TECHNICAL REPORT AND PRELIMINARY ECONOMIC ASSESSMENT
FOR THE

ZANCUDO
GOLD-SILVER MINERAL DEPOSIT

MUNICIPALITY OF TITIRIBÍ
DEPARTMENT OF ANTIOQUIA
REPUBLIC OF COLOMBIA

DATED DECEMBER 14, 2023

EFFECTIVE DATE: OCTOBER 24, 2023

PREPARED FOR:

DENARIUS METALS CORP.

BY

RESOURCE DEVELOPMENT ASSOCIATES
HIGHLANDS RANCH, COLORADO

Qualified Persons:

Scott Wilson, APIG Certified Professional Geologist

Ray "Zeke" Blakeley, Mining Engineer, SME Registered Member

Jeffrey Woods, Metallurgist, SME-Registered Member

DATE AND SIGNATURE PAGE

Denarius Metals Corp.: Technical Report and Preliminary Economic Assessment for the Zancudo Gold-Silver Mineral Deposit, Municipality of Titiribí, Department of Antioquia, Republic of Colombia, South America.

Technical Report Effective Date: October 24, 2023

Dated December 14, 2023

(signed/sealed) *Scott E. Wilson*
Scott E. Wilson, SME-RM, CPG
Geologist

(signed/sealed) *Zeke Blakeley*
Ray "Zeke" Blakeley, SME-RM, QP
Mining Engineer

(signed/sealed) *Jeffrey Woods*
Jeffrey Woods, SME-RM, MMSA QP
Consulting Metallurgist

AUTHOR CERTIFICATE

Scott E. Wilson

I, Scott E. Wilson, CPG, SME-RM, of Highlands Ranch, Colorado, as the author of the technical report entitled "Technical Report and Preliminary Economic Assessment for the Zancudo Gold-Silver Mineral Deposit, Municipality of Titiribí, Department of Antioquia, Republic of Colombia, South America" (the "Technical Report") with an effective date of October 24, 2023 prepared for Denarius Metals Corp. (the "Issuer"), do hereby certify:

1. I am currently employed as President by Resource Development Associates, Inc., 10262 Willowbridge Way, Highlands Ranch, Colorado USA 80126.
2. I graduated with a Bachelor of Arts degree in Geology from the California State University, Sacramento in 1989.
3. I am a Certified Professional Geologist and member of the American Institute of Professional Geologists (CPG #10965) and a Registered Member (#4025107) of the Society for Mining, Metallurgy and Exploration, Inc.
4. I have been employed as both a geologist and a mining engineer continuously for a total of 31 years. My experience included resource estimation, mine planning, geological modeling, geostatistical evaluations, project development, and authorship of numerous technical reports and preliminary economic assessments of various projects throughout North America, South America and Europe. I have employed and mentored mining engineers and geologists continuously since 2003.
5. I have read the definition of "Qualified Person" set out in National Instrument 43-101 ("NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for the purposes of NI 43-101.
6. I made a personal inspection of the Zancudo Project on September 15 and 16, 2023.
7. I am responsible for Section 1 through Section 12, Section 14, Section 15, Section 19, Section 20 and Section 23 through Section 27 of the Technical Report.
8. I am independent of the Issuer as independence is described in Section 1.5 of NI 43-101.
9. Prior to being retained by the Issuer, I have not had 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 this Technical Report was prepared in compliance with NI 43-101.
11. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, the portions of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the portions of the Technical Report for which I am responsible not misleading.

Dated: December 14, 2023

(signed/sealed) *Scott Wilson*
Scott E. Wilson, CPG, SME-RM

AUTHOR CERTIFICATE

Ray “Zeke” Blakeley

I, Ray “Zeke” Blakeley, QP, SME-RM, of Butte, Montana, as the author of the technical report entitled “Technical Report and Preliminary Economic Assessment for the Zancudo Gold-Silver Mineral Deposit, Municipality of Titiribí, Department of Antioquia, Republic of Colombia, South America” (the “Technical Report”) with an effective date of October 24, 2023 prepared for Denarius Metals Corp. (the “Issuer”), do hereby certify:

1. I am currently employed as a Principal by Minetech, LLC, 29 Denali Lane, Butte, Montana USA 59701.
2. I graduated with a Bachelor of Science degree in Mine Engineering from Montana College of Mineral Science and Technology, Butte, Montana 1994.
3. I am a Quality Person and a Registered Member (#4029863) of the Society for Mining, Metallurgy and Exploration, Inc.
4. I have been employed as a mining engineer continuously for a total of 28 years. My experience included underground and surface mine planning and design, production scheduling, feasibility studies, cost estimating, strategic planning, mine expansion planning, ground control management, mobile equipment maintenance, economic studies, reclamation, construction management and mine closure throughout North America. I have mentored and employed mining engineers continuously since 1997.
5. I have read the definition of “Qualified Person” set out in National Instrument 43-101 (“NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a “Qualified Person” for the purposes of NI 43-101.
6. I made a personal inspection of the Zancudo Project on September 15 and 16, 2023.
7. I am responsible for Section 16, Section 18, Section 21 and Section 22.
8. I am independent of the Issuer as independence is described in Section 1.5 of NI 43-101.
9. Prior to being retained by the Issuer, I have not had 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 this Technical Report was prepared in compliance with NI 43-101.
11. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, the portions of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the portions of the Technical Report for which I am responsible not misleading.

Dated: December 14, 2023

(signed/sealed) *Ray “Zeke” Blakeley*
Ray “Zeke” Blakeley, QP, SME-RM

AUTHOR CERTIFICATE

Jeffery Woods

I, Jeffrey L Woods, SME-RM MMSA QP, of Reno, Nevada, as the author of the technical report entitled "Technical Report and Preliminary Economic Assessment for the Zancudo Gold-Silver Mineral Deposit, Municipality of Titiribí, Department of Antioquia, Republic of Colombia, South America" (the "Technical Report") with an effective date of October 24, 2023 prepared for Denarius Metals Corp. (the "Issuer"), do hereby certify:

1. I am currently employed as President by Woods Process Services LLC, 10585 Dillingham Dr, Reno, Nevada USA 89521
2. I graduated with a Bachelor of Science degree in Metallurgical Engineering from the Mackay School of Mines, University of Nevada, Reno in 1988.
3. I am a Registered Member (#408591) of the Society for Mining, Metallurgy and Exploration, Inc. and a Registered Member (#01368QP) of the Mining & Metallurgical Society of America.
4. I have been employed as both a metallurgist and a process engineer continuously for a total of 35 years. My experience included metallurgical test work, process flow sheet design, mine process operation, operating statistical analyses, capital cost and operating cost estimating, due diligence, operations performance optimization. project development, and authorship of numerous technical reports and preliminary economic assessments of various projects globally. I have employed and mentored metallurgical and chemical engineers and laboratory technicians continuously since 2006.
5. I have read the definition of "Qualified Person" set out in National Instrument 43-101 ("NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for the purposes of NI 43-101.
6. I made a personal inspection of the Zancudo Project on September 15 and 16, 2023.
7. I am responsible for Section 13 and Section 17 of the Technical Report.
8. I am independent of the Issuer as independence is described in Section 1.5 of NI 43-101.
9. Prior to being retained by the Issuer, I have not had 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 this Technical Report was prepared in compliance with NI 43-101.
11. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, the portions of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the portions of the Technical Report for which I am responsible not misleading.

Dated: December 14, 2023

(signed/sealed) *Jeffery L. Woods*
Jeffery L. Woods, SME-RM MMSA QP

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1 SUMMARY

This report entitled "Technical Report and Preliminary Economic Assessment for the Zancudo Gold-Silver Mineral Deposit, Municipality of Titiribí, Department of Antioquia, Republic of Colombia, South America" (the "Technical Report"), describes the mining and processing operations for the Zancudo Project ("Zancudo" or "the Project" or "the Property") located near the town of Titiribi, Antioquia, Colombia for Denarius Metals Corp. ("Denarius" or the "Company"). Denarius retains a 100% ownership of the Project.

This preliminary economic assessment ("PEA") proposes underground mining of the Zancudo mineral deposit. Mined material will be processed by three-stage crushing followed by conventional grinding and product slurry conditioning. Processing of the conditioned slurry product will be followed by industry typical bulk sulfide flotation to produce a bulk sulfide concentrate for the recovery of gold and silver. The flotation concentrate will be thickened, filtered and readied for shipment. Flotation tailings will be thickened and filtered for disposal as dry-stacked material in a tailings storage facility ("TSF").

Highlights of the Technical report, including the PEA, are listed in Table 1-1 and Table 1-2. Table 1-1 lists the Mineral Resource estimate for Zancudo. Mineral Resources are reported according to the CIM Definition Standards of May 10, 2014 ("CIM"). The guidance and definitions of CIM are incorporated by reference in National Instrument 43-101 -*Standards of Disclosure for Mineral Projects within Canada* of the Canadian Securities Administrators ("NI 43-101") Mineral Resources are geologically constrained and defined at economic cutoff grades that demonstrate reasonable prospects of eventual economic extraction. Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. There is no certainty that all or any part of the Mineral Resources will be converted into Mineral Reserves.

1.1 MINERAL RESOURCE ESTIMATES

Geostatistics and estimates of mineralization have an effective date of October 24, 2023. Industry accepted grade estimation techniques were used to develop global mineralization block models for the mineral deposit at Zancudo. The Mineral Resource estimate considers underground mining as the basis for the reasonable prospects of eventual economic extraction. The total Mineral Resource estimate for the Project is listed in Table 1-1 at a cutoff grade of 4.0 grams per tonnes of gold equivalent (4 g/t AuEq).

Table 1-1 Zancudo Mineral Resource Estimate ("MRE") Effective date October 24, 2023. QP Scott Wilson C.P.G

Inferred Mineral Resources	Tonnes (x1,000)	Au g/t	Ag g/t	AuEq g/t	Au Ounces (x1,000)	Ag Ounces (x1,000)	AuEq Ounces (x1,000)
Au and Ag Mineral Resources Cutoff Grade 4 g/t AuEq	4,100	6.53	107	8.10	860	14,090	1,060

1. Mineral Resources are classified as Inferred Mineral Resources, and are based on the 2014 CIM Definition Standards.
2. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability. There is no certainty that all or any part of the mineral resources estimated will be converted into mineral reserves.
3. Mineral Resources are estimated using a gold selling price of US$1,850/ounce and a silver selling price of US$23/ounce.
4. Cutoff grade of 4 g/t AuEq is based on underground mining costs (US$105/tonne), mill processing and concentrating (US$42/tonne), G&A (US$21/t) and royalties of 3.2%.
5. Numbers may not add up due to rounding.
6. The effective date of this Mineral Resource estimate is October 24, 2023.
7. The quantity and grade classified as Inferred Mineral Resources in this estimation are uncertain in nature and there has been insufficient exploration to define these Inferred Mineral Resources as Indicated or Measured Mineral Resources.
8. Gold Equivalent is calculated with the formula AuEq = (Au *Au Recovery (75%) * AuPrice + Ag *Ag Recovery (80%) * AgPrice)) / (Au Recovery (75%) *Au Price).
9. The qualified person knows of no environmental, permitting, legal, title, taxation, socio-economic, marketing, political or other relevant factors that may materially affect the Mineral Resource estimates in this Technical Report.

1.2 PRELIMINARY ECONOMIC ASSESSMENT

The summary of the current projected financial performance of Zancudo is listed in Table 1-2.

The Zancudo Project PEA is based on the above stated MRE. Over the approximately 10.3-year mine life, production from the mining and processing of approximately 3.5 million tonnes of material containing 899,000 gold equivalent ounces is expected to recover 683,000 payable gold equivalent ounces through the sale of approximately 636,000 tonnes of high-grade gold-silver concentrates. Recoveries to concentrates are expected to be 85% for gold and 87% from a 3-stage crushing circuit. Initial CAPEX costs are estimated at US$14.8 million including a US$2.0 million contingency. All-in sustaining costs are forecast to be US$1,059 per ounce of payable gold on a by-product credit basis.

The Project incorporates local contract mining and is expected to stimulate the local economy, benefitting the Municipality of Titiribi and surrounding communities through direct and indirect employment at the Project.

At long-term gold and silver prices of US$1,800 per ounce and US$22 per ounce, respectively, total LOM undiscounted after-tax Project cash flow from mining operations amounts to US$266.4 million. At a 5% discount rate, the net present value of the total LOM after-tax Project cash flow amounts to US$206.3 million. The Project has an after-tax internal rate of return of 287% and payback in 2025.

Table 1-2 Key Economic Results of the PEA

Assumption / Results	2023 PEA
Total tonnes processed over the LOM	**3,463,000**
Total waste mined over the LOM	**346,000**
Gold grade mined – LOM average (g/t)	**6.77**
Silver grade mined – LOM average (g/t)	**106.13**
Gold recovery – LOM average	**85%**
Silver recovery – LOM average	**87%**
Expected long-term gold price (US$/oz)	**$1,800**
Expected long-term silver price (US$/oz)	**$22**
Total gold production (payable ounces)	**575,514**
Total silver production (payable ounces)	**8,809,108**
LOM net revenue, after refining and treatment charges (US$ millions)	**$1,021.3**
Initial capital costs (US$ millions) (Table 1-3)	**$14.8**
Sustaining capital costs (US$ millions)	**$5.2**
LOM operating costs and royalties (US$ millions) (Table 1-4)	**$589.7**
LOM cash cost per ounce of gold (US$) (Table 1-4)	**$1,050**
LOM AISC per ounce of gold (US$) (Table 1-4)	**$1,059**
Mine Life	**10.3 Years**
Average LOM process rate (tpd)	**925**
After-tax undiscounted LOM Project Cash Flow (US$ millions)	**$266.4**
After-Tax NPV (5% discount) (US$ millions)	**$206.3**
After-Tax IRR	**287%**
Payback Period	**1.2 Years**

This preliminary economic assessment is preliminary in nature, and there is no certainty that the reported results will be realized. The Mineral Resource estimate used for the PEA includes Inferred Mineral Resources which are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as Mineral Reserves, and there is no certainty that the projected economic performance will be realized. The basis of the PEA is to demonstrate the economic viability of the Zancudo Mine, and the results are only intended as an initial, first-pass review of the Project economics

based on preliminary information. Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. There is no certainty that all or any part of the mineral resources estimated will be converted into mineral reserves.

1.3 CAPITAL COSTS AND OPERATING COSTS

Capital costs are summarized in Table 1-3and operating costs are summarized in Table 1-4. The estimated capital costs to bring the Project into operation in 2024 are based on an underground mining operation utilizing local contract mining. The local mine contractor is responsible for capital and operating development within the underground mine and will be compensated for such work through its mine operating contract with the Company. After an initial ramp up period, mineralized material will be processed at a rate of 365,000 tonnes per year in a conventional three-stage crushing and milling plant which will produce a saleable gold-silver concentrate.

The initial capital expenditure for the construction period (which commenced in mid-2023) is estimated at US$14.8 million, which includes US$2.0 million in contingency costs. An additional US$4.2 million is estimated for sustaining capital, principally associated with the crushing and milling facilities, over the LOM. The Company has also included US$1.0 million of expenditures in the first year of the LOM for a 10,000 meters exploration drilling campaign split between infill drilling and step-out drilling aimed to extend the current mineralization in the northern and central areas of the deposit.

Capital cost estimates are based on industry standards and were developed using quotes provided by mining contractors and specialists experienced in mining development in Colombia.

Table 1-3 Capital Cost Estimates for the Project

Initial Capital Costs	**Costs (US$)**
Mine access rehabilitation (initial work excluded from mine contractor responsibility)	29,000
Access road	2,492,000
Crushing plant	752,000
Crushing plant electrical	806,000
Civil works	325,000
Processing plant	5,284,000
Tailings storage facility	1,000,000
Permitting	408,000
Indirect costs	1,200,000
Owner's costs, including lab and other site infrastructure	500,000
Total initial capital costs before contingency	**12,796,000**
Contingency	2,000,000
Total initial capital costs	**14,796,000**

Table 1-4 PEA Operating Costs

Operating Costs	LOM (US$M)	Per Oz Au (US$)
Mining	435.1	756
Processing	57.6	100
Site administration and social programs	16.1	28
Shipping and port handling	31.4	55
Royalties	49.6	86
Total operating costs and royalties	**589.7**	**1,025**
Refining and treatment charges	208.4	**362**
Less: silver by-product credits	(193.8)	**(337)**
Total cash costs	**604.3**	**1,050**
Sustaining capital and exploration	**5.2**	**9**
All-in sustaining costs	**609.5**	**1,059**

1.4 LOM OPERATING AND FINANCIAL DATA

A summary of the operating and financial metrics over the mine life of the Project is summarized in Table 1-6 below.

Table 1-5: Operating and Financial Metrics

Year	Production (3) Gold	Production (3) Silver	Net Revenue(4)	Operating Costs & Royalties	Operating Cash Flow (5)	Sustaining Capex	Initial Capex	Project Cash Flow	AISC(6)
	Kozs		US$ Millions						Per Oz
2023	-	-	-	-	-	-	6.2	(6.2)	N/A
2024 (2)	34	167	61.2	33.8	12.5	0.2	8.6	3.7	1,007
2025	76	1,118	132.3	75.5	37.3	1.4	-	35.9	1,067
2026	75	1,104	130.5	74.6	37.7	0.5	-	37.2	1,058
2027	66	990	116.3	67.3	32.5	0.5	-	32.0	1,070
2028	62	932	109.3	63.7	30.4	0.5	-	29.9	1,078
2029	60	956	105.7	61.3	29.7	0.5	-	29.2	1,062
2030	57	977	102.7	59.2	29.0	0.5	-	28.5	1,047
2031	54	948	97.5	56.3	28.2	0.5	-	27.7	1,046
2032	45	797	81.7	48.5	22.4	0.5	-	21.9	1,076
2033	45	795	81.5	48.0	22.3	0.1	-	22.2	1,059
2034 (7)	2	25	2.6	1.5	4.4	-	-	4.4	1,027
Total	**576**	**8,809**	**1,021.3**	**589.7**	**286.4**	**5.2**	**14.8**	**266.4**	**1,059**

Notes:

1. All figures are rounded to reflect the relative accuracy of the estimate.
2. Includes production and cash flow from early-stage mining operations and sale of run-of-mine ("ROM") material during the construction period. Processing plant operations and sale of gold-silver concentrates expected to commence November 1, 2024.
3. Production represents payable gold and silver from the sale of ROM material and concentrates.
4. Net revenue is based on spot gold and silver prices of US$1,800 and US$22 per ounce, respectively, and is shown net of refining and treatment charges. Refer to Table 1-4.
5. Operating cash flow is shown after working capital adjustments and income taxes. Refer to Table 1-5.
6. All-In Sustaining Cost ("AISC") is a non-IFRS measure and is calculated on a by-product credit basis by deducting revenue from silver production from the sum of operating costs and royalties, refining and treatment charges and sustaining capex, divided by the number of gold ounces produced. Ending January 31, 2034.
7. Please see "*Cautionary Statement on PEA and Use of Inferred Resources*" below for the limitations, explanations and cautionary language on the use of the PEA.

