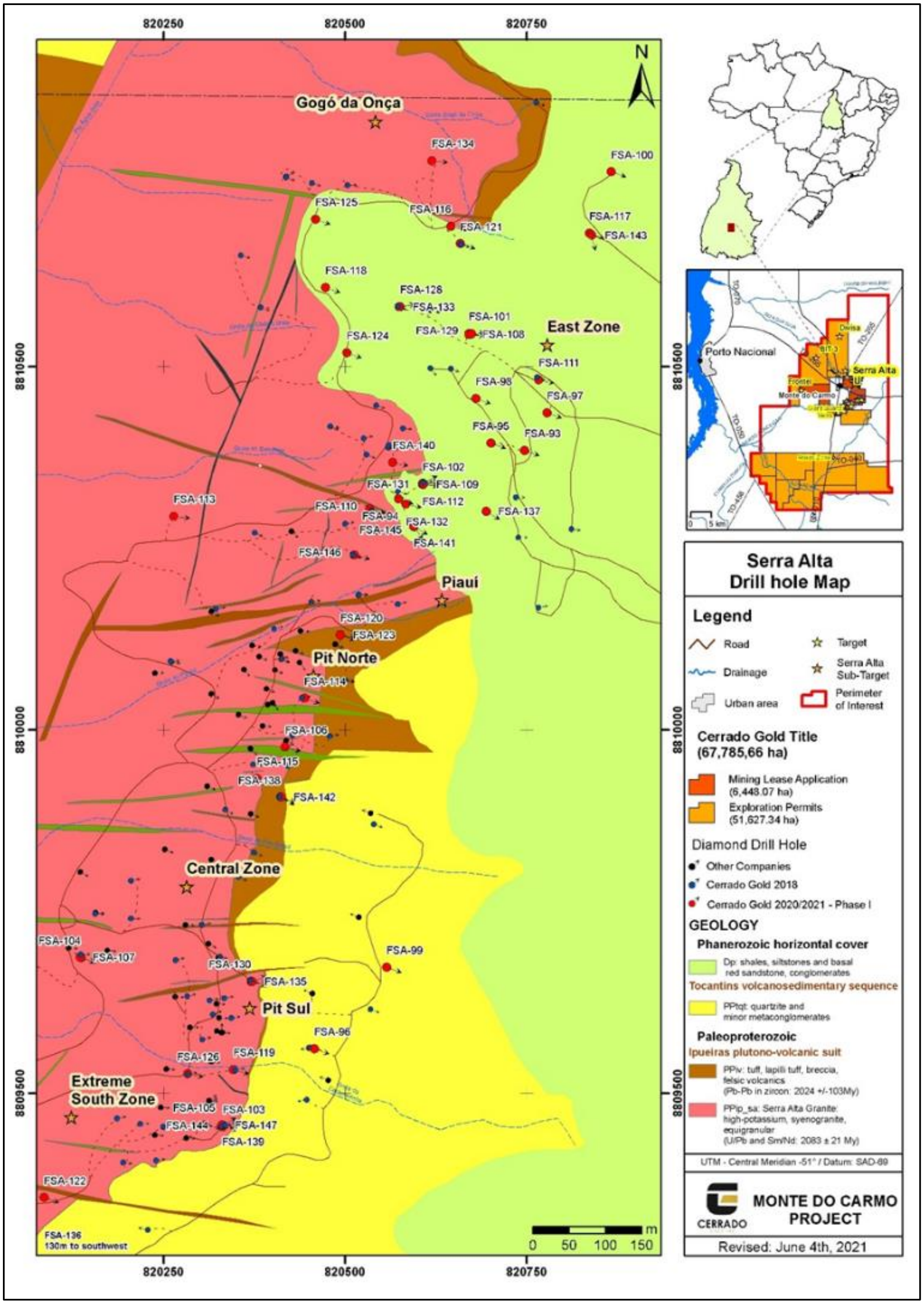
Cerrado conducted the Phase I drilling campaign from November, 2020 until the end of April, 2021 at the Serra Alta Deposit. Cerrado had completed 58 drill holes and received assays for 58 diamond drill holes totalling 20,378.37 m (Table 10 7).

The drill hole collar locations of Phase 1 are shown on Figure 10 7. The collar information for the holes drilled by Cerrado at Serra Alta is shown in Table 10 8.

Table 10.7
Phase I Drilling Summary

Campaign	Total Metres	Total Holes	ANM Concession
Phase 1	20,378.37	58	860.187/88
Total	**20,378.37**	**58**	

Figure 10.7
Serra Alta Phase I Drill Hole Locations



Source: Cerrado, 2021, Scale in metres on grid lines.

Table 10.8
Cerrado Drill Hole Collar Information of Phase I

Drill Hole	X Coordinate	Y Coordinate	Elevation	Depth	Date Finished	Az.	Dip
FSA-89	820540.51	8809869.84	561.59	384	2018	109	-70
FSA-90	820766.54	8810168.31	661.68	390	2018	80	-86
FSA-91	820764.31	8810485.23	660.82	297	2018	112	-75
FSA-92	820535.89	8809614.90	565.62	279	2018	109	-64
FSA-93	820747.43	8810385.00	673.01	424	2020	110	-65
FSA-94	820573.63	8810318.23	570.56	484	2020	110	-33
FSA-95	820701.24	8810395.24	672.75	271	2020	110	-64
FSA-96	820457.94	8809561.10	548.19	379	2020	110	-55
FSA-97	820778.50	8810436.56	663.56	424	2020	110	-66
FSA-98	820680.24	8810456.59	672.12	394	2020	110	-65
FSA-99	820557.50	8809673.30	568.17	469	2020	110	-41
FSA-100	820866.84	8810768.57	659.70	523	2020	110	-65
FSA-101	820670.82	8810545.33	660.95	643	2020	85	-46
FSA-102	820607.10	8810339.07	582.37	517	2020	63	-31
FSA-103	820331.96	8809453.61	514.17	61	2020	102	-34
FSA-104	820136.36	8809686.60	414.40	301	2020	110	-32
FSA-105	820307.34	8809456.06	504.62	223	2020	100	-34
FSA-106	820417.65	8809976.65	460.08	409	2021	105	-32
FSA-107	820135.17	8809687.07	414.64	280	2020	110	-51
FSA-108	820670.83	8810545.06	661.31	502	2021	95	-42
FSA-110	820534.41	8810303.90	540.60	478	2020	105	-38
FSA-111	820767.14	8810481.75	661.62	475	2021	100	-52
FSA-112	820606.68	8810338.90	582.30	565	2021	95	-34
FSA-113	820264.27	8810293.74	491.58	400	2021	95	-31
FSA-114	820444.18	8810043.79	468.49	409	2021	108	-31
FSA-115	820378.74	8809933.38	460.40	394	2021	110	-32
FSA-116	820646.37	8810693.34	557.36	379	2021	105	-33
FSA-117	820836.77	8810683.86	661.41	226	2021	110	-39
FSA-118	820472.96	8810609.34	569.60	343	2021	110	-31
FSA-119	820346.69	8809532.39	471.34	352	2021	105	-30
FSA-120	820493.75	8810130.87	487.15	154	2021	105	-34
FSA-121	820658.80	8810669.57	559.91	319	2021	110	-33
FSA-122	820085.71	8809356.36	458.13	343	2021	110	-44
FSA-123	820493.50	8810130.93	487.15	397	2021	110	-43
FSA-124	820502.51	8810519.69	572.54	307	2021	110	-30
FSA-125	820459.20	8810703.25	565.63	439	2021	110	-33
FSA-126	820283.78	8809526.47	456.58	391	2021	100	-30
FSA-127	820607.21	8810339.08	582.28	87.72	2021	84	-32
FSA-128	820576.13	8810582.49	664.39	87.65	2021	80	-45
FSA-129	820674.74	8810545.55	660.82	583	2021	95	-52
FSA-130	820370.95	8809653.58	494.28	457	2021	100	-31
FSA-131	820608.01	8810338.88	582.32	595	2021	84	-34
FSA-132	820584.17	8810310.82	572.34	607	2021	100	-31
FSA-133	820574.84	8810582.35	664.69	277	2021	80	-45
FSA-134	820619.93	8810783.55	544.79	292	2021	95	-35
FSA-135	820371.38	8809653.72	494.22	166	2021	70	-32

Drill Hole	X Coordinate	Y Coordinate	Elevation	Depth	Date Finished	Az.	Dip
FSA-136	820001.66	8809251.22	465.11	22	2021	130	-31
FSA-137	820694.65	8810301.32	679.97	421	2021	120	-53
FSA-138	820411.62	8809907.85	484.87	151	2021	120	-38
FSA-139	820330.94	8809456.05	514.00	196	2021	60	-35
FSA-140	820565.79	8810368.16	552.59	529	2021	100	-31
FSA-141	820594.95	8810280.16	569.26	196	2021	120	-31
FSA-142	820411.65	8809907.73	485.11	430	2021	108	-32
FSA-143	820840.05	8810680.87	661.04	253	2021	165	-52
FSA-144	820330.76	8809455.55	514.10	49	2021	86	-33
FSA-145	820595.20	8810280.06	569.11	157	2021	145	-33
FSA-146	820513.06	8810240.68	508.77	406	2021	105	-33
FSA-147	820330.82	8809455.92	514.10	391	2021	77	-31

The significant intersections received as of the previous resource estimate data-freeze date (November 21, 2018), from the Cerrado drilling at Serra Alta, are set out above in Table 10.6.

The significant intersections received of Phase I campaign, from the Cerrado drilling at Serra Alta, are set out in Table 10.9.

Table 10.9
Significant Cerrado Drill Intersections from Phase I

DDH	From (m)	To (m)	Length (m)	Au (ppm)
FSA-91	151.78	160.95	9.17	0.72
FSA-94	30.10	54.00	23.90	1.80
Includes	42.30	44.30	2.00	4.21
and	45.30	47.35	2.05	5.12
and	66.48	85.30	18.82	0.91
and	87.57	100.00	12.43	0.69
and	108.35	130.80	22.45	12.95
Includes	112.40	116.57	4.17	60.68
and	128.70	130.80	2.10	3.68
and	152.13	163.20	11.07	0.91
and	170.10	181.75	11.65	1.36
and	191.75	214.60	22.85	2.57
and	229.78	234.02	4.24	4.62
Includes	232.45	234.02	1.57	11.40
and	257.30	261.42	4.12	1.29
and	290.48	303.44	12.96	0.73
and	305.44	309.50	4.06	6.67
and	332.84	334.49	1.65	5.28
FSA-95	208.37	219.22	10.85	2.60
Includes	217.08	219.22	2.14	3.96

DDH	From (m)	To (m)	Length (m)	Au (ppm)
FSA-96	189.91	202.14	12.23	0.68
and	228.68	230.57	1.89	5.05
FSA-97	272.10	274.10	2.00	4.40
and	299.68	318.10	18.42	1.25
and	329.90	337.30	7.40	0.99
FSA-98	156.00	172.00	16.00	1.53
and	193.00	195.00	2.00	3.14
FSA-101	454.43	464.90	10.47	1.01
and	126.43	148.60	22.17	3.07
Includes	129.70	132.10	2.40	6.26
and	137.15	140.20	3.05	7.90
and	150.60	163.60	13.00	1.17
and	305.22	312.20	6.98	0.87
and	427.45	437.23	9.78	0.66
and	446.06	459.29	13.23	0.88
FSA-104	157.96	159.05	1.09	6.58
FSA-105	37.60	43.90	6.30	3.09
FSA-106	12.86	22.19	9.33	1.31
and	37.70	52.65	14.95	1.38
and	54.70	64.00	9.30	0.81
and	72.00	82.00	10.00	2.11
Includes	80.00	82.00	2.00	5.71
and	103.85	118.00	14.15	5.98
Includes	116.00	118.00	2.00	37.85
FSA-108	159.17	168.81	9.64	0.77
and	173.03	185.27	12.24	0.68
and	320.60	326.40	5.80	1.59
and	376.85	388.30	11.45	0.76
and	391.40	406.60	15.20	0.93
and	419.00	429.65	10.65	0.93
FSA-110	92.16	100.88	8.72	1.55
and	122.47	143.88	21.41	2.61
Includes	131.26	137.67	6.41	7.46
and	197.62	204.52	6.90	5.56
and	249.92	257.25	7.33	5.57
FSA-111	312.20	324.50	12.30	2.00
Includes	317.12	319.29	2.17	7.93
and	328.61	336.14	7.53	5.01
and	344.63	361.40	16.77	0.72
FSA-112	87.60	102.90	15.30	0.93
and	123.58	143.38	19.80	1.81
and	180.48	185.65	5.17	23.20

DDH	From (m)	To (m)	Length (m)	Au (ppm)
Includes	181.59	184.60	3.01	38.38
and	403.70	405.70	2.00	3.61
FSA-113	0.00	8.13	8.13	0.75
FSA-114	69.50	86.75	17.25	1.62
Includes	71.74	73.75	2.01	6.81
and	21.30	25.73	4.43	9.31
and	64.86	71.03	6.17	0.93
and	80.00	87.10	7.10	1.48
Includes	23.41	25.73	2.32	16.67
FSA-119	10.17	27.87	17.70	0.77
and	43.77	58.89	15.12	2.47
Includes	56.62	58.89	2.27	6.51
and	63.03	68.30	5.27	3.17
and	239.56	251.00	11.44	2.06
Includes	247.84	250.00	2.16	9.05
and	258.43	267.88	9.45	0.84
FSA-121	224.00	230.33	6.33	0.99
FSA-124	198.17	211.50	13.33	2.74
and	260.70	261.70	1.00	5.26
FSA-130	0.00	12.93	12.93	0.67
and	22.30	42.24	19.94	3.04
Includes	35.86	38.16	2.30	8.86
and	48.90	58.45	9.55	1.35
and	79.73	90.56	10.83	1.59
and	273.10	283.80	10.70	1.97
Includes	277.28	279.40	2.12	6.34
FSA-131	91.00	98.00	7.00	0.87
and	128.80	141.85	13.05	2.47
Includes	139.78	141.85	2.07	11.49
and	145.00	151.32	6.32	1.42
and	176.96	182.10	5.14	11.73
Includes	178.03	181.10	3.07	18.78
and	199.18	215.19	16.01	1.04
and	398.51	416.35	17.84	3.65
and	421.77	429.41	7.64	2.31
FSA-132	22.67	39.81	17.14	1.42
Includes	31.38	33.38	2.00	6.78
and	42.66	50.75	8.09	1.73
and	55.96	58.19	2.23	10.38
and	84.06	92.10	8.04	1.71
and	102.57	118.40	15.83	1.74
and	124.52	128.60	4.08	3.18

DDH	From (m)	To (m)	Length (m)	Au (ppm)
and	153.31	166.66	13.35	2.60
Includes	163.57	165.65	2.08	3.96
and	168.68	181.05	12.37	2.09
Includes	178.90	181.05	2.15	8.20
and	187.25	208.85	21.60	2.17
and	356.92	365.19	8.27	2.20
FSA-133	152.80	159.60	6.80	3.92
FSA-135	14.15	28.12	13.97	2.51
and	39.26	53.80	14.54	0.61
and	66.63	82.25	15.62	1.80
and	88.25	98.42	10.17	1.15
FSA-137	258.45	268.78	10.33	3.12
Includes	259.55	261.56	2.01	9.79
and	277.80	283.78	5.98	2.52
and	323.80	334.11	10.31	14.60
FSA-139	9.65	22.80	13.15	1.74
and	54.35	62.46	8.11	1.18
and	129.14	135.45	6.31	0.89
FSA-140	13.15	25.49	12.34	0.71
and	71.05	81.50	10.45	1.74
Includes	71.05	73.12	2.07	7.23
and	335.00	336.05	1.05	7.29
and	347.84	355.20	7.36	10.26
FSA-141	33.91	48.41	14.50	0.80
and	67.15	83.15	16.00	2.65
Includes	79.97	83.15	3.18	11.15
and	111.31	133.02	21.71	0.82
and	135.08	146.39	11.31	3.97
Includes	138.29	141.30	3.01	5.50
FSA-142	197.80	209.70	11.90	8.48
Includes	197.80	204.26	6.46	15.07
FSA-145	16.60	30.38	13.78	1.07
Includes	16.60	18.10	1.50	5.09
and	41.71	60.03	18.32	1.16
and	66.18	68.23	2.05	3.81
and	78.63	94.30	15.67	1.40
and	96.35	113.40	17.05	1.17
and	115.42	124.79	9.37	0.61
FSA-146	50.28	55.41	5.13	3.11
and	91.60	110.40	18.80	3.45
Includes	103.27	105.34	2.07	10.40
and	124.75	132.81	8.06	0.65

10.2.1 Logging and Sample Layout

Core is delivered to the core shed at the end of each shift, or first thing in the morning, by the drillers. Upon arrival, the core boxes are checked for correct labelling and placement of the from/to footage blocks for the drilled intervals. A quick log is then made for daily "flash reports" to management.

The core is photographed while wet, both prior to logging, and after being sawn and sampled.

Drill holes are logged by the geologist on a paper logging form (Figure 10.3 and 10.4) using the legend and standard codes shown on Figure 10 4. The Serra Alta granite is logged with a series of alteration codes (GRA = granite with low/no alteration, protolith, GRB = granite weakly altered with chlorite, GRC = potash altered pink granite, GRD = altered red granite, intensely fractured, iron altered and GRN = unclassified granite, from Kinross logs). Type examples of each rock are available for reference at the core shed. It is hoped that the use of standard alteration codes will help in the geological modelling of the deposit.

In addition to the standard naming conventions detailed descriptions of the interval are made emphasizing the amount of sulphides, presence of quartz veins, granite classification, observable oxidation, possible structures and hydrothermal alteration minerals such as, epidote, chlorite, sericite, tourmaline, as well as the presence of visible gold.

For the mineralogy noted above, detailed descriptions are made as per Section 10.1.3.

Currently a logging description of RQD is realized in all drilling.

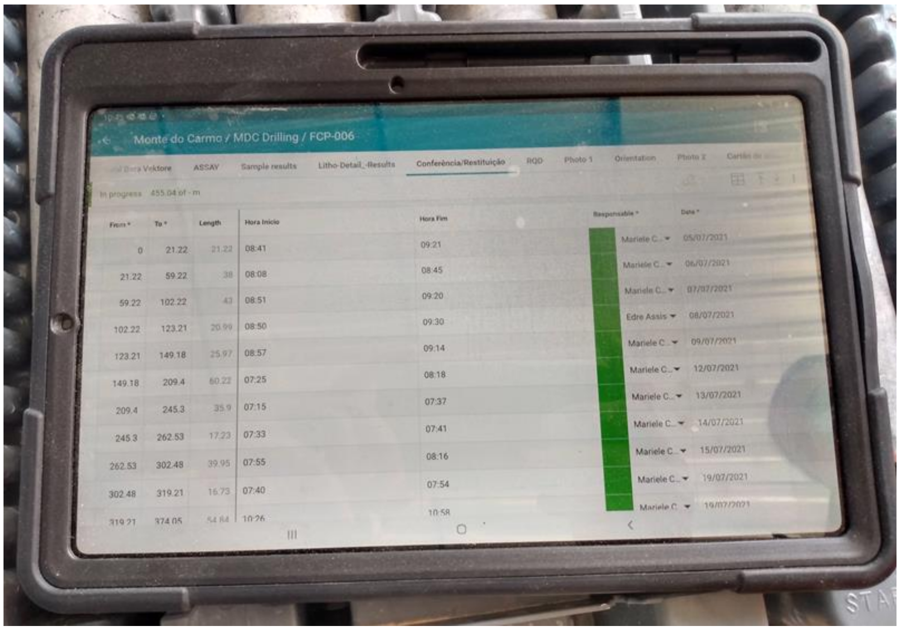
Samples are laid out by the logging geologist and detailed descriptions are made of each. All granite is sampled, and sampling extends for 5 to 10 m into wall rock. The standard sample length is 1 m in hydrothermally altered granite, but sampling does not cross lithological or alteration boundaries. The minimum sample length used is 30 cm. Two samples are conducted in unaltered granite and unmineralized wall rock in the contact of mineralization.

During logging, a reference cut line is marked on the core indicating the orientation of the saw cut to be made when sampling. The beginning and end of each sample is also marked on the core and the core box.

In the 2018 campaign, once logging was completed the paper logs were transcribed to an electronic database to which the assay results can later be appended. The database was backed up to a portable hard drive on a regular basis.

Following the previous recommendations from Micon in 2018, Cerrado adopted the MX Deposit as the logger database. MX-Deposit is a Seequent's Database Management System prepared to apply in the mineral industry. The transfer process is ongoing and most of the Store Facilities procedures are realized directly in MX deposit using Tablets (Figure 10.8). Data collected through MX Deposit is stored in the cloud and managed by Seequent, making this process secure.

Figure 10.8
Photo of Tablet with Logging Form in MX Deposit



Source: GE21, 20211

The collection of structural data in oriented drill core is carried out in the core shed by a trained geologist. From the intervals of the cores guided by the ACT in the drilling, a top guidance line is drawn and extrapolated to the other intervals, using a gutter as support (Figure 10.9). The structural measurements identified during the litho/structural logging are carried out on the oriented core using Reflex's IQ-Logger (Figure 10.10). The entire process of collecting points is conducted digitally and stored in MX Deposit.

Figure 10.9
Drill Core Orientation Process

Source Cerrado, 2018

Figure 10.10
Process of Collecting Structural Data on Drill Core

10.2.2 Density Determination

Cerrado is using Archimedes principle to determine the density of core samples. A piece of core is systematically collected every 10 samples and its density determined. The dry core sample is weighed (m1), then is totally immersed in distilled water and weighed again (m2) (see Figure 10.5). The density (ρ) is determined with the density formula and equipment from Section 10.2.3.1:

10.2.3 Summary and Interpretation of Results

Cerrado's work at Serra Alta has been ongoing for one year and now initial modelling and interpretation of the drilling results has been completed. It has become apparent that relogging of the historical core using the new granite alteration codes (GRA, GRB, GRC, GRD and GRN) was necessary before modelling or interpretation began in earnest. This has now been completed.

The current drilling clearly shows a number of gold mineralized intercepts in the altered granite. There are no significantly higher grade intervals in the drill results received so far.

Core recovery is generally quite good in fresh rock (Figure 10.6). Therefore, no drilling, sampling, or recovery factors that could materially impact the accuracy and reliability of the results are known to be present.

10.2.4 Conclusions (Phase I - Ge21)

The QP (GE21) visited the site to examine the mineralization and the procedures used in drilling. In the opinion of the QP, Cerrado have used appropriate procedures and within industry standard best practices in the collection, handling and management of drill core and assay samples.

The QP is not aware of any drilling, sampling, or recovery factors that could materially impact the accuracy and reliability of the results presented in this report.

11.0 SAMPLE PREPARATION, ANALYSES AND SECURITY

11.1 HISTORICAL SAMPLING

The Verena (VML and VMC) and Kinross drill programs used fire assay determination for gold analysis of samples using ½ core, sawn on site. The sample size analyzed (aliquot) was 50 g. This method involves crushing the entire sample, pulverizing between 250 and 300 g, then subsampling 50 g for fire assay (ref: AuFA50 - FA/AA 50g - Au (5ppb)) performed at SGS-GEOSOL Belo Horizonte laboratories.

The final analysis of the weight of gold recovered in the assay can be by atomic absorption spectroscopy (AAS). A QA/QC protocol was employed for the Kinross sampling. Rocklabs certified reference materials (CRMs, SH24, SE19 e SF12) were inserted as standards and limestone samples inserted as blanks. The acceptable limits for standards was set at +/- 2 standard deviations and for the blanks 0.038 au g/t.

The Kinross blank sample and CRM control charts are shown in Figure 11.1 and Figure 11.2.