1.5 PROPERTY DESCRIPTIONS AND OWNERSHIP

The Zancudo Project is a gold and silver deposit located in the Municipality of Titiribí, Department of Antioquia, Republic of Colombia. Zancudo is approximately 30 kilometers (km) southwest of the city of Medellin, the capital of the Department of Antioquia. Zancudo is wholly owned by Denarius.

The Project has a long mining history, but the most recent underground mining activity has not occurred since 1993. Between 1993 and 2010, Consorcio de Inversionistas, C.D.I., S.A. (CDI), built a small pilot plant (120 tonnes per day (t/d)) to process historical waste dumps at Sitio Viejo in 1994, and rehabilitated the historical Independencia, La Matilde and El Castaño mines. In the 2000's, Proyecto Sabaletas S.A.S. (Mineros S.A.) who took ownership of the operation re-processed 70,000 tonnes (t) of scoria dumps at Sabaletas to produce gold (Au) and silver (Ag), and between 2009 and 2013 reportedly re-processed 135,407 t of dumps at Sitio Viejo to produce Au and Ag.

In 2010, Gran Colombia Gold Corp (Gran Colombia), took ownership from CDI of the Project and began systematic exploration. Between 2011 and 2012, a series of drilling programs were completed to confirm the mineralization around the existing mining areas. In 2017 through 2020, IAMGOLD Corporation ("IAMGOLD") optioned the Project from Gran Colombia with the First Option for six years for 65% and a Second Option for three more years for 70%. Under the option agreement dated 27 February 2017, the property was explored by IAMGOLD Sucursal Colombia (IAMGOLD Colombia), a branch of IAMGOLD, a company registered in Ontario. The agreement allowed IAMGOLD Colombia to earn an initial 65% interest (the First Option) in the Zancudo Project by making exploration expenditures of US$10 million (M) over six years, subject to meeting specified annual work commitments during this period. The start of the option and Anniversary Date for the annual work commitments was August 3, 2017, the date that the drilling permits were obtained. In addition, the First Option required that IAMGOLD Colombia define total NI 43-101 measured, indicated and inferred mineral resources of at least 500,000 ounces (oz) of Gold Equivalent (AuEq) (defined as the amount of gold plus the amount of silver multiplied by the projected silver recovery to gold recovery divided by 60) and complete a NI 43-101 Preliminary Economic Assessment (PEA) between years five and six. IAMGOLD Colombia completed approximately 26,000 m of drilling under the First Option but exited the agreement in 2022 due to factors unrelated to the Project.

On February 19, 2021, pursuant to a November 2020 definitive Share Purchase Agreement ("SPA") with Gran Colombia, ESV Resources Ltd. (ESV) acquired the Zancudo Project by issuing 27,000,000 common shares to Gran Colombia. Concurrently, in February 2021, upon completion of an RTO transaction, ESV was renamed Denarius Silver Corp. (TSXV: DSLV) and then on February 1, 2022, Denarius Silver changed its name to Denarius Metals.

1.6 GEOLOGY AND MINERALIZATION

The Zancudo Project is located on the western side of the Central Cordillera of the Colombian Andes, which is separated from the Western Cordillera to the west by the Cauca River. The Zancudo deposit lies within the Romeral terrane, an oceanic terrane comprising metamorphosed mafic to ultramafic complexes, ophiolite sequences and oceanic sediments of probable Late Jurassic to Early Cretaceous age. The Romeral terrane is partially covered by continental sediments of the Oligocene to Lower Miocene age called the Amagá Formation, comprising conglomerates, sandstones, shales, and coal seams. The Titiribí porphyry of Late Miocene age intrudes the Arquía Complex schists and Amagá Formation sedimentary rocks. Gold mineralization is related to the emplacement of porphyry stocks.

The host rocks to gold mineralization are schists of the Arquía Complex, sedimentary rocks of the Amagá Formation, and the Late Miocene andesite porphyry intrusions. The sediments have been folded into several synclines cut by high angle reverse faults with a strike of N10-20°W and a steep dip of 50° to 70° east.

Mineralization at Zancudo occurs in multiple stacked mantos and steeper structures exploited over a strike length of 3,500 meters (m). The known vertical extent of mineralization is approximately 400 m.

Structure formation is related to WNW to NW-SE oriented compression that reactivated earlier fault and probable thrust imbricate structures as sinistral transpressional shear zones. Low angle stacked mantos formed as reverse faults in the footwall of the Santa Catalina structure.

The structures have early-stage base metal sulfides (pyrite, sphalerite, galena, arsenopyrite) infilled by quartz or quartz-carbonate gangue, with banded textures that are typical of epithermal veins. The structure minerals, in order of decreasing abundance, are pyrite, galena, arsenopyrite, sphalerite, silver-sulfosalts, bournonite, boulangerite and jamesonite, with minor chalcopyrite, pyrrhotite, native gold or electrum, and native silver. The gangue minerals are quartz, calcite and clay minerals. The clay minerals identified are kaolinite, muscovite and sericite. Wall rock alteration is sericite, carbonate and disseminated sulfides.

1.7 QAQC PROCEDURES

Quality assurance and quality control (QAQC) procedures are established for the drilling campaigns at Zancudo. Procedures include submission of standards, blanks, duplicates, and second laboratory checks. In general, the results of the QA/QC controls inserted during the different campaigns are acceptable and the failures have been managed with the laboratories, including the re-assaying of samples of batches with failures in standards, review of contamination with laboratories and communication with the laboratories. Sample preparation and storage is deemed to be up to industry standards and within expectations. Sample preparation and handling is considered good with the vast majority of QA/QC data submitted performs within tolerance limits.

In the opinion of the QP, the methods employed for sampling preparation, security, analytical procedures, and QA/QC protocols are in line with the industry's best practices and are satisfactory.

1.8 DATA VERIFICATION

The professionals responsible for the validation of the mineral resource estimate (SRK, 2023) completed a phased approach to the data validation on the digital sample database supplied by the Company, which included but was not limited to the following:

- Complete a meeting with a senior geologist in charge of the database to review the processes used to log, store and extract data from the central Access database during the site inspection.
- Search for sample overlaps or significant gaps in the interval tables, duplicate or absent samples, errors in the length field, anomalous assays and survey results. Company's geological team was notified of any issues that required correction or further investigation. No material issues were noted in the final sample database.
- Currently there is not a three-dimensional (3D) volume to accurately reflect the previous mining activity which still remains a risk. Th QP has accounted for this by generating a buffer around the digitized polylines reflecting the underground developed as known. Grade estimates are sterilized within 5m of all digitized underground.

Undertook a review of assay certificates to extracts supplied from the Access database.

There was no limitation placed on the qualified person for data verification. It is the opinion of the QP responsible for the preparation of this Technical Report that the data used to support the conclusions presented here are adequate for the purposes of defining the current geological model and associated mineral resource estimates.

1.9 MINERAL PROCESSING AND METALLURGICAL TESTING

The Zancudo deposit has undergone limited metallurgical test work in the past. In 2012-13, Terra Mineralogical Services, using 22 core samples, conducted a predictive metallurgical study using scanning electron microscope SEM-EDS scans of polished thin sections to help determine gold deportment and metallurgical response. Initial results of the study indicated gravity extraction followed by regrind and whole ore cyanidation may be an efficient and economic extractive method for Zancudo gold-silver mineralization types. After additional metallurgical test work it was determined that the initial assessment was invalid for the global Zancudo deposit, and a simpler gravity and flotation flow sheet was selected.

Zancudo hired SGS Laboratories in Lima, Peru, to test three composite samples from different mineralogical structures (Santa Catalina, Manto Antiguo, and La Miel) and evaluate the metallurgical performance of the deposit. The tests included mineralogy, grinding kinetics, gravity, rougher/cleaner flotation, and diagnostic leaching to estimate the gold and silver recoveries.

The test samples received by SGS were graded and quantified as shown in Table 1-6. The gold content of each sample varied from 0.44 g/t to 22.36 g/t, while the silver content of each sample varied from 1.4 g/t to 788 g/t. A notable observation is that the arsenic content ranged from 153 ppm to 53,421 ppm.

Table 1-6 Metallurgical Test Composites

Structure	Metallurgical Sample	Number of Samples	Weight (kilograms (kg))	Assayed Au (g/t)	Assayed Ag (ppm)	Assayed As (ppm)
Santa Catalina	ZM-01M	16.00	35.2	2.23	58.67	3,855
Manto Antiguo	ZM-02M	26.00	53.0	6.15	166.60	14,299
La Miel	ZM-03M	16.00	43.9	2.15	21.12	6,173

Source: Denarius 2023

Gravity

A two-stage gravity concentration test using a centrifugal Falcon concentrator was used to conduct tests on a 10 kg sample of each composite. The sample was ground to P80 of 212µm and fed to the concentrator. The concentrate was collected, and the tailings from the first stage were reprocessed in the concentrator. The concentrate from both stages was assayed and used to estimate the total gravity recovery. The recovery results for gold and silver are shown in Table 1-7.

Table 1-7 Gravity Test Results

Structure	Metallurgical Sample	Gravity Au Recovery (%)	Gravity Au Grade (g/t)	Gravity Ag Recovery (%)	Gravity Ag Grade (g/t)
Santa Catalina	ZM-01M	19.0	15.1	7.99	155
Manto Antiguo	ZM-02M	23.2	60.3	4.6	281
La Miel	ZM-03M	19.6	15.4	9.4	76.7

Source: Denarius 2023

Flotation

To optimize the flotation response and achieve the highest precious metal recovery, while minimizing mass pull, a series of tests were performed on three different composites.

Table 1-8 Initial Metallurgical Rougher Flotation Test Composite Recovery Results

Structure	Metallurgical Sample	Au Recovery (%)	Conc Grade Au(g/t)	Program Test Number	Ag Recovery (%)	Conc Grade Ag(g/t)	Program Test Number
Santa Catalina	ZM-01M	75.8	7.7	15B	88.1	240	15B
Manto Antiguo	ZM-02M	82.5	28.5	24B	86.8	681	24B
La Miel.	ZM-03M	85.0	13	20	88.4	135	13F

Source: Denarius 2023

Table 1-9 summarizes the gravity and flotation results for ZM-02M, which had 86.6% gold recovery and 87.4% silver recovery.

Table 1-9: Gravity and flotation results for ZM-02M, which had 86.6% gold recovery and 87.4% silver recovery

	Gravity Recovery (%)	Gravity Grade (g/t)	Flotation Recovery (%)	Flotation Grade (g/t)	Overall Recovery (%)	Overall Grade (g/t)
Gold (Au)	23.2	60.3	82.5	28.5	86.6	32.8
Silver (Ag)	4.6	281.2	86.8	680.9	87.4	626.5

Source: Denarius 2023

1.10 MINING METHOD

Mineralization at Zancudo occurs in several near vertical veins and flat lying structures under mountainous terrain. The identified mineralization contains five steeply dipping veins and four flat lying structures (mantos). The mine plan anticipates vein extraction by utilizing a modified overhand sublevel resue method; whereas the mantos will be exploited in a horizontal room and pillar resue method. Both methods are applicable to the mineralization orientation resulting in high selectivity to reduce dilution. All development is designed and scheduled to achieve a 1,000 tonne per day production profile prioritizing higher grade mineralized zones.

1.11 RECOVERY METHODS

The envisioned process method for Zancudo consists of crushing, grinding, gravity separation, froth flotation and liquid solid separation via thickening and filtration to produce a precious metal rich bulk sulfide concentrate. Major design goals of the process are a daily production rate of 1,000 tpd at a nominal feed grade of 6.15 ppm Au and 166.6 ppm Ag. Precious metal recoveries are expected to be 85 % and 87 % for gold and silver respectively using gravity concentration followed by flotation.

1.12 ENVIRONMENTAL STUDIES AND PERMITTING

Denarius holds the required permits to continue exploration activities on the Project. To date, the exploration activities completed by Denarius and the previous owners have had a limited social impact. There are currently no regulations directly related to social impacts that limit exploration activities. Denarius has been proactive and has implemented a set of activities in order to promote local employment and social benefit in the area of influence of the project.

There are no known historical environmental liabilities for the Project.

1.13 CURRENT EXPLORATION AND DEVELOPMENT

Gran Colombia and IAMGOLD carried out systematic exploration of the Zancudo Project from 2011 through 2022, mainly by mapping and geochemistry on surface and underground in old mine workings. As of the effective date of this Technical Report, the latest exploration was completed by IAMGOLD, mainly focused on drilling. Previous exploration included deposit scale mapping, geochemical (soil and stream sediment) sampling, rock chip sampling, and mapping and channel sampling of select locations from historical mined areas.

All drilling completed on the Project to date has been completed by CDI, Gran Colombia and IAMGOLD. A total of 40,099.70 m of diamond drilling (DD) in 149 holes has been carried out at the Zancudo Project, including 33 underground holes drilled in the Independencia Mine. Denarius has not carried out any drilling on the Zancudo Project since completion of the IAMGOLD drilling program. The results of the drilling are sufficient to interpret the key structural controls on the deposit, including a number of mineralized domains which can been connected both along strike and downdip in the case of the vein material.

The Company's most recent exploration work has focused on re-establishing access to the historical underground operations and further validation of geological model. This recent validation work resulted in a better interpretation of the geological model. The interpretation consists of an upper unit of steeply dipping structures interpreted as veins and stacked mantos style mineralization over a known strike length of approximately 2.5 km with a vertical extent of over 650 m from surface. Drilling intersections are considered reasonable to provide confidence to the modeled domains, with further validation including review of core photography, used to validate the revised model. The main structures that have been identified during geological logging and in conjunction with the assay information are:

- Manto Antiguo
- Manto Antiguo Upper
- Manto Antiguo Lower
- Manto Inferior
- Miel Vein
- Santa Catalina Vein
- Porvenir Vein
- Panal Vein
- Ortiz A Vein
- Ortiz B Vein

It is the opinion of the QP responsible for the preparation of this Technical Report that the data used to support the conclusions presented here are adequate for the purposes of the mineral resource estimates.

1.14 CONCLUSIONS

Estimated Mineral Resources were assumed to be conventionally mined and processed with a conventional process facility to produce a gold and silver concentrate that would be shipped to an external refinery.

The Zancudo Project is expected to yield an after-tax undiscounted LOM net cash flow of US$266.4 million, and an NPV of US$206.3 million, US$179.2 million and US$163.9 million at a discount rate of 5%, 8% and 10% per year respectively.

Based on the assumptions of this PEA, the report suggests that the Project could be put into production and return capital investments within 1.2 years of startup.

1.15 RECOMMENDATIONS

In terms of the current Mineral Resources and potential extensions, and the work completed to date, the QP is recommending the following work program:

- The current drill spacing does not statistically support Indicated Mineral Resource in terms of understanding of the shorter scale grade variability, so a series of infill drilling is recommended to increase the confidence in the estimates.
- Additional underground sampling of mineralized faces is also recommended using protocols which ensure sample representativity via pre-cut channels at the equivalent sample support as drilling.

- It is estimated that the next drilling campaign will be in the order of 10,500 m split between infill drilling and attempts to extend the current mineralization in the northern areas of the Project (Figure 26-1).
- Investigate options for improved confidence in the underground mine surveys once access is available.
- On-going validation of the density studies should be completed and with additional routine sampling further analysis of estimates versus regressed assignment of density in future models will need to be completed.

Recommend work program costs are summarized in Table 1-10.

Table 1-10 Recommended work program for Zancudo mineral resource development

Type of Work	Description	Cost
Exploration Drilling	In-fill drilling to convert some of the Inferred Resources to Indicated within Area A and to confirm grade continuity within Area B (Figure 26-1), aimed to improve the geological confidence to a sufficient level to define Mineral Resources outside the estimated blocks.	US$1,200,000
Study	Complete and update Mineral Resource Estimate	US$75,000
Subtotal		**US$1,275,000**
Contingency	Monte Carlo Simulation suggests there is a 55% probability the program will exceed $1,275,000. A contingency of 14% has been added to the work program budget.	**US$177,000**
Total		**US$1,452,000**

The QP has not recommended successive phases.

2 INTRODUCTION

2.1 TERMS OF REFERENCE

Denarius retained the services of Scott Wilson, President of Resource Development Associates Inc. ("RDA"), to complete an independent NI 43-101 Technical Report and Preliminary Economic Assessment ("PEA") for the Zancudo Project located near the town of Titiribi, Antioquia, Colombia. RDA's associates for this study were:

- Scott E. Wilson, CPG, President of Resource Development Associated Inc. Mr., Wilson is acting as the overall QP for the NI 43-101 Technical Report
- Zeke Blakeley, P.E. of Minetech, LLC. Mr. Blakeley performed mining engineering, mine designs, mine scheduling and economic analyses for the Project.
- Jeffery Woods, Registered Member SME of Woods Process Services. Mr. Woods provided input regarding mineral processing and metallurgical studies, recovery methods and mill construction.
- Enrique Moreno Cota, P.E. of Procesos y Proyectos Woods Moreno SA de CV. Mr. Cota provided input to the recovery methods, flow sheet parameters for the Zancudo mill facilities and construction recommendations.

Mr. Scott E. Wilson, (CPG #10965, SME 4025107RM), an independent qualified person under the terms of NI 43-101, conducted a site visit of the Property on September 15-16, 2023. The site visit was to review the Property layout for suitable locations for processing facilities, to meet the local Project staff, and to gather information related to tasks required for RDA to develop a preliminary economic assessment on the Project.

Mr. Zeke Blakeley, (QP, SME #4029863 RM), an independent qualified person under the terms of NI 43-101, conducted a site visit of the Property on September 15-16, 2023. The site visit was to review the Property layout for suitable locations for processing facilities, to meet the local Project staff, and to gather information related to tasks required for RDA to develop a preliminary economic assessment on the Project.

Mr. Jeffery Woods, (SME 408591RM and MMSA 01368QP), an independent qualified person under the terms of NI 43-101, conducted a site visit of the Property on September 15-16, 2023. The site visit was to review the Property layout for suitable locations for processing facilities, to meet the local Project staff, and to gather information related to tasks required for RDA to develop a preliminary economic assessment on the Project.

The Authors have worked closely with the Company to follow the CIM Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines, November 29, 2019 and the CIM Mineral Exploration Best Practice Guidelines, November 23, 2018 with respect to the implementation and execution of the collection of scientific data for the Property.

This Technical Report was prepared by the Authors, at the request of Mr. Serafino Iacono, President and CEO of Denarius Metals, a publicly listed company with its corporate office at 401 Bay Street, Suite 2400, PO Box 15, Toronto, ON M5H 2Y4.

All dollar amounts in this document are United States dollars (US$) unless otherwise noted.

2.2 SOURCES OF INFORMATION

This Technical Report is based on existing company technical reports, maps, published reports, company letters, memoranda, public disclosure and public information as listed in the References at the conclusion of this Technical Report. Budgetary capital equipment quotes were solicited from a number of suppliers for major equipment. Supplies and material costs primarily are from other similar projects and estimates for which Minetech and Woods/Moreno have been recently associated. Labor costs are those currently charged the operations for work in support of mine maintenance and drilling contractor support. Labor costs are benchmarked against other known Colombian mining operations.

Mineral resource estimates included information from Denarius such as geology maps, drilling databases, underground sampling databases, geology logging codes, QAQC programs carried out by the Company, underground development surveys, reviews of core photography and results of metallurgical testing programs.

2.3 EFFECTIVE DATE

The effective date of this technical report is October 24, 2023

2.4 UNITS OF MEASURE

The metric system has been used throughout this report. Tonnes are metric of 1,000 kg, or 2,204.6 lb. All currency is in U.S. dollars (US$) unless otherwise stated.

3 RELIANCE ON OTHER EXPERTS

With respect to title issues and information, the Author of this Technical Report has relied upon the Title Opinion of CLA-Consultores, dated November 4, 2023 as well as written and verbal communication with Denarius in the preparation of Section 4. CLA-Consultores is a law firm qualified to give opinions in Colombia with respect to land title matters. CLA-Consultores are not qualified persons as defined by NI 43-101.

With respect to environmental issues, the Author of this technical report has relied on verbal and written communication with Denarius in the preparation of Section 20.

No other experts were relied upon in the preparation of this Technical Report.

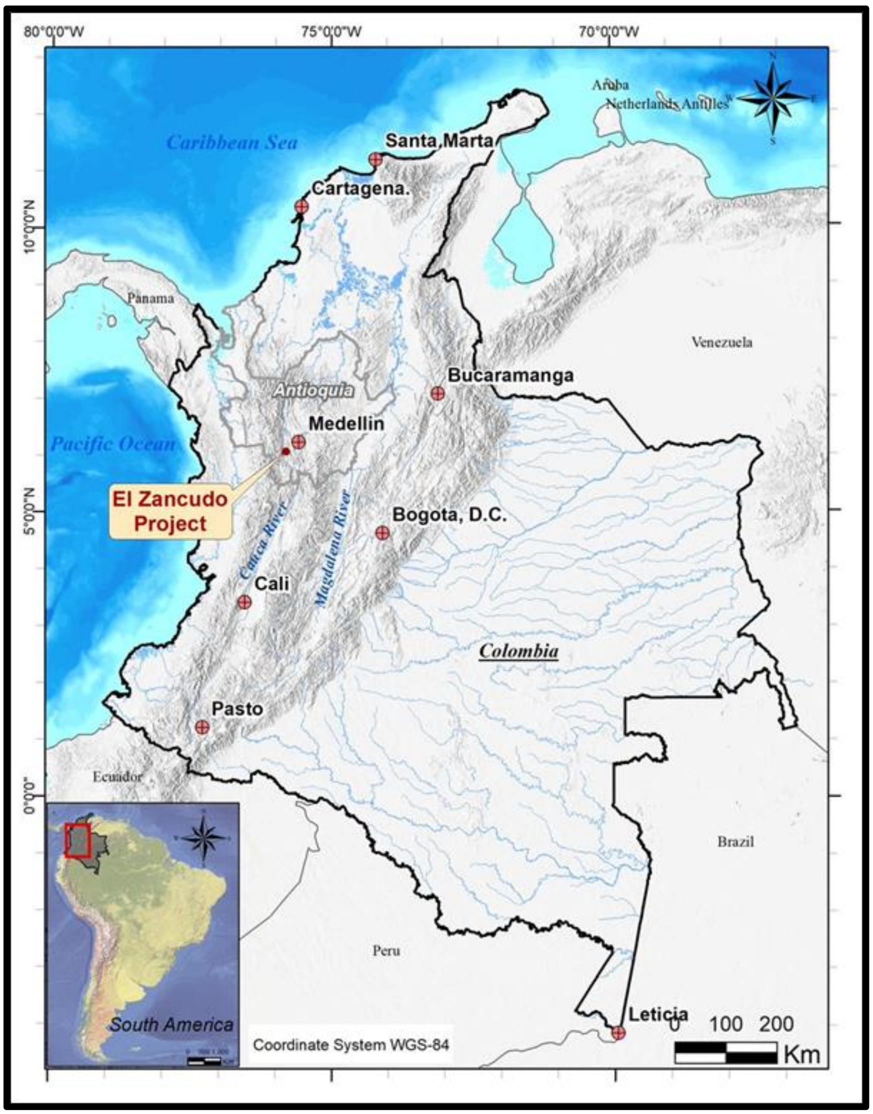
4 PROPERTY DESCRIPTION AND LOCATION

4.1 PROPERTY LOCATION

The Zancudo – Titiribí district is located on the western side of the Central Cordillera on the east side of the Cauca River. The topography in the area is abrupt with a relief of about 1,750 m between the Cauca River at 450 meters above sea level (masl) elevation on the west side of the project and the peaks of the nearby mountains south of Titiribí of about 2,200 masl. The Zancudo structures outcrop on the north trending ridge of the mountain of Cerro Vetas at altitudes of between 900 and 1,350 masl.

The Zancudo Project is in the Municipality of Titiribí, Department of Antioquia, Republic of Colombia (Source SRK 2023

Figure 4-1). Zancudo is approximately 30 km southwest of the city of Medellin, the capital of the Department of Antioquia. The geographical coordinates for the village of Sitio Viejo, located within the Zancudo Project, are 6°04’30” N, 75°47’26” W at an altitude of 1,302 masl.



Source SRK 2023

Figure 4-1 Location Map of the Zancudo Project, Colombia.

4.2 MINERAL TITLES

All mineral resources in Colombia belong to the state and can be explored and exploited by means of concession contracts granted by the state. The mining authority is the National Mining Agency (Agencia Nacional de Minería or ANM) except in the Department of Antioquia, where it has been delegated to the Government of Antioquia through its Secretary of Mines. The Ministry of Mines and Energy is in charge of setting and overseeing the Government´s national mining policies. Mining is governed by the Mining Law 685 of 2001 and subsequent decrees and resolutions, except for mining titles granted before that law, which are subject by the law in place at the time of their granting, which is most commonly Decree 2655 of 1988. Under Mining Law 685 of 2001, there is a single type of concession contract covering exploration, construction and mining that is valid for 30 years and can be extended for another 30 years.

According to the Title Opinion of CLA Consultores S.A.S., Denarius Metals, owns three adjoining mining concession contracts and one exploration license located in the municipality of Titiribí, Department of Antioquia, Republic of Colombia (jointly known as the "Zancudo Concessions" and the "Exploration License") with a total area of 1,054.15 hectares (ha) as listed in Table 4-1and Source SRK 2023

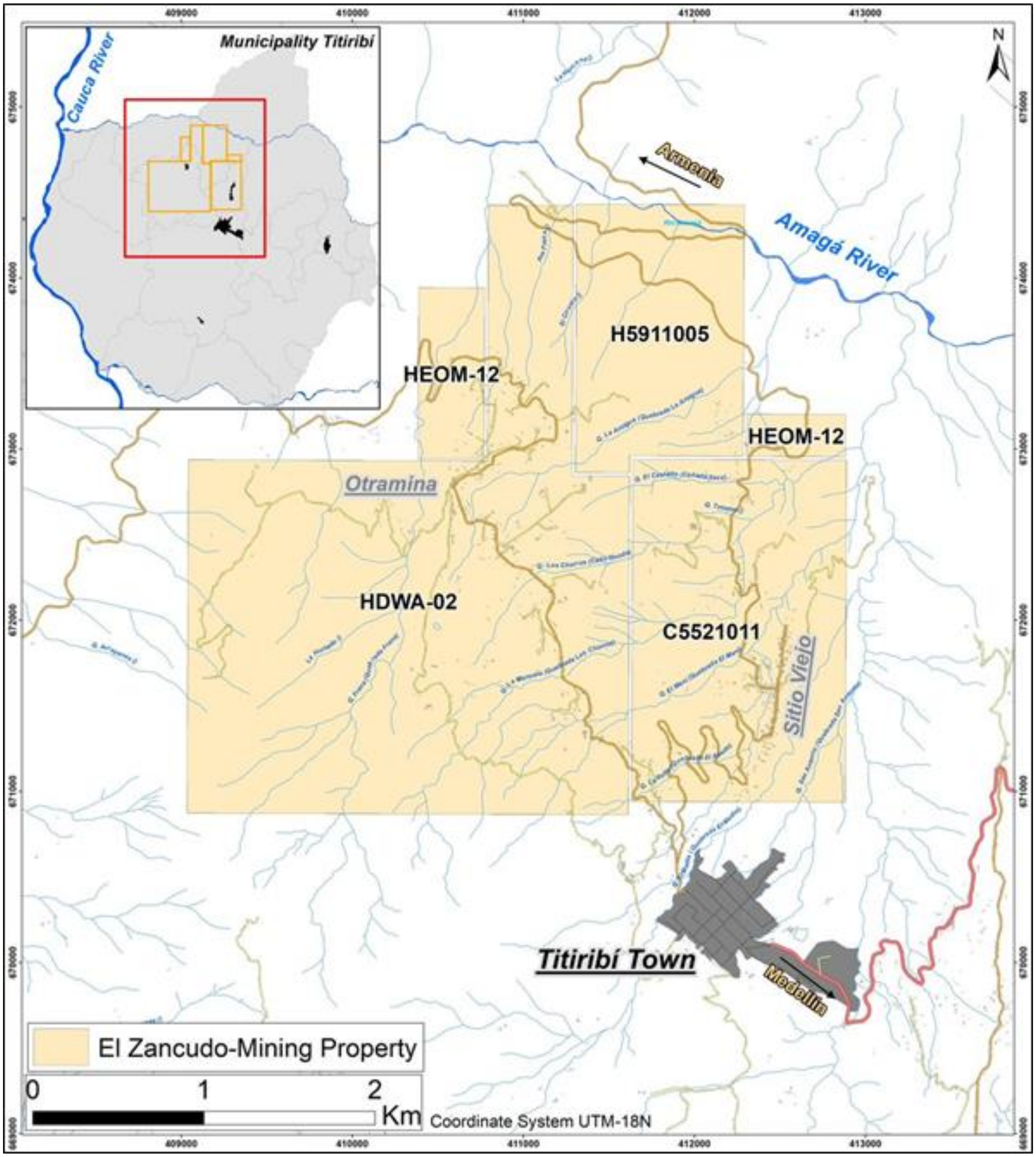
Figure 4-2. The properties are held by Zancudo Metals, Sucursal Colombia ("Zancudo Colombia", formerly Gran Colombia Gold Titiribí Sucursal Colombia (GCG Titiribí)), a branch of Zancudo Metals Corp., Panamá, (previously called Gran Colombia Gold Titiribí Corp., Panamá (GCG Panamá). Title Number HEOM-12 is pending approval of request for conversion into a mining concession contract. Certificates of ownership of all four mining titles were issued by the Colombian Mining Registry on May 26, 2023.

Table 4-1 Summary of Zancudo Mining Titles

Title Number	National Mining Cadastre (RMN) No.	Old Contract No.	Type	Title Owner	Area (ha)	Date of Registration	Date of Expiry
H5911005	HGIE-07	5911	Concession contract (Law 685 of 2001)	Zancudo Metals Corp.	147.1289	9-May-06	8-May-36
HDWA-02	HDWA-02	5747	Concession contract (Law 685 of 2001)	Zancudo Metals Corp.	604.017	1-Feb-08	31-Jan-38
C5521011	FDHK-01	5521	Concession contract (Decree 2655 of 1988)	Zancudo Metals Corp.	250.1013	19-Dec-07	7-Jan-28
HEOM-12	HEOM-12	4985	Exploration license (Decree 2655 of 1988)	Zancudo Metals Corp.	52.9029	11-Mar-08	10-Mar-09 (Pending approval of request for conversion into a mining concession contract)

Zancudo Colombia is the registered title holder of the mining rights that conform the Zancudo Project (Zancudo Concessions and the Exploration License). The Zancudo Concessions and the Exploration License are valid, binding, and enforceable mining titles in accordance with their terms and under applicable Colombian laws.

In order to undertake mining operations in the Zancudo Concessions, Zancudo Colombia requires that the competent mining and environmental authorities approve the Unified Plan for Exploration and Exploitation ("PUEE") and the Works and Construction Plan for the Zancudo Project and issue the Environmental License. A PUEE is an administrative instrument that allows the integration of areas to resolve legal, technical, and environmental problems. On June 23, 2023. Denarius Metals completed and submitted a PUEE that was prepared in agreement with the regional mining authority in Medellin. Final approval of the PUEE is expected to be received by the Company in Q4 2023. It is the QP's opinion, at the time of reporting, that there is currently no reason to assume this will not be granted.



Source SRK 2023

Figure 4-2 Map of the Mining Titles at the Zancudo Project (Source Denarius 2023)

4.2.1 NATURE AND EXTENT OF ISSUER'S INTEREST

Surface Rights

The granting of a concession contract in Colombia does not include a legal right of surface access, for which permission has to be obtained from the landowners or community.

Zancudo Colombia owns the surface rights over a land lot located in the District of Sitio Viejo, Municipality of Titiribí, with an approximate area of 4.51 ha. In addition, Zancudo Colombia leases the surface rights over two separate land lots, as summarized in Table 4-2.

Table 4-2 Surface Land Ownership and Rental Contracts at the Zancudo Project

License Number	Name	Rights	Owner	Location	Area (ha)	Time (years)	Renewal
033- 11991	La Arabia	Owner	Zancudo Metals Corp.	Sitio Viejo, Titirib	4.51	Permanent	Permanent
	Chumbimbo (Pequeña Toya)	Tennant (rental)	Antonio María Castaño Sánchez	Zancudo, Titiribí		1	Annually
033-1002	Reprocessing Plant	Tennant (rental)	Maria Gilma Deossa Jaramillo	Sitio Viejo, Titiribí	0.45	1	Annually

Source: Denarius 2023

Water Rights

Historically, water rights have been negotiated by the Company with the regional environmental authority CORANTIOQUIA. Water rights are typically negotiated at a time when active drilling is being completed on the Project. Four applications are currently in place to allow pumping from the following streams: (“AS1-2020-575") for the La Manuela stream, (AS1-2017-461) for the Los Chorros stream, (AS1-2017-198) for the Lo Rello stream and (AS1-2017-197) for the La Mani stream. Applications are typically awarded for a 3-to-5-year period.

4.3 ROYALTIES, AGREEMENTS AND ENCUMBRANCES

Royalties are payable to the state at an effective rate of approximately 3.2% of the gross value at the mine mouth for gold and silver (Law 141 of 1994, modified by Law 756 of 2002). For the purposes of royalties, the gold and silver price is set by the government and is typically 80% of the average of the London afternoon fix price for the previous month.

As part of the agreement on termination of the Option Agreement between IAMGOLD and Denarius Metals in July 2022, IAMGOLD was granted a 1% NSR by the Company on future production from the Zancudo Project, payable in cash.

4.4 ENVIRONMENTAL LIABILITIES AND PERMITTING

4.4.1 ENVIRONMENTAL LIABILITIES

No large-scale regional environmental liabilities have been identified. Local liabilities are possible at the site do exist due to prior mining activities. The regional environmental authority CORANTIOQUIA has not identified any environmental liabilities at the Project. However, the Project has potential environmental liabilities due to past mining activities including surface disturbance and degradation including deforestation; waste rock, scoria and tailings from past mining and smelting operations; and contamination of soil and water by mercury, cyanide, arsenic, acid drainage, heavy metals, and solids from past mining operations.

Under Colombian mining and environmental laws, companies are responsible for any environmental remediation and any other environmental liabilities based on actions or omissions occurring from and after the entry into force and effect of the relevant concession contract, exploration license or mining request, as applicable, even if such actions or omissions occurred at a time when a third party was the owner of the relevant mining title. On the other hand, companies are not responsible for any such remediation or liabilities based on actions or omissions occurring before the entry into force and effect of the relevant concession contract, exploration license or mining request, as applicable, from historical mining by previous owners and operators, or based on the actions or omissions of third parties who carry out activities outside of the mining title such as illegal miners.

There is no known artisanal mining on the Property.

4.4.2 REQUIRED PERMITS AND PERMIT STATUS

In order to undertake mining operations in the Zancudo Concessions, Zancudo Colombia requires that the competent mining and environmental authorities approve the PUEE and the Works and Construction Plan for the Zancudo Project and issue an Environmental License.

4.5 OTHER SIGNIFICANT FACTORS AND RISKS

The La Candela Forrest Reserve covers part of the land title HDWA-02 (5757) which is shown below in Figure 4-3. The Candela reserve was created as a result of Municipal Agreement 007 of the year 2000. This land is defined as a Forest Reserve Zone. It is considered a sensitive area given the environmental characteristics of the area and the repercussions for the inhabitants of Titiribí. There is no prohibition to mining, but further work will be required.

The Falda de Cauca and Franá Biological zones occur on the western side of the concessions and overlap parts of title HDWA-02 and HEOM-12 concessions. Current legislation does not restrict mining activities in these zones; however, they are socially and environmentally sensitive zones, and a local municipal agreement has declared these to be Forest Reserves. The area of overlap of the protected areas with the title is not known to be a significant target for exploration.