Figure 11.1
Kinross Blank Control Charts

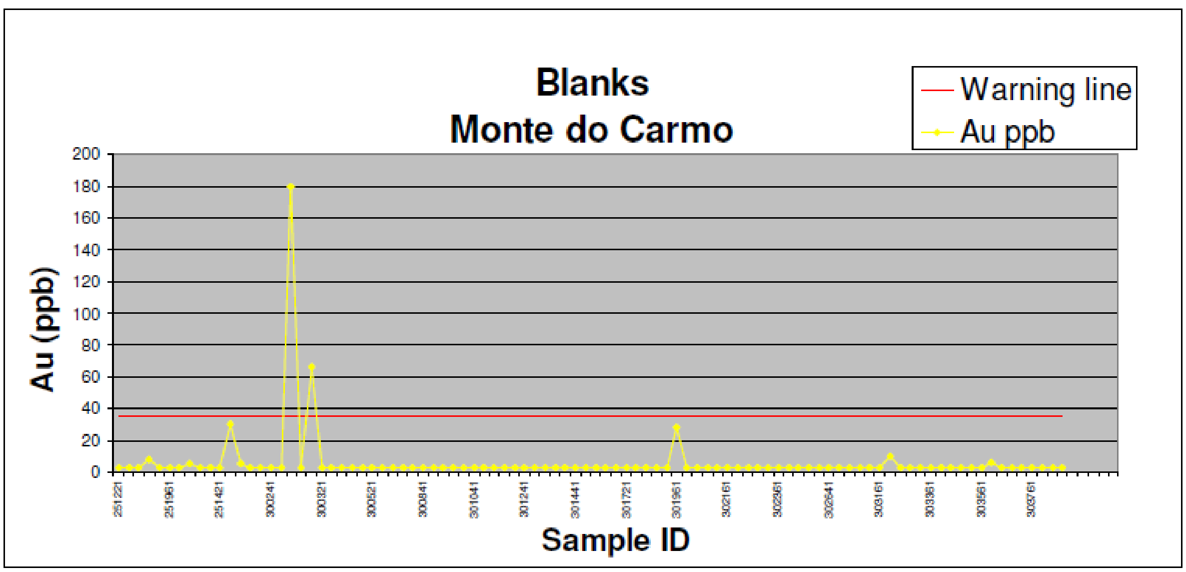
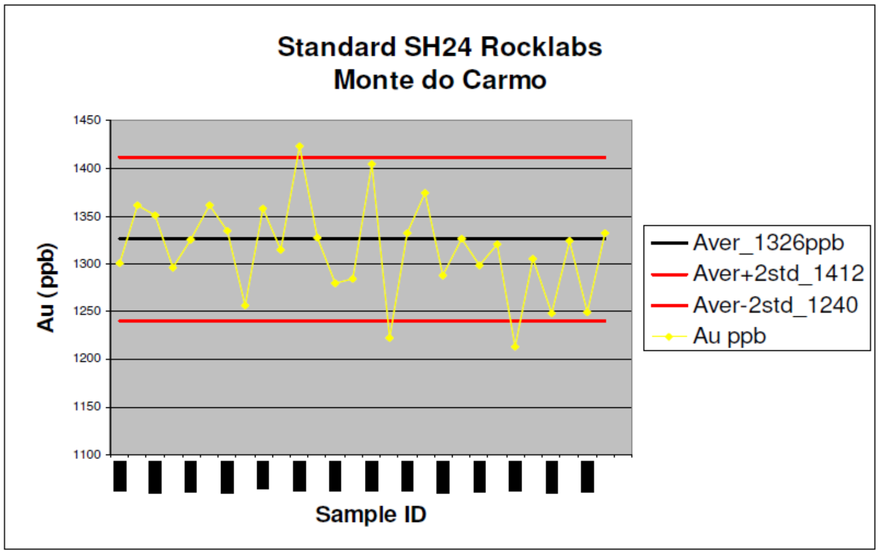
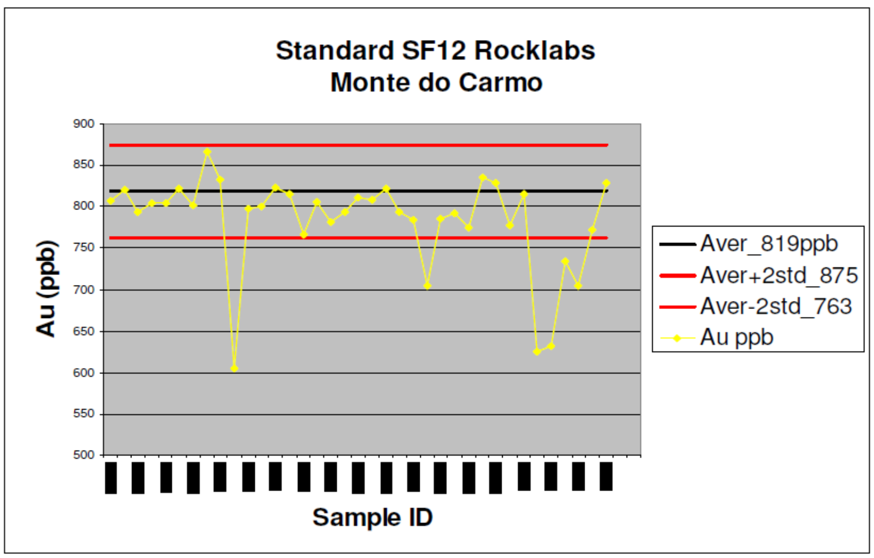
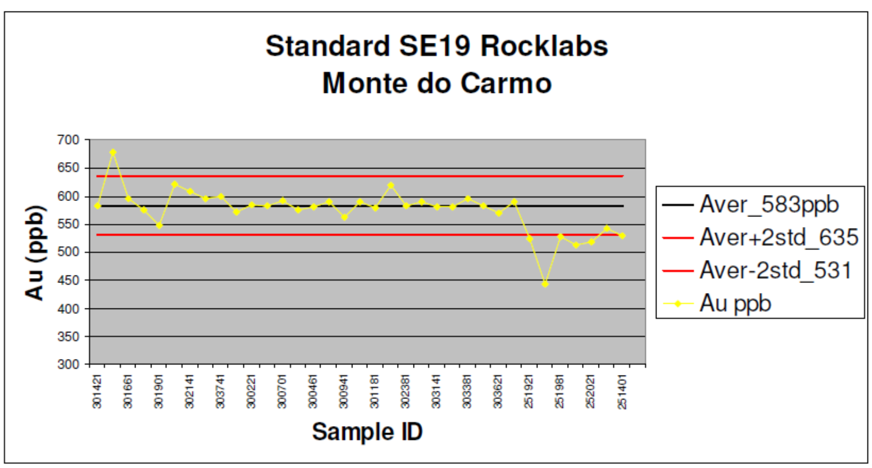


Figure 11.2
Kinross CRM Control Charts







Paranapanema is reported to have analyzed its samples using only an AAS determination. This was a somewhat less expensive method in relatively common use in the 1970s and 1980s. It involved dissolution of the sample pulp in acid and determination of gold content of the resulting liquor by AAS after MIBK collection. In this method, sample aliquot size usually varied from 1 g up to about 20 g, depending on technique. The method had several disadvantages in that a 1 g sample was far too small to accurately subsample the pulp and 20 g was often too large to fully digest in the acid, thereby failing to release all of the gold. These analyses were performed in Paranapenema's own laboratory (ETMGN) using an unknown aliquot size.

In its Corporate Finance Manual, Appendix 3D (https://www.tsx.com/resource/en/544), the TSX Venture Exchange (TSX-V) places restrictions on the use or disclosure of the results of precious metal analyses by non-fire assay techniques, or results from an analysis by a non-Canadian laboratory.

This requires each news release, shareholder report or other public communication which includes such analyses to contain the following information:

- The analytical method used to obtain the reported results.
- The name of the laboratory at which the analyses were conducted.
- The results of any fire assay check program or the intention to conduct a fire assay check program at an independent laboratory. All results of a fire assay check program are to be published in a timely manner.

The TSX-V can require an Issuer to undertake a fire assay check program at a Canadian laboratory if the reported results are, in the TSXV's opinion, inconsistent with historic results from the property, the geological environment or other pertinent factors.

Since most large laboratories are now multi-national, it has been Micon's experience that companies such as SGS, ALS and others are accepted as "Canadian".

There have been a couple of checks of the PNP assays by MSM and Cerrado using ¼ of the remaining core. The first was by 30 g fire assay (MSM) and the latter by screen metallics fire assay (Cerrado). For the MSM reassays the individual results varied significantly but, on average, the gold grade increased by 29.6%. For the Cerrado re-assays, again the results were variable, but the average grade dropped from 1.04 g/t Au to 0.80 g/t Au.

MSM staff are also concerned that the PNP geologists may have been selective in their choice of which half of the core was bagged for assaying during sampling. This also has the potential for creating a bias.

The QP would not be comfortable using these AAS results in a mineral resource estimate.

The Kinross drilling employed a quality assurance/quality control (QA/QC) program. It is not certain that Paranapanema or Verena had a QA/QC program.

11.2 CERRADO SAMPLING PRE-2019

11.2.1 Sampling Procedures

The following procedures were used by Cerrado during sampling:

- All samples are marked and numbered on the core boxes respecting the limits defined by the geologists (lithological or alteration contacts) during core logging.

- At the end of each sample interval two sample tags, with sample numbers marked, are stapled to the core boxes.

- The core is then sawn by Cerrado employees using a diamond sawn blade with the saw-cut location following the cut line marked by the geologist.

- After sawing, the left half of the core is placed into a numbered plastic sample bag with one of the sample tags (both using the same number). The other half core is returned to the box. (The other sample tag remains in the box).

- Quarter core duplicate, blank and standard samples are inserted into the sample number sequence at planned intervals.

- The small plastic sample bags are placed into a larger rice bag (5 to 10 samples) and sealed for shipment to the laboratory.

11.2.2 Control Samples

Cerrado has been inserting blanks, standards and quarter-core duplicate samples into its sample stream since drill hole FSA-05. One control sample is placed every 10 samples so that there is one of each type every 30 samples. Cerrado is using a dirty limestone sourced from local quarry as a blank. The standard samples (Certified Reference Materials or CRMs) used were commercially sourced from ITAK (Instituto de Tecnologia August Kekulé) up to the time of the QP's site visit. At that time, Cerrado was about to switch to using CRMs from Canadian Resource Laboratories (CRL).

Once sealed, the samples are taken by company truck to Palmas where they are put on commercial transport for shipment to SGS' sample preparation laboratory in Goiania.

The samples were shipped to the laboratory, with sample submission forms specifying the size and contents of the batch and the procedure code and instructions for preparation and analysis.

11.2.3 Analyses

All samples from the MDC project were assayed using the metallic screen fire assay technique (SGS reference FAASCR_150). In this method 1 kg of coarse crushed material is subsampled and milled to -150 mesh. The material is screened and the plus fraction is fire assayed for gold and duplicate assays are performed on the minus fraction. For Cerrado, the coarse fraction was analyzed by 50 g fire assay and the minus fraction was assayed in duplicate with 50 g pulps. Final gold determination was with AAS finish. The results of the different assays are combined mathematically to produce a calculated assay result.

The samples were prepared at SGS in Goiania or at Vespasiano in Minas Gerais. Analysis was performed at SGS Vespasiano.

In situations where gold occurs within the sample as dispersed nuggets, particularly if the average grade is relatively low, screen metallics fire assaying is often a more appropriate analytical technique.

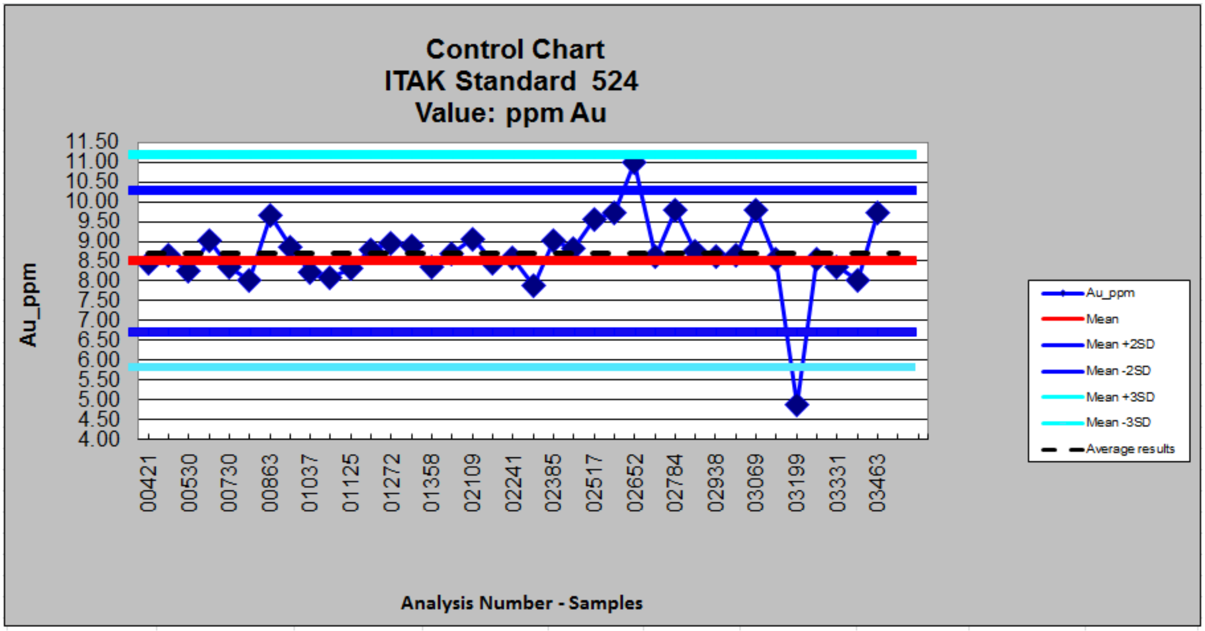
There is no relationship between SGS and Cerrado other than a business one for contract analytical services. No Cerrado employees or directors took part in the sample preparation or analyses other than the cutting and bagging of half core.

11.2.4 Quality Assurance/ Quality Control Until 2018

Cerrado tracks the results of its blank, duplicate and CRM assays on industry standard control charts. The CRM control charts showed the accepted value of the standard as well as warning lines at the 2 and 3 standard deviation (SD) level as determined by the round robin assaying protocol which certified the materials. Any sample result falling outside of the 3 SD warning line, or 2 samples in a row outside of the 2 SD line, are usually considered to be failures, requiring follow-up with the laboratory with possible reassays required.

At the time of the QP's visit only a few results had been populated into the charts. A more recent Cerrado control chart is shown in Figure 11.3

Figure 11.3
Example Cerrado CRM Control Chart



Source Cerrado, 2018

10% of the analyzed samples were sent to ALS Global's sample preparation laboratory in Goiania for cross check analyses by screen metallics with AAS finish. Final analysis was performed at ALS Global's laboratory in Lima, Peru (ALS reference Au-SCR21AA).

There is no relationship between ALS Global and Cerrado other than a business one for contract analytical services.

11.2.5 Conclusions and Recommendations (Micon to 2018)

The QP has reviewed the analytical and QA/QC methods employed by Cerrado and Kinross at Serra Alta and finds them suitable for a modern gold exploration program. The QP is satisfied with the adequacy of the sample preparation, security, and analytical procedures employed and concludes that they have resulted in data suitable for use in a mineral resource estimate.

The analytical technique employed in the assaying of core by PNP is considered inadequate for modern gold exploration. Determination of gold by AAS is subject to errors introduced by incomplete digestion of the samples and/or inadequate aliquot size. The QP recommends that the PNP AAS sampling results not be used for mineral resource estimation. The portions of the remaining half core which could be salvaged were resampled and assayed using the current Cerrado protocols.

11.3 PHASE I DRILLING (GE21)

The sampling procedures in this phase were maintained, as described in item 11.2. It should be noted that the chemical analysis were now performed by two different labs.

In Phase 1, Cerrado modified the batch structuring and analysis procedures to be in accordance with Micon's recommendations, in 2018. The batch size was gradually adjusted to the amount of samples available for analysis in the laboratory.

In the beginning of the campaign, Cerrado used the ALS laboratory for assaying the samples, and switched to SGS laboratory due to operational issues caused by the Covid-19 pandemic.

The ALS lab sends the prepared aliquots for analytical assay to their lab in Lima, Peru where the prepared samples are systematically analyzed for gold by fire assay (Au-AA24) or by metallic screen (Au-SCR24).

SGS prepared the samples in Vespasiano and, at the same facility, they were assayed for gold by fire assay with an atomic absorption spectrometry finish (FAA505) or gold by metallic screen with gravimetric finish (FAASCR_150_Au-Grav).

With less frequency, the ICP-MS analysis method was also used for trace elements in a 4 acid digestion (ALS ME-MS-61 and SGS ICP40B).

11.3.1 QA/QC

The QA/QC program covers each chemical analysis performed on samples with the aim of promoting procedures for controlling and guaranteeing the quality and reliability of the samples that are prepared and of the chemical analytical results that are obtained in the laboratory.

GE21 conducted the validation of QA/QC data generated in the period from November 24, 2020, until April 4, 2021, referring to Phase 1 drilling.

The QA/QC program includes blanks, standards. quarter-core duplicate samples and secondary laboratory analysis. One control sample is placed every 10 samples so that there is one of each type in every 30 samples.

11.3.1.1 Blank Samples

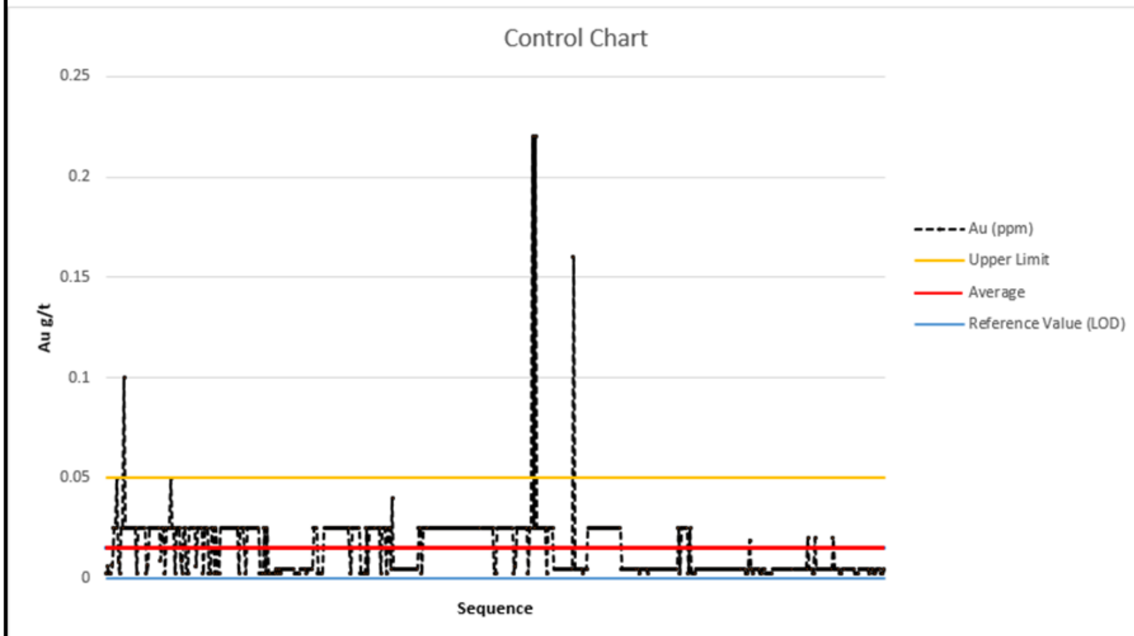
Cerrado uses brittle gneiss material as blank control samples, acquired from Bahia State. These samples are included with the aim of verifying the quantitative analysis undertaken by the laboratory. The internal procedure defines including blank samples with a frequency of one for every 30 samples. GE21 observed that the total of number of blank samples has a rate of 3.31% comparing to the amount of samples present in Cerrado's database. Figure 11.4 presents the statistics and results associated with the blank control samples used on Phase 1.

Figure 11.4
Result of the Analysis of Blank Samples

Type of control	Blank
Reference	Internal
Variable	Au Total ppm
Number of analysis	534

Unity	g/t
Reference Value (LOD)	0.010
Standard deviation	0.018
Upper limit (5 x LOD)	0.050
Lower limit	-

Minimum	0.00
Maximum	0.22
Average	0.01
Median	0.01
Bias	49.90%



Sample code 29572, with 6.2 g/t Au, was presumed as an eventual sample exchange, and it was not considered as a contamination evidence in the preparation process. Due to this, the sample was removed from the analysis. Overall, results from samples that underwent these quality control procedures are considered to be within the quality control limit, except for four samples higher than 0.05 g/t.

11.3.1.2 Standard Samples

Cerrado uses standard samples to verify the laboratory's accuracy. The internal procedure defines including a standard sample with a frequency of one for every 30 samples. GE21 observed that the total of number of Certified Reference Material ("CRM") control samples has a rate of 2.77% compared with the total database used for estimation. The CRM samples used, ranged from low to high gold grades, acquired from ITAK, CDN Resource Laboratories Ltd. and CTRS.

Based on internal controls, GE21 has established that 90% of the tested samples should be within the minimum and maximum limits, defined as within two standard deviations of the

CRM certified value (or 95% confidence limits). The values of these limits are presented in Table 11 1. The analysis graphics are presented in Figure 11.5 to Figure 11.9.

Table 11.1
Cerrado CRM Evaluation Criteria

CRM ID	Certified Value (Au g/t)	Lower Limit (Au g/t)	Upper Limit (Au g/t)
		95% Confidence	
CDN-GS-5U	5.200	4.930	5.470
CDN-GS-P5C	0.517	0.469	0.565
CTRS 0902 X	7.560	7.200	7.920
ITAK 524	8.480	8.120	8.840
ITAK 590	1.348	0.988	1.708

Figure 11.5
Results of the QA/QC Analysis of CRM CDN-GS-5U

Type of Control	Standard
Reference	CDN-GS-5U
Variable	Au total
Number of analysis	191

Unity	g/t
Reference Value	5.200
Standard desviation	0.135
Upper limit (+2SD)	5.470
Lower limit (-2SD)	4.930

Minimum	4.17
Maximum	5.78
Average	5.17
Médian	5.17
Bias	-0.63%

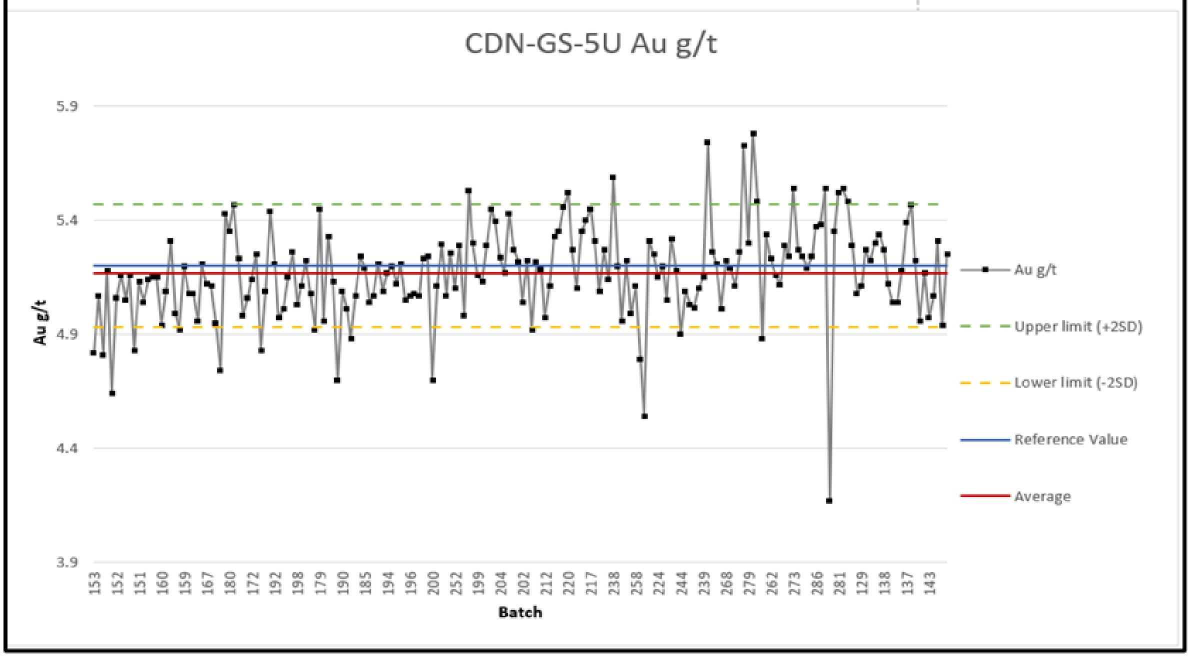


Figure 11.6
Results of the QA/QC Analysis of CRM CDN-GS-P5C

Type of Control	Standard
Reference	CDN-GS-P5C
Variable	Au Total ppm
Number of analysis	187

Unity	g/t
Reference Value	**0.571**
Standard desviation	0.024
Upper limit (+2SD)	0.619
Lower limit (-2SD)	0.523

Minimum	0.50
Maximum	0.73
Average	0.59
Médian	0.58
Bias	3.10%

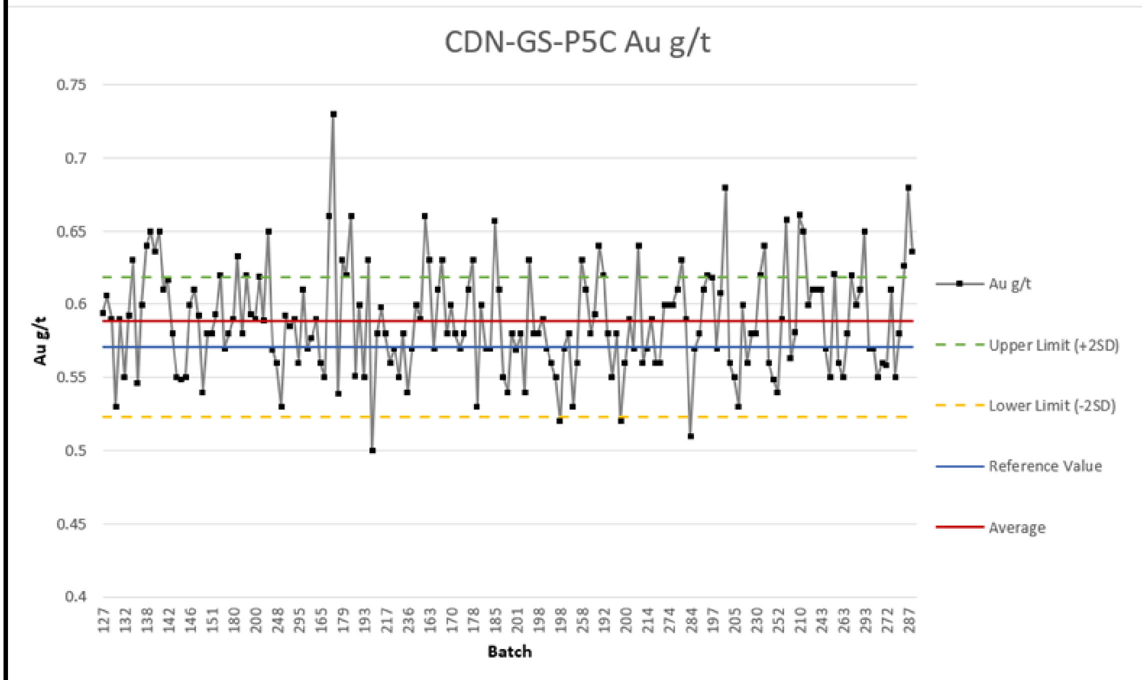


Figure 11.7
Results of the QA/QC Analysis of CRM CTRS 0902 X

Type of Control	Standard
Reference	CTRS 0902 X
Variable	Au Total ppm
Number of analysis	14

Unit	g/t
Reference Value	7.560
Standard desviation	0.180
Upper limit (+2SD)	7.920
Lower limit (-2SD)	7.200

Minimum	6.31
Maximum	7.75
Average	7.04
Médian	6.97
Bias	-6.83%

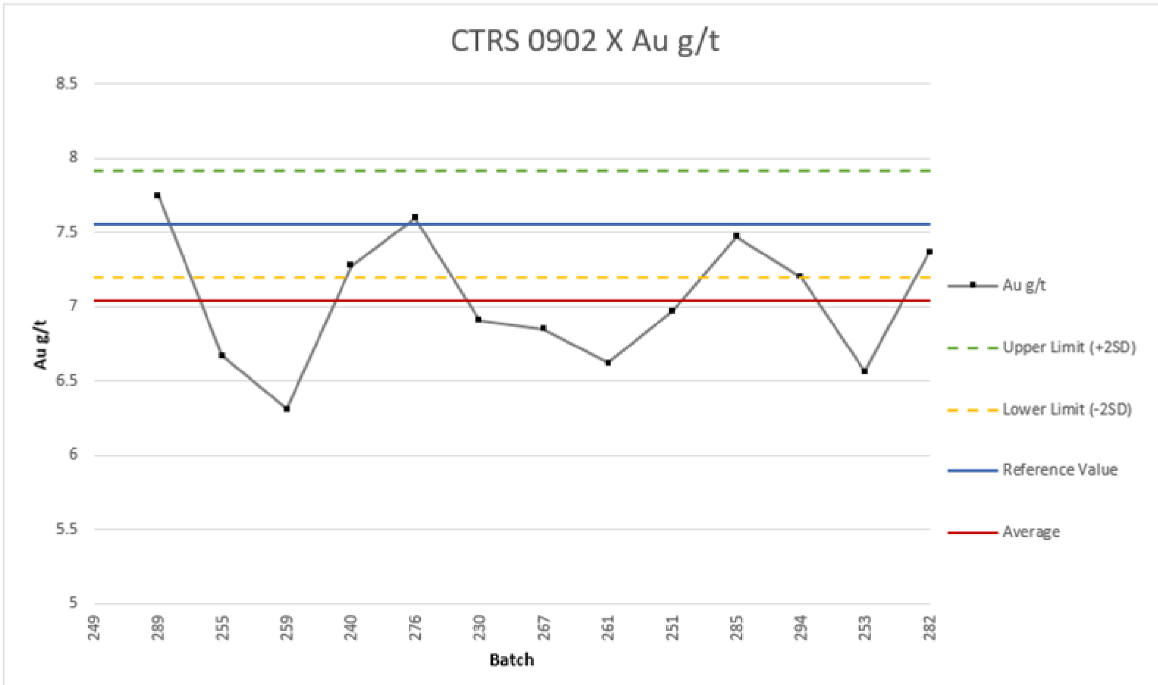


Figure 11.8
Results of the QA/QC Analysis of CRM ITAK-524

Type of Control	Standard
Reference	ITAK-524
Variable	Au Total ppm
Number of analysis	30