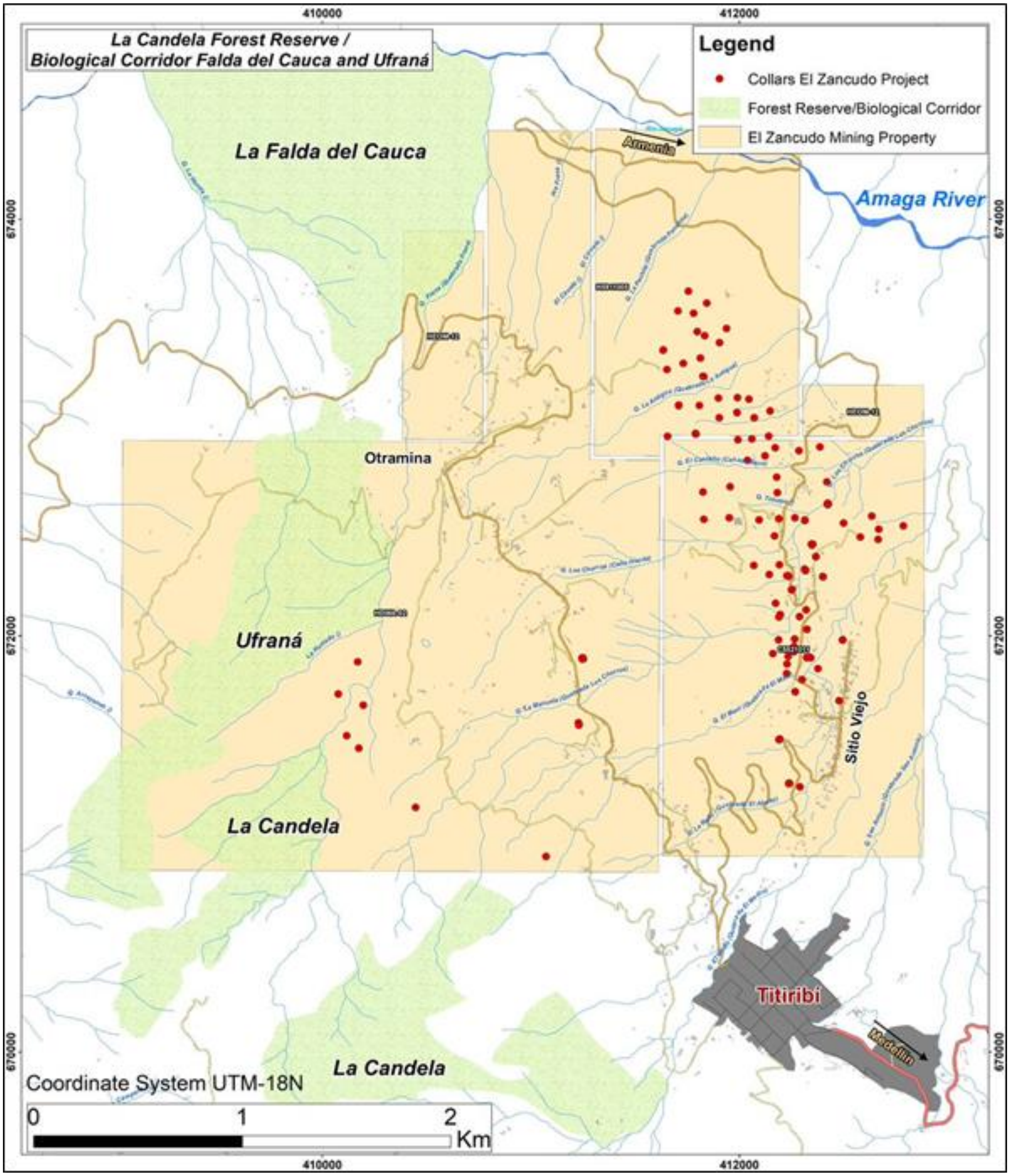


Figure 4-3 Location Map of La Candela Forest Reserve and the Falda de Cauca - Franá Biological Corridor Overlap with the Zancudo Concession Contracts (Source Denarius, 2023)

5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 TOPOGRAPHY, ELEVATION AND VEGETATION

Zancudo lies within the tropical, moist forest ecological zone of the Holdridge Life Zone climatic classification system. Vegetation is tropical forest that has been partly cleared for pasture, with secondary forest growth. Land use is cattle grazing, coal mining, and minor cultivation of coffee, sugar cane, citrus fruit and bananas.

Field personnel for the exploration program are available from the towns of Sitio Viejo and Titiribí and neighboring districts. There are coal mines in the district, and the district is expected to be able to supply the basic workforce for any future mining operation.

Titiribí is supplied by electrical power on the Colombian national power grid. The region has high rainfall and there are ample water resources available. Water rights belong to the state and are governed by Decree 1541 (1978).

5.2 ACCESSIBILITY AND TRANSPORTATION TO THE PROPERTY

Zancudo is located 30 km southwest of Medellin (population 2.5 million), the capital of the Department of Antioquia and the second largest city in Colombia. Aeropuerto Internacional José María Córdova serves as the main for Medellin. The current exploration office is located in the town of Titiribí, which is 56 km and about a 1½ hour drive by paved road from Medellin via the Autopista Sur/Route 25 south to Caldas, then Route 60 west through Amagá, and turn off on to a secondary road to Titiribí, as shown in Figure 5-1.

Access within the Zancudo property is by unpaved road from Sitio Viejo to the Independencia Mine, and another unpaved road at higher altitude from Titiribí to the village of Otra Mina and beyond.

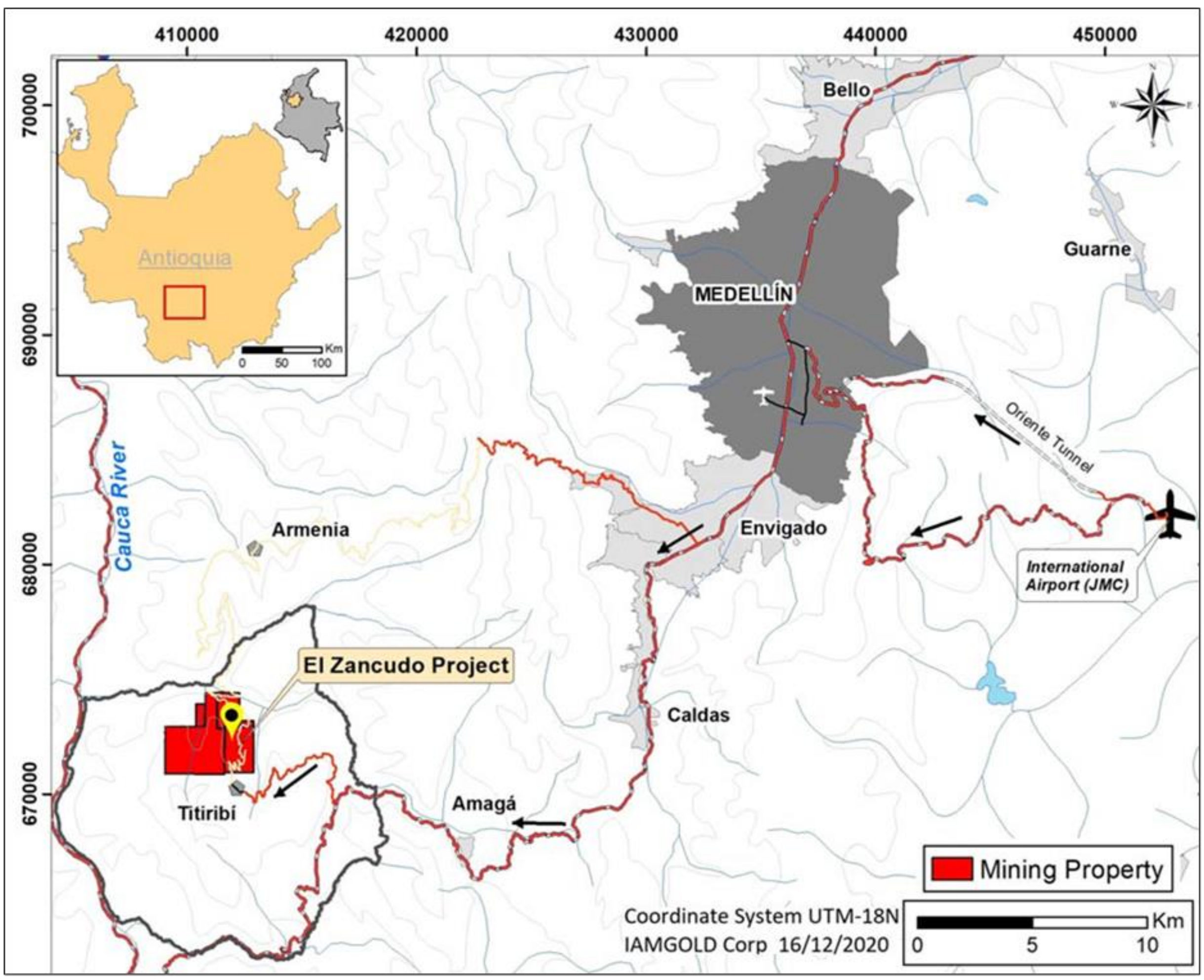


Figure 5-1 Access from Medelin to the Zancudo Project

5.3 CLIMATE AND LENGTH OF OPERATING SEASON

The climate is Tropical rainforest climate (Af) in the Köppen climate classification scheme, characterized by constant high temperatures with an average of 18°C or higher for every month, and average rainfall of at least 60 millimeters (mm) every month. The nearest weather data is for Amagá, located 10 km east of Zancudo at 1,407 masl, where the average annual temperature is 22.0°C and varies from 21.2-22.9°C, the average annual high temperature is 27.6°C, the average annual low temperature is 16.5°C, and the average annual rainfall is 2,187 mm and varies from 76 to 276 mm per month (www.climate-data.org). Rainfall has a bimodal distribution with the wettest months from April to June, and again from August to November. Fieldwork can be carried out all year round.

5.4 PHYSIOGRAPHY

The Zancudo –Titiribí district is located on the western side of the Central Cordillera on the east side of the Cauca River. The topography in the area is abrupt with a relief of about 1,750 m between the Cauca River at 450 masl elevation on the west side of the project and the peaks of the nearby mountains south of Titiribí of about 2,200 masl. A general view of the physiography of the Zancudo Project is shown in Figure 5-2. The Zancudo structures outcrop on the north trending ridge of the mountain of Cerro Vetas at altitudes of between 900 and 1,350 masl. The area is bounded on the east side by the valley of the north-flowing Las Juntas creek, on the north side by the valley of the west-flowing Amagá River, and on the west side by the Cauca River. The Cauca is a major, north-flowing river in a deep valley that separates the Western and Central Cordilleras. It is a tributary of the Magdalena River that drains into the Caribbean Sea at Barranquilla.

Source SRK 2023

Figure 5-2 Panoramic View of the Physiography of the Zancudo Project Looking West

5.5 SUFFICIENCY OF SURFACE RIGHTS

Access for sampling and drilling needs to be negotiated to allow temporary surface access agreements as required.

5.6 INFRASTRUCTURE AVAILABILITY AND SOURCES

5.6.1 POWER

Power is currently accessible from the towns of Titiribí and Sitio Viejo to support the current work. Previously at the Independencia floatation plant electrical power was provided by a 15-kilovolt (kV) (630-kilovolt-amp (KVA)) power line that was stepped down to 460 volts (V) in a small substation at the concentrator.

5.6.2 WATER

Locally water is supplied through a series of small creeks as needed. At the Independencia Plant, the process water was provided from a creek near the concentrator and entrance to the mine.

5.6.3 MINING PERSONNEL

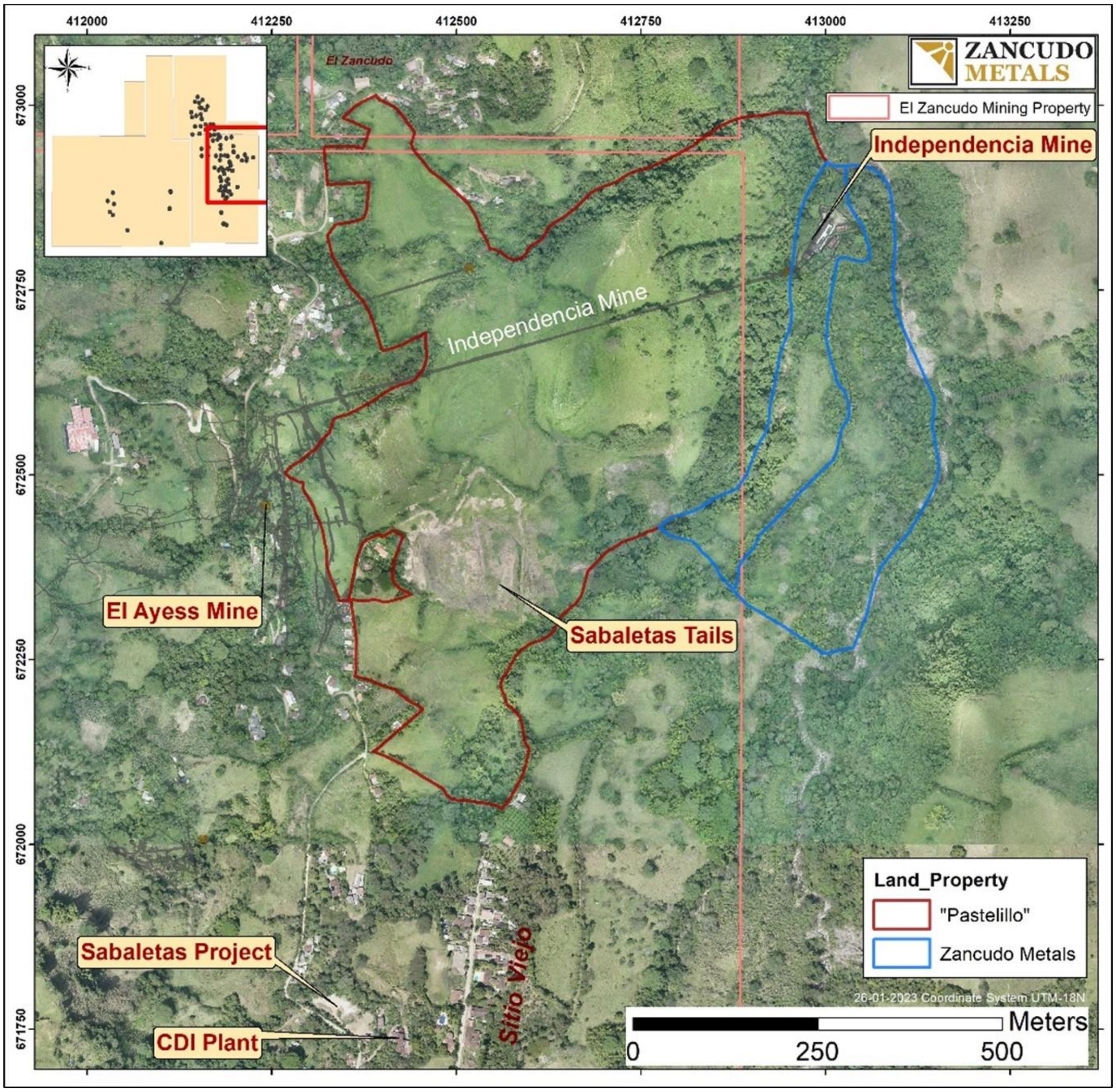
Skilled workers and general services could be sourced from the regional urban centers. Mining operations within the local region use mining staff who commute in from the regional centers on a weekly basis.

5.6.4 TAILINGS STORAGE FACILITIES

Several potential sites are available for the location of a tailings storage facility (TSF). The economic analysis in this report describes the potential location for the TSF.

5.6.5 PROCESSING PLANT SITES

A potential site for the processing plant is being considered near the Independencia Mine. There are other sites that could accommodate a processing plant of the size required for production. These include Sabletas, the old Sabletas tailings dump location and the El Ayess Mine, as shown in Figure 5-3.



Source SRK 2023

Figure 5-3 Location of the Pastelillo Property and the Independencia Mine

6 HISTORY

The previous technical report compiled for ESV was entitled "NI 43-101 TECHNICAL REPORT For the Zancudo Gold-Silver Project, Municipality of Titiribí, Department of Antioquia, Colombia". The author presented the history of the Zancudo district in a concise table which has been extracted and placed below as Table 6-1.

Table 6-1 Summary of Ownership of the Zancudo Project

Year	Company	Activity
1746	Spanish colonizers	First gold mine discovered in the district in the Amagá River.
1764-1824	Spanish colonizers	Numerous gold mines staked.
1775	Benito del Rio	Founded San Antonio de Real de Minas de los Titiribíes at Sitio Viejo. Became a municipality in 1807. Moved to present location in 1815.
1828	Sociedad de Minas de Antioquia	Company formed.
1848	Sociedad de Zancudo	The most important company in the district was formed in Medellin by Jose Maria Uribe Restrepo.
Unknown	Sociedad de Otra Mina	Another mining company in the district.
Unknown	Sociedad de los Chorros	Another mining company in the district.
1851-1858	Hacienda de Fundicion de Titiribí	First ore roasters installed at Sitio Viejo by Tyrell Moore.
1863-1865	Hacienda de Fundicion Zancudo y Sabaletas	Roasters installed by Sociedad de Zancudo at Sabaletas by Reinhold Paschke.
1898	Compañía Unida de Zancudo	Company formed in Medellin and Paris to recapitalize Sociedad Zancudo, of which it owned 57%.
1945	Sociedad de Zancudo	Zancudo mine closed and company bankrupt.
1945-1985		No significant activity.
1985-1993	Compañía de Reciclaje Minero, S.A. (COREMINE)	Evaluated reserves and metallurgy to re-process scoria dumps at Sitio Viejo.
1993	Compañía Minera El Escoria S.O.M.	Mining contract 5521 returned to owner El Escorial.
1993-2010	Consorcio de Inversionistas, C.D.I., S.A. (CDI)	Built pilot plant to process scoria at Sitio Viejo in 1994. Rehabilitated Independencia, La Matilde and El Castaño Mines. Built 120 t/d plant at Independencia. Minor production.
2000s	Proyecto Sabaletas S.A.S. (Mineros S.A.)	Re-processed 70,000 t of scoria dumps at Sabaletas to produce Au and Ag.
2009-2013	Proyecto Sabaletas S.A.S. (Mineros S.A.)	Re-processed 135,407 t of scoria dumps at Sitio Viejo to produce Au and Ag.
2010	Gran Colombia Gold Corp.	Bought the project from CDI.
2011-2012	Gran Colombia Gold Corp.	Exploration and diamond drilling.
2014	Anglo American plc	Evaluated the porphyry potential of the project.
2017-2022	IAMGOLD Corporation	Optioned the project from Gran Colombia. Exploration and diamond drilling. First Option for 6 years for 65%. Second Option for 3 more years for total 70%.
2020	ESV Resources Ltd.	Share purchase agreement entered into with Gran Colombia for the acquisition of GCG Titiribi (since renamed Zancudo Metals)
2021	Denarius Silver Corp (renamed Denarius Metals on February 1, 2022)	ESV Resources Ltd changed its name to Denarius Silver Corp in conjunction with an RTO transaction and completed the acquisition of the Project through the issuance of 27,000,000 common shares to Gran Colombia

Source: Redwood, 2021 – compiled from historical reports by the history of mining at Zancudo has been described in historical studies by Molina (2003, 2011) and Ramos (2007), and in geological reports, papers and books by Restrepo (1885), Miller & Singewald (1919), Botsford (1926), Grosse (1926, 1932), Emmons (1937), CDI (1994), Gallego & Zapata (2003), James (2006) and Jimenez (2012).

6.1 EXPLORATION AND DEVELOPMENT RESULTS OF PREVIOUS OWNERS.

All exploration and drilling were completed by the previous owners and is detailed in Section 9 and 10 of this report.

6.2 HISTORIC MINERAL RESOURCES AND RESERVE ESTIMATES

Between 1985 and 1993, COREMINE carried out studies to extract gold and silver from the scoria dumps at Sitio Viejo (Flores, 1991). These and subsequent studies are summarized in a report by James (2006). A historical proven and probable reserve estimate was made of the scoria dumps of 574,000 t grading 4.40 g/t gold and 222.25 g/t silver and was dated 1991 and was disclosed in a private disclosure document by Flores (1991) and quoted in a report by James (2006). The estimates are of unknown reliability but are included for purposes of depicting the history and development of the property. The QP has not done sufficient work to classify the historical estimate as a current resource estimate or Mineral Reserve and the issuer is not treating the historical estimate as a current resource estimate.

6.3 HISTORIC PRODUCTION

6.3.1 MINING 1793 – 1945

Gold was first discovered in the Zancudo district in 1746. Mining has been carried out at Zancudo since 1793 in 58 mines. The nineteenth century mining companies were the Sociedad de Minas de Antioquia, formed in 1828, the Sociedad de Los Chorros and the Sociedad de Otra Mina. The most important company was the Sociedad de Zancudo that operated for a century from 1848-1948, with the most important mining period being from 1863-1927. From 1898 the company was owned 57% by La Compañía Unida de Zancudo of Paris and Medellin, formed as a holding company to recapitalize it. The Zancudo mine was closed in 1945.