Unity	g/t
Reference Value	8.480
Standard desviation	0.180
Upper limit (+2SD)	8.840
Lower limit (-2SD)	8.120

Minimum	7.99
Maximum	9.61
Average	8.73
Médian	8.70
Bias	2.95%

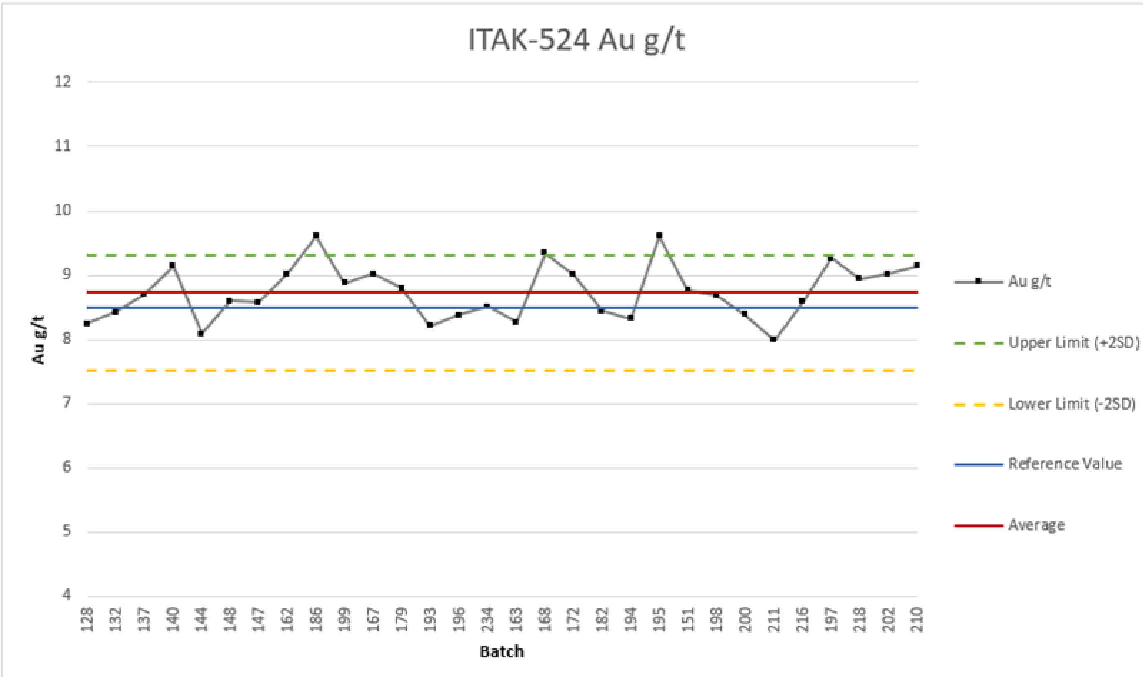
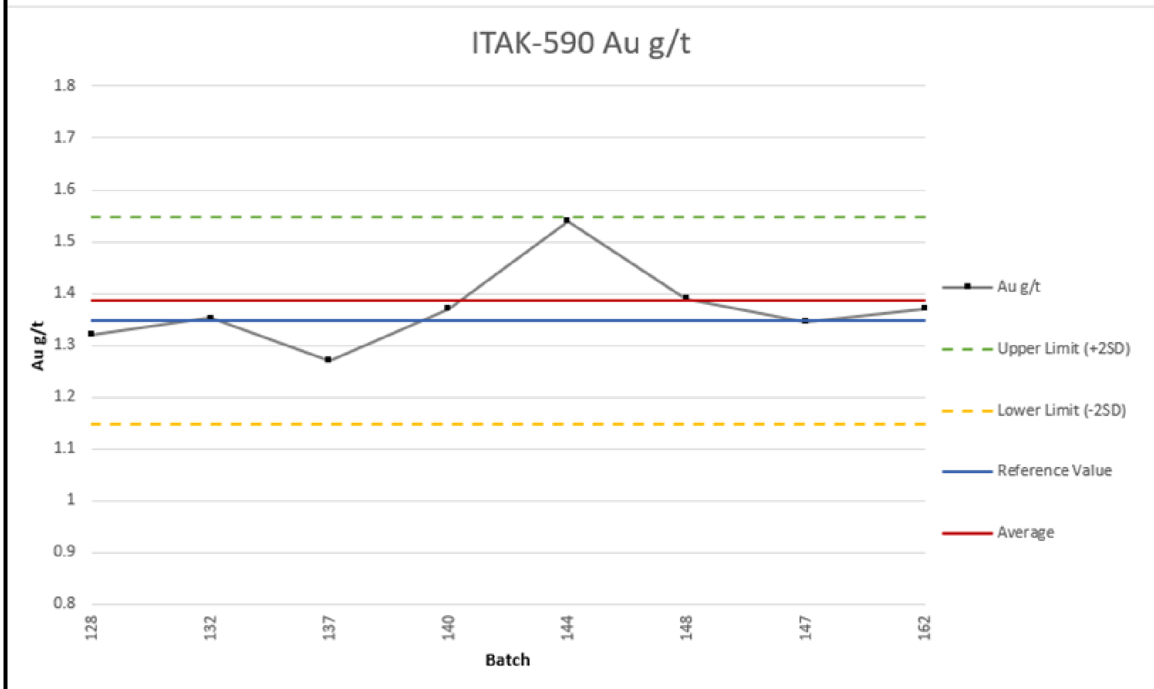


Figure 11.9
Results of the QA/QC Analysis of CRM ITAK-590

Type of Control	Standard
Reference	ITAK-590
Variable	Au Total ppm
Number of analysis	45

Unity	g/t
Reference Value	1.348
Standard desviation	0.180
Upper limit (+2SD)	1.708
Lower limit (-2SD)	0.988

Minimum	1.22
Maximum	1.54
Average	1.39
Médian	1.39
Bias	2.89%



The existence of three sample exchanges between standards in the database were detected that were corrected to be presented in the graphics. One sample was removed from the analysis due to a sample exchange in the collecting or storing processes.

Overall, based on the analysis of the QA/QC results, the SGS and ALS laboratory provided a good level of accuracy at higher gold grades with minor accuracy with grade decreasing, as approaching the detection limit.

It was observed that both laboratories display a slight tendency to overestimate the gold values for CRM CDN-GS-P5C, probably due to equipment calibrating in this grade range.

The analysis for standard CTRS 0902 X was only assayed by SGS, and a tendency to underestimate the gold grades was noticed. It is noticeable that there are two CRMs in its same gold grade range that did not present bias. Also, only 14 samples were assayed for this CRM. GE21 recommends evaluating the tendency of this CRM, with its continuous use.

11.3.1.3 Duplicate Samples

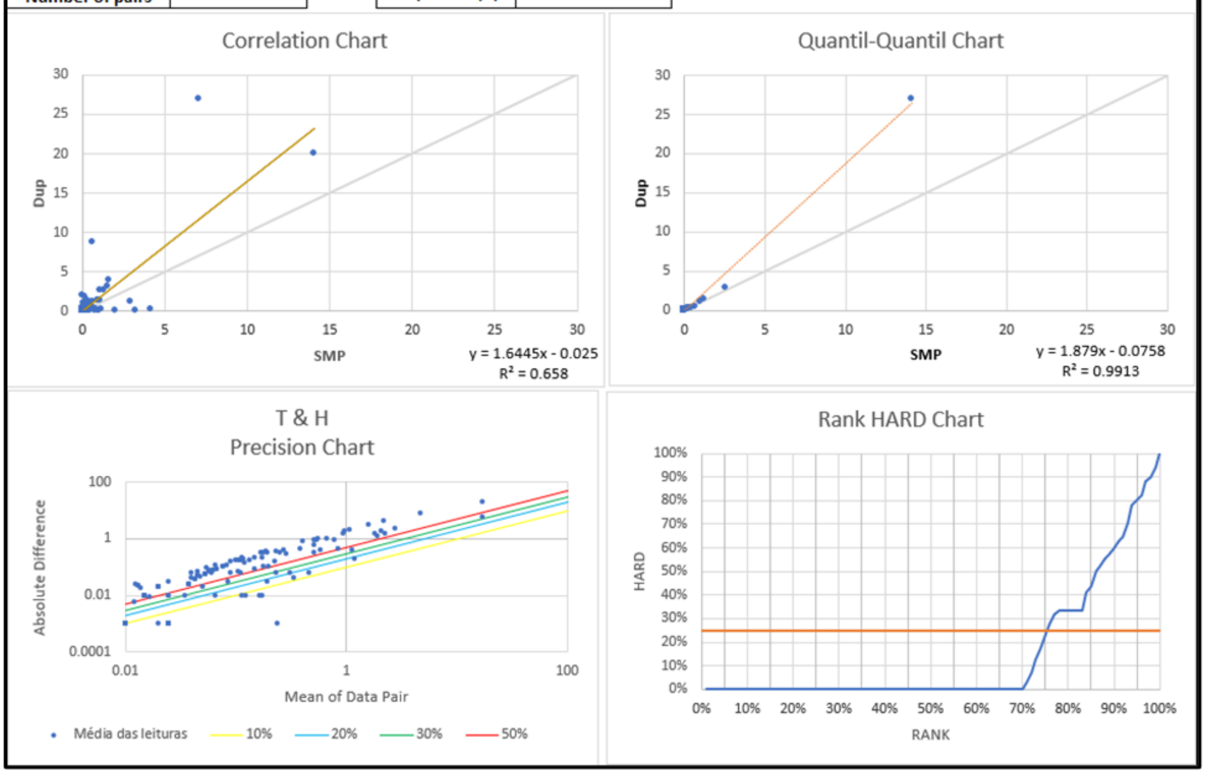
The typical QA/QC program implemented at Cerrado involves sending quarter-core duplicate samples to be assayed by a laboratory. The internal procedure defines including duplicate samples with a frequency of one for every 30 samples. GE21 observed that the total of number of duplicate samples has a rate of 3.56% of the total samples present in the database.

Analysing the results of duplicate samples, the author considered 25% of the relative difference as a limit of acceptability, considering the variability of the gold in the deposit, including the presence of coarse gold. The analysis is presented in Figure 11 10.

Figure 11.10
Duplicate Sample Analysis

Type of control	Field Duplicate
Reference	Global
Variable	Au g/t
Accuracy limit	25%
Number of pairs	446

	SMP	DUP
Minimum	0.0025	0.0025
Maximum	14.09	26.92
Average	0.14	0.21
Median	0.03	0.03
Dentro do limite de precisão (%)	75.11%	



The duplicate analysis provided a low precision in the samples' correlation, considering that only 75% of the analyses are within the limits of acceptability. The T&H graph shows that there does not exist a tendency that relates the observed low precision with a specific grade range.

11.3.1.4 Secondary Laboratory

Analyses made by a secondary laboratory have been implemented as a control in 2018 into Cerrado QA/QC program. 10% of the analyzed samples were sent to a secondary laboratory. The procedure consists of sending the primary laboratory coarse reject to a secondary lab. In Phase I, Cerrado used ALS and SGS certified laboratories.

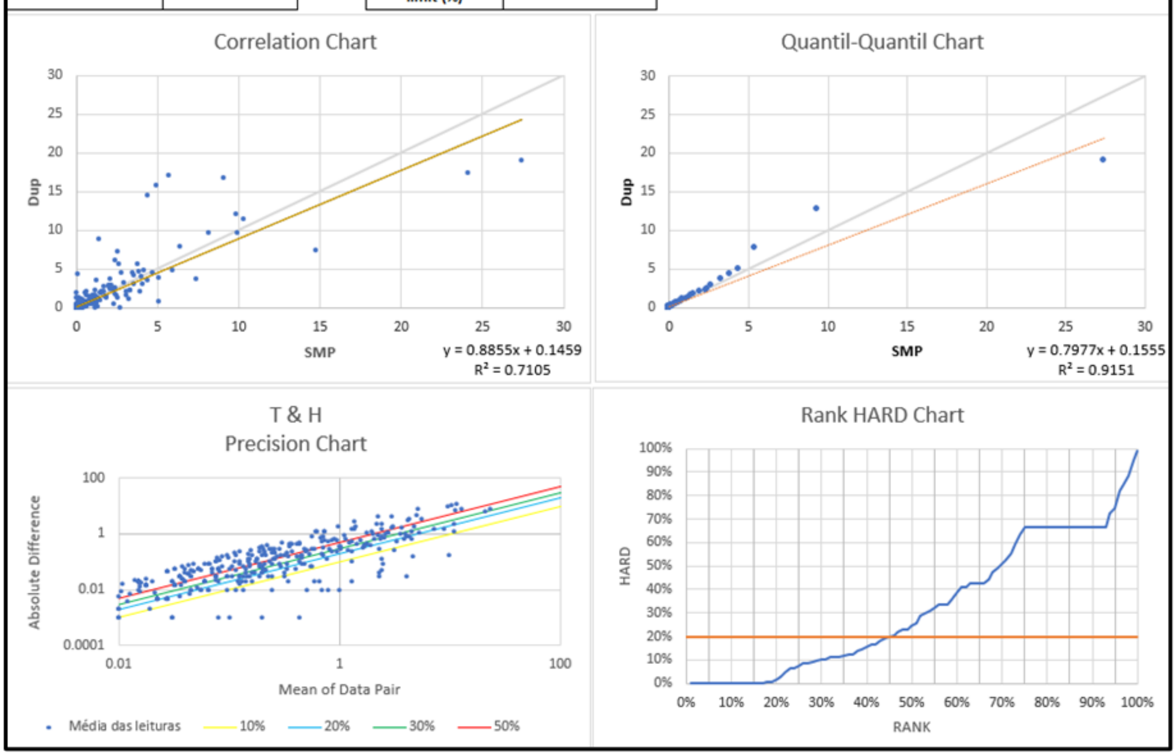
GE21 observed that the total of number of secondary samples has a rate of 2.91% of the total number of samples in the database.

In the analysis of the results assayed by secondary lab, the authors considered 20% of the relative difference acceptability. The analysis is presented in Figure 11 11.

Figure 11.11
Secondary laboratory Analysis

Type of control	Secondary Lab
Unity	g/t
Variable	Au total
Accuracy limit	20%
Number of pairs	573

	SMP	DUP
Minimum	0.00	0.00
Maximum	27.40	19.00
Average	0.62	0.69
Median	0.03	0.03
Within precision limit (%)	45.38%	



The secondary laboratory analysis has revealed a low precision in the samples' correlation, considering that only 45% of the analysis are within the limits of acceptability. The T&H graph shows that a tendency that relates the observed low precision with a specific grade range does not exist.

11.3.2 Conclusions and Recommendations (GE21–Phase I)

GE21 performed the evaluation of data generated and concludes that the QA/QC procedures are being followed using industry best practices and concludes with aiming for improvement on the QA/QC program with the following observations:

- Overall, the QA/QC program was modified to attend to Micon's 2018 technical report recommendations.

- GE21 maintains the recommendation to create a matrix-matched CRMs (analytical standards) from local mineralization.

- GE21 considers that the low precision observed in the secondary laboratory control analysis is related to the use of coarse reject, provided by the primary lab. In this way, the secondary lab must establish a preparation process to the samples. GE21 suggests using the pulp reject as the control sample, instead of coarse reject.

- GE21 considered that the low precision presented in the quarter-core duplicates graphic is related to the high variability of the gold in the deposit and it does not represent a low laboratory analysis precision. GE21 suggests Cerrado revaluate the continuity of this type of control once the sample is inserted in the database. When the duplicate samples occur, this implies the sampling support reducing to ¼ of core. GE21 recommends to Cerrado evaluate changing the use of quarter-core duplicate to coarse and pulp duplicates.

- GE21 suspects that exchanging samples in standards and blanks could represent a failure in the sampling/database storing procedures. GE21 recommends to Cerrado that it reinforce the quality assurance in the field procedures. It is also recommended to improve a pre-existing method to analyze the control results online, in the database.

12.0 DATA VERIFICATION

12.1 MICON DATA VERIFICATION

During his site visit the QP went to three of the Giant Quartz Veins targets to examine exposures of mineralization.

At the VM vein there were three active milling sites where garimpeiros were processing material from small pits and underground workings. At one milling site, the workers took the mill apart and showed the QP some gold collected from their mining and milling activity.

At the Magalhaes 1 vein location an abandoned garimpo was examined and gold- and galena-mineralized quartz float was found.

At Serra Alta, the QP examined very extensive, abandoned bandeirante and garimpeiro workings over a significant width and strike length. It was obvious that considerable effort, over a long period of time, was expended to make these excavations. The obvious conclusion is that enough gold was recovered to justify the effort.

The QP also reviewed fresh drill core from the hydrothermally altered granite at Serra Alta. The alteration, veining (Figure 10.6) and mineralization with pyrite, galena and sphalerite were clearly visible. Several small specks of visible gold were also noted.

While examining drill core, the QP collected four quarter-sawn duplicate samples for assay upon return to Canada. The samples were analyzed by ALS Global in Sudbury, Ontario. Sample preparation was performed using method PREP 31-D. The samples were analyzed in duplicate using a 50 g fire assay with AA finish (code Au AA26) and by the screen metallics method (code Au SCR24). The results are presented in Table 12.1.

Table 12.1
Micon Check Samples

Hole	From (m)	To (m)	Original Assay (Au g/t)	Reassay		
				Au SCR 24	Au AA26	Au AA26 Dup
FSA-23	47.0	47.7	13.92	0.53	0.21	0.33
FSA-23	58.0	58.5	14.87	5.27	2.63	2.65
FSA-23	61.0	61.5	24.32	4.79	1.29	1.5
FSA-23	71.0	71.5	11.45	5.58	2.58	2.43

The results have confirmed the presence of gold in the core, albeit at lower grades than from the original samples. The results also indicate that for 75% of the time the screen metallics assay was significantly higher than the 50 g fire assay, thereby justifying the use of screen metallics assays. The difference between the original and reassays is likely explained by the random and unequal distribution of gold nuggets within the core.

The QP is satisfied that the presence of gold has been demonstrated at the MDC project site. Further exploration is justified. The QP is also satisfied with the adequacy of the sample preparation, security and analytical procedures employed, excluding those by PNP, and concludes that they have resulted in data suitable for use in a mineral resource estimate.

The QP is satisfied with the adequacy of the data for the purposes used in this Technical Report.

12.2 GE21, 2021 Data Verification

Geologist Fábio Xavier (MAIG #5179), associated with GE21, visited the project on August 17th to 18th, 2021. The visit aimed to understand the mineralization and the processes involved in drilling, including the quality control implemented in the project.

The QP visited the Pit Sul and Pit Norte to know outcrops of the mineralization appear. It was possible to observe the spatial arrangement of the mineralization within the geological context of the area and understand the extension of the hydrothermal alteration zones and the relationship of the mineralization with the quartz veins and sulfation zones. Technical discussions were held with the Cerrado team throughout the visit period.

During the visit, it was possible to visit drilling carried out in Phase I and previous campaigns (Figure 12.1). The position of the holes is correctly identified with a concrete structure and a plate with basic information. In the field, the QP carried out the identification of the hole, the collection of photographs and coordinates using GPS Navigation. In an office, the coordinates collected in the field were compared with the coordinates registered in the database. No differences were found that could not be explained by the accuracy of the GPS equipment used.

Figure 12.1
Collar Drill Collars Visited in the field

The QP observed the execution of the drilling during the Phase II program at Serra Alta (Figure 12.1 and Figure 12.2). It was possible to observe the equipment used and the operating procedures adopted by the drilling company, as well as the safety procedures and operation interaction with the environment. The QP understands that all points noted are within the industry best practices.

Figure 12.2
Drilling execution in Serra Alta to Phase II

No checks were carried out or samples collected in order to compare chemical analyzes obtained by the project.

During the visit, the activities involving drilling were carried out in the drilling core shed. The core shed has structure for activities such as core box storage, description activities, sampling, core sawing, batch assembly, etc. QP observed core boxes, crushed and pulp reserves and documents generated during the procedures performed in the core shed (Figure 12.3 and Figure 12.4). The processes of geological logging, core orientation, collection of oriented structural measurements and core sawing were monitored. The QP verified three geologists logging during the visit. All procedures observed are performed by professionals trained for the activity. The QP had access to documents referring to the operational procedures used in the drilling processes. The QP considered all observed procedures adequate for mineralization and within industry best practices.

Figure 12.3
Storing of Core Cox in the Core Shed

Figure 12.4
Storing of Course Rejects in the Core Shed

The QP held discussions with the Cerrado team about the quality assurance and quality control procedures related to the drilling data generation processes. The procedures and evaluation of results are described in item 11.4.

The QP considers that the procedures related to the drilling processes, and carried out in the core shed, are in accordance with the best practices of industry and ensure adequate quality for use in the estimation of mineral resources.

13.0 MINERAL PROCESSING AND METALLURGICAL TESTING

13.1 METALLURGICAL TESTS

The mineral processing development tests were performed in 2018. They are described in the report REPORT No 007-2018 CERRADO REV.0 prepared by the laboratory TESTWORK Desenvolvimento de Processo Ltda. who were responsible for testing.

GE21 evaluated the TESTWORK tests from April, 2020 and their results, generating a preliminary feasibility estimate of a concentration plant with capacity of 2.0 Mt/year of ROM, according to the "Monte do Carmo Project, Tocantins State, Brazil, Independent Economic Assessment for Serra Alta Deposit" report.

TESTWORK carried out new mineral processing development tests on four samples in 2021, described in the report "RELATÓRIO PRELIMINAR - Testes Metalúrgicos com Amostras dos Corpos do Projeto Serra Alta", June 2021. GE21 evaluated the delivered report and makes the following observations.

The four samples were submitted to several alternative process routes, in two distinct ranges of crushing sizes, as summarized below:

- The four crushed samples P80 = 106µm and 75µm were subjected directly to leaching with sodium cyanide, with and without activated charcoal.

- The four samples were processed directly by gravity concentration in a centrifugal concentrator, with sizes of P80 = 106µm and 75µm, and the tailings from this step were directly leached with sodium cyanide, with and without activated carbon, and the concentrates subjected to intensive leaching also with sodium cyanide.

- The tailings from the gravity concentration, with sizes of P80 = 106µm and 75µm, were also concentrated by flotation, and these concentrates were submitted to leaching by sodium cyanide.

- Concentrates of the gravity concentration of the four samples were subjected to intensive leaching with sodium cyanide.

- Flotation concentrates were subjected to leaching with sodium cyanide, with activated carbon, and the tailings were considered final plant tailings.

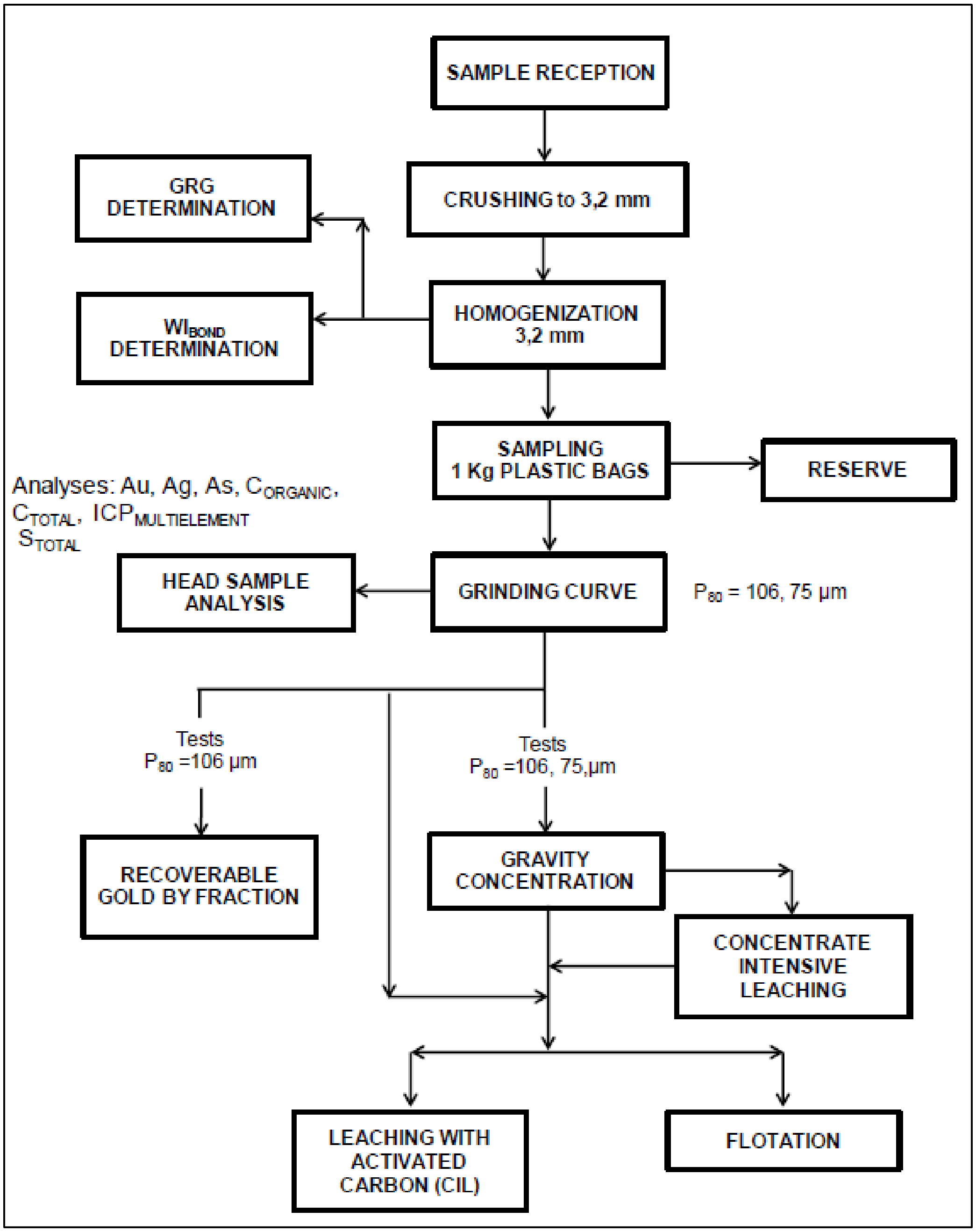
- The Work Index (Wi) was determined for ball milling in aliquots of the four samples, with results close to 15 kWh/st.

The metallurgical recoveries in all complete tests and in the various process alternatives evaluated with the four samples, with sizes of P80 = 106µm and P80 = 75µm, resulted in gold recoveries above 95%.

13.2 Summary of the Metallurgical Testing Program and Description of Samples

Figure 13.1 shows the summary of the planning of the tests performed with the four samples from Serra Alta.

Figure 13.1
Metallurgical Testing Program



Four samples were received from the Serra Alta Project, as shown in Figure 13.2, and the sampling was carried out by the geology team of Cerrado Gold.

Figure 13.2
Four Cerrado Samples Received

The samples were named:

- CUT - Cut Off.
- EAC - East Zone.
- BLC - Blend.
- SNC - Sul Norte.

13.3 Physical Preparation of Samples and Summary of Test Results

The four samples received were crushed below 3.2 mm in a jaw crusher and in a roller mill, homogenized, sampled and packed in 1 kg bags for later use in each of the stages of the test program.