The first gold ore roaster was installed in 1851 at Sabaletas, 6 km southeast of Sitio Viejo, and others later at Sitio Viejo to treat refractory gold associated with arsenopyrite using locally- produced coal. The high-grade ore was hand cobbed and sent directly to the roasters. The lower grade ore was crushed in stamp mills, the sands were concentrated by gravity on Wilfley tables and “German” tables, and the fines by flotation. Free gold was panned from the concentrates of the Alto Chorros mines. The smelting process separated the ore by pooling into a primary matte, containing the precious metals, and slag. The primary matters were then refined through progressive oxidation of a mass of crude molten lead. Other metals such as arsenic and lead were also oxidized, leaving a bottom residue of molten precious metals. Hydrometallurgical processes were introduced in 1910 to treat the primary matter by sulfidization to recover silver, leaving a gold-bearing residue which was treated by cyanidation (Grosse, 1926; Flores, 1991; James, 2006). Three of the twelve brick chimneys still stand at Sitio Viejo (Figure 6-1).

Source SRK 2023

Figure 6-1 Historical Gold Roaster Chimneys at the Village of Sitio Viejo

Annual production data is generally lacking except for the period of 1912-1922 when the Sociedad de Zancudo reported production of 129,325 ounces (4.2 t) of gold and 958,570 ounces (30.8 t) of silver from 284,370 tonnes of ore (Table 6-2). The recovered grade was reported to be 14.62 g/t gold and 108.37 g/t silver. Free gold reportedly accounted for 53.5% of the total gold, and the balance was produced by smelting (Grosse, 1926). The head grade from 1864-1899 was 16.66 g/t Au and 256.61 g/t Ag (Botsford, 1926).

Table 6-2 Gold and Silver Production by Sociedad de Zancudo, 1912-1922

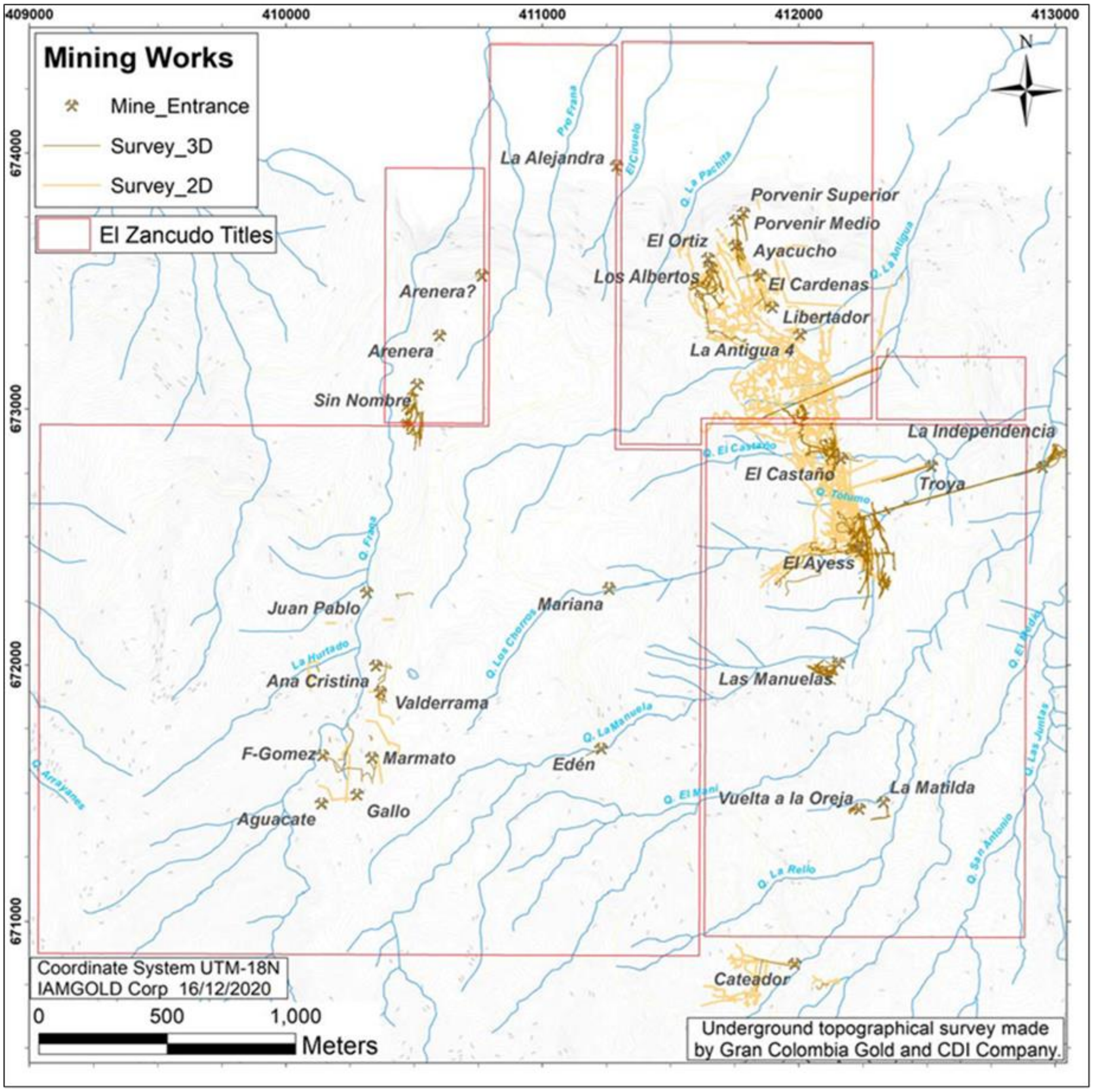
Years	Ore (t)	Au (oz)	Au (kg)	Ag (oz)	Ag (kg)
1912-1922	284,370	129,325	4,158	958,570	30,819

The 2020 technical report provided a summary of the estimated total production from the Zancudo District from 1793 to 2006 from various sources. The estimates ranged between 1.4 and 2 million ounces (Moz) AuEq (43.1 to 64.3 t) according to different estimates (Table 6-3).

Table 6-3 Estimates of the Total Historical Production of Gold and Silver Expressed as Au Equivalent from the Zancudo District

Years	AuEq (Moz)	AuEq (t)	Source
1793-1919	1.451	45.1	Miller & Singewald (1919), Emmons (1937)
1794-1922	1.386	43.1	Botsford (1926)
1793-2006	1.5 to 2.0	48.2 to 64.3	James (2006)

The historic mine workings are shown in Figure 6-2and have been plotted from historical mine plans and underground surveys carried out by Gran Colombia and IAMGOLD Colombia.



Source SRK 2023

Figure 6-2 Distribution of Historical Mine Workings at the Zancudo Project

6.3.2 COREMINE, 1985-1993

COREMINE carried out studies to extract gold and silver from the scoria dumps at Sitio Viejo between 1985 and 1993. It is reported a historical proven and probable reserve estimate was made of the scoria dumps of 574,000 t grading 4.40 g/t gold and 222.25 g/t silver and was dated 1991 and was disclosed in a private disclosure document by Flores (1991) and quoted in a report by James (2006). The data and methodology used to calculate this estimate has not been verified. This MRE is a historical estimate as defined in NI 43-101, and the mineral reserve categories for this estimate predate the CIM standards and definitions for mineral reserve classification, and therefore do not conform with the current definitions of mineral reserves as stated in NI 43-101. The estimates are of unknown reliability but are included for purposes of depicting the history and development of the property. There is no plan to conduct any work to verify this historical estimate, and in any event, it is the QP's understanding that these reserves were subsequently mined by a prior operator. A QP has not done sufficient work to classify the historical estimate as current mineral reserves. The historical estimate is not being treated current mineral resources or mineral reserves.

6.3.3 CDI, 1993-2010

Mining contract 5521 was returned to the owner Compañía Minera El Escorial S.O.M., which subsequently made an agreement with Consorcio de Inversionistas, C.D.I., S.A. (CDI) in 1993 to produce gold and silver from the scoria and from underground vein mining. CDI built a pilot plant at Sitio Viejo to treat the scoria in 1994.

CDI rehabilitated the Independencia, La Matilde and El Castaño mines, and built a 120 t/d mineral treatment plant at the Independencia Mine to concentrate ore by gravimetry and flotation. The concentrates were roasted and trucked to the pilot plant at Sitio Viejo for cyanidation. However, the plant was never fully operational. CDI carried out small scale exploitation of the mines from 2002 until about 2009; production in 2006, for example, was 112 oz (3.488 kg) of gold and 303 oz (9.438 kg) of silver (CDI, 2007).

6.3.4 PROYECTO SABALETAS S.A.S., 2000'S – 2013

Proyecto Sabaletas S.A.S. (Sabaletas), a subsidiary of Mineros S.A. (Mineros), a Colombian gold mining company, reprocessed scoria to recover gold and silver under a contract from CDI in the 2000's to 2013. The company re-processed about 70,000 t of scoria with a grade of 8 g/t Au at Sabaletas. The plant operated at Sitio Viejo from 2009 to 2013 and processed about 135,407 t of scoria grading 4 g/t Au. A summary break down of the reported production is shown in (Table 6-4).

The plant had a capacity to treat 6,000 t per month. It consisted of three stages of crushing and two stages of grinding in ball mills to 70% passing 325 mesh (-44 microns), followed by gold and silver dissolution in agitated cyanide tanks and Merrill Crowe precipitation using zinc powder. The zinc precipitate containing gold and silver was sold to a smelter in Medellin.

Table 6-4 Gold and Silver Production from Scoria Dumps by Proyecto Sabaletas S.A.S., 2009-2011

Year	Milled (t)	Au (g/t)	Au Recovery (%)	Au Production (kg)	Ag (g/t)	Ag Recovery (%)	Ag Production (kg)
2009	18,298	3.94	60.8	45.08	unknown	unknown	
2010	71,480	4.12	64.2	191.98	unknown	unknown	3,397.91
2011	45,629	3.94	59.0	100.46	unknown	unknown	2,234.53
Total	**135,407**	**4.04**	**61.7**	**337.52**			**5,632.44**

Source SRK 2023

6.3.5 GRAN COLOMBIA AND IAMGOLD 2010-2022

Gran Colombia bought the Zancudo Project from CDI in 2010 for the price of US$15 million in cash. Gran Colombia carried out exploration, including a total of approximately 14,000 m of diamond drilling, in 2011 and 2012 that is described in a report by Gaviria et al. (2013). The exploration program was operated by its subsidiary Mineros Nacionales S.A. in 2013. Anglo American plc evaluated the porphyry potential of Zancudo in 2014. IAMGOLD, pursuant to the IAMGOLD Option described in Section 4.3, carried out an on-going program of exploration, including approximately 26,000 m of diamond drilling, from 2017 through 2022.

No production has been completed at the Project since 2011.

6.3.6 ESV RESOURCES 2020-2021

In 2020, ESV entered into a share purchase agreement with Gran Colombia pursuant to which it would acquire the Zancudo Project in exchange for the issuance to Gran Colombia of 27,000,000 common shares of ESV. No production was completed during this period.

6.3.7 DENARIUS METALS 2021-2023

Upon completion of a reverse takeover transaction in February 2021, ESV was renamed Denarius Silver Corp. On February 1, 2022, Denarius Silver Corp. announced that it changed its name to Denarius Metals Corp. In July 2022, in response to a shortfall by IAMGOLD in meeting its annual work commitment, the Company and IAMGOLD mutually agreed to terminate the Option Agreement and the Company granted a 1% net smelter return (NSR) on future production from the Zancudo Project, payable in cash, to IAMGOLD. The focus for the Company to date has been to consolidate the geological information based on the work completed to date, and to start the process of rehabilitating some of the underground mine access to allow further exploration on a more detailed scale and potentially more detailed engineering work required prior to mining.

7 GEOLOGICAL SETTING AND MINERALIZATION

7.1 REGIONAL GEOLOGY

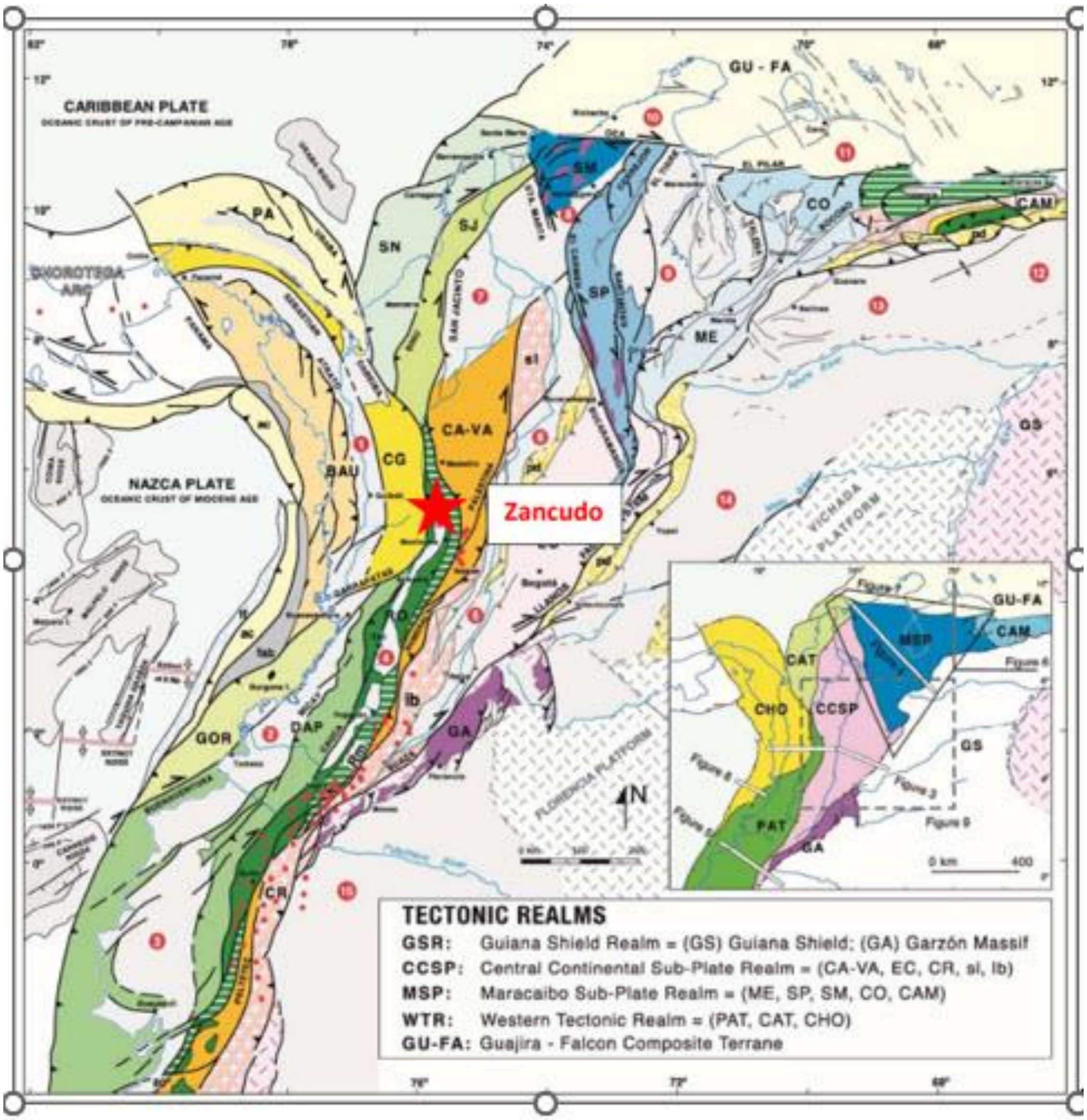
The Zancudo deposit is located on the western side of the Central Cordillera of the Colombian Andes which is separated from the Western Cordillera to the west by the Cauca River. The Zancudo deposit lies within the Romeral terrane, an oceanic terrane comprising metamorphosed mafic to ultramafic complexes, ophiolite sequences and oceanic sediments of probable Late Jurassic to Early Cretaceous age (Figure 7-1) (Cediel & Cáceres, 2000; Cediel et al., 2003). This terrane was accreted to the continental margin along the Romeral Fault, which lies east of Zancudo, in the Aptian (125 to 110 mega annum (Ma)). Movement on the Romeral Fault was dextral indicating that terrane accretion was highly oblique from the southwest.

The terrane is bounded by the Cauca-Patía Fault on the west side. Further west, additional oceanic and island arc terranes were subsequently accreted to the Western Cordillera in the Paleogene and Neogene periods, culminating in the ongoing collision of the Panamá-Choco arc since late Miocene. This reactivated the Cauca-Patía and Romeral faults with left lateral and reverse movements (Cediel & Cáceres, 2000; Cediel et al., 2003). The Central Cordillera is formed of continental crust of Proterozoic and Paleozoic-age comprising metasediments, amphibolites and gneisses.

The Romeral terrane is partially covered by continental sedimentary rocks of Oligocene to Lower Miocene age called the Amagá Formation, comprising gray to green colored conglomerates, sandstones, shales and coal seams, and by thick subaerial basaltic to andesitic volcanic and sedimentary rocks of the late Miocene Combia Formation.

The host rocks for the mineralization at the Zancudo Project are schists of the Arquía Complex and sedimentary rocks of the Amagá Formation. The sediments have been folded into several synclines cut by high angle reverse faults with strike of N10-20°W and a steep dip of 50⍰ to 70° east.

The Titiribí porphyry of Late Miocene age intrudes the Arquía Complex schists and Amagá Formation sedimentary rocks. Gold mineralization is related to the emplacement of the porphyry stocks.