Three 1 kg samples were taken from the initial batch and randomly mixed, homogenized, and used to survey the ore grinding curve to reach P80 = 106 and 75 µm.

Due to the expected presence of liberated gold, a special procedure was adopted to determine its content in the samples, with the objective of reducing the nugget effect. The 3.0 kg milled sample was dried, homogenized and subjected to testing in a laboratory Knelson MD-3 centrifugal concentrator.

The Knelson concentrate was dried, weighed and sent for gold analysis by Fire Assay (FAA35V). The tailings were dried, homogenized and sampled to remove three representative aliquots, which were sent for gold analysis by Fire Assay (FAA323).

In order to compare the chemical results, a sample was collected for Metallic Screen Fire Assay analysis. (FAASCR).

Density determinations (Specific Gravity) were carried out in a pycnometer.

The results of the determinations of gold content of the samples by the analytical methods of fire assay and metallic screen fire assay are as follows (Tables 13.1 to 13.4).

Table 13.1
Chemical Analysis of Samples by Fire Assay (FAA323)

SAMPLE	Au (ppm)	SAMPLE	Au (ppm)	SAMPLE	Au (ppm)
BLC - AL4	2.92	SNC - AL4	1.01	EAC - AL4	0.28
BLC - AL5	1.99	SNC - AL5	0.96	EAC - AL5	0.32
BLC - AL6	2.04	SNC - AL6	1.38	EAC - AL6	0.21
Average	**2.32**	**Average**	**1.12**	**Average**	**0.27**
Standard Deviation	**0.52**	**Standard Deviation**	**0.23**	**Standard Deviation**	**0.06**

Table 13.2
Chemical Analysis of Samples by Metallic Screen Fire Assay (FAASCR)

Sample	BLC - AL7		SNC - AL7			EAC - AL7		CUT - AL7	
	Mass (g)	Au (g/t)	ID	Mass (g)	Au (g/t)	Mass (g)	Au (g/t)	Mass (g)	Au (g/t)
Oversize	19.21	19.68	Oversize	26.77	31.19	15.14	42.54	18.35	2.45
Undersize	823.29	0.67	Undersize	979.23	1.47	978.76	0.94	863.15	0.22
		0.63			1.62		1.11		0.24
Total	**842.50**	**1.08**	**Total**	**1,006.00**	**2.33**	**993.90**	**1.66**	**881.50**	**0.28**

Table 13.3
Density, Wi Ball Mill and Circulating Load

Sample	BLC	SNC	EAC	CUT
Density (Specific Gravity)	2.68	2.64	2.62	2.63
WI Bond (kWh/t)	16.1	15.4	14.9	14.3
Circulating load (%)	245	259	246	256

Table 13.4
Summary - Chemical Analysis of Samples - AL4 - ICP

AL4	CUT	EAC	SNC	BLC		CUT	EAC	SNC	BLC
Ag (ppm)	<3	<3	<3	<3	Ni (ppm)	<3	<3	<3	7
Al (%)	5.33	4.66	4.7	4.06	P (%)	<0,01	<0,01	<0,01	0.03
As (ppm)	<10	<10	<10	<10	Pb (ppm)	12	50	73	49
Ba (ppm)	232	203	248	253	S (%)	0.08	0.08	0.15	0.07
Be (ppm)	<3	<3	<3	<3	Sb (ppm)	<10	<10	<10	<10
Bi (ppm)	<20	<20	<20	<20	Sc (ppm)	<5	<5	<5	<5
Ca (%)	0.24	0.16	0.18	0.4	Se (ppm)	<20	<20	<20	<20
Cd (ppm)	<3	<3	<3	<3	Sn (ppm)	<20	<20	<20	<20
Co (ppm)	<8	<8	<8	<8	Sr (ppm)	25	17	30	51
Cr (ppm)	4	4	6	8	Th (ppm)	<20	<20	<20	<20
Cu (ppm)	7	11	15	13	Ti (%)	0.05	0.05	0.05	0.19
Fe (%)	1.19	1.14	1.13	1.36	Tl (ppm)	<20	<20	<20	<20
K (%)	3.74	3.79	3.61	3.23	U (ppm)	<20	<20	<20	<20
La (ppm)	<20	<20	<20	<20	V (ppm)	<8	<8	<8	16
Li (ppm)	4	4	3	5	W (ppm)	<20	<20	<20	<20
Mg (%)	0.12	0.09	0.11	0.33	Y (ppm)	9	5	5	8
Mn (%)	0.02	0.02	0.02	0.03	Zn (ppm)	18	59	45	51
Mo (ppm)	<3	<3	<3	<3	Zr (ppm)	71	66	66	66
Na (%)	2.38	2.24	2.44	1.9					

Table 13.5 shows a summary of gold recoveries in gravity concentration and rougher flotation.

Table 13.5
Summary - Gravity Concentration and Flotation - Gold Recovery

Sample / P80	Gravity Concentration		Flotation	
	106 µm	75 µm	106 µm	75 µm
CUT	68,0%	62,8%	70,1%	73,8%
EAC	82,5%	79,7%	85,0%	83,0%
SNC	75,1%	79,4%	78,3%	82,9%
BLC	71,1%	74,7%	76,2%	80,2%

Table 13.6 shows a summary of gold recoveries in direct leaching and CIL leaching.

Table 13.6
Summary - CIL and Direct Leaching - Gold Recovery

Sample / P80	Direct Leaching		CIL	
	106 µm	75 µm	106 µm	75 µm
CUT	84,6%	82,0%	90,5%	87,3%
EAC	96,0%	96,1%	96,0%	96,7%
SNC	92,3%	96,8%	94,7%	97,5%
BLC	95,4%	96,1%	96,2%	96,8%

Table 13.7_ shows a summary of gold recoveries in direct leaching and CIL leaching, but also considering gold recovery in gravity concentration.

Table 13.7
Summary - CIL and Direct Leaching Plus Gravity Concentration - Gold Recovery

Sample / P80	Direct Leaching		CIL	
	106 µm	75 µm	106 µm	75 µm
CUT	95,8%	93,7%	96,3%	94,9%
EAC	99,3%	99,3%	99,3%	99,3%
SNC	98,2%	99,4%	98,6%	99,4%
BLC	98,8%	99,2%	98,8%	99,1%

The results of the other tests are summarized in the following chapters and items of this report.

13.4 1.4 GRAVITY CONCENTRATION TESTS AND GRANULOCHEMICAL CHARACTERIZATION

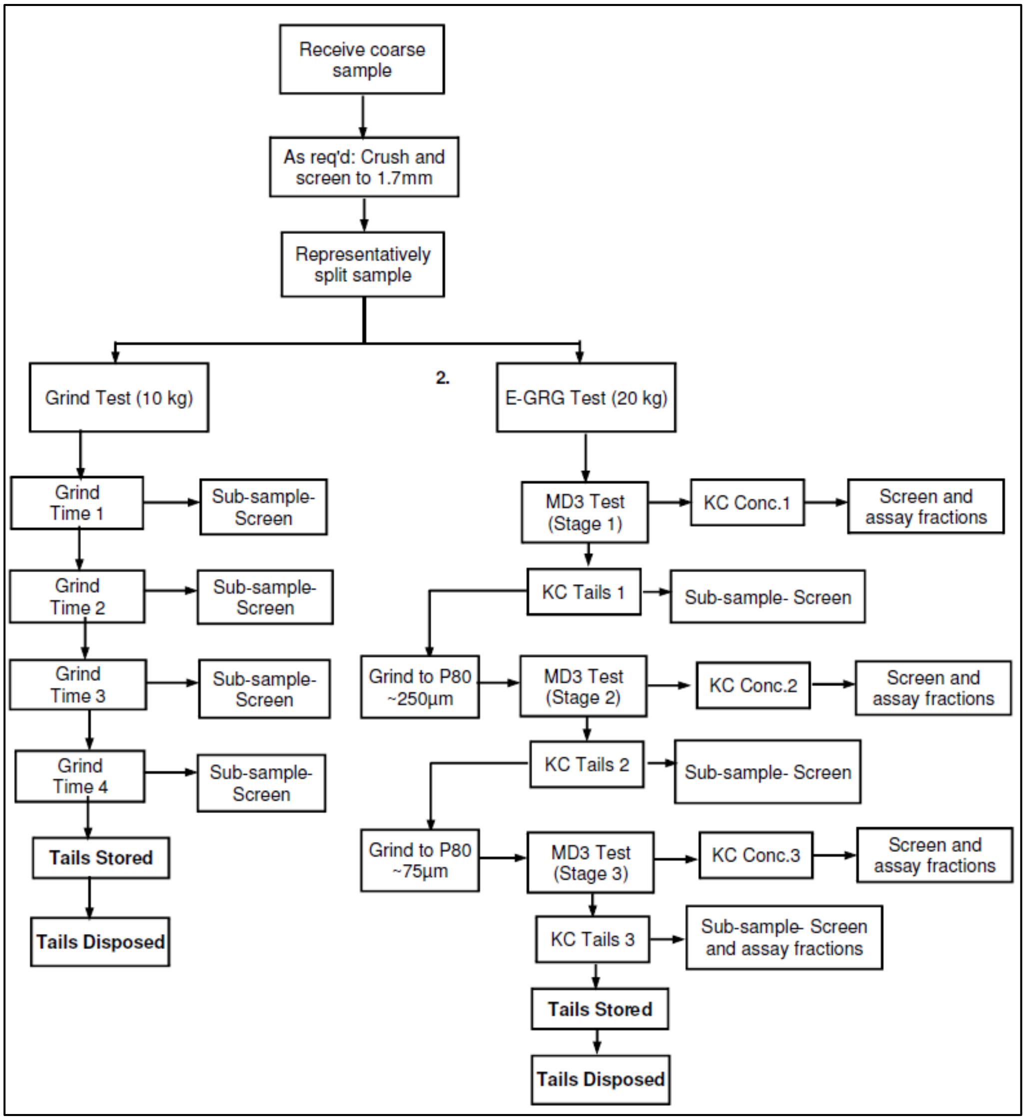
13.4.1 GRG Gravity Concentration Tests

These tests have as a main objective the determination of gold recoveries by particle size range in a centrifugal concentrator, to allow definition of the best performance positioning of the centrifugal concentrator in the plant:

- at the mill discharge, concentrating all the circulating load, or
- in the underflow of the grinding circuit cyclone, concentrating only the grinding product.

The Extended Gravity Recoverable Gold (E-GRG) tests were performed as per the standard flowchart from FLSmidth Knelson, as shown in Figure 13.3 below.

Figure 13.3
Flowsheet - E-GRG - Methodology FLSmidth Knelson



The results of the E-EGR tests have not yet been presented by TESTWORK, which is awaiting chemical analysis results.

13.4.2 Gravity Concentration and Intensive Concentrate Leaching Tests

Gravity concentration tests on Knelson MD-3 were performed on 10.0 kg or 5.0 kg aliquots of the four samples. The tests were performed with milled samples with P80 of 106 and 75 µm.

Knelson's concentrates were dried, weighed and leached in a bottle, simulating intensive leaching, which is industrially carried out in intensive leachers available on the market (Acacia, SRL and others).

The tailings from each intensive leaching test were filtered, the solid washed and again mixed with the respective gravitational tailings of each sample, simulating what could happen in the metallurgical plant. The final solution from each test was sent for chemical analysis of the gold grade.

Table 13.8
Intensive Leaching Conditions of Gravity Concentrate (Knelson)

Parameter	Condition
NaCN Concentration	10,000 mg/L
Solution pH (set with NaOH)	12
% of solid	27%
Contact Time	24 hours

Table 13.9
Summary - Gravity Concentration Conditions (Knelson)

Gravity Concentration - Knelson MD-3	
Feed Rate	5.0 l/min - 60 Gs
Mass (g)	9,000

Table 13.10
Summary - Gravity Concentration Results - Knelson

Sample	BLC		CUT		EAC		SNC	
P80	106 µm	75 µm	106 µm	75 µm	106 µm	75 µm	106 µm	75 µm
Analysed Feed (g/t)	1.68	1.68	0.27	0.27	2.19	2.19	2.04	2.04
Feed Calculated (g/t)	1.67	2.27	0.54	0.44	2.86	2.75	2.26	4.26
Au Recovered (g/t)	207.13	333.49	39.85	49.90	428.51	424.00	268.59	669.10
% Mass Recovered	0.57	0.01	0.01	0.01	0.01	0.01	0.01	0.01
% Au Recovered	71.14	74.7	67.96	62.80	82.51	79.69	75.12	79.41

Table 13.11
Summary - Gravity Concentration Results and Mass Balance - Knelson - P80 = 106 µm

Test/Sample	Weight (g)	Weight (kg)	(%)	Grade Au (g/t)	Au (mg)	(%) Au Recovery
Concentrate BLC	51.47	0.05	0.57	207.13	10.66	76.26
Tailing BLC	8,948.53	8.95	99.4	0.37	3.32	23.74
Feed Calculated BLC	9,000.00	9.00	100.0	1.55	13.980	100.00
Analysed Feed BLC	9,000.00	9.00	-	-	-	-
Concentrate CUT	82.14	0.08	0.91	39.85	3.27	70.07
Tailing CUT	8,917.86	8.92	99.1	0.16	1.40	29.93
Feed Calculated CUT	9,000.00	9.00	100.0	0.52	4.672	100.00
Analysed Feed CUT	9,000.00	9.00	-	-	-	-
Concentrate SNC	56.92	0.06	0.63	268.59	15.29	78.34
Tailing SNC	8,943.08	8.94	99.4	0.47	4.23	21.66
Feed Calculated SNC	9,000.00	9.00	100.0	2.17	19.516	100.00
Analysed Feed SNC	9,000.00	9.00	-	-	-	-
Concentrate EAC	49.50	0.05	0.55	428.51	21.21	84.94
Tailing EAC	8,950.50	8.95	99.5	0.42	3.76	15.06
Feed Calculated EAC	9,000.00	9.00	100.0	2.77	24.971	100.00
Analysed Feed EAC	9,000.00	9.00	-	-	-	-
Summary - Samples BLC, CUT, SNC and EAC						
Concentrate	240.0	0.24	0.67	210.12	50.43	79.88
Tailing	35,760.0	35.76	99.33	0.36	12.70	20.12
Feed Calculated	36,000.0	36.00	100.0	1.75	63.14	100.00

Table 13.12
Summary - Intensive Leaching of the Gravity Concentrate - Knelson - - P80 = 106 µm

Sample/Test	Adiction					
	Bottle (g)	Ore (g)	Water (ml)	Total Mass (g)	pH Initial	NaCN (mg/L)
BLC	482.43	51.47	322.4	856.34	11.87	10,000
CUT	517.59	82.14	320.9	920.64	11.78	10,000
EAC	517.42	49.50	320.9	887.85	11.63	10,000
SNC	462.97	56.92	326.1	846.02	11.82	10,000
Average	495.10	60.01	322.6	877.71	11.78	10,000
Sample/Test	**Final Solution**					
	Final Mass (g)	**Solution (ml)**	**pH Final**	**NaCN (mg/l)**	**Au (mg/l)**	
BLC	855.63	318.5	12.21	9,424.0	33.47	
CUT	918.28	315.4	12.17	9,397.0	10.38	
EAC	886.94	316.8	12.27	9,596.0	66.95	
SNC	848.93	325.8	12.46	9,076.0	46.92	
Average	877.45	319.1	12.28	9,373.3	39.43	
Sample/Test	**Consumption (NaCN)**					
	(mg/l)	**(mg/g conc. Knelson)**	**(kg/t Knelson Concentrate)**	**(kg/g Au Concentrate)**	**(kg/t ROM)**	
BLC	576.00	3.61	3.61	0.017	0.0206	
CUT	603.00	2.36	2.36	0.059	0.0215	
EAC	404.00	2.62	2.62	0.006	0.0144	
SNC	924.00	5.29	5.29	0.020	0.0335	
Average	**626.75**	**3.47**	**3.47**	**0.026**	**0.0225**	

Note that there are small differences between some values of the same nature or origin in the tables above, but these differences are normal due to calculations based on overdue or calculated grades.

13.4.3 Granulochemical Characterization Tests

A sample of approximately 3 kg was taken from each of the four orebodies, these samples were crushed with a P80 = 106µm, and subsequently subjected to a particle size separation in order to verify the recoverable gold in the fractions.

Separations were made into the 100 mesh (150 µm), 150 mesh (106 µm), 200 mesh (75 µm) and 325 mesh (44 µm) fractions. The oversize in each of these screens has been leached. Both the solid and the solutions were analysed to verify gold recovery.

The conditions used in the leaching of fractions are described in Table 13.13.

Table 13.13
Conditions - Leaching of Fractions

Parameter	Condition
NaCN Concentration	1,000 mg/L (Initial and adjusted according to consumption)
Solution pH (set with lime)	10.50 - 11.00
% of solid	~50%
Contact Time	24 hours
Sampling Time	24 hours
Parameters Control	pH, OD, Eh

The results of the granulochemical analysis and the cyanide leaching of each fraction are, respectively, in the following tables.

Table 13.14
Gold Distribution by Fraction - BLC Sample - P80 = 106 µm

Mesh (Tyler)	Size (µm)	Au Grade (g/t)	% Au Retained by Fraction	% Au Retained Accumulated	% Au Passing Accumulated
100 #	150	12.85	9.70	9.70	90.30
150 #	106	3.31	19.40	29.10	70.90
200 #	75	1.16	20.80	49.90	50.10
325 #	45	1.13	13.20	63.10	36.90
<325 #	<45	1.09	36.90	100.00	0.00
		1.43			

Table 13.15
Leaching Results by Fraction - BLC Sample - P80 = 106 µm

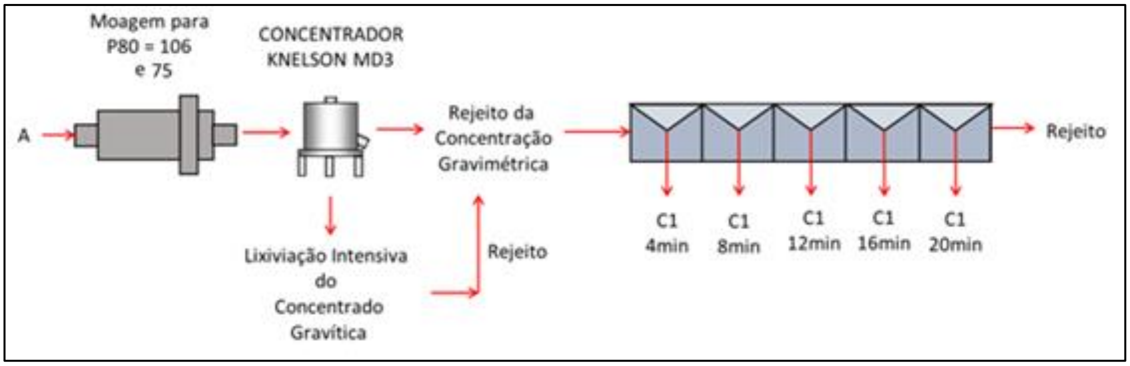
Mesh (Tyler)	Size (µm)	Au Grade by Fraction (g/t)	Au Tailings by Fraction (g/t)	Au Recovery by Fraction (%)	(%) Au by Fraction	(%) Au Accumulated
100 #	150	12.85	0.08	99.4	9.6	9.6
150 #	106	3.31	0.05	98.5	19.2	28.7
200 #	75	1.16	0.04	96.6	20.1	48.8
325 #	45	1.13	0.02	98.2	13.0	61.8
<325 #	<45	1.09	0.04	96.3	35.5	97.3
		1.43	0.04			

The results of the other three samples are shown in the TESTWORK report.

13.5 Flotation Tests

Flotation tests were carried out with the four Serra Alta zones and according to the flowchart shown in Figure 13.4.

Figure 13.4
Flotation Testing Procedure



All flotation tests were carried out with approximately 1.0 kg of tailings of gravity concentration, each tailings sample having received the addition of solid tailings from intensive leaching. The samplings for the tests were made in pulp.

The tests were carried out with a residence time of 20 min with sampling of concentrates every 4 min, thus it was possible to define kinetic flotation curves:

- Recovery of Au and S vs. time.
- Recovery of Au and S vs. Floated Mass.
- Au and S content vs. Floated Mass.

The tests were performed with crushed samples with a P80 of 106 and 75 µm.

Table 13.16
Summary of Flotation Tests Conditions - P80 = 106 µm

Sample BLC	P80	Test Condition (g/t)					Time (min)
		$CuSO_4$	A208	SIBX	PAX	INT 102	
FT1		50	-	-	80	42	20
FT2		50	-	80	-	42	20
FT3	106 µm	-	-	-	80	42	20
FT4		-	-	80	-	42	20
FT5		50	80	-	80	42	20
Sample CUT							
FT1		50	-	-	80	42	20
FT2		50	-	80	-	42	20
FT3	106 µm	-	-	-	80	42	20
FT4		-	-	80	-	42	20
FT5		50	80	-	80	42	20
Sample SNC							
FT1		50	-	-	80	42	20
FT2		50	-	80	-	42	20
FT3	106 µm	-	-	-	80	42	20
FT4		-	-	80	-	42	20
FT5		50	80	-	80	42	20
Sample EAC							
FT1		50	-	-	80	42	20
FT2		50	-	80	-	42	20
FT3	106 µm	-	-	-	80	42	20
FT4		-	-	80	-	42	20
FT5		50	80	-	80	42	20

Table 13.17
Summary of Flotation Tests Conditions - P80 = 75 µm

Sample BLC	P80	Test Condition (g/t)					Time (min)
		$CuSO_4$	A208	SIBX	PAX	INT 102	
FT1	75 µm	50	-	-	80	42	20
FT2		50	-	80	-	42	20
FT3		-	-	-	80	42	20
FT4		-	-	80	-	42	20
FT5		50	80	-	80	42	20
Sample CUT							
FT1	75 µm	50	-	-	80	42	20
FT2		50	-	80	-	42	20
FT3		-	-	-	80	42	20
FT4		-	-	80	-	42	20
FT5		50	80	-	80	42	20
Sample SNC							
FT1	75 µm	50	-	-	80	42	20
FT2		50	-	80	-	42	20
FT3		-	-	-	80	42	20
FT4		-	-	80	-	42	20
FT5		50	80	-	80	42	20
Sample EAC							
FT1	75 µm	50	-	-	80	42	20
FT2		50	-	80	-	42	20
FT3		-	-	-	80	42	20
FT4		-	-	80	-	42	20
FT5		50	80	-	80	42	20

Table 13.18
Summary of The Flotation Tests Results - P80 = 106 µm

Sample BLC	P80	Mass Pull (%)	Gravity Concentrate - Au (g/t)	Flotation Concentrate Au (g/t)	Flotation Tailing - Au (g/t)	Flotation Recovery (Rougher) - Au (%)	Recovery (GC + Flot) Au (%)
FT1	106 µm	9.35	0.36	3.68	0.02	95.00	98.83
FT2		9.96	0.30	2.79	0.03	92.51	98.55
FT3		9.38	0.37	3.72	0.03	93.90	98.54
FT4		7.36	0.37	4.56	0.04	90.05	97.61
FT5		13.24	0.44	3.14	0.03	95.04	98.60
Average BLC		**9.86**	**0.37**	**3.58**	**0.03**	**93.30**	**98.43**
Sample CUT							
FT1	106 µm	7.73	0.13	1.20	0.04	71.60	92.89
FT2		6.76	0.13	1.46	0.03	77.92	94.61
FT3		7.97	0.15	1.40	0.05	72.94	92.02
FT4		8.48	0.13	1.17	0.03	78.34	94.71
FT5		7.79	0.24	2.66	0.04	86.52	93.78
Average CUT		**7.75**	**0.155**	**1.58**	**0.04**	**77.46**	**93.60**
Sample SNC							
FT1	106 µm	8.71	0.55	5.48	0.08	87.46	96.84
FT2		7.72	0.39	4.69	0.04	91.81	98.51
FT3		7.15	0.41	5.22	0.04	90.96	98.29
FT4		7.16	0.48	6.22	0.04	92.31	98.29
FT5		9.84	0.53	5.15	0.03	95.74	98.96
Average SNC		**8.12**	**0.47**	**5.35**	**0.04**	**91.66**	**98.18**
Sample EAC							
FT1	106 µm	6.84	0.38	4.74	0.06	86.36	98.15
FT2		6.78	0.39	5.07	0.05	88.07	98.32
FT3		8.90	0.44	4.33	0.06	88.50	98.19
FT4		7.31	0.46	5.55	0.06	88.84	98.16
FT5		9.45	0.44	4.28	0.04	91.77	98.69
Average EAC		**7.85**	**0.42**	**4.80**	**0.05**	**88.71**	**98.30**
Average BLC, CUT, SNC e EAC		**8.39**	**0.35**	**3.83**	**0.04**	**87.78**	**97.13**

Table 13.19
Summary of The Flotation Tests Results - P80 = 75 µm

Sample BLC	P80	Mass Pull (%)	Gravity Concentrate - Au (g/t)	Flotation Concentrate Au (g/t)	Flotation Tailing - Au (g/t)	Flotation Recovery (Rougher) - Au (%)	Recovery (GC + Flot.) Au (%)
FT1	75 µm	9.91	0.41	3.90	0.03	93.47	98.72
FT2		8.55	0.42	4.50	0.04	92.32	98.49
FT3		9.38	0.42	4.13	0.04	91.43	98.29
FT4		9.15	0.40	4.06	0.04	92.12	98.50
FT5		15.42	0.45	2.77	0.03	95.28	99.00
Average BLC		**10.48**	**0.42**	**3.87**	**0.03**	**92.93**	**98.60**
Sample CUT							
FT1	75 µm	7.45	0.10	1.05	0.02	80.81	95.06
FT2		7.03	0.11	1.17	0.03	77.95	93.79
FT3		10.32	0.09	0.64	0.03	74.75	94.01
FT4		10.28	0.08	0.64	0.02	78.48	95.21
FT5		12.77	0.12	0.78	0.02	85.13	95.34
Average CUT		**9.57**	**0.098**	**0.86**	**0.02**	**79.42**	**94.68**
Sample SNC							
FT1	75 µm	7.63	0.65	8.04	0.04	94.99	99.21
FT2		10.92	0.72	6.27	0.04	95.05	99.13
FT3		8.24	0.68	7.70	0.06	92.63	98.76
FT4		9.00	0.65	6.72	0.05	93.66	99.00
FT5		12.04	0.81	6.49	0.04	96.21	99.25
Average SNC		**9.57**	**0.70**	**7.04**	**0.04**	**94.51**	**99.07**
Sample EAC							
FT1	75 µm	6.68	0.42	5.72	0.05	90.11	98.41
FT2		7.77	0.46	5.45	0.04	91.98	98.60
FT3		9.17	0.45	4.51	0.05	91.01	98.45
FT4		9.22	0.39	3.75	0.05	88.38	98.28
FT5		10.39	0.52	4.63	0.05	92.27	98.47
Average EAC		**8.65**	**0.45**	**4.81**	**0.05**	**90.75**	**98.44**
Average BLC, CUT, SNC e EAC		**9.57**	**0.42**	**4.15**	**0.04**	**89.40**	**97.70**

Table 13.20
Summary - Reagents Consumption - Flotation Tests

Reagent		Function	(g/t Feed in Flotation)	(g/t ROM)
1	Copper Sulfate ($CuSO_4.5H_2O$)	Activator	50.0	48.5
2	Isobutyl Sodium Xanthate (SIBX)	Collector	80.0	77.6
3	Potassium Amyl Xanthate (PAX)	Collector	80.0	77.6
4	INT 102	Frother	42.0	40.7

In some tests, the sodium salt collector di(ethyl-secbutyl) dithiophosphate (Aerofloat A208) was also used at a dosage of 80g/t of feed in the flotation.