Source: Cediel et al., 2003

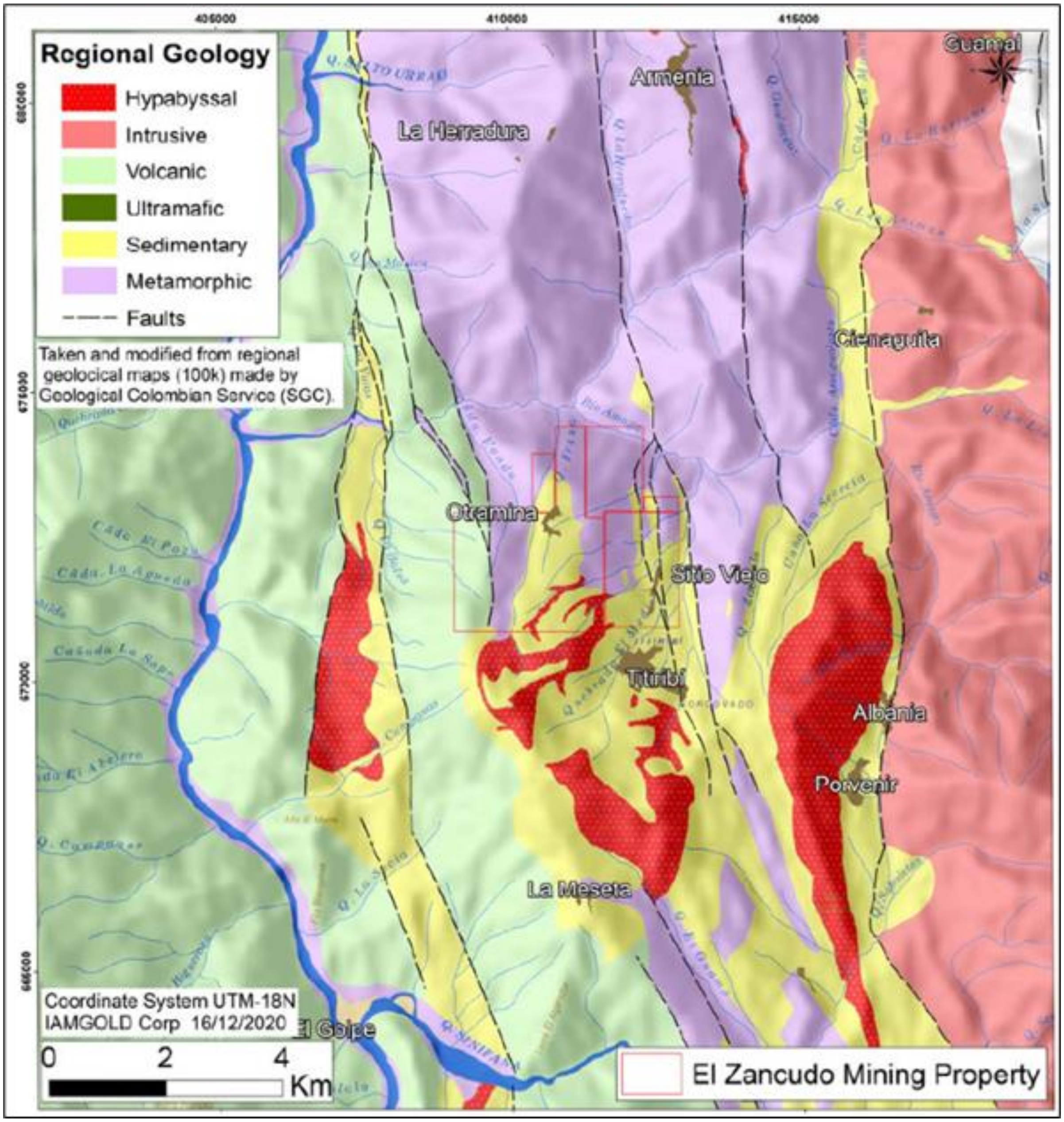
Notes: GS = Guiana Shield; GA= Garzon massif; SP = Santander massif-Serrania de Perija; ME= Sierra de Merida; SM = Sierra Nevada de Santa Marta; EC = Eastern Cordillera; CO= Carora basin; CR= Cordillera Real; CA-VA= Cajamarca-Valdivia terrane; sl = San Lucas block; ib = Ibague block; RO = Romeral terrane; DAP = Dagua-Piñon terrane; GOR = Gorgona terrane; CG = Canas Cordas terrane; BAU = Baudó terrane; PA = Panamá terrane; SJ = San Jacinto terrane; SN = Sinú terrane; GU-FA= Guajira-Falcon terrane; CAM = Caribbean Mountain terrane; Rm = Romeral melange; tab = fore arc basin; ac = accretionary prism; tf = trench fill; pd = piedmonte; 1 = Atrato (Choco) basin; 2 = Tumaco basin; 3 = Manabi basin; 4 = Cauca-Patía basin; 5 = Upper Magdalena basin; 6 = Middle Magdalena basin; 7 = Lower Magdalena basin; 8 = Cesar-Rancheria basin; 9 = Maracaibo basin; 10 = Guajira basin; 11 = Falcon basin; 12 = Guarico basin; 13 = Barinas basin; 14 = Llanos basin; 15 = Putumayo- Napo basin; Additional Symbols: PALESTINA = fault/suture system; red dot= Pliocene-Pleistocene volcano; Bogota = town or city.

Figure 7-1 Regional Geological Setting showing Lithotectonic and Morphostructural Map of Northwestern South America

7.2 LOCAL GEOLOGY

The Titiribí porphyry intrudes the Arquía Complex schists and Amagá Formation siliciclastic sedimentary rocks (Figure 7-2). Gold mineralization is related to the emplacement of the porphyry stocks. High grade epithermal Au-Ag veins of the Zancudo Project occur along the lower eastern flank of the Cerro Vetas porphyry complex of monzodiorite, diorite-granodiorite to quartz monzonite composition (Leal-Mejia et al., 2019).

The porphyry has been dated by potassium-argon method on hornblende from Cerro El Corcovado at Titiribí at 9.0 ± 0.9 Ma and 7.8 ± 1.0 Ma (Gonzalez, 1976), and at 7.6 ± 0.3 Ma by uranium-lead dating of zircon from the Cerro Vetas porphyry (Leal-Mejia et al., 2019). The ages of intrusion, alteration and mineralization are thus Late Miocene. The Titiribí porphyry has been described by Meldrum (1998), Uribe (2013), Kantor & Cameron (2013, 2016) and Ross et al. (2019).

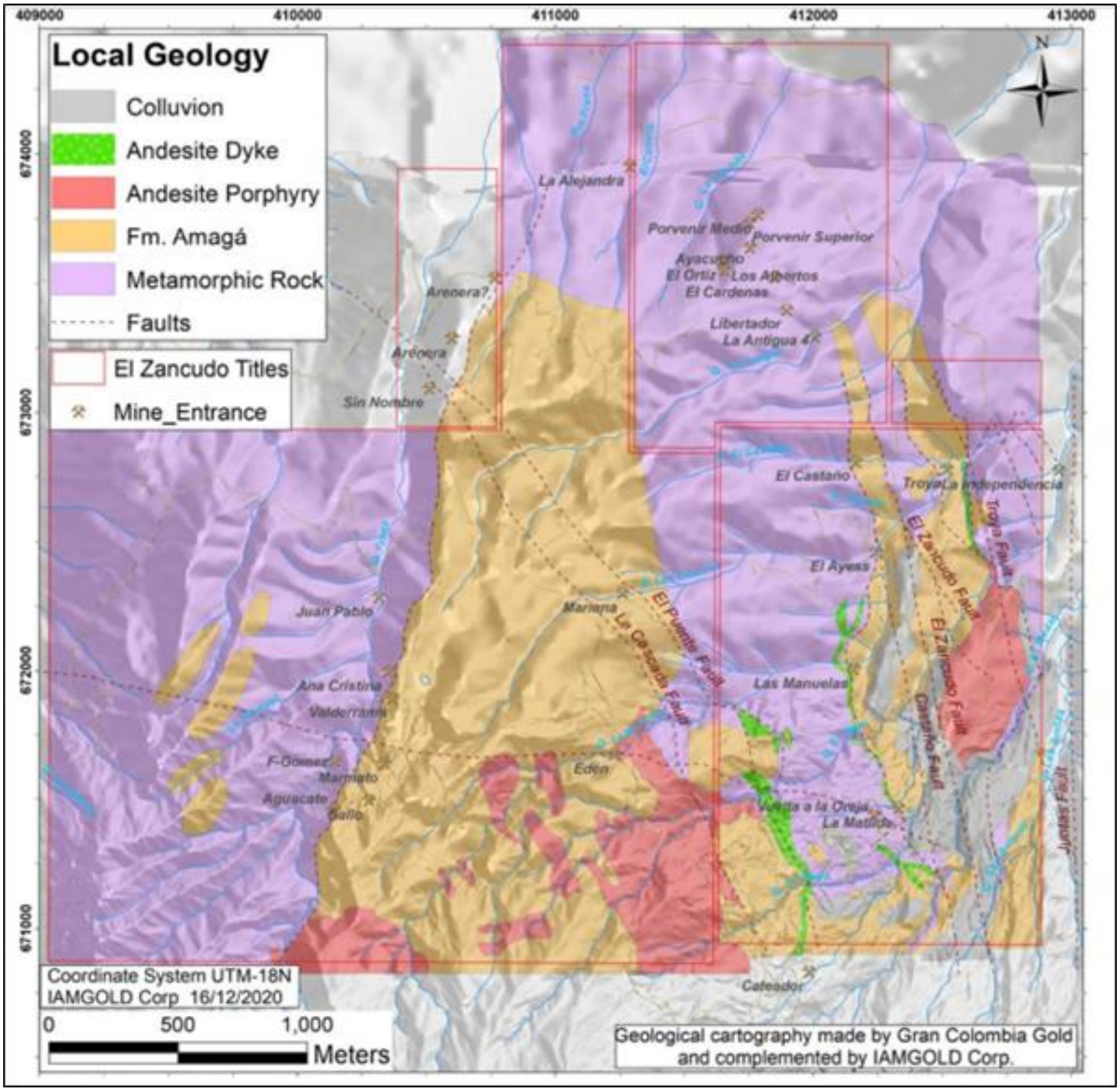


Source SRK 2023

Figure 7-2 Local Geology Map

7.3 PROPERTY GEOLOGY

The geology of the Zancudo deposit has been described by Botsford (1926), Grosse (1926), Emmons (1937), CDI (1994, 2007), PPM (2002, 2003), Carrillo (2003, 2004) and reports by Gran Colombia (Gaviria et al., 2013) and IAMGOLD Colombia (IAMGOLD, 2020). This section summarizes these descriptions. A property scale geological map is shown in Figure 7-3.



Source SRK 2023

Figure 7-3 Geological Map of the Zancudo Project

7.3.1 LITHOLOGICAL UNITS

The host rocks in the local area are defined as by three main groups:

- Schists of the Late Jurassic to Early Cretaceous Arquía Complex - The Arquía Complex comprises chlorite schists, quartz-sericite schists and intervals of black graphitic schist. The schistosity trends NS to NW and dips steeply to the west.
- Continental sedimentary rocks of the Oligocene to Lower Miocene Amagá Formation - The sedimentary rocks of the Amagá Formation Lower Member are unconformable on the schists with a basal coarse to medium grained polymictic conglomerate

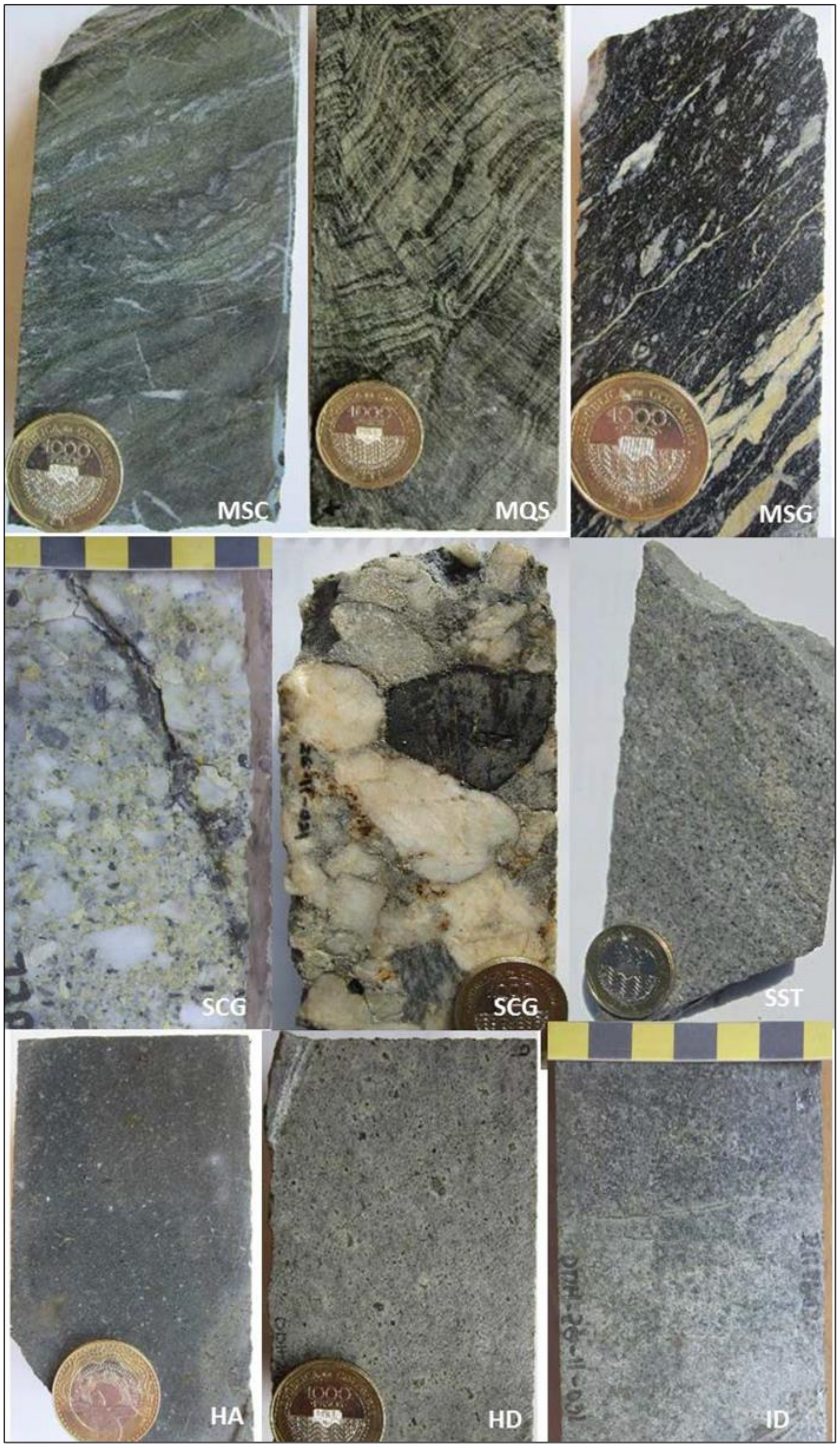
followed by sandstone with carbonaceous beds, carbonaceous sandy mudstone, gray claystone, and in the upper part a violet claystone with thick lenses of sandstone. The stratigraphic thickness preserved is up to 50 m.

- Late Miocene andesite and dacite porphyry intrusions – The schists and sediments are cut by minor porphyry intrusions in the form of dykes and sills of andesite porphyry and dacite porphyry. There are also fine grained, equigranular diorite intrusions. These intrusions are located on the northern side of the Cerro Vetas porphyry intrusion center.
- Additional logging codes have been used by the geologist for veins, hydrothermal breccias and fault breccias and colluvium which overlay the rocks at the towns of Titiribí and Sitio Viejo

The lithologies and logging codes are described in Table 7-1 and pictured in Figure 7-4.

Table 7-1 Summary of Key Lithological Units at Zancudo and the Associated Logging Codes in the Database

Code	Lithology	Description
BXF	Fault breccia	Matrix supported breccia. Clasts 0.3-10.0 cm, subangular, of schist, quartz. Matrix graphite, quartz, sulfides.
VEN	Vein	Vein textures may be massive sulfide, banded quartz-sulfide, massive quartz.
BXH	Hydrothermal breccia	Clast supported breccia with angular to subangular clasts of wall rock <4 cm cemented by sulfides.
ID	Diorite	Grey-green color, mottled texture. Fine grained (<1 mm) phaneritic texture. Quartz, plagioclase, hornblende, biotite. Veinlets of quartz-sulfides with epidote halo.
HD	Dacite porphyry	Pale grey-green color. Matrix 70%, very fine grained quartzofeldspathic. Phenocrysts 30%, size <4 mm, of quartz, plagioclase, hornblende, biotite.
HA	Andesite porphyry	Grey-green color. Matrix 80%, very fine grained. Phenocrysts 20%, size <2 mm, of hornblende, plagioclase, biotite and quartz, altered to chlorite and sericite. Moderate magnetic susceptibility.
SST	Sandstone	Light grey colored quartz arenite, grain size 1 mm, subrounded, quartz 90%, biotite 5%, clays 3%, muscovite 1%, pyrite <1%.
SCG	Conglomerate	Clast-supported conglomerate. Clasts 4-40 mm, rounded to subrounded, polymict, white quartz, black rock (graphite schist?). Matrix carbonate(?)
MSG	Graphite schist	Graphite schist with graphite, quartz, sericite(?)
MQS	Quartz-sericite schist	Schist with quartz, green sericite, biotite.
MSC	Chlorite schist	Chlorite schist with chlorite, dark minerals, carbonate.



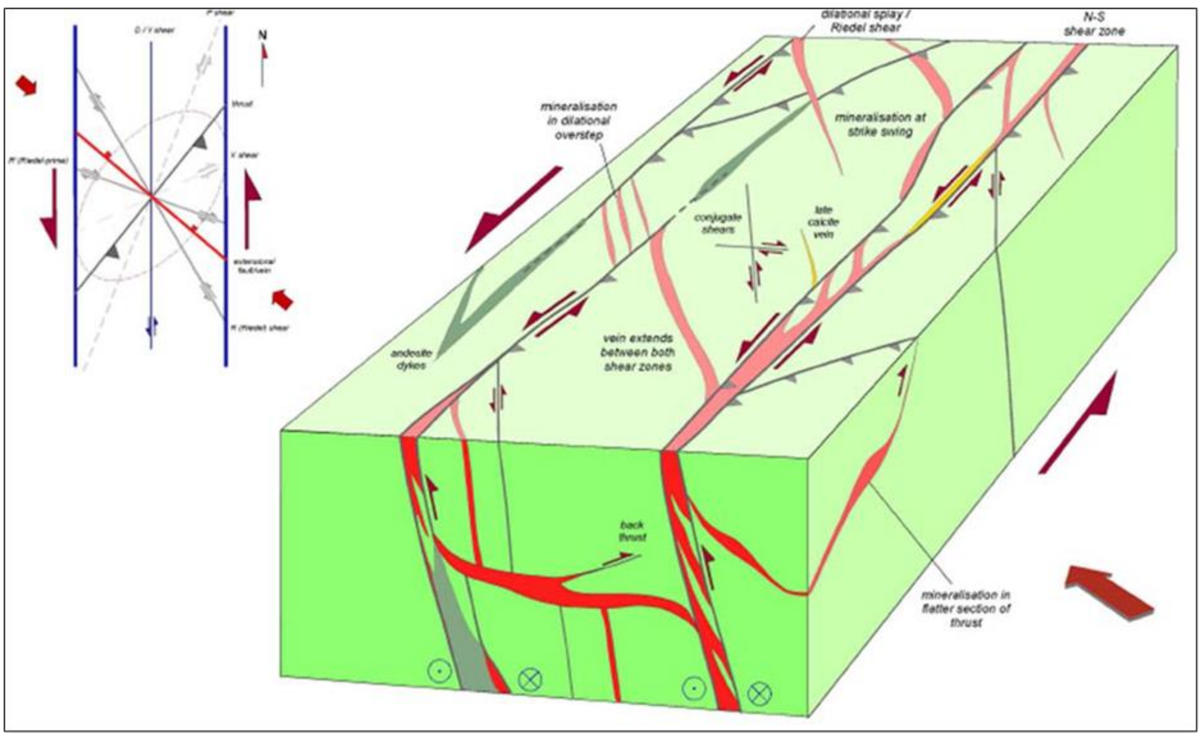
Notes: Top row: MSC, Chlorite schist; MQS, Quartz sericite schist; MSG Graphite schist. Middle row: SCG Conglomerate, SST Sandstone. Bottom row: HA, Andesite porphyry; HD, Dacite porphyry; ID, Diorite.
Source: IAMGOLD, 2020 and photos by S. Redwood..