The consumption of reagents for the pH regulation of the flotation and the control of the pH of the solution was not informed in the TESTWORK report, so it was interpreted that the flotation was done at natural pH.

13.6 FLOTATION TAILINGS DIRECT CYANIDATION AND CIL TESTS

Direct leaching and CIL (activated carbon G210) tests were performed in duplicate with P80 = 106 and 75 µm. The tests were performed under the conditions shown in Tables 13.21 and 13.22.

Table 13.21
Testing Conditions of Direct Leaching of Cerrado Gravity Tailings

Parameter	Condition
NaCN Concentration	1,000 mg/L (Initial and adjusted according to consumption)
pH Solution (Adjusted with lime)	10.50 - 11.00
% of solid	50%
Time Contact	24 hours
Sampling Time	2, 4, 8, 24 hours
Controls	pH, OD, Eh

Table 13.22
Testing Conditions of CIL Leaching of Cerrado Gravity Tailings

Parameter	Condition
NaCN Concentration	1,000 mg/l (Initial and adjusted according to consumption)
pH Solution (Adjusted with lime)	10.50 - 11.00
% of solid	50%
Carbon Type	PICAGOLD G210
Contact Time	24 hours
Sampling Time	2, 4, 8, 24 hours
Controls	pH, OD, Eh
Carbon Concentration	18 g/l of pulp

Table 13.23 presents a summary of the results of direct leaching of samples with P80 = 106 µm.

Table 13.23
Summary - Direct Leaching Results - P80 = 106 µm

Test/Sample		BLEND (BLC)				CUT			
No Test - Gravity Concentration		LT1				LT1			
No Test – Leaching		LT3		LT4		LT3		LT4	
Description		Concentration / CIL Leaching				Concentration / CIL Leaching			
P80		106 µm				106 µm			
Stage 2									
Gravity Concentrate (calculated) (g/t)		0.44		0.43		0.14		0.15	
NaCN Initial (g/t)		1004		1012		1021.99		1013.16	
NaCN Consumption (g/t)		192		191		180.54		180.81	
Lime Consumption (kg/t)		0.90		0.91		0.77		0.78	
Carbon (g/t)		-		-		-		-	
Recovery - Leaching	Time (min)	Tailing (g/t)	Recovery (%)	Tailing (g/t)	Recovery (%)	Tailing (g/t)	Recovery (%)	Tailing (g/t)	Recovery (%)
	0		0.00		0.00		0.00		0.00
	2		78.19		82.13		72.11		69.75
	4		84.95		86.73		85.83		83.01
	8		91.36		93.27		92.34		83.01
	24	<0.02	95.41	<0.02	95.33	0.02	86.18	0.03	83.01
Final Recovery		98.80		98.80		96.26		95.33	

Table 13.23 (cont'd.)
Summary - Direct Leaching Results - P80 = 106 µm

Test/Sample		EAC				SNC			
No Test - Gravity Concentration		LT1				LT1			
No Test - Leaching		LT3		LT4		LT3		LT4	
Description		Concentration / CIL Leaching				Concentration / CIL Leaching			
P80		106 µm				106 µm			
Stage 2									
Gravity Concentrate (calculated) (g/t)		0.51		0.50		0.52		0.51	
NaCN Initial (g/t)		1,015.53		1,010.96		988.17		993.98	
NaCN Consumption (g/t)		187.91		181.42		214.36		231.59	
Lime Consumption (kg/t)		0.76		0.45		0.79		0.80	
Carbon (g/t)		-		-		-		-	
Recovery - Leaching	Time (min)	Tailing (g/t)	Recovery (%)	Tailing (g/t)	Recovery (%)	Tailing (g/t)	Recovery (%)	Tailing (g/t)	Recovery (%)
	0		0.00		0.00		0.00		0.00
	2		84.66		88.18		86.88		85.34
	4		90.56		92.18		88.71		89.03
	8		94.29		95.97		88.71		92.52
	24	0.02	96.05	0.02	95.97	0.05	90.36	0.03	94.17
Final Recovery		99.30		99.30		97.79		98.67	

Table 13.24
Summary - Direct Leaching Results - P80 = 75 µm

Test/Sample		BLEND (BLC)				CUT			
No Test - Gravity Concentration		LT2				LT2			
No Test - Leaching		LT7		LT8		LT7		LT8	
Description		Concentration / CIL Leaching				Concentration / CIL Leaching			
P80		75 µm				75 µm			
Stage 2									
Gravity Concentrate (calculated) (g/t)		0.51		0.53		0.15		0.16	
NaCN Initial (g/t)		1,007		1014		1,006.18		1,007.86	
NaCN Consumption (g/t)		151		131		399.78		428.90	
Lime Consumption (kg/t)		0.91		0.91		0.88		0.93	
Carbon (g/t)		-		-		-		-	
Recovery - Leaching	Time (min)	Tailing (g/t)	Recovery (%)	Tailing (g/t)	Recovery (%)	Tailing (g/t)	Recovery (%)	Tailing (g/t)	Recovery (%)
	0		0.00		0.00		0.00		0.00
	2		79.12		77.81		67.90		58.64
	4		88.77		87.31		80.81		77.22
	8		96.10		94.52		80.81		83.09
	24	<0.02	96.10	<0.02	96.23	0.02	86.59	0.04	77.55
Final Recovery		99.12		99.12		95.46		92.05	

Table 13.24 (cont'd.)
Summary - Direct Leaching Results - P80 = 75 µm

Test/Sample		**EAC**				**SNC**			
No Test - Gravity Concentration		LT2				LT2			
No Test – Leaching		LT7		LT8		LT7		LT8	
Description		Concentration / CIL Leaching				Concentration / CIL Leaching			
P80		75 µm				75 µm			
Stage 2									
Gravity Concentrate (calculated) (g/t)		0.51		0.51		0.79		0.77	
NaCN Initial (g/t)		1,022.54		1,003.78		994.54		997.01	
NaCN Consumption (g/t)		119.38		132.34		352.53		364.22	
Lime Consumption (kg/t)		0.56		0.55		0.60		0.60	
Carbon (g/t)		-		-		-		-	
Recovery - Leaching	Time (min)	Tailing (g/t)	Recovery (%)	Tailing (g/t)	Recovery (%)	Tailing (g/t)	Recovery (%)	Tailing (g/t)	Recovery (%)
	0		0.00		0.00		0.00		0.00
	2		86.14		88.44		94.10		96.00
	4		97.85		96.09		92.85		97.27
	8		97.85		96.09		92.85		99.67
	24	0.02	96.09	0.02	96.09	0.03	96.21	0.02	97.40
Final Recovery		**99.27**		**99.27**		**99.30**		**99.53**	

Table 13.25
Summary - CIL Leaching Results - P80 = 106 µm

Test/Sample		BLEND (BLC)				CUT			
No Test - Gravity Concentration		LT1				LT1			
No Test - Leaching		LT5		LT6		LT5		LT6	
Description		Concentration / CIL Leaching				Concentration / CIL Leaching			
P80		106 µm				106 µm			
Stage 2									
Gravity Concentrate (calculated) (g/t)		0.53		0.52		0.20		0.22	
NaCN Initial (g/t)		1,008		1,017		1,026.78		1,020.22	
NaCN Consumption (g/t)		376		357		353.56		364.74	
Lime Consumption (kg/t)		0.91		0.92		0.78		0.74	
Carbon (g/t)		19.20		18.40		6.40		7.10	
Recovery – Leaching	Time (min)	Tailing (g/t)	Recovery (%)	Tailing (g/t)	Recovery (%)	Tailing (g/t)	Recovery (%)	Tailing (g/t)	Recovery (%)
	0		0.00		0.00		0.00		0.00
	2		88.77		86.49		85.01		86.55
	4		94.39		84.56		90.00		91.03
	8		96.26		94.21		90.00		86.55
	24	<0.02	96.26	<0.02	96.14	0.02	90.00	0.02	91.03
Final Recovery		98.80		98.80		96.26		96.26	

Table 13.25 (cont'd.)
Summary - CIL Leaching Results - P80 = 106 µm

Test/Sample		EAC				SNC			
No Test - Gravity Concentration		LT1				LT1			
No Test – Leaching		LT5		LT6		LT5		LT6	
Description		Concentration / CIL Leaching				Concentration / CIL Leaching			
P80		106 µm				106 µm			
Stage 2									
Gravity Concentrate (calculated) (g/t)		0.50		0.49		0.62		0.62	
NaCN Initial (g/t)		1,025.70		1,022.93		1,000.76		991.95	
NaCN Consumption (g/t)		435.48		302.93		410.31		436.63	
Lime Consumption (kg/t)		0.77		0.77		0.80		0.44	
Carbon (g/t)		17.80		17.70		21.10		21.80	
Recovery - Leaching	Time (min)	Tailing (g/t)	Recovery (%)	Tailing (g/t)	Recovery (%)	Tailing (g/t)	Recovery (%)	Tailing (g/t)	Recovery (%)
	0		0.00		0.00		0.00		0.00
	2		88.08		85.82		93.51		87.15
	4		94.04		95.95		93.51		96.79
	8		96.03		95.95		96.75		95.18
	24	<0,02	96.03	<0,02	95.95	0.04	94.32	0.03	95.18
Final Recovery		99.30		99.30		98.45		98.67	

Table 13.26
Summary - CIL Leaching Results - P80 = 75 µm

Test/Sample		BLEND (BLC)				CUT			
No Test - Gravity Concentration		LT2				LT2			
No Test – Leaching		LT9		LT10		LT9		LT10	
Description		Concentration / CIL Leaching				Concentration / CIL Leaching			
P80		75 µm				75 µm			
Stage 2									
Gravity Concentrate (calculated) (g/t)		0.65		0.62		0.18		0.17	
NaCN Initial (g/t)		1,007.18		1.007.30		1,004.64		1,011.82	
NaCN Consumption (g/t)		428.99		435.07		508.07		522.52	
Lime Consumption (kg/t)		1.01		0.91		0.88		0.86	
Carbon (g/t)		24.10		22.50		5.50		5.30	
Recovery - Leaching	Time (min)	Tailing (g/t)	Recovery (%)	Tailing (g/t)	Recovery (%)	Tailing (g/t)	Recovery (%)	Tailing (g/t)	Recovery (%)
	0		0.00		0.00		0.00		0.00
	2		93.84		93.53		61.89		76.47
	4		96.92		96.76		67.33		88.23
	8		96.92		96.76		78.22		88.23
	24	<0.02	96.92	<0.02	96.76	0.03	86.39	0.02	88.23
Final Recovery		99.12		99.12		94.32		95.46	

Table 13.26 (cont'd.)
Summary - CIL Leaching Results - P80 = 75 µm

Test/Sample		**EAC**				**SNC**			
No Test - Gravity Concentration		LT2				LT2			
No Test – Leaching		LT9		LT10		LT9		LT10	
Description		Concentration / CIL Leaching				Concentration / CIL Leaching			
P80		75 µm				75 µm			
Stage 2									
Gravity Concentrate (calculated) (g/t)		0.60		0.62		0.98		0.98	
NaCN Initial (g/t)		1,029.54		1,027.49		1,004.14		998.44	
NaCN Consumption (g/t)		328.68		304.49		583.59		574.36	
Lime Consumption (kg/t)		0.82		0.87		0.80		0.80	
Carbon (g/t)		21.70		22.70		36.50		36.60	
Recovery - Leaching	Time (min)	Tailing (g/t)	Recovery (%)	Tailing (g/t)	Recovery (%)	Tailing (g/t)	Recovery (%)	Tailing (g/t)	Recovery (%)
	0		0.00		0.00		0.00		0.00
	2		96.68		95.16		96.94		96.95
	4		96.68		96.77		95.93		96.95
	8		96.68		96.77		96.94		97.97
	24	0.02	96.68	0.02	96.77	0.02	97.96	0.03	96.95
Final Recovery		99.27		99.27		99.53		99.30	

Table 13.27 presents a summary of the average results of direct leaching of samples with P80 = 106 µm and 75 µm.

Table 13.27
Summary - Average of Direct Leaching Results - P80 = 75 µm and P80 = 106 µm

Test/Sample		**Average BLC, CUT, EAC e SNC**				**Average BLC, CUT, EAC e SNC**			
No Test - Gravity Concentration		LT2				LT1			
No Test – Leaching		LT7		LT8		LT3		LT4	
Description		Concentration / CIL Leaching				Concentration / CIL Leaching			
P80		75 µm				106 µm			
Stage 2									
Gravity Concentrate (calculated) (g/t)		0.49		0.49		0.40		0.40	
NaCN Initial (g/t)		1,007.64		1,005.69		1,007.40		1,007.49	
NaCN Consumption (g/t)		255.55		264.17		193.71		196.20	
Lime Consumption (kg/t)		0.74		0.75		0.81		0.74	
Carbon (g/t)		-		-		-		-	
Recovery - Leaching	Time (min)	Rej. (g/t)	Recup. (%)	Rej. (g/t)	Recup. (%)	Rej. (g/t)	Recup. (%)	Rej. (g/t)	Recup. (%)
	0		0.00		0.0		0.00		0.00
	2		81.81		80.2		80.46		81.35
	4		90.07		89.5		87.51		87.74
	8		91.90		93.3		91.68		91.19
	24		93.75		91.8		92.00		92.12
Final Recovery		98.29		97.49		98.04		98.03	

Table 13.28 presents a summary of the average CIL leaching results of samples with P80 = 106 µm and P80 = 75 µm.

Table 13.28
Summary - Average of CIL Leaching Results - P80 = 75 µm and P80 = 106 µm

Test/Sample		Average BLC, CUT, EAC e SNC				Average BLC, CUT, EAC e SNC			
No Test - Gravity Concentration		LT2				LT1			
No Test – Leaching		LT9		LT10		LT5		LT6	
Description		Concentration / CIL Leaching				Concentration / CIL Leaching			
P80		75 µm				106 µm			
Stage 2									
Gravity Concentrate (calculated) (g/t)		0.60		0.60		0.46		0.46	
NaCN Initial (g/t)		1,011.37		1,011.26		1,015.28		1,012.95	
NaCN Consumption (g/t)		462.33		459.11		393.83		365.37	
Lime Consumption (kg/t)		0.88		0.86		0.81		0.72	
Carbon (g/t)		21.95		21.78		16.13		16.25	
Recovery - Leaching	Time (min)	Tailing (g/t)	Recovery (%)	Tailing (g/t)	Recovery (%)	Tailing (g/t)	Recovery (%)	Tailing (g/t)	Recovery (%)
	0		0.00		0.0		0.00		0.00
	2		87.34		90.5		88.84		86.50
	4		89.21		94.7		92.98		92.08
	8		92.19		94.9		94.76		92.97
	24		94.49		94.7		94.15		94.58
Final Recovery		98.06		98.29		98.20		98.26	

Table 13.29 shows a summary of the reagents consumption measured in the TESTWORK tests. Based on the consumption of TESTWORK tests, Table 13.30 contains estimates of consumption per ton of ROM and per gold grade.

Table 13.29
Summary - Consumptions of Leaching Tests - TESTWORK

Description	Direct Leaching		CIL Leaching	
P80	75 µm	106 µm	75 µm	106 µm
Tailing Gravity Concentration - Calculated (g/t)	0.49	0.40	0.60	0.46
NaCN Initial (g/t)	1,000.00	1,000.00	1,000.00	1,000.00
NaCN Consumed (g/t)	260.00	200.00	460.00	400.00
Lime (kg/t)	0.75	0.80	0.90	0.80
Carbon (g/t)	-	-	22.00	16.50

Table 13.30
Estimation - Consumptions by Tonne of ROM and by Gold Content

Description	Direct Leaching		CIL Leaching	
P80	75 µm	106 µm	75 µm	106 µm
Tailing Gravity Concentration - Calculated (g/t)	0.49	0.40	0.60	0.46
NaCN Initial (g/t ROM)	1,000.00	1,000.00	1,000.00	1,000.00
NaCN (g/t ROM)	260.00	200.00	460.00	400.00
NaCN Consumed (g/g Au)	529.33	498.16	766.67	869.57
Lime (kg/t ROM)	0.75	0.80	0.90	0.80
Carbon (kg/t ROM)	-	-	-	-
Carbon (kg/g Au)	-	-	-	-

Carbon consumption cannot be estimated from the concentration used in the tests, as it is an input that can be regenerated and used again several times. Due to the generation of fines, there is a loss of activated carbon during the process of adsorption, acid washing, elution and regeneration. Another important matter to define consumption is the gold adsorption capacity per ton of carbon, which depends on the original quality and efficiency of the regeneration process implemented.

1.6 Recommendations

- Complete and improve flotation studies, also considering the cleaner stage, as flotation has good recovery and can be important to further reduce the mass to be leached. Evaluate the development of tests on a pilot scale.

- Complete and improve the centrifugal concentration-by-size-range (GRG) test studies, which are important to confirm the flowchart of the milling step and gravity concentration. The results are also important for improving the sizing of the following stages of plant design, intensive leaching, flotation and CIP or CIL leaching.

- Carry out a SAG (Semi-Autogenous Grinding Mill) milling study with samples from the primary crushing, as the ore characteristics seem to be appropriate for this type of milling. SAG milling can simplify and reduce the CAPEX and OPEX of the comminution steps (crushing and grinding), with a significant reduction in energy consumption, crusher linings and grinding bodies.

14.0 MINERAL RESOURCE ESTIMATES

14.1 GENERAL DESCRIPTION

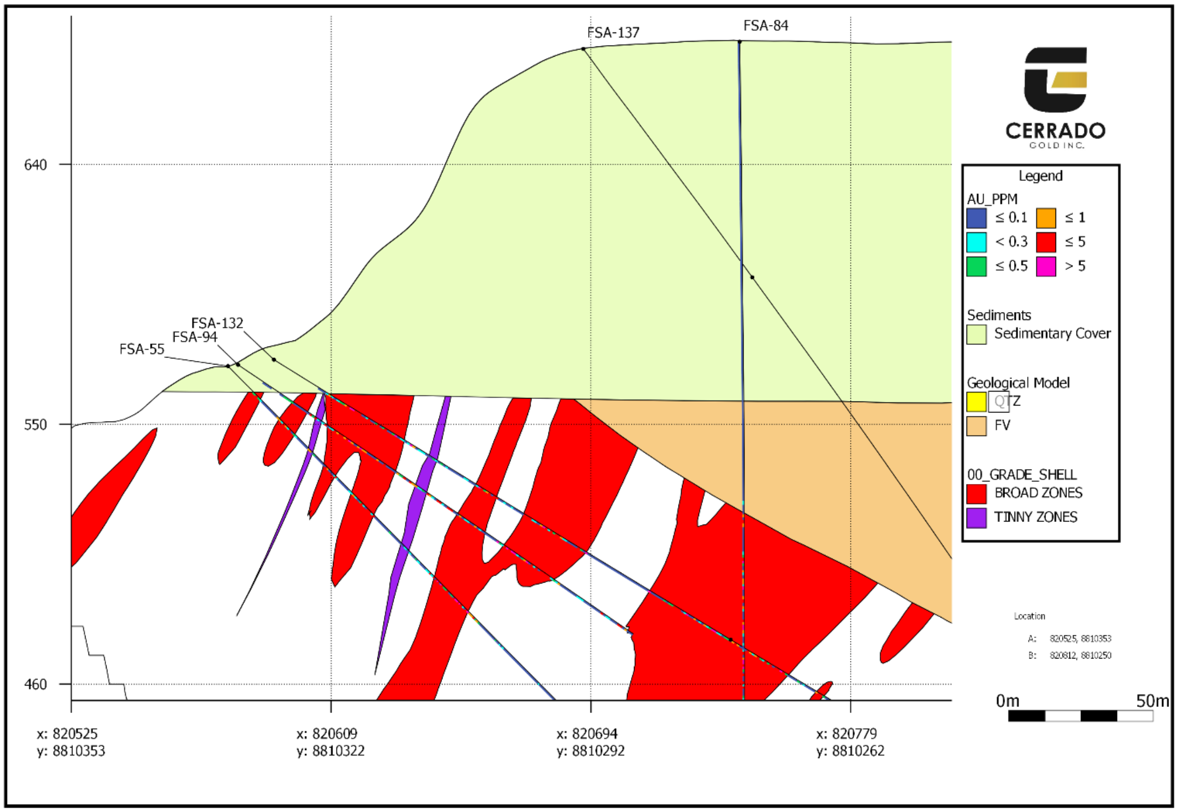
The Serra Alta Deposit mineral resource update has been prepared in conjunction with Cerrado technical staff. Micon revised the updated mineralization wireframes received from the project site staff. As has been done in the past, the deposit is still divided into fault-bounded mineralized zones, however, this time the zones have been renamed and a new minor zone has been added as follows:

- North 1 (N1) is now Pit Norte - PN
- North 2, (N2) is now East Zone - EZ
- South 1 (S1) is now Pit Sul - PS
- South 2 (S2) is now Ext Sul - ES and
- New minor zone Central - C

In addition to these changes, Cerrado also modelled multiple narrow veins, 11 veins in EZ, 3 veins in PN and 4 veins in PS for a total of 18 veins.

The mineralization model was constructed based on hydrothermal alteration represented by veins, sulphides and mainly quartz veins. Those intervals were refined selecting sub-intervals with grades higher than 0.1 Au g/t to construct the model in a more selective manner regarding the grades. The software used for tridimensional interpretation of mineralized zone is Leapfrog GEO, two different interpolants were used; the intrusion for the broad mineralized zones and the vein interpolant for tiny zones. The mineralization in both zones is the same sheeted veins hosted in hydrothermally altered syenogranite.

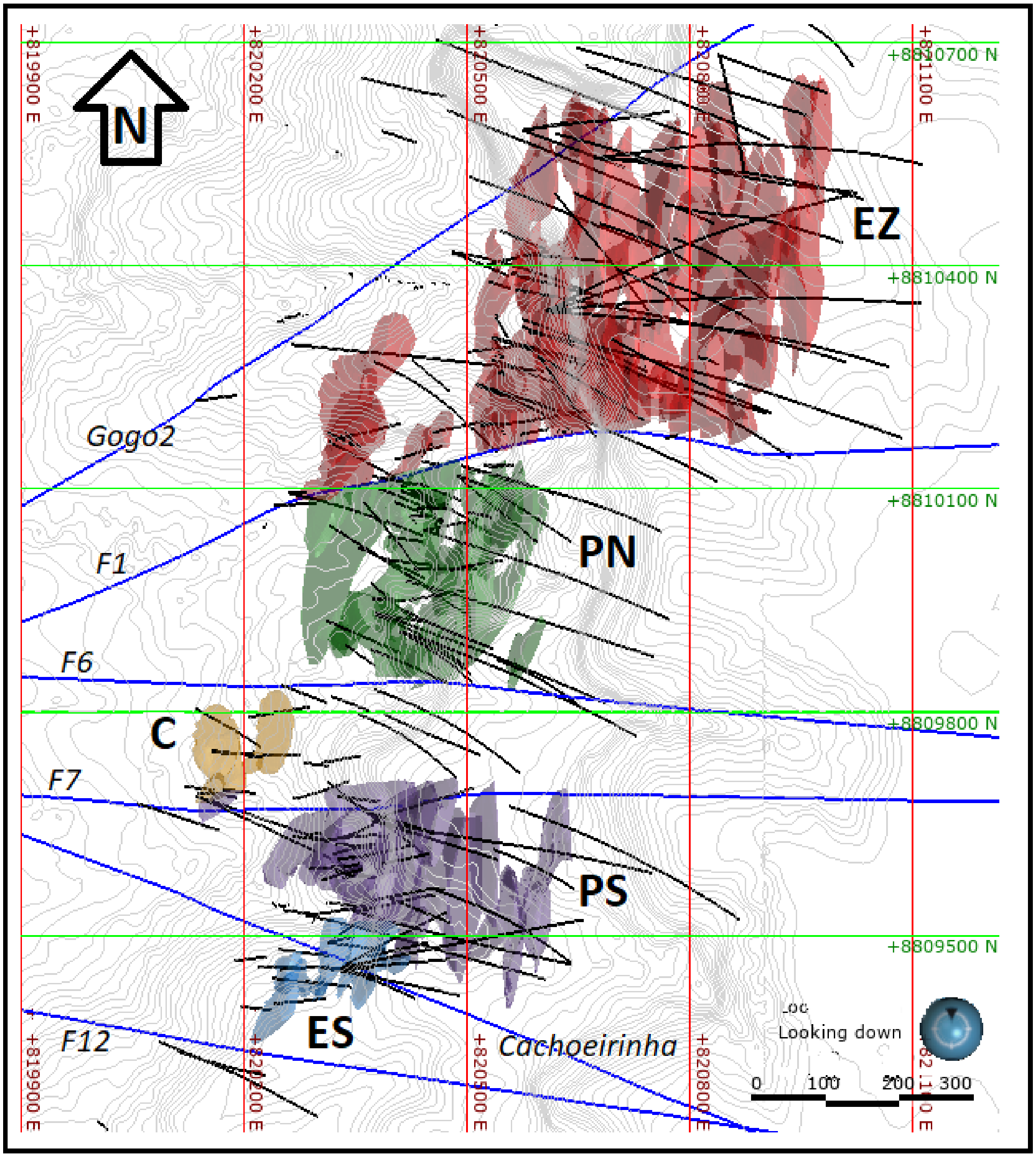
Figure 14.1
Geological Section Showing Mineralization Model



Source: Cerrado 2021.

The five zones and the eighteen veins located along strike from each other, contain clusters of quartz veinlets. Grade interpolation will be affected by zone offsets of the major faults and so the zones have been separated. Figure 14.2 shows the location of all interpreted wireframes constructed by Cerrado and modified by Micon.

Figure 14.2
Serra Alta Deposit Mineralized Zone Locations



Faults Section Plan Level at +350 m

Source: Micon, 2021

The Serra Alta Deposit has been estimated assuming both surface and underground mining scenarios.

14.2 MINERAL RESOURCE ESTIMATE DEFINITION AND PROCEDURE

The current mineral resource estimate for the Serra Alta Deposit has been prepared following the 2014 CIM standards and definitions as well as the 2019 CIM Best Practice guidelines, as required under NI 43-101 regulations. The standards and definitions are as follows:

"Mineral Resources are sub-divided, in order of increasing geological confidence, into Inferred, Indicated and Measured categories. An Inferred Mineral Resource has a lower level of confidence than that applied to an Indicated Mineral Resource. An Indicated Mineral Resource has a higher level of confidence than an Inferred Mineral Resource but has a lower level of confidence than a Measured Mineral Resource."

"A Mineral Resource is a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade or quality and quantity that there are reasonable prospects for eventual economic extraction."

"The location, quantity, grade or quality, continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling. "

"Material of economic interest refers to diamonds, natural solid inorganic material, or natural solid fossilized organic material including base and precious metals, coal, and industrial minerals."

"The term Mineral Resource covers mineralization and natural material of intrinsic economic interest which has been identified and estimated through exploration and sampling and within which Mineral Reserves may subsequently be defined by the consideration and application of Modifying Factors. The phrase 'reasonable prospects for eventual economic extraction' implies a judgment by the Qualified Person in respect of the technical and economic factors likely to influence the prospect of economic extraction. The Qualified Person should consider and clearly state the basis for determining that the material has reasonable prospects for eventual economic extraction. Assumptions should include estimates of cut-off grade and geological continuity at the selected cut-off, metallurgical recovery, smelter payments, commodity price or product value, mining and processing method and mining, processing and general and administrative costs. The Qualified Person should state if the assessment is based on any direct evidence and testing."

"Interpretation of the word 'eventual' in this context may vary depending on the commodity or mineral involved. For example, for some coal, iron, potash deposits and other bulk minerals or commodities, it may be reasonable to envisage 'eventual economic extraction' as covering time periods in excess of 50 years. However, for many gold deposits, application of the concept would normally be restricted to perhaps 10 to 15 years, and frequently to much shorter periods of time."

14.2.1 Inferred Mineral Resource

"An Inferred Mineral Resource is that part of a Mineral Resource for which quantity and grade or quality are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade or quality continuity."

"An Inferred Mineral Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration."

"An Inferred Mineral Resource is based on limited information and sampling gathered through appropriate sampling techniques from locations such as outcrops, trenches, pits, workings and drill holes. Inferred Mineral Resources must not be included in the economic analysis, production schedules, or estimated mine life in publicly disclosed Pre-Feasibility or Feasibility Studies, or in the Life of Mine plans and cash flow models of developed mines. Inferred Mineral Resources can only be used in economic studies as provided under NI 43-101."

"There may be circumstances, where appropriate sampling, testing, and other measurements are sufficient to demonstrate data integrity, geological and grade/quality continuity of a Measured or Indicated Mineral Resource, however, quality assurance and quality control, or other information may not meet all industry norms for the disclosure of an Indicated or Measured Mineral Resource. Under these circumstances, it may be reasonable for the Qualified Person to report an Inferred Mineral Resource if the Qualified Person has taken steps to verify the information meets the requirements of an Inferred Mineral Resource."

14.2.2 Indicated Mineral Resource

"An Indicated Mineral Resource is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics are estimated with sufficient confidence to allow the application of Modifying Factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit."

"Geological evidence is derived from adequately detailed and reliable exploration, sampling and testing and is sufficient to assume geological and grade or quality continuity between points of observation."

"An Indicated Mineral Resource has a lower level of confidence than that applying to a Measured Mineral Resource and may only be converted to a Probable Mineral Reserve."

"Mineralization may be classified as an Indicated Mineral Resource by the Qualified Person when the nature, quality, quantity and distribution of data are such as to allow confident interpretation of the geological framework and to reasonably assume the continuity of mineralization. The Qualified Person must recognize the importance of the Indicated Mineral Resource category to the advancement of the feasibility of the project. An Indicated Mineral

Resource estimate is of sufficient quality to support a Pre-Feasibility Study which can serve as the basis for major development decisions."

14.2.3 Measured Mineral Resource

"A Measured Mineral Resource is that part of a Mineral Resource for which quantity, grade or quality, densities, shape, and physical characteristics are estimated with confidence sufficient to allow the application of Modifying Factors to support detailed mine planning and final evaluation of the economic viability of the deposit."

"Geological evidence is derived from detailed and reliable exploration, sampling and testing and is sufficient to confirm geological and grade or quality continuity between points of observation."

"A Measured Mineral Resource has a higher level of confidence than that applying to either an Indicated Mineral Resource or an Inferred Mineral Resource. It may be converted to a Proven Mineral Reserve or to a Probable Mineral Reserve."

Mineralization or other natural material of economic interest may be classified as a Measured Mineral Resource by the Qualified Person when the nature, quality, quantity and distribution of data are such that the tonnage and grade or quality of the mineralization can be estimated to within close limits and that variation from the estimate would not significantly affect potential economic viability of the deposit. This category requires a high level of confidence in, and understanding of, the geology and controls of the mineral deposit.

14.3 SUPPORTING DATA

The Serra Alta Deposit database was provided to Micon by Cerrado. It is comprised of 199 drill holes and 499 channel samples, totaling 40,503 m of drilling and 955 m of channels, containing a total of 31,961 samples. This database was the starting point from which the gold mineralized shell envelopes (wireframes) were modelled.

For the purposes of mineral resource estimation, Micon used only the data contained within the final wireframes, including broad envelopes and narrow veins. The effective number of drill holes and samples used were 135 drill holes and 94 channels totalling 5,521 m of sampling from which 371 m were inside the narrow veins.

The channels used came from surface trenches. They were helpful in the interpretation of the mineralized envelopes at or near surface.

14.3.1 Cerrado Data Verification

Cerrado personnel have spot checked the surveyed collar locations for a number of older drill holes. No significant errors were reported.

The electronic drill hole database provided by Cerrado was checked for logical errors in its entries using Leapfrog Geo software. No errors were detected.

14.3.2 Topography

The project topographic model was provided by Cerrado in the form of a digital terrain model (DTM), included as part of the Leapfrog Geo files. The DTM was of sufficient quality to be used for the pit optimization which constrained the reported mineral resources.

14.3.3 Geological and Mineralogical Data

The Serra Alta Deposit geology and mineralization styles are discussed in detail elsewhere in this report. The mineralization has been interpreted to occur in north-northeast trending pods within the granite, which contain frequent, narrow, cross-cutting ladder veins. The pods have been modelled based on a combination of veining intensity and a 0.1 g/t Au cut-off. Small areas below 0.1 g/t contained within contiguous areas that met the criteria above were allowed to remain.

14.3.4 Rock Density

A total of 955 density measurements were provided by Cerrado. Given the relatively even distribution of the data along the mineralization corridor, Micon was able to interpolate density values into the Serra Alta Deposit model. The nearest neighbour method was used for the waste rock density determination and ordinary kriging for the mineralized envelopes. The overall range of density values in the block model for the entire project is from 1.77 g/cm^3 to 3.06 g/cm^3. Table 14.1 summarizes the density averages.

Table 14.1
Serra Alta Deposit Average Density by Rock Type

Deposit Name	Count of Density Measurements	Avg. Density Value
Mineralized Envelope	(Mixed)	2.600
Sediments (SED)	41	2.015
Felsic Volcanics (FV)	148	2.650
Granite (GRA)	3,261	2.624
Quartz (QTZ)	118	2.624

14.3.5 Univariate Statistics

Basic univariate statistics were calculated for the entire database at Serra Alta and for the selected intervals inside of the mineralized envelopes. The results are summarized in Table 14.2 and Table 14.3.

Table 14.2
Serra Alta Deposit Global Basic Statistics, Gold - Raw Samples

Description	Count/Au (g/t)
Count	29,724
Length	31,463
Mean	0.30
Standard deviation	2.49
Coefficient of variation	8.35
Variance	6.18
Minimum	0.00
Lower quartile	0.01
Median	0.01
Upper quartile	0.03
Maximum	218.00

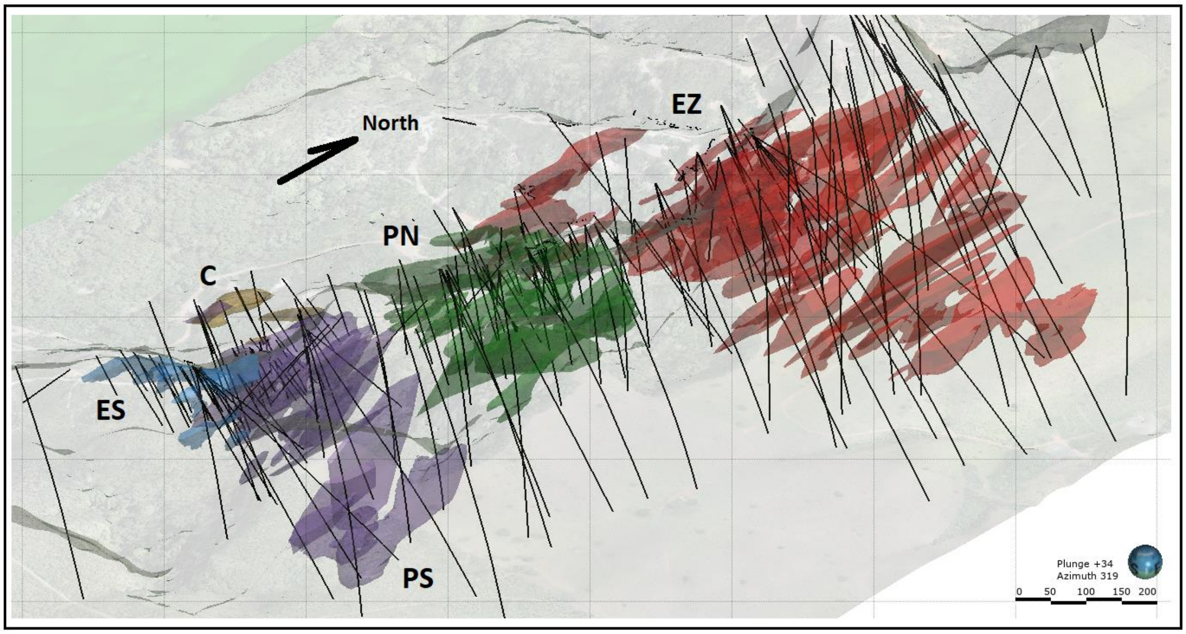
Table 14.3
Serra Alta Deposit Global Basic Statistics, Gold - Raw Samples within Wireframes

Description	Fault-Bounded Mineralized Blocks	
Selection	Entire Broad Envelope	All Veins
Count	5,281	363
Length	5,010	368
Mean	1.42	0.49
Standard deviation	5.68	0.98
Coefficient of variation	4.01	1.99
Variance	32.26	0.95
Minimum	0.00	0.00
Lower quartile (Q1)	0.03	0.03
Median	0.17	0.18
Upper quartile (Q3)	0.88	0.51
Maximum	218.00	8.42

14.3.6 Three-Dimensional (3D) Modelling

Cerrado provided Micon with the wireframes of the mineralized envelopes at Serra Alta. Micon and Cerrado technical staff had various video link review sessions and discussions to achieve the final wireframes. Figure 14.3 illustrates the final wireframes for the multiple zones.

Figure 14.3
3D Isometric View of Serra Alta Deposit Envelope



Source: Micon, 2021.

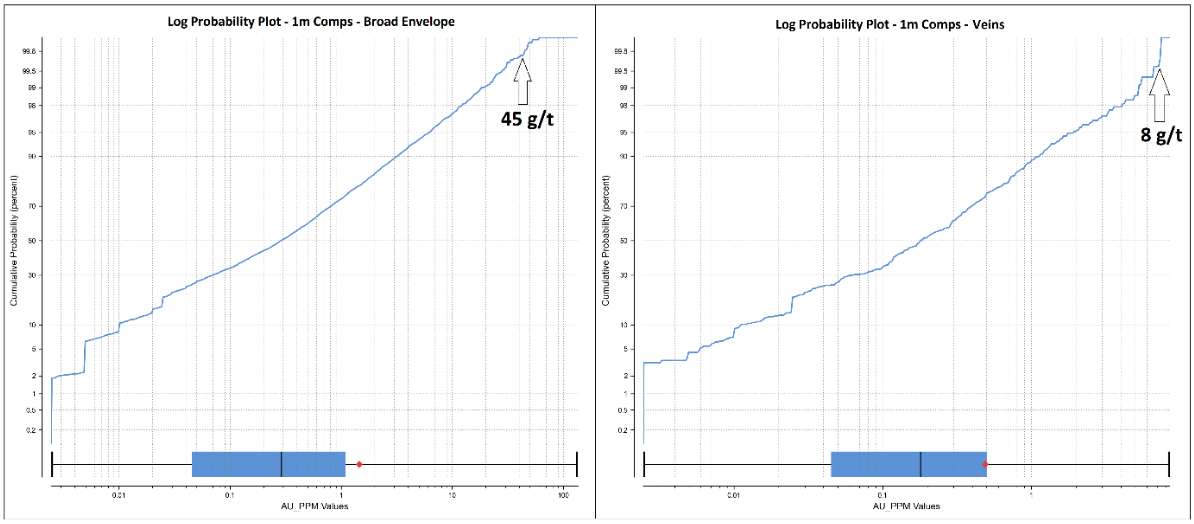
The 3D model was adjusted to remove isolated wireframe pods informed by a single drill hole.

14.3.7 Data Processing

14.3.7.1 Grade Capping

All outlier assay values were carefully analyzed, individually by zone, and globally, using log probability plots. It was decided to cap based on the entire envelope, given the assumption that the Serra Alta Deposit is formed by a single mineralizing event and the zone offsets are the result of post mineral faulting, and not different geological domains. Figure 14.4 shows the probability plot of 1-m composites for the entire Serra Alta Deposit (within the wireframes).

Figure 14.4
Serra Alta Log Probability Plots for Broad Envelope and Veins



Source: Micon, 2021.

In order to identify true outliers, the data were assessed after compositing to constant intervals. This was done to avoid potential short sample bias should shorter samples be taken near visible gold in core. Table 14.4 summarizes the capping grades used and the number of composites capped.

Table 14.4
Serra Alta Selected Capping Grades on 1.0-m Composites

Entire Deposit	Max. Grade (Au g/t)	Capping Grade (Au g/t)	Capped Composites	Total Composites
Gold Mineralized Broad Envelope	132.57	45.00	10	5,310
Gold Mineralized Veins	8.42	8.00	1	464

14.3.7.2 Compositing

The selected intercepts for the Serra Alta Deposit were composited to 1.0-m equal length intervals. The composite length selected was based on the most common original sample length. Table 14.5 summarizes the basic statistics of the composited data.

Table 14.5
Summary of the Basic Statistics for 1.0-m Composites

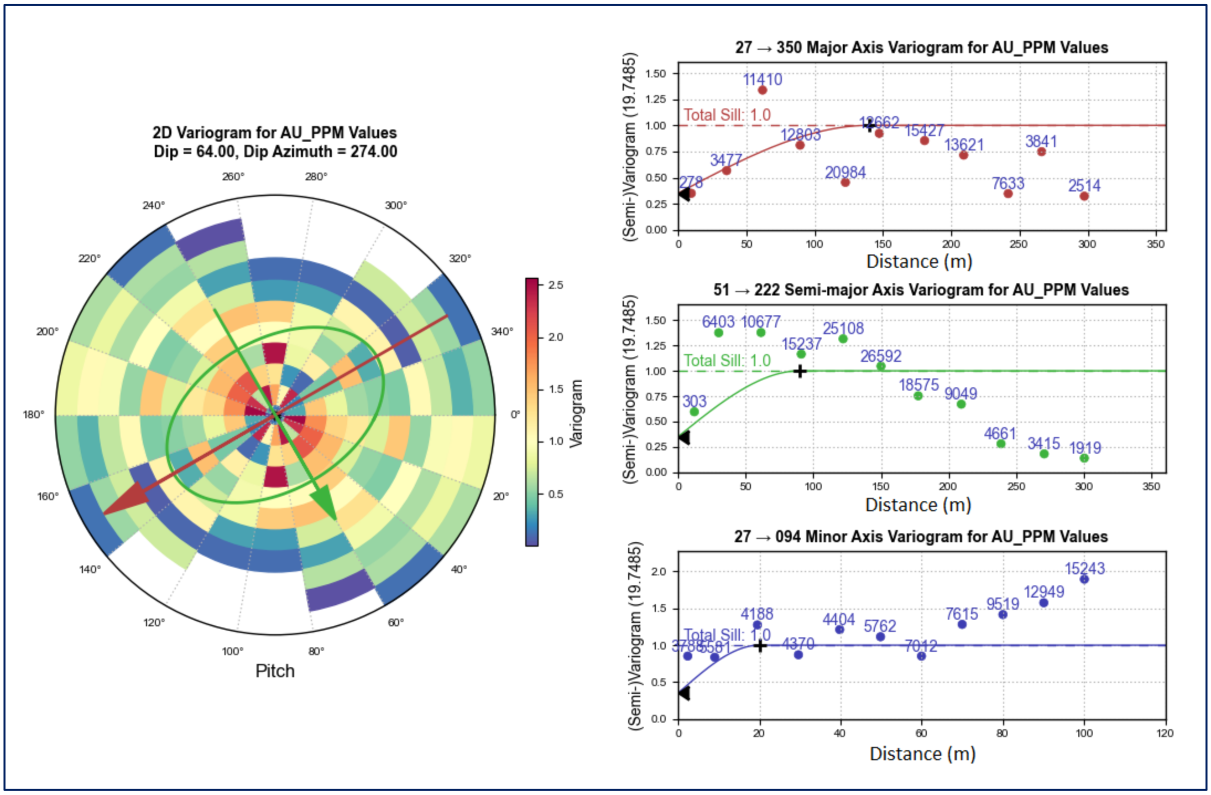
Description	Capped Composites							Uncapped Composites	
Selection	EZ	PN	PS	ES	C	All Veins	All Zones	All Veins	All Zones
Count	2,423	1,088	1,499	261	154	464	5,310	464	5,310
Length	2,422	1,089	1,499	261	154	464	5,310	410	5,311
Mean	1.71	1.34	1.08	0.72	0.64	0.52	1.41	0.49	1.45
Standard deviation	4.44	3.32	3.20	1.71	3.64	0.99	3.84	0.95	4.58
Coefficient of variation	2.60	2.48	2.96	2.36	5.65	1.90	2.73	1.93	3.15
Variance	19.74	11.02	10.23	2.93	13.25	0.99	14.76	0.90	20.99
Minimum	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lower quartile (Q1)	0.08	0.06	0.03	0.02	0.02	0.05	0.05	0.05	0.05
Median	0.43	0.35	0.13	0.14	0.05	0.21	0.29	0.18	0.29
Upper quartile (Q3)	1.37	1.07	0.68	0.62	0.40	0.51	1.09	0.50	1.09
Maximum	45.00	45.00	45.00	14.68	44.88	8.00	45.00	8.42	132.57

14.3.8 Variography

Variography is the analysis of the spatial continuity of grade for the commodity of interest. In the case of Serra Alta Deposit, the analysis was done on each individual mineralized zone using down-the-hole variograms and 3D variograms, in order to define the best parameters to interpolate grade.

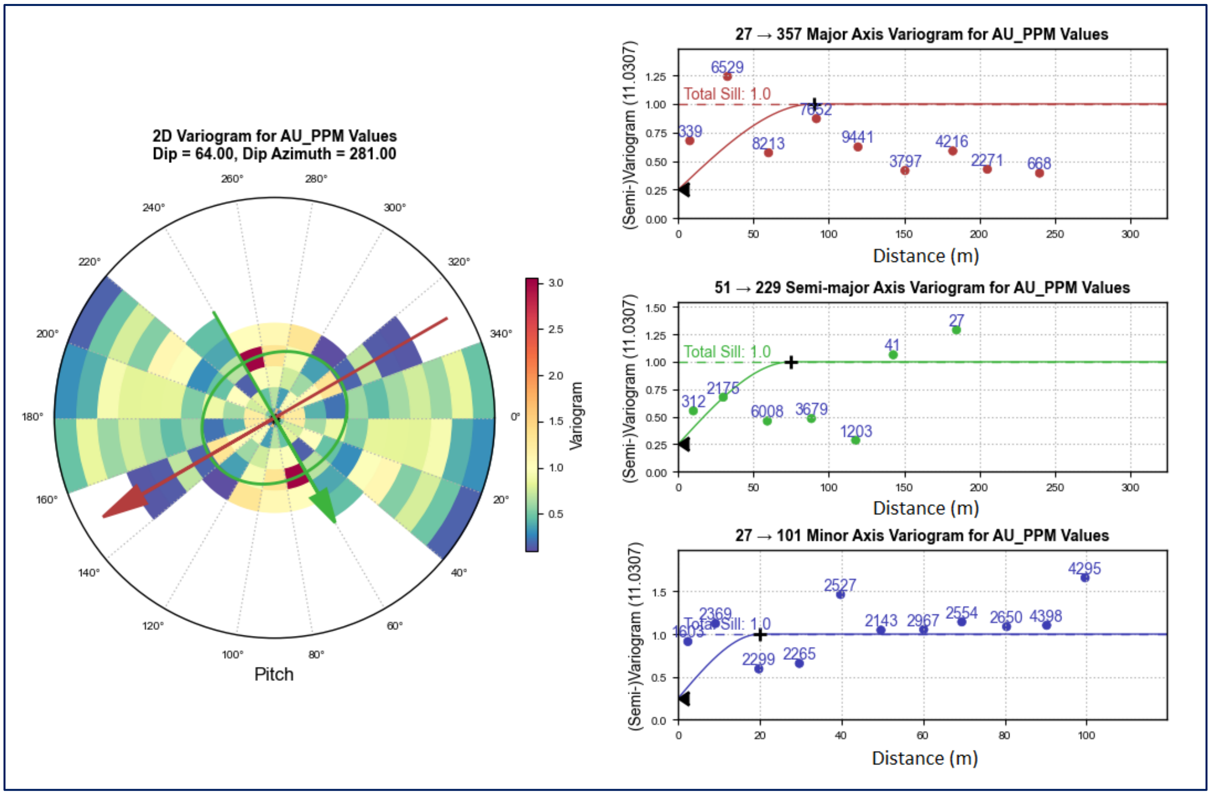
Variography must be performed on regular coherent shapes with geological continuity support. First, down-the-hole variograms were constructed for each zone, to establish the nugget effect to be used in the modelling of the 3D variograms. Figures 14.5 to 14.7 show a summary of the gold variography within the fault-delineated zones.

Figure 14.5
Serra Alta Deposit Zone EZ Variography



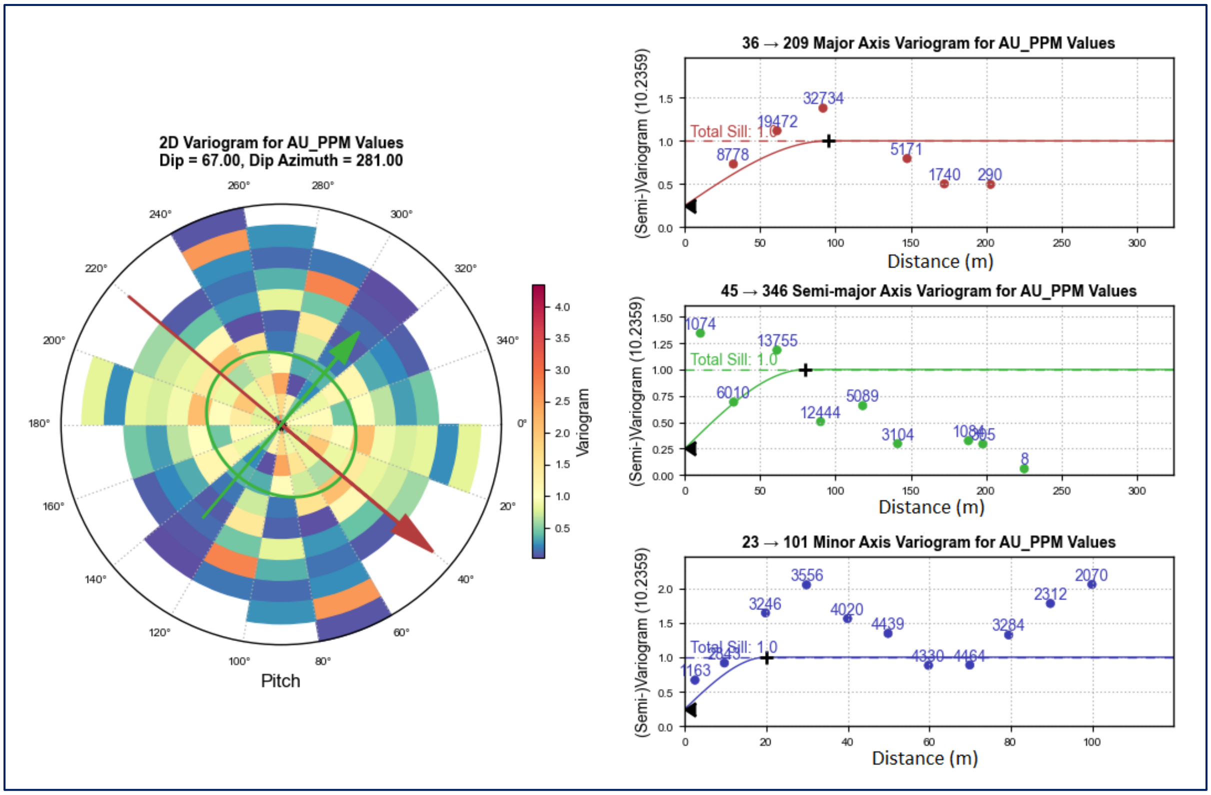
Source: Micon 2021.

Figure 14.6
Serra Alta Deposit Zone PN - Variography



Source: Micon 2021.

Figure 14.7
Serra Alta Deposit Zone PS - Variography



Source: Micon 2021.

Variograms were successfully modelled for EZ, PN and PS, however, for Zones ES and C Micon decided to use the closest zone (PS) kriging parameters. All 5 zones were well supported to use the ordinary kriging (OK) interpolation method. The ranges modelled varied from 60 to 75 m and were used to establish the search parameters employed. Further detail is discussed in Section 14.4.2, Search Strategy and Interpolation.

14.3.9 Continuity and Trends

The Serra Alta Deposit presents a predominant bearing and dip with a well-defined broad geometry. This is supported by the geology, grades, historic bandeirante and garimpeiro workings, as well as enough drill hole intercepts to give confidence on their continuity along strike and down dip. On average the deposit model has an overall 27º strike and -70º northwest dip. Within this corridor there could be local variation of strike and/or dip of individual veins and pods.

14.4 MINERAL RESOURCE ESTIMATION

The mineral/element of economic interest at Serra Alta is gold. The estimate of tonnes and grade was performed solely using Leapfrog Geo/EDGE software.

14.4.1 Block Model

A single block model was constructed to contain the wireframe zone codes, gold grades and density. A summary of the definition data of the block model is shown in Table 14.6.

Table 14.6
Serra Alta Deposit Block Model Parameters

Description	Serra Alta Block Model (SABM)
Model Dimension X (m)	1,250
Model Dimension Y (m)	1,500
Model Dimension Z (m)	550
Origin X (Easting)	820,000
Origin Y (Northing)	8,809,260
Origin Z (Upper Elev.)	710
Rotation (°)	0
Parent Block Size X (m) - Across Strike	2
Parent Block Size Y (m) - Along Strike	10
Parent Block Size Z (m) - Down Dip	5

14.4.2 Search Strategy and Interpolation

A set of parameters were derived from the variographic analysis results to interpolate the composite grades into the blocks. A summary of the Serra Alta Deposit OK interpolation parameters is shown in Table 14.7. Dynamic anisotropy was chosen due to local, short range variation of strike and dip of individual mineralized pods.