Figure 7-4 Core Photos of the Main Lithologies of the Zancudo Project

7.4 STRUCTURAL GEOLOGY

. A structural study carried out by Telluris Consulting (2012, 2013) defined four phases of deformation:

- Pre-mineralization deformation of the Paleozoic and Jurassic-Cretaceous rocks to form schists (D1).
- NE-SW to E-W compression that resulted in the folding of the Oligocene Amagá Formation sedimentary rocks with the older schists prior to mineralization, and formation of probable thrust faults on the eastern limb with an east dipping imbricate structure (D2).
- WNW to NW-SE oriented compression during the late Miocene associated with emplacement of the Au-Cu porphyries, associated volcanic rocks and the formation of epithermal veins (D3), with reactivation of the D2 structures as sinistral transpressional shear zones, as shown in Figure 7-5. Steeply eastward dipping veins such as Platanal and Colmena formed by reactivation of probable thrust imbricate structures. The unconformable contact of the Amagá Formation sediments with the schists was reactivated as a shear zone to form the Santa Catalina vein. Low angle veins such as Manto Antiguo and Colmena II formed as reverse faults in the footwall of the Santa Catalina vein.
- Continued E-W to WNW-ESE oriented post-mineralization compression (D4) resulting in further folding and faulting such as the Zancudo Fault that defines the eastern margin of mineralization in the Independencia Mine.



Source; Telluris Consulting (2012)

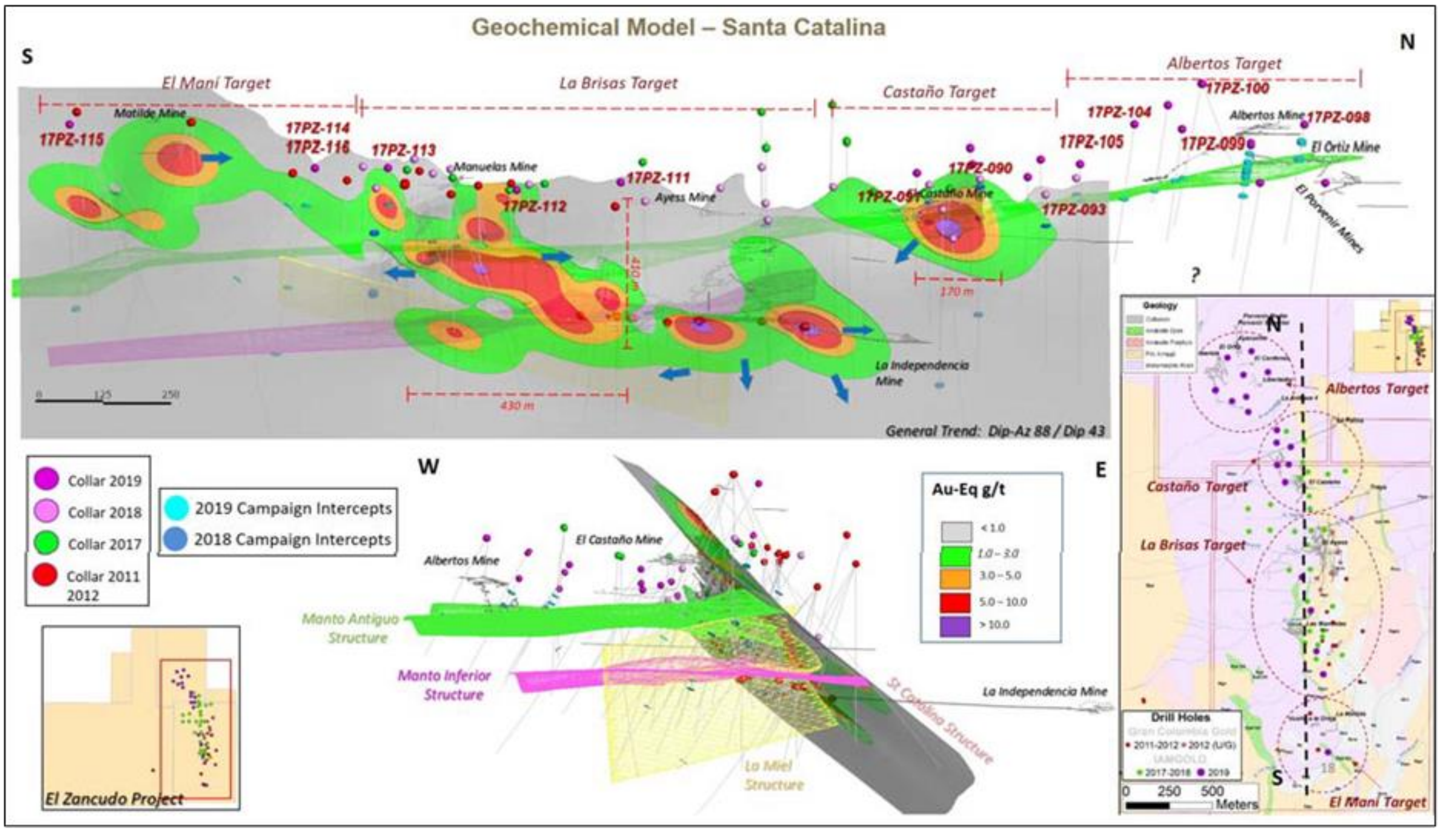
Figure 7-5: Schematic Three-Dimensional Block Model, Looking North, Showing Structural Control on Mineralization During Syn-Mineralization Deformation at Zancudo

. The Zancudo deposit occurs on the eastern limb of an upright N-S trending antiform with schists in the core and Amagá Formation sedimentary rocks on the eastern limb.

In the La Independencia Mine the kinematic indicators along the N-S veins indicate that they were activated as sinistral transpressional shears forming NNW to NW steep tensional splay veins with coeval, low-angle, contractional splay structures (thrusts) along NNE to NE trends. In places mineralization is associated with sheared andesite dikes that are silicified and host fine visible gold along sub-parallel structures indicating that the dikes were emplaced during or shortly before the main mineralization event.

The low-angle veins (mantos) that trend NNE to NE tend to show a SE dip due to NW vergence but in the confined space within the N-S-trending structural corridor, contraction was also accommodated by back-thrusting (i.e., SE vergent, NW-dipping thrusts/veins). Due to the complex interaction of the frontal and back thrusts there are some low angle to sub-horizontal zones of high-grade mineralization where they intersect but their dip and strike continuities are limited by other, steeper veins and faults. In this part of the deposit the mineralization is primarily hosted in banded and massive epithermal-style veins. Although there is some stockwork veining, especially on a small scale at strike-swings and marginal to the main veins, large-scale stockwork or breccia bodies appear to be scarce or absent.

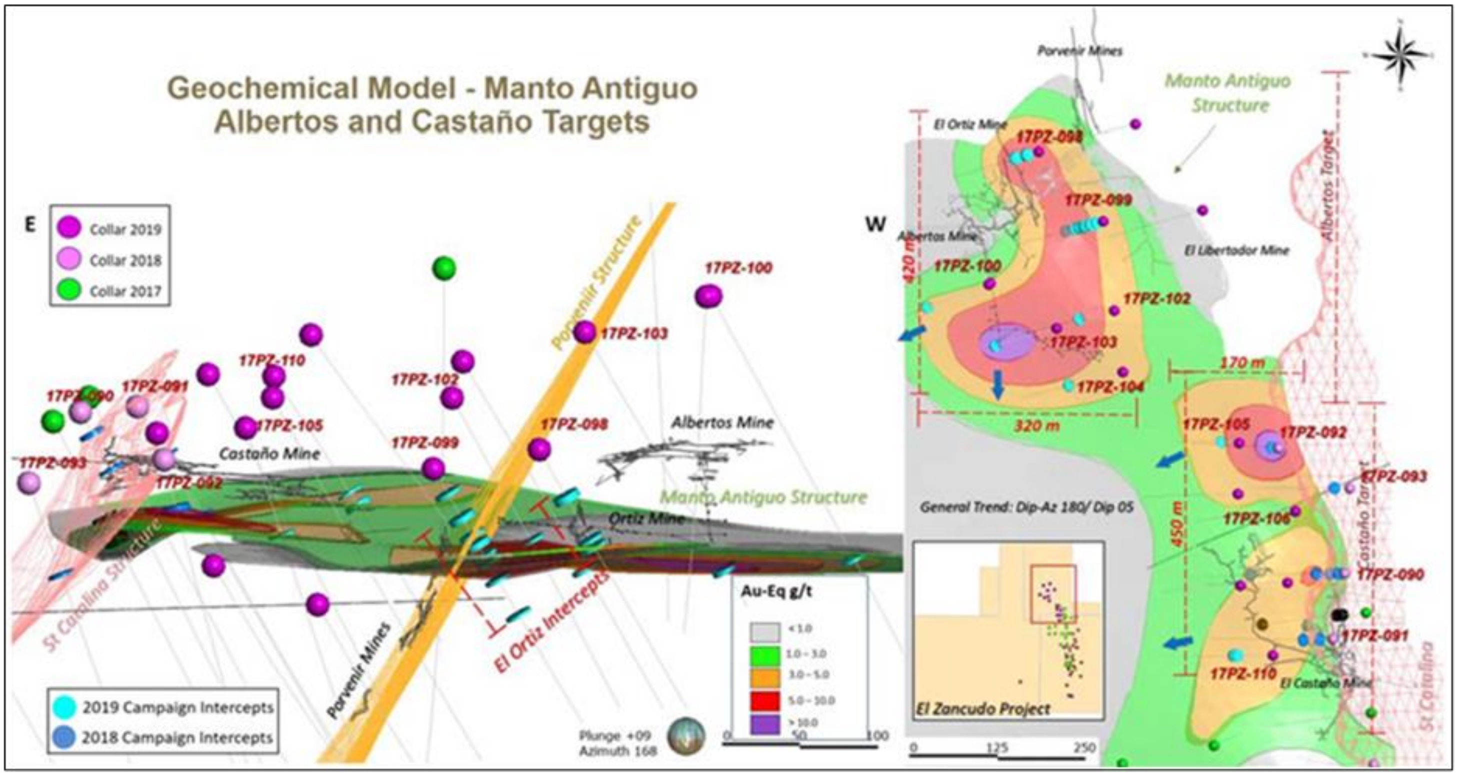
The principal veins that have been drilled by Gran Colombia and IAMGOLD are the steep, N5- 20°W trending Santa Catalina Vein over 2,700 m strike length, divided from north to south into the Albertos, Castaño, Las Brisas and El Mani targets; the high angle Porvenir Vein in the footwall of Santa Catalina with a known strike length of 400 m; the low angle Manto Antiguo (Zancudo) and Manto Las Manuelas veins mined over a strike length of 1,600 m and a width of 400 m; and the newly discovered low angle Manto Inferior and La Miel Veins. These veins are shown in Figure 7-6 and Figure 7-7.



Source: EVS, 2021

Note: Top: long section of the Santa Catalina Vein with contoured AuEq grades of drill intersections. Bottom: 3D image showing the geometry of the Santa Catalina, Manto Antiguo and Manto Inferior Veins.

Figure 7-6: The Geometry of the Vein Systems at Zancudo Showing Drillholes



Source: EVS, 2021

Figure 7-7: The Geometry of the Veins in the Northern Zone at Zancudo (Albertos and Castaño targets) showing 3D Model with Drill Intersections (left) and Plan with Contoured AuEq Grades of Drillholes in the Manto Antiguo Vein (right)

7.5 ALTERATION

The alteration types defined for logging by IAMGOLD are argillic (sericite, illite-smectite, ± quartz, calcite, dolomite, pyrite), intermediate argillic (kaolinite/dickite, illite-smectite, quartz, pyrite), propylitic (chlorite, calcite, epidote, albite, pyrite) and silicic (quartz or chalcedony (IAMGOLD, 2020). Argillic, intermediate argillic and silicic alteration form alteration halos to the mineralized structures. Pervasive propylitic alteration affects diorite.

7.6 MINERALIZATION

Mineralization at Zancudo occurs in multiple steep or flat lying vein/structures that have been exploited over a strike length of 2,500 m. The known vertical extent of mineralization is at least 650 m.

Gold mineralization at Zancudo occurs in two different types of structures. Mineralization in flat-lying veins and dissemination in conglomerates and sandstones at or near the base of the sedimentary sequence at the unconformity with the underlying schists. These were historically mined in sub-horizontal structures called “mantos” near surface at Zancudo and Otra Mina and most of the historical gold production came from these. A near continuous zone of flat lying veins occurs west of the Zancudo Fault over a strike length of 1,600 m with a strike of N30°W and a width of 400 m in the northern zone (PPM, 2002, 2003).

Mineralization in higher angle structures is hosted by N-S striking, steeply dipping veins in chlorite schists. These were mined by several long crosscuts with the levels defined in meters above the La Independencia level, namely: Chaverra (+269 m level), Castaño (+230 m), Sucre (+189 m), Palma (+189 m), Troya (+140 m) and La Independencia (0 m level, at 923 m altitude). These were all made before 1923 and were described by Botsford (1926) and Grosse (1926). The Independencia Mine has a crosscut 740 m long in direction 254°, and four veins (Colmena, Platanal and splays) were exploited over a strike length of about 300 m and to 125 m above the Independencia level.

The veins have early stage, base metal sulfides (pyrite, sphalerite, galena, arsenopyrite) infilled by quartz or quartz-carbonate gangue, with banded textures that are typical of epithermal veins. The vein minerals, in order of decreasing abundance, are pyrite, galena, arsenopyrite, sphalerite, silver-sulfosalts, bournonite, boulangerite and jamesonite, with minor chalcopyrite, pyrrhotite, native gold or electrum, and native silver. The gangue minerals are quartz, calcite and clay minerals. The clay minerals identified are kaolinite, muscovite and sericite. Wall rock alteration is sericite, carbonate and disseminated sulfides.

All three types of structure have halos of argillic alteration. The vein textures are massive sulfide with grain size up to 20 mm; banded quartz-sulfide with wall rock clasts; and quartz veins with cockscomb banding, colloform banding, druses, bladed quartz replacement of calcite, and banded textures. The principal sulfides are arsenopyrite, pyrite, galena, sphalerite, and chalcopyrite.

The Santa Catalina structure follows an andesitic dike that may have strong argillic alteration with a stockwork of narrow sulfide veinlets (IAMGOLD, 2020). The wall rocks may be mylonitized in schists, brecciated in schists and sedimentary rocks, or have strong argillic alteration with quartz veinlets. Disseminated sulfides are common in the matrix of sedimentary wall rock and along the foliation of schists.

The low angle structures or mantos typically have a hydrothermal breccia texture with clasts of quartz and wall rock with sericite alteration, and a quartz-sulfide matrix (IAMGOLD, 2020). Another important texture is a stockwork of narrow quartz-sulfide veinlets.

The sub-vertical structures commonly have quartz veins with low sulfidation epithermal textures as described above.

There are occurrences of porphyry-style magnetite ± quartz (M type) and quartz ± pyrite (A and B type) veining accompanied by potassic alteration overprinted by propylitic alteration in andesite porphyry, diorite and basalt in the western area of the property.

Gold/electrum occur as inclusions in sphalerite, pyrite, arsenopyrite, and may also be partially surrounded by pyrite, arsenopyrite, sphalerite, and tetrahedrite. About 80% of the gold/electrum grains are below 30 microns in size. Much of the gold/electrum occurs as small inclusions of less than 10 microns in pyrite and arsenopyrite, or intergrown with other minerals. A small proportion of gold occurs in fractures in other minerals. A small percentage is coarse grained (>100 microns). The average Au/Ag ratio is 72/28, and varies from 67/33 to 74/26 (Gallego et al., 2005). Native silver occurs in minor amounts as small grains in contact with silver-rich sulfosalts. The silver-bearing sulfosalts identified are argentian tetrahedrite ($(Cu,Fe)_{12}As_4S_{13}$)- freibergite ($(Ag,Cu,Fe)_{12}Sb_4S_{13}$) solid solution, andorite ($PbAgSb_3S_6$), miargyrite ($AgSbS_2$), diaphorite ($Pb_2Ag_3Sb_3S_8$) and owyheeite ($Pb_{10}Ag_3Sb_{11}S_{28}$). The lead-antimony sulfosalts identified are bournonite ($CuPbSbS_3$), jamesonite ($Pb_4FeSb_6S_{14}$), and boulangerite ($Pb_5Sb_4S_{11}$). The FeS content of sphalerite varies from 0.91 molar percentage (mol %) in the early generation to higher FeS in the later stages that show zoning from 4 to 20 mol %, with a dominant range of 9 to 16 mol % FeS.

7.7 SIGNIFICANT MINERALIZED ZONES

Based on the exploration completed to date drilling has identified the presence of both steeply dipping structures or veins and shallow manto style vein material. The vein textures are massive sulfide with grain size up to 20 mm; banded quartz-sulfide with wall rock clasts; and quartz veins with cockscomb banding, colloform banding, druses, bladed quartz replacement of calcite, and banded textures. The principal sulfides are arsenopyrite, pyrite, galena, sphalerite, and chalcopyrite.

The low angle veins or mantos typically have a hydrothermal breccia texture with clasts of quartz and wall rock with sericite alteration, and a quartz-sulfide matrix (IAMGOLD, 2020). Another important texture is a stockwork of narrow quartz-sulfide veinlets.

The sub-vertical veins commonly have quartz veins with low sulfidation epithermal textures as described above.

During initial test work on potential stope targets for mining to aid in with exploration planning it was noted that a number of potential explorations targets could be noted

The current strike length of the known mineralization approximately 2.5 km, with a dip ranging from 40⍰ to 60º for the steep to sub horizontal for the manto vein mineralization. The average thickness mineralized sections are summarized in Table 7-2.