Table 14.7
Ordinary Kriging Interpolation Parameter Summary

Zone Code	Pass	Orientation			Search Parameters					
		Dip Az (°)	Pitch (°)	Dip (°)	Range Major Axis (m)	Range Semi-Major Axis (m)	Range Minor Axis (m)	Minimum Samples	Maximum Samples	Maximum Samples per Hole
EZ	1	Dynamic Anisotropy			140	90	20	6	12	2
PN	1				90	75	20	6	12	2
PS	1				95	80	20	6	12	2
ES	1				95	80	20	6	12	2
C	1				95	80	20	6	12	2
All	2	Same as Pass 1			x 2	x 2	x 2	4	12	2
All	3				x 2	x 2	x 2	2	8	2

14.4.3 Prospects for Economic Extraction

This mineral resource has been constrained using economic assumptions of both surface open pit and underground mining scenarios. The potentially minable portions of the block model are conceptual in nature and are based on single cut-off value of 0.49 g/t Au for surface mining and 1.5 g/t Au for underground mining.

The gold price and operating costs used were supplied by Cerrado after consultation with engineers from Grupo GE21. In the QP's opinion, the economic parameters used are reasonable. However, they were not developed from first principles. They are taken from similar operations in Brazil and are considered conceptual in nature.

Table 14.8 summarizes the economic assumptions on which the open pittable portion of the resource estimate for the Serra Alta Deposit is based.

Table 14.8
Economic Assumptions for the Conceptual Open Pit Scenario

Description	Units	Value Used
Gold Price	USD$/t	1,600.00
Mining Cost Ore	USD$/t	2.00
Mining Cost Waste	USD$/t	1.70
UG Mining Cost	USD$/t	40.00
Processing Cost	USD$/t	10.78
General & Administration	USD$/t	2.00
Gold Recovery (Metallurgical)	%	98.50
Slope Angle	Degrees (º)	55

The parameters above were used to calculate the cut-off grade of 0.30 g/t Au for the open pit portion of the Serra Alta Deposit.

14.4.4 Underground Mining Potential

Most of the mineral resources reported for the Serra Alta Deposit are within the conceptual open pit. The remainder of the block model, under the pit, was reported at a higher cut-off grade deemed suitable for underground mining, from a ramp, in Brazil.

Assuming an underground mining cost of US$40/t and the rest of the parameters shown in Table 14.8, it is considered reasonable to determine that the mineral resources outside of the pit shell can potentially be mined by underground methods at a cut-off grade of 1.1 g/t Au.

The choice of a 1.1 Au g/t cut-off was supported after comparison to the nearby Jacobina mine of Yamana Gold Inc., which reports at a 1.2 g/t Au cut-off. Jacobina is a ramp access gold deposit in Bahia State mining quartz pebble conglomerate zones which are usually steeply dipping. The mining is performed mostly using longhole methods. The rock is estimated to be of similar competency to the unweathered (underground) granite at Serra Alta. Engineers from Grupo GE21 were also consulted on these parameters.

Isolated small patches of blocks above cut-off grade were not tabulated in the mineral resource estimate. To be included the group of blocks was required to be approximately 20 m by 20 m by 2 m in dimension, or greater, considered to be a mineable size.

14.4.5 Categorization of Mineral Resources

Micon has categorized the present mineral resource estimate at the Serra Alta Deposit in the Indicated and Inferred category. No Measured mineral resources are declared at this time. Thanks to the infill drilling more than 9 MT of material was upgraded into the Indicated category.

14.5 MINERAL RESOURCE STATEMENT FOR SERRA ALTA

The mineral resource statement for the Serra Alta Deposit is summarized in Table 14.9.

Table 14.9
Statement of Mineral Resources for Serra Alta Gold Deposit
(Effective Date July 21, 2021)

Mining Method	Cut-off Grade (g/t Au)	Resource Category	Tonnage (kt)	Avg. Au Grade (g/t)	Metal Content (koz)
Open Pit	0.30	Indicated	9,063	1.85	539
		Inferred	12,128	1.82	708
Underground	1.10	Indicated	45	1.66	2
		Inferred	1,069	2.10	72
OP + UG		Indicated	9,108	1.85	541
		Inferred	13,197	1.84	780

Estimate Notes:

1. Mineral resources were estimated by Mr. B. Terrence Hennessey, P.Geo., and Mr. Alan J. San Martin, MAusIMM(CP) of Micon International Limited. ("Micon"), a Toronto based consulting company, independent of Cerrado Gold. Both Mr. Hennessey and Mr. San Martin meet the requirements of a "Qualified Person" as established by the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Definition Standards for Mineral Resources and Mineral Reserves (May 2014) ("the CIM Standards").
2. The estimate is based on a long-term gold price of US$ 1,600 per ounce and economic cut-off grades 0.30 g/t Au (Open Pit) and 1.10 g/t (Underground).
3. Open Pit constrained resources are reported within an optimized pit shell; underground resources are reported within continuous and contiguous shapes which lie adjacent to and below the ultimate open pit shell and interpreted to be recoverable utilizing standard underground mining methods.
4. Rock density was assigned to different lithologies based on the geological and mineralization models, using calculated average values of 2.624 g/cm^3 in granite, 2.65 g/cm^3 in volcanics and 2.60 g/cm^3 inside mineralization wireframes.

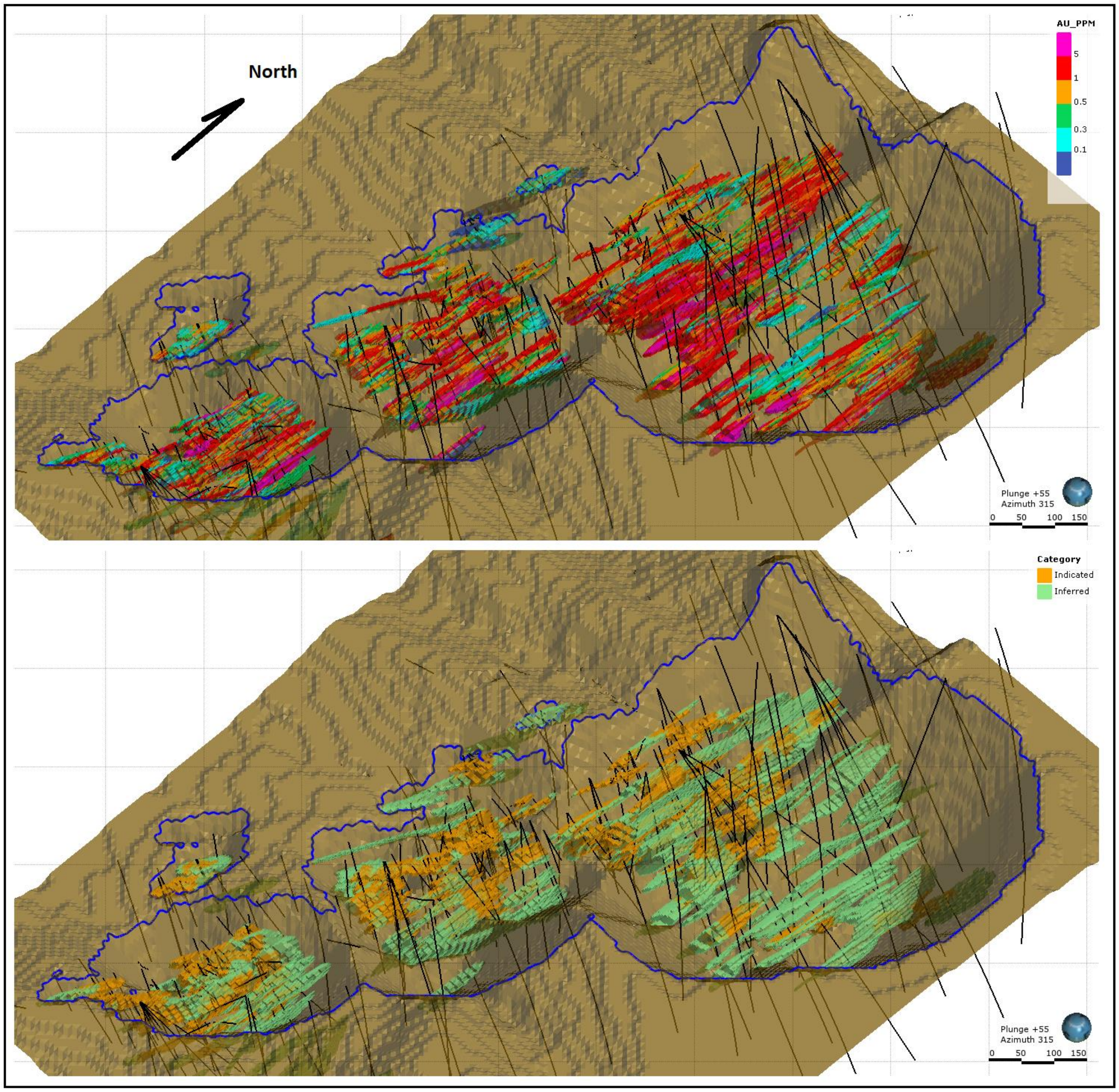
5. The block model gold grades were estimated using the Ordinary Kriging interpolation method with searching parameters derived from geostatistical analysis performed within the mineralization wireframes. Variogram ranges go from 90 m to 150 m in the major axis.
6. The pit constrained resource is reported within an optimized pit shell that assumed a maximum slope angle of 55 degrees. Open pit mining recovery was assumed to be 100%. Open pit dilution was assumed to be 0%. Underground mining recovery was assumed to be 100%. Underground dilution was assumed to be 0%.
7. Micon has not identified any legal, political, environmental, or other risks that could materially affect the potential development of the mineral resource estimate.
8. The mineral resource estimates are classified according to the 2014 CIM Standards which define a Mineral Resource as “a concentration or occurrence of solid material of economic interest in or on the earth's crust in such form, grade or quality and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade or quality, continuity and other characteristics of a mineral resource are known, estimated or interpreted from specific geological evidence and knowledge including sampling.
9. The mineral resource was categorized based on the geological confidence of the deposit into inferred and indicated categories. An inferred mineral resource has the lowest level of confidence. An indicated mineral resource has a higher level of confidence than an inferred mineral resource. It is reasonably expected that the portions of the inferred mineral resources could be upgraded to indicated mineral resources with additional infill drilling.

Mineral resources which are not mineral reserves do not have demonstrated economic viability. At the present time, Micon does not believe that the Serra Alta mineral resource estimate would be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.

Micon considers the resource estimate for the Serra Alta Deposit to have been reasonably prepared and to conform to the current 2014, CIM standards and definitions for estimating mineral resources.

The mineral resources within the pit shells, summarized in Table 14.9 above, are shown graphically in Figure 14.8.

Figure 14.8
Resource Blocks by Grade and Category - Isometric View



Source: Micon 2021

14.6 MINERAL RESOURCE VALIDATION

Micon has validated the block model using both statistical comparisons and visual inspections.

14.6.1 Statistical Comparison

The average grade of the composites within each of the mineralized envelopes was compared to the average grade of all blocks therein. Table 14.10 summarizes the results of this comparison.

Table 14.10
1.0-m Composite Grades vs. Block Grades

Zone	1-m Composites			Block Model		
	Nº of Comps	Total Length (m)	Au (g/t)	Nº of Blocks	Volume (m^3)	Au (g/t)
EZ	2,423	2,422	1.71	57,652	5,765,200	1.78
PN	1,088	1,089	1.34	13,849	1,384,900	1.69
PS	1,499	1,499	1.08	25,065	2,506,500	1.20
ES	261	261	0.72	2,150	215,000	0.68
C	154	154	0.64	1,818	181,800	0.75

The average composite grades and block grades compare reasonably closely, however, for those veins with few samples, the difference tends to be somewhat higher.

14.6.2 Visual Inspection

The model blocks and the drill hole intercepts were reviewed interactively in three-dimensional mode within Leapfrog to ensure that the blocks were honouring the drill hole data. The agreement between the block grades and the drill intercepts of the Serra Alta Deposit was deemed to be satisfactory.

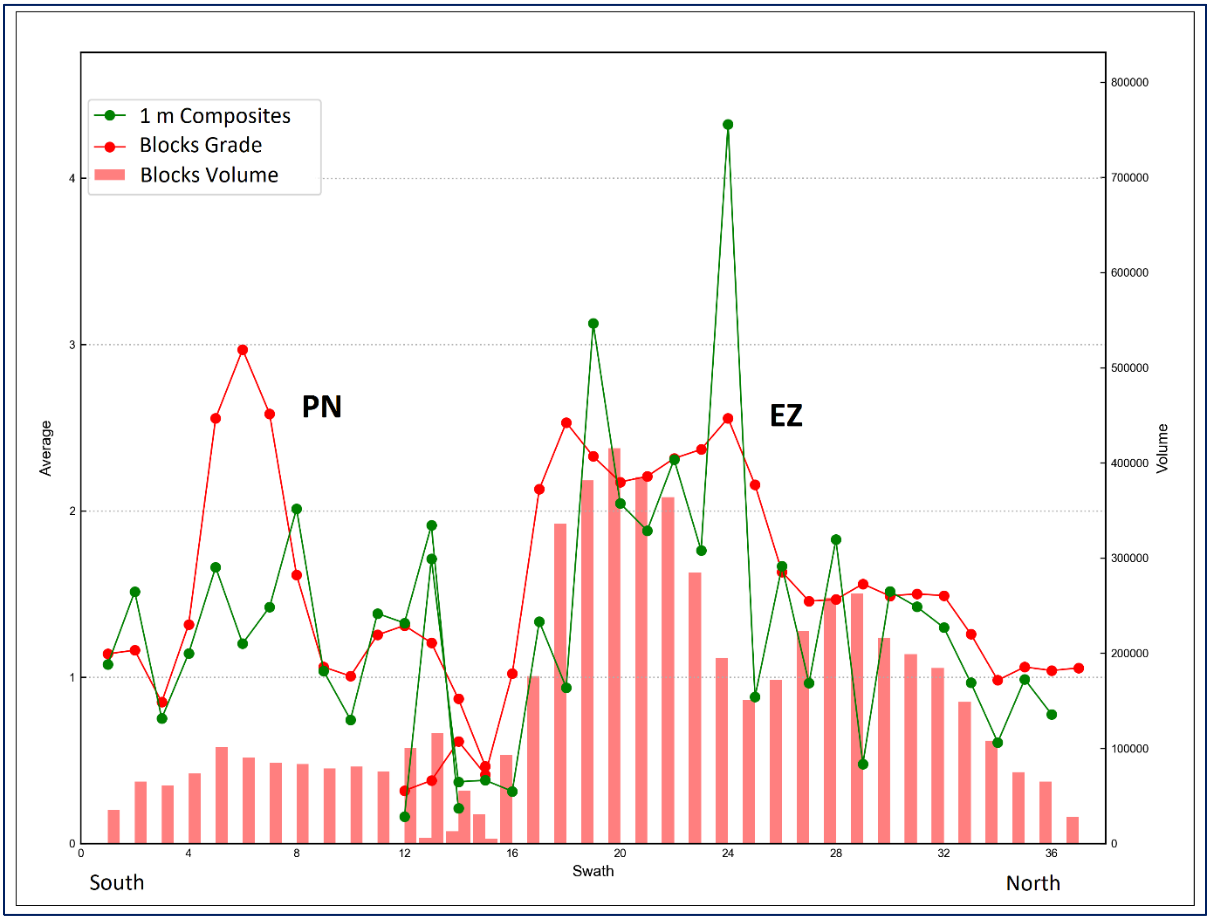
14.6.3 Swath Plots

The average gold grades of the block model and the informing 1-m composites were compared in a profile along the strike (a swath plot). Figures 14.9 and 14.10 show the swath plots for the North and the South Zone pairs.

14.7 RESPONSIBILITY FOR ESTIMATION

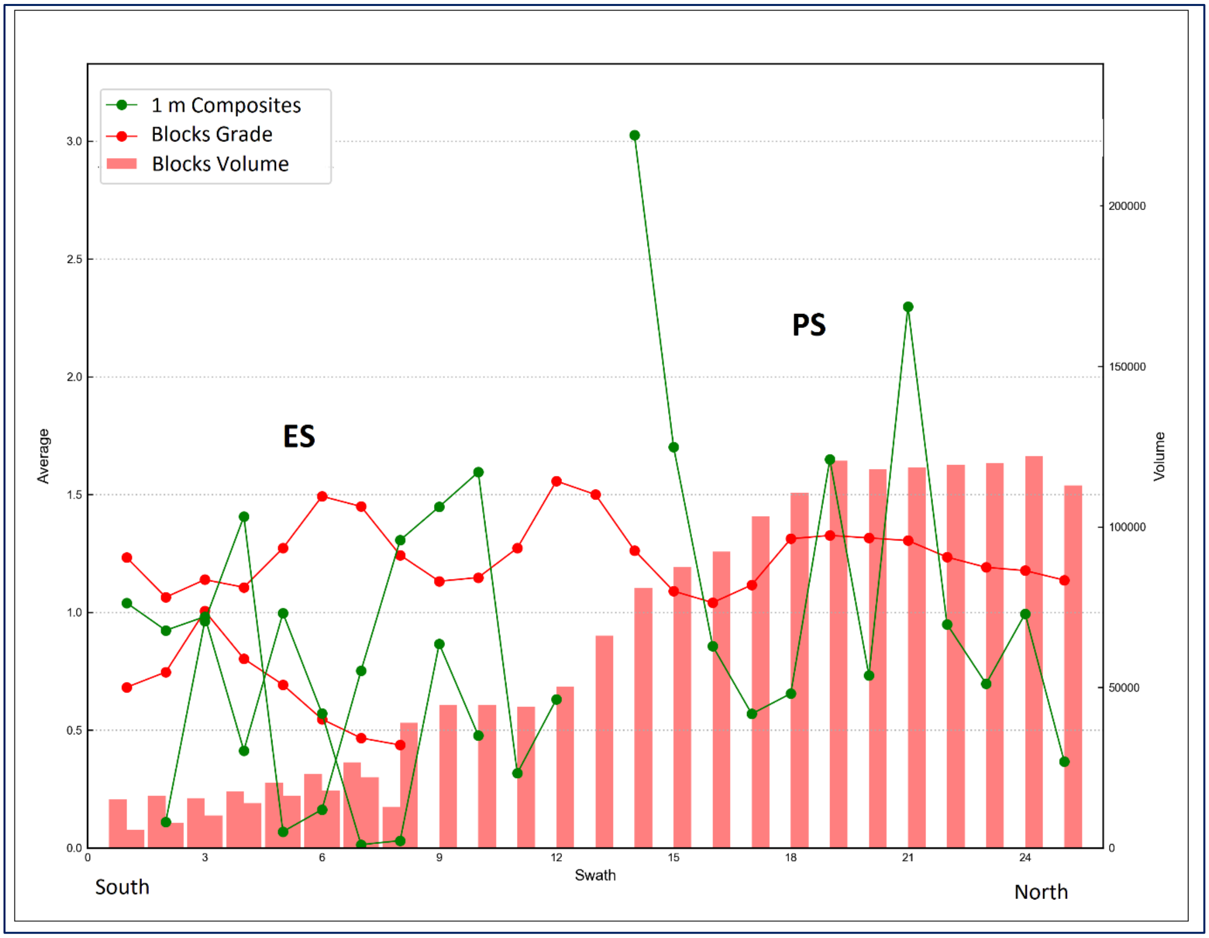
The mineral resources presented in this report have been prepared under the direction of B. Terrence Hennessey, P.Geo., of Micon International Limited. The estimates have been prepared with the assistance of Ing. Alan J. San Martin, MAusIMM(CP), also of Micon International Limited.

Figure 14.9
Serra Alta EZ and PN Swath Plot - 1 m Composites vs Block Grades at 20 m Spacing



Source: Micon, 2021

Figure 14.10
Serra Alta PS and ES Swath Plot - 1-m Comps vs Block Grades at 20 m Spacing



Source: Micon, 2021

15.0 MINERAL RESERVE ESTIMATES

There have been no NI 43-101-compliant mineral reserve estimates prepared at this time for the MDC project.

16.0 ADJACENT PROPERTIES

There are no adjacent properties which affect the opinions offered in this report.

17.0 OTHER RELEVANT DATA AND INFORMATION

17.1 DEPOSIT GRADE

Given the apparently large size of the Serra Alta Deposit, the possible existence of more than one sub-corridor of mineralization and the number of older drill holes with questionable assays, it is difficult at this time to estimate the ultimate approximate size and grade at Serra Alta.

From 2012 to 2017, MSM operated a small mill with gravity recovery and reported a processed tonnage of 60,361 t at a recovered grade of 1.508 g/t Au. Of this material, it is reported that 54,354 t came from the South Block, 33 t from the Central Block and 5,943 t from the North Block. It is believed that most of the material processed came from the eastern-most sub-corridor of mineralization currently identified.

Figure 17.1 shows a close-up view of the surface of one of the tailings piles near the Serra Alta mill site. The material here is coarse sand with occasional pebbles, indicating that the mill was not completely effective in grinding the ore processed. Given this, it is considered likely that the recoveries of gold were relatively poor.

Due to financial constraints, MSM did not routinely collect head and tail samples while the mill was in operation. A consulting firm is reported to have completed a one-day recovery test after cleaning the mill and processing ore with frequent head and tail samples. This is reported to have given a 23% recovery and has not been confirmed by the QP. However, the QP notes that this is only one day's results in five years of operation.

MSM has presented tables showing estimated head grades for the life of the project, using an assumed 23% and 35% recovery that show relatively high estimated head grades in the areas mined. The QP is reluctant to rely on these limited data. However, even if a recovery of 50% or 60% is applied, the head grade of the material mined would have been around 3 g/t Au.

If a large amount of material of this grade could be proven up it would make an attractive open pit target and may even have chutes of mineralization of sufficient grade to be mined underground.

Although it is obvious that recent production on a moderate scale has occurred at Serra Alta, the QP has not verified any of the production claims made by MSM. The QP cautions that the analysis above is not to be regarded as a mineral resource estimate for Serra Alta. It is the QP's opinion, however, that it is justification for an exploration program at the deposit.

Figure 17.1
Serra Alta Tailings Showing Coarse Grind

Source: Micon 2018. Note scale card in photo.

18.0 INTERPRETATION AND CONCLUSIONS

18.1 SERRA ALTA - GENERAL

Traversing the Serra Alta portion of the property to visit mineralized exposures, the QP was struck by the extensive development of historical mine workings (bandeirante workings), more recent garimpos and the bulk sample small open pits completed by MSM. The historical workings are reported to date back over 200 years. The garimpeiros were reportedly bought out a number of years ago and have moved on. No activity is occurring on the Serra Alta portion of the property other than that conducted by Cerrado and/or MSM.

The white patches in the pink granite of Figure 6.1 are the mapped positions of the bandeirante pits and garimpos. Except for the Gogó da Onça pit in the far north, the mapped garimpos stop at the Cleiton Maia pit (Figure 6.1 and 18.1). During the site visit, it was clear that they extended beyond this, close to the north property limit. They appear over a width of at least 200 m, and possibly 300 m, and a strike length of at least 1,500 m. Within this corridor, MSM and Cerrado geologists have interpreted three distinct sub-corridors or trends of mineralization. It is possible that the far western trend is composed largely of colluvium shed from the slope and has no immediate bedrock source. However, there are large exposed bedrock sources of veined and altered granite on the eastern side.

Clearly a large amount of mining work, over a wide area, mostly by hand, has been completed at this location over a long period of time. Intuitively, this leads to the conclusion that the recovered gold was sufficient to justify the significant effort and expense for that much activity. It is the QP's opinion that this justifies the expense of a continuing exploration program to more fully test the true grade, depth and width of the mineralization.

The ultimate true width of the sub-corridors does not seem to be currently well defined. Figure 18.1 shows the locations of the principal pits and zones at Serra Alta.

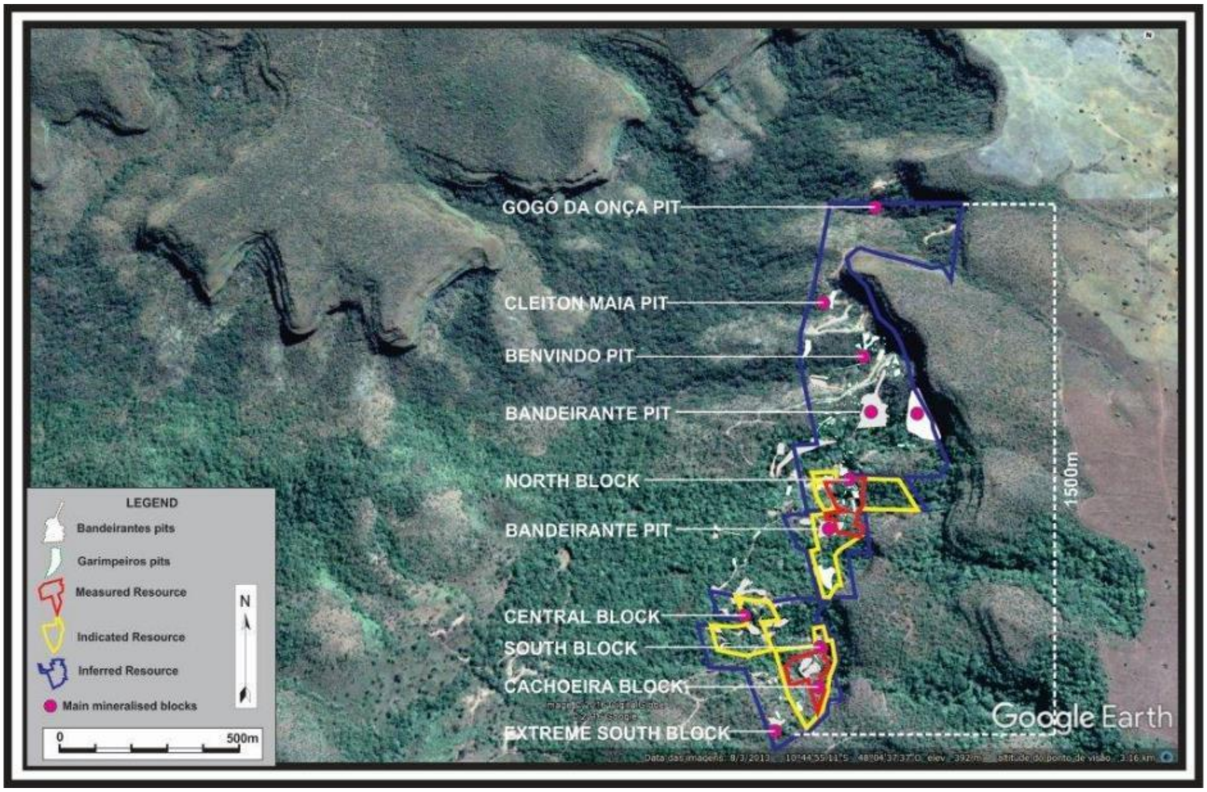
18.2 GIANT QUARTZ VEINS AND OTHER SATELLITE TARGETS

Given the above, the QP concurs with Cerrado's decision to concentrate exploration effort on the Serra Alta Deposit, a potential district anchor deposit, where the potential for size is considered to be much greater.

However, limited further exploration at the Giant Quartz Veins is considered to be justified.

Other satellite targets like Capitão and Fartura evidence similarities with Serra Alta mineralization and should also be properly drill-tested.

Figure 18.1
Satellite Photo of Serra Alta Showing Principal Pits and Zones



Source MSM, 2018.

18.3 CONCLUSIONS

Serra Alta is robust gold exploration project with a long history of artisanal mine workings and exposures over significant widths and strike length. The deposit geometry is well understood after systematic drilling and is open along strike in both directions and down dip. The possibility exists that more mineralization will be found under the quartzite and red bed sediments to the immediate east of the known mineralization. However, there will likely need to be justification for underground mining for much of the mineralization, due to the significant amount of waste stripping of the overlying sediments which would be required for an open pit mine. The new resource estimate presented in this technical report, consolidates Serra Alta as the anchor deposit in the Monte do Carmo district.

It is the QP's opinion that further exploration and economic studies are justified.

The Giant Quartz Veins to the south are rather small tonnage targets and are unlikely to support a mining and milling operation on their own. However, should a mill be built at Serra Alta, they may contribute some mill feed. Other satellite targets like Capitão and Fartura evidence similarities with Serra Alta mineralization and should be properly drill-tested and model as they might also contribute additional mill feed

18.3.1 Current Mineral Resource Estimate

The drilling completed to date, or relogged, resampled and validated by Cerrado is considered sufficient to interpret mineralized shells (see Section 14) and to estimate indicated and inferred mineral resource for the Serra Alta Deposit.

The mineral resource statement for the Serra Alta Deposit is summarized in Table 1.2.

Table 18.1
Statement of Mineral Resources for Serra Alta Gold Deposit
(Effective Date July 21, 2021)

Mining Method	Cut-off Grade (g/t Au)	Resource Category	Tonnage (kt)	Avg. Au Grade (g/t)	Metal Content (koz)
Open Pit	0.30	Indicated	9,063	1.85	539
		Inferred	12,128	1.82	708
Underground	1.10	Indicated	45	1.66	2
		Inferred	1,069	2.10	72
OP + UG		Indicated	9,108	1.85	541
		Inferred	13,197	1.84	780

Mineral resources which are not mineral reserves do not have demonstrated economic viability. At the present time, Micon does not believe that the Serra Alta mineral resource estimate is materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.

Micon considers that the resource estimate for the Serra Alta Deposit to have been reasonably prepared and to conform to the current 2014, CIM standards and definitions for estimating mineral resources as well as the 2019 CIM best practice guidelines.

18.3.2 Mineral Processing

Cerrado conducted an appropriate program for metallurgical process development, which was understood as enough for this phase of the project development. New tests are recommended to define the concentration route, including milling, flotation and centrifugal tests, aiming mainly improve the economics of the project, as the concentrability condition of the ore is considered already consistently assumed.

The current stage of metallurgical process development presents high performances in gold recovery, reaching, in the four tests performed in Testwork laboratory, values higher than 95%. The pilot test can confirm this performance and should be considered in the next phase, allowing increase confidence in the economics assessment of the project.

The mineralized rock characteristics indicates that using of SAG (Semi-autogenous Grinding Mill) can improve the balance between CAPEX and OPEX by decreasing energy consumption, and consumables.

In the QP's opinion, the results derived from the testwork as enrichment and metallurgical recovery are suitable for use as first pass parameters for pre- economic assessment level studies.

19.0 RECOMMENDATIONS

19.1.1 Recommendations

In addition to continued exploration at Serra Alta, the QP makes the following recommendations:

- As Serra Alta progress into an advanced project, consideration should be given to making matrix-matched CRMs (analytical standards) from local mineralization.
- Complete a Preliminary Economic assessment using this resource as base of the metal endowment of the deposit
- Complete and improve flotation studies, also considering the cleaner stage, as flotation has good recovery and can be important to further reduce the mass to be leached. Evaluate the development of tests on a pilot scale.
- Complete and improve the centrifugal concentration-by-size-range (GRG) test studies, which are important to confirm the flowchart of the milling step and gravity concentration. The results are also important for improving the sizing of the following stages of plant design, intensive leaching, flotation and CIP or CIL leaching.
- Carry out a SAG (Semi-Autogenous Grinding Mill) milling study with samples from the primary crushing, as the ore characteristics seem to be appropriate for this type of milling. SAG milling can simplify and reduce the CAPEX and OPEX of the comminution steps (crushing and grinding), with a significant reduction in energy consumption, crusher linings and grinding bodies.

19.1.2 Serra Alta Exploration Program

Cerrado has initiated an exploration program designed to confirm and expand the gold mineralization at Serra Alta and to follow up other favourable targets from earlier programs. This report proposes to continue that work. The program includes definition drilling and expansion of the areas north, south and along the contact.

Also included is the follow up of favourable targets of earlier exploration programs with channel sampling, detailed geological mapping, and drilling of the extensive garimpeiro workings.

Despite the lower grades on the edges of Serra Alta the “Phase I” drilling campaign indicates that the mineralization system is still open for exploration to the North of East Zone, to the East along the contact, and to the South of Extreme South Block. The East-West fault system should be modeled in order to better understand the suggested displacement of Serra Alta mineralization and its actual limits. Also, further investigation along some faults near the High Grades zones could indicate different directions for exploratory drilling. The ultimate goal is to produce a database suitable for additional mineral resource estimates. A program comprised of 14,000 m of drilling has been proposed for exploration.

An update of the Preliminary Economic Assessment for the Serra Alta Mineral Resource is on course, this study targets a reasonable understanding of the possible mine layouts, mining methods, additional metallurgical recovery data, and the footprint of the mine project. This study will also work as guidance to keep the mineral exploration focused on the most profitable mineral resources. This study will consider the metal endowment disclosed in this report.

19.1.3 Exploration Budget

A total budget of $3,888,772.98 is proposed by Cerrado for the recommended 2021 Phase II exploration program as set out in Table 19.1 below. An additional $97,458.00 is budgeted for debt repayment conditions.

Table 19.1
Proposed 2021 Serra Alta Exploration Budget

Monte Do Carmo Project - Exploration	2021 Total (US$)
Serra Alta	851,307.50
Capitão/Magalhaes/Other Quartz Veins - follow up drilling	283,769.16
BIT-3 follow up - drilling	283,769.16
Fartura, Ferradura - exploratory drilling	283,769.16
Operation Expenses	1,507,227.00
G&A Expenses	603,931.00
Metallurgy test work	80,000.00
Preliminary Economic Assessment	75,000.00
Total	**3,968,772.98**

The QP has reviewed the proposed exploration program and finds it to be reasonable and justified. Should it fit with Cerrado’s strategic goals, it is the QP’s recommendation that the company conduct the proposed exploration program.

The data used in the preparation of this report are current as of April 30, 2021. The mineral resource estimate has an effective date of July 21, 2021.

MICON INTERNATIONAL LIMITED

“B. Terrence Hennessey” {signed, sealed and dated}

B. Terrence Hennessey, P.Geo.
Senior Associate Geologist
Micon International Limited
September 17, 2021

Porfirio Cabaleiro Rodriguez {signed, sealed and dated}

Porfirio Cabaleiro Rodriguez, FAIG
Grupo GE21
September 17, 2021

Fabio Valerio Câmara Xavier {signed, sealed and dated}

Fabio Valerio Câmara Xavier, MAIG
Grupo GE21
September 17, 2021

20.0 REFERENCES

Bizzi, L. A.; Schobbenhaus, C; Vidotti, R. M.; Gonçalves, J. H. 2003. Geologia, tectônica e recursos minerais do Brasil. CPRM. Brasília, 692 p. Il., mapas e SIG (disponível em www.cprm.gov.br).

Borges, M. S., Guedes, C. A. M. & Assis, R. L. (2011). Um estudo do "projeto Balde Cheio" como vetor do desenvolvimento sustentável do pequeno produtor de leite. Revista Brasileira de Agropecuária Sustentável, 1, 151-161.

Botelho, N. F. 1996. Fichas de descrição petrográfica para VML. Brasília, 39 amostras de rocha.

Camargo, A.C.; Novaes, N.J.; Novo, A.L.M. et al. Projeto Balde Cheio: Transferência de tecnologia na produção leiteira - Estudo de caso do sítio São José, de Nhandeara, SP. São Carlos: Embrapa Pecuária Sudeste, 2006d. 8p. (Embrapa Pecuária Sudeste, Comunicado técnico 74).

Corrêa-Silva, R. H. 2002. Caracterização de um sistema epitermal low-sulfidation (adularia-sericita) mineralizado em Au-Cu-Mo em vulcânicas paleo-proterozóicas na Província Aurífera do Tapajós: implicações metalogenéticas e tectônicas. USP - Instituto de Geociências, São Paulo, Dissertação de Mestrado, inédita, 159 p. il., anexos.

Costa, J. B. S. e Hasui, Y. 1988. Aspectos do Lineamento Transbrasiliano na região de Porto Nacional - Natividade, GO. In: SBG, Congresso Brasileiro de Geologia, 35, Anais, Belém, vol. 5, p. 2208-2216.

Costa, M. L. 2010. Depósitos brasileiros associados à evolução da paisagem e aos processos de lateritização: Al, Au, Mn, Ni e Fe. ADIMB, Simpósio Brasileiro de Exploração Mineral - Simexmin, 4. Ouro Preto, em cdrom (disponível em www.adimb.com.br).

Coutinho, M. G. N.; Liverton, T. E Souza, E. C. 1997. Granitic magmatism and related gold mineralization in the Tapajós Mineral Province, Amazonian Area, Brazil. In: 2nd Intern. Symp. on Granites and Associated Mineralizations - ISGAM 2, Salvador, p.46-47.

Coutinho, M. G. N.; Robert, F.; Santos, R. A. 1998. Província Mineral do Tapajós, Amazônia, Brasil: novo enfoque geológico das mineralizações de ouro. In: Congresso Brasileiro de Geologia, 40. Belo Horizonte, SBG, Anais, p. 160.

CPRM - Serviço Geológico do Brasil. 2004. Carta Geológica do Brasil ao Milionésimo, Folha SC.22 Tocantins. CPRM, Brasília, em cdrom (disponível em http://geobank.sa.cprm.gov.br).

Cunha, F. S. S. 1996. Análise estrutural e estatística de lineamentos aplicada à pesquisa mineral: o caso da região de Porto Nacional - TO. Universidade Federal do Rio Grande do Sul, Escola de Engenharia, Porto Alegre, Dissertação de Mestrado, 110 p. il., anexos.

Dardenne, M. A. E Schobbenhaus, C. 2001. Metalogênese do Brasil. Editora UnB, Brasília, 392 p.il.

DNPM - Departamento Nacional de Produção Mineral. 2011. Sumário Mineral - Ouro. DNPM, Brasília, 2 p. (disponível em www.dnpm.gov.br).

Dornelles, C.P.N.; Bellé, A.R. O uso de Sistemas Agroflorestais como estratégia de recuperação de áreas de preservação permanente: a experiência do Centro de Tecnologias Alternativas Populares - CETAP. In: 50º Congresso da SOBER, 2012. Anais. Vitória: SOBER, 2012

EMBRAPA. 1999. Sistema brasileiro de classificação de solos. Embrapa - SPI, Brasilia, 412 p.

Favero, Claudenir; LOVO, Ivana Cristina and MENDONCA, Eduardo de Sá. Recuperação de área degradada com sistema agroflorestal no Vale do Rio Doce, Minas Gerais. Rev. Árvore [online]. 2008, vol.32, n.5, pp.861-868. ISSN 1806-9088.

Franco, F. S. Sistemas agroflorestais: uma contribuição para a conservação dos recursos naturais na Zona da Mata de Minas Gerais. 2000. 128f. Tese (Doutorado em Ciência Florestal) - Universidade Federal de Viçosa, Viçosa, MG, 2000.

Garnett, R. H. T. & Bassett, N. C. 2005. Placer deposits. Economic Geology 100th Anniversary Volume, p. 813-843.

GEOPROCESS Geologia e Geoprocessamento Ltda. 2011. Projeto Ouro Monte do Carmo - Consolidação dos dados e avaliação de recursos na Serra de Monte do Carmo. Relatório para MSML, Brasília, 45 p. il., anexos. R. T. geólogo M. W. Tschiedel.

HCA (Holcombe Coughlin & Associates). 2006. Structural assessment of the Monte do Carmo Project, Tocantins. Relatório para KINROSS, Belo Horizonte, 10 p. il.

Jacobi, P. 1999. The discovery of epithermal Au-Cu-Mo Proterozoic deposits in the Tapajos Province, Brazil. Revista Brasileira de Geociências, 29(2):277-279.

Juliani, C.; Monteiro, L. V. S.; Bettencourt, J. S. 2006. The paleoproterozoic volcano-plutonism in the Tapajos gold province and associated epithermal high- and low-sulfidation and porphyry-related gold and base metals mineralizations. In: SBG, Congresso Bras. Geologia: 43, Aracajú. Anais, p. 83.

Kinross Gold Corporation. 2008. Projeto Monte do Carmo - Relatório Final de Pesquisa. Relatório para VMC, Belo Horizonte, 96 p. il.

Klemm, D. D.; Krautner, H. G. 2000. Hydrothermal alteration and associated mineralization in Fredda-Rebecca Gold Deposit, Bindura District, Zimbabwe. Mineralium Deposita, 35: 90-108.

Leonardos, O.H.; Jost, H.; Veiga, A.T.C. 1988. Brazilian Gold Deposits: how many are not associated with shear zones? Bicentennial Gold 88, Melbourne. Extented Abstracts, Poster Programme, v.2, 611-613.

Lima Filho, O. F. De; Ambrosano, E. J.; Rossi, F.; Carlos, J. A. D. (Ed.). Adubação verde e plantas de cobertura no Brasil: fundamentos e prática. Brasília, DF: EMBRAPA, 2014. v. 1.

Lima, H. A. F. 2002. Geologia e petrologia dos corpos VE3 e Monte do Carmo - Porto Nacional, Tocantins. Universidade de Brasília, Instituto de Geociências, Grupo de Pesquisa Metalogênese de depósitos magmáticos e vulcanogênicos. Relatório de estágio para VMC, supervisão prof. C. F. Ferreira Filho. Brasília, 32 p. il., anexos.

Metais Especiais. 1988. Relatório de testes de cianetação em amostras de veios de quartzo de Monte do Carmo. Relatório para VML. Salvador, 15 p.

Maia, Jéssica Gomes De Almeida, 2016. Caracterização da mineralização aurífera no granito do Carmo, Depósito Serra Alta, Município de Monte do Carmo (TO).

MSML (Monte Sinai Mineração Ltda.). 2011a. Plano de lavra e beneficiamento piloto do Projeto Serra Alta - DNPM 860.187/1988, Substância: ouro. Relatório interno, Porto Nacional, 80 p. il., Geólogos responsáveis: J. Salomão Neto, E. Reis e O. N. G. Carvalho.

MSML (Monte Sinai Mineração Ltda.). 2011b. Justificativa técnica e econômica para a extração de minério de ouro e brita em regime de Autorização de Pesquisa - Guia de Utilização. Processo DNPM 860.187/1988, Alvará nº 11.124 (DOU 07/07/2009), Prorrogação, Serra Alta, Monte do Carmo - TO. Relatório apresentado ao DNPM - TO, protocolo em 09/11/2011. Palmas, 149 p. il., R.T. engenheira de minas M. T. Paiva.

MSML (Monte Sinai Mineração Ltda.). 2011c. Projeto Ambiental para a extração de minério de ouro e brita em regime de Autorização de Pesquisa - Guia de Utilização, Serra Alta, Monte do Carmo - TO. Empreendedor: Monte Sinai Mineração Ltda. Processo DNPM 860.187/1988, Alvará nº 11.124 (DOU 07/07/2009). Relatório apresentado ao Instituto Natureza do Tocantins - Naturatins, protocolo em 08/11/2011. Palmas, 95 p. il., anexos, R.T. geólogo M. C. C. Bonatto.

Nunes, C. M. D. 2001. Caracterização de um sistema epitermal high-sulfidation Paleoproterozóico na Província Aurífera do Tapajós, Pará. USP - Inst. Geociências, São Paulo, Dissertação de mestrado inédita,174p.

Peters, S. G. 1993. Formation of oreshoots in Mesothermal Gold-Quartz Vein Deposits: Examples from Queensland, Australia. Ore Geological Reviews, 8: 277-301.

RADAMBRASIL. 1981. Folha SC.22 Tocantins - Geologia, geomorfologia, pedologia, vegetação e uso potencial da terra. MME, Projeto Radambrasil. Rio de Janeiro, vol. 22, 524 p. il., mapas.

Reconsult Assessoria Geofísica S/C. 1977. Campanha de aquisição de Polarização Induzida - segundo semestre de 1977. Relatório para VML. São Paulo, 5 p. il., anexos. Geólogo responsável: R. Cordani.

Rodriguez, P. C. et al.,(2020). Monte Do Carmo Project, Tocantins State, Brazil, Independent Technical Report - Preliminary Economic Assessment for Serra Alta Deposit. pp217. Report by Grupo GE21.

RTDM (Rio Tinto Desenvolvimentos Minerais Ltda.). 1997. Selection of gold targets from the 1996 airborne magnetic and radiometric survey in Porto Nacional region, Tocantins State. Relatório para VML. Brasília, 5 p. il., anexos. Geólogos responsáveis: P. Jacobi, M. Barlow, N. Teixeira.

RTZ Mineração Ltda. 1990. Projeto Tocantins - Relatório de Avaliação. Relatório para VML. Brasília, 36 p. il., anexos. Geólogos responsáveis: C. G. M. Marques, M. D. Silva.

Schobbenhaus, C. et al. (coord.). 1984. Geologia do Brasil. Texto explicativo do Mapa Geológico do Brasil (...) escala 1:2.500.000. MME/DNPM, Brasília, 666 p.il.

Silva, C. R. (Ed.). 2008. Geodiversidade do Brasil. CPRM, Rio de Janeiro, 264 p.il.

Taboca, Mineração Ltda. (Grupo Paranapanema). 1994. Projeto Tocantins - Relatório Final. Relatório para VML. São Paulo, 141p. il., mapas, anexos, 9 volumes.

Veiga, A. T. C. 1990. Significado paleo-ambiental e econômico dos aluviões auríferos e estaníferos da Amazônia, Universidade de Brasília, Instituto de Geociências, Brasília, Dissertação de Mestrado, 111 p.il.

Veiga, A. T. C. 1999. A geodiversidade e o uso dos recursos minerais da Amazônia. Terra das Águas, NEAz / UnB, Brasília, 1:88-102.

Veiga, A. T. C. e LATORRACA, F. 1997. Diretrizes geológicas para pesquisa de ouro no Estado do Tocantins. SBG, Congresso Brasileiro de Geologia, 40, Anais, Belo Horizonte.

VML (Verena Mineração Ltda.). 2005. Habilitação para Pesquisa Mineral, processo DNPM 860.187/1988, Monte do Carmo - TO. Relatório apresentado ao DNPM - TO, protocolo em 15/07/2005. Palmas, 103 p. il., anexos., R. T. geólogo O. N. G. Carvalho.

Voicu, G. E Bardoux, M. 2002. Geochemical behavior under tropical weatherig of the Barama-Mazaruni greenstone belt at Omai gold mine, Guiana Shield. Applied Geochemistry, 17: 321-336.

Voicu, G.; Bardoux, M.; Stevenson, R. 2001. Lithostratigraphy, geochronology and gold metallogeny in the northern Guiana Shield, South America: a review. Ore Geology Reviews, 18: 211-236.

21.0 CERTIFICATES

B. TERRENCE HENNESSEY

As an author of this report on certain mineral properties of Cerrado Gold Inc., in Tocantins State, Brazil, I, B. Terrence Hennessey, P.Geo., do hereby certify that:

1. I carried out this assignment for:

   Micon International Limited
   Suite 900, 390 Bay Street
   Toronto, Ontario
   M5H 2Y2

   Tel.: (416) 362-5135
   Fax: (416) 362-5763
   e-mail: thennessey@micon-international.com

2. I hold the following academic qualifications:

   B.Sc. (Geology)   McMaster University   1978

3. I am a registered Professional Geoscientist with the Association of Professional Geoscientists of Ontario (membership # 0038); as well, I am a member in good standing of several other technical associations and societies, including:

   The Canadian Institute of Mining, Metallurgy and Petroleum (Member).
   Society of Economic Geologists (Fellow)

4. I have worked as a geologist in the minerals industry for over 40 years.

5. I have read the definition of "Qualified Person" set out in National Instrument 43-101 Standards of Disclosure for Mineral Projects (NI 43-101) and, by reason of my education, past relevant work experience and affiliation with a professional association, fulfill the requirements to be a Qualified Person for the purposes of NI 43-101. My work experience includes 7 years as an exploration geologist looking for iron ore, gold, base metal and tin deposits, more than 10 years as a mine geologist in both open pit and underground mines and 24 years as a consulting geologist working in precious, ferrous and base metals as well as industrial minerals.

6. I visited the Monte do Carmo project site in Brazil during the periods February 26 to March 2, 2018, to review the results of exploration at site. A second visit was made to the project from September 4 to 8, 2018. A third site visit was conducted on May 5, 2019 to review recent exploration planning.

7. I am responsible sections 2 to 9, 12.1, 14 through 17 and summaries therefrom in sections 1, 18 and 19 of the Technical Report titled "An Updated Mineral Resource Estimate for the Serra Alta Deposit at the Monte Do Carmo Project, Tocantins State, Brazil" dated September 17, 2021 (the "Technical Report"). The new mineral resource in this report has an effective date of July 21, 2021.

8. I am independent of the issuer and all parties involved in this Technical Report, as defined in Section 1.5 of NI 43-101.

9. I have had no prior involvement with the property that is the subject of the Technical Report.

10. I have read NI 43-101 and Form 43-101F1 and the sections of this Technical Report, for which I am responsible, have been prepared in compliance with that instrument and form.

11. As of the date of this certificate, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not be misleading.

    Report Date: September 17, 2021
    Effective Date: July 21, 2021

Dated this 17th day of September, 2021 in Toronto, Ontario, Canada.

"B. Terrence Hennessey" {signed and sealed}

B. Terrence Hennessey, P.Geo.

FÁBIO VALÉRIO CÂMARA XAVIER

As an author of this report on certain mineral properties of Cerrado Gold Inc., in Tocantins State, Brazil, I, Fábio Xavier, MAIG., do hereby certify that:

1. I carried out this assignment for:

   GE21 Consultoria Mineral Ltda.
   Avenida Afonso Pena, 3130, 12° Andar
   Belo Horizonte-Minas Gerais-Brazil
   CEP: 30.130-910

   Tel.: (+55) 31 3327-4211
   Cel: (+55) 31 99191-2408
   e-mail: fabio.valerio@grupoge21.com

2. I hold the following academic qualifications:

   B.Sc. (Geology) Universidade Federal do Rio Grande do Norte (UFRN) 2003

3. I am a registered Professional Geoscientist Member of Australian Institute Geoscientists (membership # 5179); as well, I am a member in good standing of CREA-MG association.

4. I have worked as a geologist in the minerals industry for over 18 years.

5. I have read the definition of "Qualified Person" set out in National Instrument 43-101 Standards of Disclosure for Mineral Projects (NI 43-101) and, by reason of my education, past relevant work experience and affiliation with a professional association, fulfill the requirements to be a Qualified Person for the purposes of NI 43-101. My work experience includes 7 years as a specialist geologist on geotechnologies applied to mineral exploration and 11 as a Mineral Resource Estimation. My experience includes open pit and underground mines and considerable experience dealing with various commodities, such as phosphate, iron ore, gold and copper ore, in addition to rare earth elements, among others.

6. I visited the Monte do Carmo project site in Brazil during the periods August 17 and 18, 2021, to review the results of exploration at site.

7. I am responsible sections 10, 11 and 12.2, and summaries therefrom in Sections 1 and 19, of the Technical Report titled "An Updated Mineral Resource Estimate for the Serra Alta Deposit at the Monte Do Carmo Project, Tocantins State, Brazil"

dated September 17, 2021 (the “Technical Report”). The new mineral resource in this report has an effective date of July 21, 2021.

8. I am independent of the issuer and all parties involved in this Technical Report, as defined in Section 1.5 of NI 43-101.

9. I have had no prior involvement with the property that is the subject of the Technical Report.

10. I have read NI 43-101 and Form 43-101F1 and the sections of this Technical Report, for which I am responsible, have been prepared in compliance with that instrument and form.

11. As of the date of this certificate, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not be misleading.

    Report Date: September 17, 2021
    Effective Date: July 21, 2021

Dated this 17th day of September, 2021 in Toronto, Ontario, Canada.

“Fábio Xavier” {signed and sealed}

Fábio Xavier, MAIG.

PORFÍRIO CABALEIRO RODRIGUEZ

As an author of this report on certain mineral properties of Cerrado Gold Inc., in Tocantins State, Brazil, I, Porfirio Rodriguez, FAIG., do hereby certify that:

1. I carried out this assignment for:

   GE21 Consultoria Mineral Ltda.
   Avenida Afonso Pena, 3130, 12° Andar
   Belo Horizonte-Minas Gerais-Brazil
   CEP: 30.130-910

   Tel.: (+55) 31 3327-4211
   Cel: (+55) 31 98466-4501
   e-mail: porfirio.cabaleiro@grupoge21.com

2. I hold the following academic qualifications:
   B.A.Sc.. (Mining Engineering) Universidade Federal de Minas Gerais (UFMG) 1978

3. I am a registered Professional Geoscientist Fellow of Australian Institute Geoscientists (FAIG # 3708); as well, I am a member in good standing of CREA-MG association.

4. I have worked as a Mining Engineering in the minerals industry for more than 40 years.

5. I have read the definition of "Qualified Person" set out in National Instrument 43-101 Standards of Disclosure for Mineral Projects (NI 43-101) and, by reason of my education, past relevant work experience and affiliation with a professional association, fulfill the requirements to be a Qualified Person for the purposes of NI 43-101. My relevant experience for the purpose of this Technical Report includes:
   - 1986 to 2015 – Consultant, manager and director with consulting engineering firms that specialize in technical studies and audits of Mineral Resource and Reserves, mine planning, geometallurgy, pit optimization and analysis of economic viability for many types of mineral deposits, including gold projects in their exploration and development phases including supervising and reporting metallurgical studies for a variety of different deposit types.
   - 2015 to present – Director of GE21 Consultoria Mineral, which provides advice, assistance and audits for the entire mining cycle, from defining strategies, generating and selecting targets and investments, mineral exploration, project development, geological assessments, resource and reserve estimation for JORC and NI 43-101 reports, conceptual technical and economic studies, metallurgical studies, and economic feasibility.

6. I visited the Monte do Carmo project site in Brazil during the periods June 14 to 16, 2021.

7. I am responsible section 13, and summaries therefrom in Sections 1 and 19, of the Technical Report titled "An Updated Mineral Resource Estimate for the Serra Alta Deposit at the Monte Do Carmo Project, Tocantins State, Brazil" dated September 17, 2021 (the "Technical Report"). The new mineral resource in this report has an effective date of July 21, 2021.

8. I am independent of the issuer and all parties involved in this Technical Report, as defined in Section 1.5 of NI 43-101.

9. I have had no prior involvement with the property that is the subject of the Technical Report.

10. I have read NI 43-101 and Form 43-101F1 and the sections of this Technical Report, for which I am responsible, have been prepared in compliance with that instrument and form.

11. As of the date of this certificate, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not be misleading.

    Report Date: September 17, 2021
    Effective Date: July 21, 2021

Dated this 17th day of September, 2021 in Toronto, Ontario, Canada.

"Porfírio Rodriguez" {signed and sealed}

Porfírio Rodriguez, FAIG.