Table 7-2: Summary of Thickness per Estimation Domain

Estimation Domains	Class_V1	Mass (kt)	Thickness (m)
Porvenir	Inferred		
Santa Catalina	Inferred		
Manto Antiguo Lower	Inferred		
Manto Antiguo Upper	Inferred		
Manto Inferior	Inferred		
Manto Antiguo	Inferred		
Miel	Inferred		
Panal	Inferred		
Ortiz A	Inferred		
Ortiz B	Inferred		
Total	**Inferred**		

Source: SRK 2023

7.8 REVISED GEOLOGY MODELS 2023

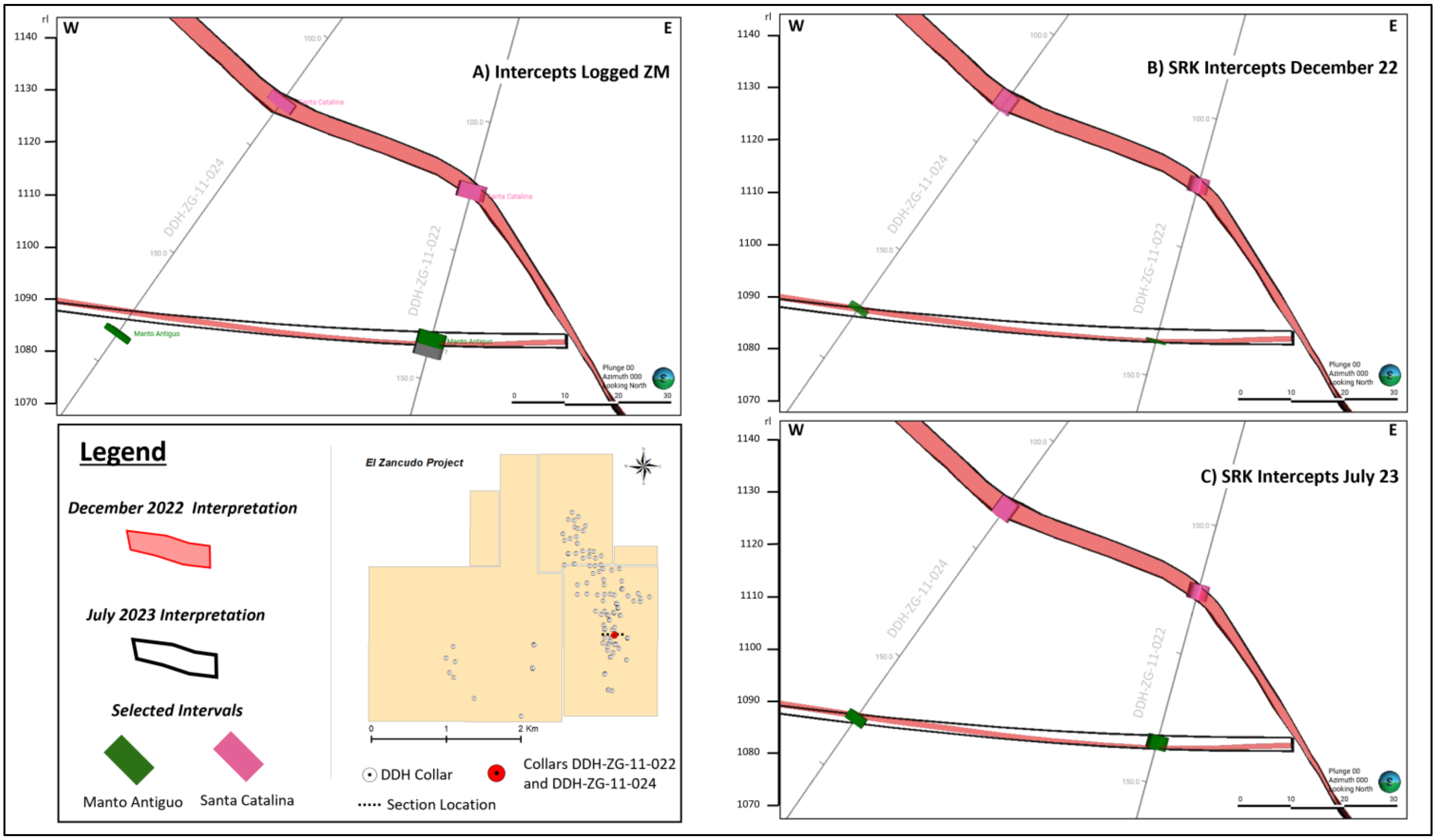
Geology Models were updated in 2023 according to the following:

- Drilling was coded using the DEC22_MRE mineralization domain.
- A coded dataset was created which reported high grades outside of the DEC22_MRE, within ±10 m.
- Intersections were initially reviewed in Excel, and high grades or samples coded outside of DEC22_MRE shapes were coded for visual inspection (Table 7-3).
- A revised mineralization model was created in Leapfrog using the interval selection tools.
- The initial interpretation was sent to Denarius's geological team for review on August 1, 2023.
- Denarius's geological team reviewed the revised coded intersections in conjunction with a review of the core and historical logging and provided feedback to the QP on August 10, 2023, which confirmed that the DEC22_MRE wireframes should be revised to improve the consistency to some of the original logging. Figure 7-8 shows an example of the type of feedback.
- Based on their feedback, the QP made a further set of edits and minor adjustments to update the interpretation, which was previously cutting through waste, to account for revised intersections. This included a cross check of the core photography to ensure consistency with the logging and potential revised intersections (Figure 7-9).
- The final models were checked for chronological order, with one adjustment being made to terminate the Manto Inferior domain on the footwall contact with Santa Catalina.

Table 7-3: Example of Selected Samples for Core Photo Review based on Revised Intersections

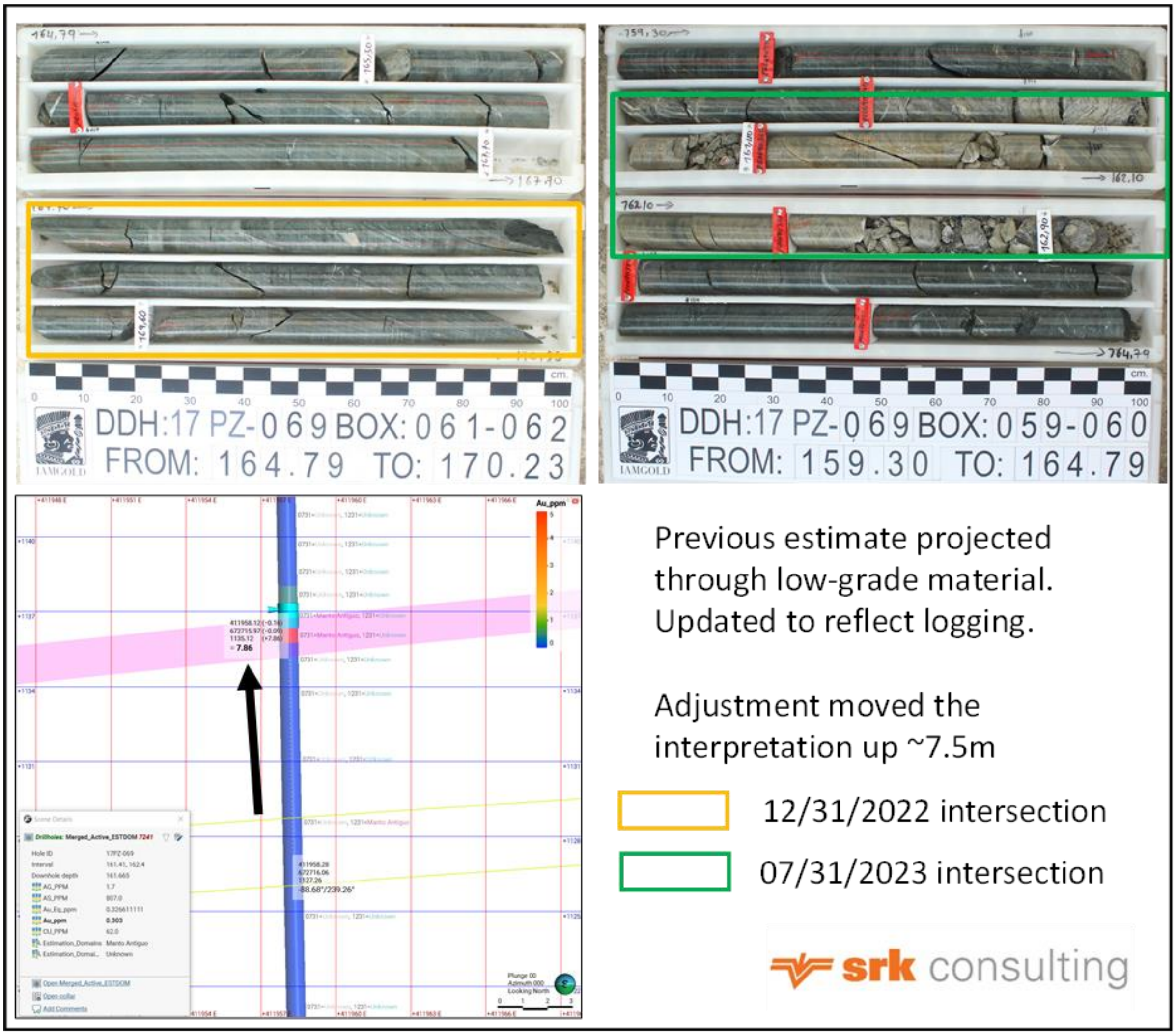
HOLE ID	Selection - 12/31/22						Selection - 07/31/23					
Row Labels	From (m)	To (m)	Length (m)	Au ppm	Ag ppm	As ppm	From	To	Length (m)	Au ppm	Ag ppm	As ppm
17PZ- 069	167.4	170.4	2.98	0.00	0.0	0.0	161.4	163.0	1.59	2.42	5.2	7,370
17PZ- 080	153.6	154.5	0.86	14.90	753.0	26,800	153.6	155.6	2.00	6.91	342.5	13,409
17PZ- 098				0.00	0.0	0.0	71.7	72.7	1.00	21.40	212.0	23,100
17PZ- 104	157.2	158.7	1.46	0.13	1.5	432	155.3	157.2	1.88	7.16	48.2	26,456
17PZ- 109	139.1	143.1	4.01	0.01	0.2	50	146.6	147.5	0.94	2.43	71.2	9700
17PZ-127	205.9	206.6	0.71	8.23	149	28,240	205.5	206.6	1.15	10.93	222.6	39,561
DDH-ZG-11-022	143.1	143.6	0.50	20.26	1796	6,240	141.0	143.6	2.60	5.67	420.9	6,007
DZ-0049				0.00	0	0	120.7	121.1	0.39	5.80	4.70	8,156

Source: SRK 2023



Source: SRK 2023

Figure 7-8: Example Cross Sections Looking North of Changes in Wireframe Interpretation to Include Additional Above Cut-Off Grades at Contact of December Model



Source: SRK 2023

Figure 7-9: Example of Workflow from Checked Intersections (Manto Antiguo)

Based on the work completed it is the opinion of the QP that the revised model represents an improved representation of geological and sampling information, and that the confidence is sufficient to update the interpretation of gold grade distributions appropriate to use in the Mineral Resource model.

8 DEPOSIT TYPES

8.1 MINERAL DEPOSIT

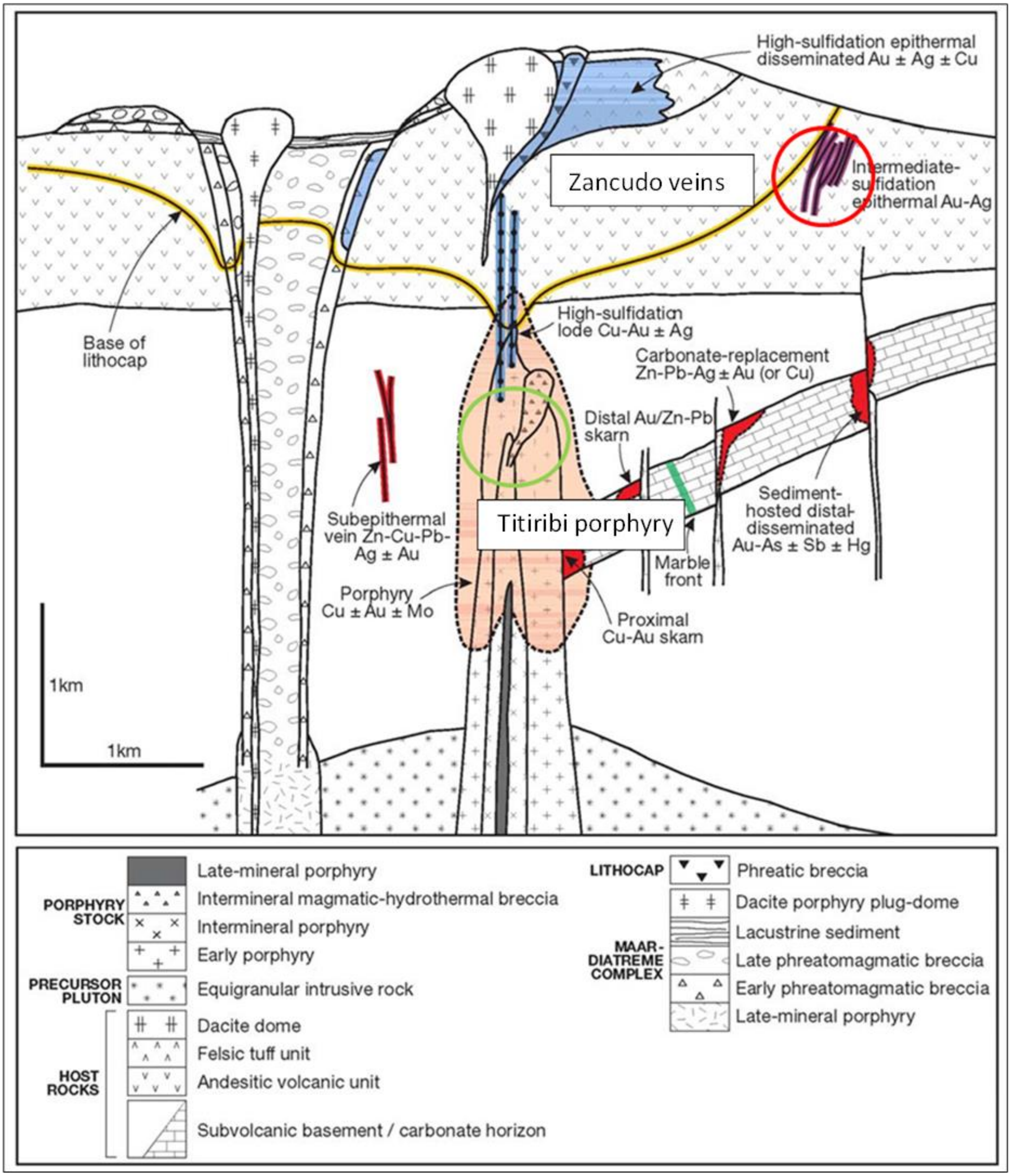
The Zancudo deposit is a high-grade gold-silver-quartz epithermal vein deposit. Epithermal gold and silver deposits of both vein-style and bulk-tonnage style are grouped into high sulfidation (HS), intermediate sulfidation (IS) and low sulfidation (LS) types based on the sulfidation states of their hypogene sulfide assemblages (Simmons et al., 2005). The sulfidation state describes the sulfur activity (logfS2):

- High sulfidation deposits contain sulfide-rich assemblages of high sulfidation state, typically pyrite with enargite, luzonite, famatinite, and covellite, hosted by leached silicic rock with a halo of advanced argillic minerals.
- Low sulfidation deposits contain the low sulfidation pair pyrite-arsenopyrite, and only minor quantities of sulfides which occur in banded veins of quartz, chalcedony and adularia plus subordinate calcite. Very minor amounts of copper (usually less than 100 parts per million (ppm) to 200 ppm) are present as chalcopyrite or, less commonly, tetrahedrite-tennantite. Pyrrhotite is present in trace amounts in only some low sulfidation deposits.
- Intermediate sulfidation deposits possess sulfidation states between those of high and low sulfidation types, typically with stability of chalcopyrite, tetrahedrite-tennantite, and Fe-poor sphalerite, but lacking appreciable arsenopyrite and pyrrhotite.

Vein mineralization is deep epithermal type with temperatures extending above 300°C into the mesothermal field, with an evolution from low to intermediate sulfidation type. This type of mineralization is considered to be porphyry related. The Cerro Vetas porphyry Au-Cu deposit occurs 3 km southwest of the Zancudo deposit and may have been the source of the hydrothermal fluids that formed the Zancudo veins. However, the veins lie to the east of the porphyry deposit at a lower altitude and dip to the east, suggesting that the fluid source may be another, undiscovered porphyry deposit at lower elevation to the east of Zancudo.

It is reported that Zancudo also has potential for porphyry gold-copper mineralization related to porphyry intrusions, and there are occurrences of porphyry-style alteration and veining in the western area (Redwood, 2012; Gallego, 2014), which has not been the focus of the current MRE.

High sulfidation epithermal deposits may occur in lithocaps above porphyry Cu deposits (Figure 8-1), where massive sulfide lodes tend to develop in deeper feeder structures and Au ± Ag-rich, disseminated deposits within the uppermost 500 m or so. Less commonly, intermediate sulfidation epithermal mineralization, chiefly veins, may develop on the peripheries of the lithocaps. The alteration in porphyry Cu deposits is zoned upward from barren, early sodic-calcic through potentially ore-grade potassic, chlorite-sericite, and sericitic, to advanced argillic, the latter forming the lithocap, which may attain >1 km in thickness if not eroded. Low sulfidation state chalcopyrite ± bornite assemblages are characteristic of potassic zones, whereas higher sulfidation state sulfides are generated progressively upwards as a result of temperature decline and the accompanying greater degrees of hydrolytic alteration, culminating in pyrite ± enargite ± covellite in the shallow parts of the lithocaps. The porphyry Cu mineralization occurs in a distinctive sequence of quartz-bearing veinlets as well as in disseminated form in the altered rock between them. Magmatic-hydrothermal breccias may form during porphyry intrusion, with some of them containing high-grade mineralization because of their intrinsic permeability. In contrast, most phreatomagmatic breccias, constituting maar-diatreme systems, are poorly mineralized because they formed late in the evolution of systems.



Source Sillitoe 2010

Figure 8-1 Porphyry System Model Showing the Zancudo Intermediate Sulfidation Epithermal Au-Ag Veins and the Titiribí Porphyry Au-Cu Deposits

8.2 GEOLOGICAL MODEL

The Zancudo deposit is broadly classified as a high-grade gold-silver-quartz epithermal vein deposit. The vein mineralization is deep epithermal type with temperatures extending above 300°C into the mesothermal field, with an evolution from low to intermediate sulfidation type. In terms of exploration a number of the structures have been identified through the current relatively wide drill spacing which is sufficient to infer the geological continuity between holes. Exploration should initially focus on infill drilling of these known structures to improve the understanding of grade continuity and distribution. It is the QP's view that the current level of geological knowledge in the model is sufficient to define the Mineral Resources as presented in this report, but as noted with the changes from the previous model, review of the geological model can impact the potential Mineral Resources which are dependent on geological characteristics of the manto and vein style mineralization being logged and defined in the database.

9 EXPLORATION

Gran Colombia and IAMGOLD have carried out systematic exploration of the Zancudo Project since 2011 mainly by mapping and geochemistry on surface and underground in old mine workings. As at the effective date of this Technical Report, ESV exploration has focused on drilling of the Zancudo Project.

9.1 RELEVANT EXPLORATION WORK

The exploration carried out at the Zancudo Project is summarized in Table 9-1. CDI carried out limited exploration of the Independencia Mine in 1994 through 2007, but its focus was on mining. These programs are summarized in reports by Carillo (2003, 2004), CDI (1994, 2007), and PPM (2002, 2003). Gran Colombia and IAMGOLD have carried out systematic exploration of the Zancudo Project in 2011 and 2012 and 2017 to present, respectively, mainly by mapping and geochemistry. ESV Resources has not carried out any exploration of the Zancudo Project to date.

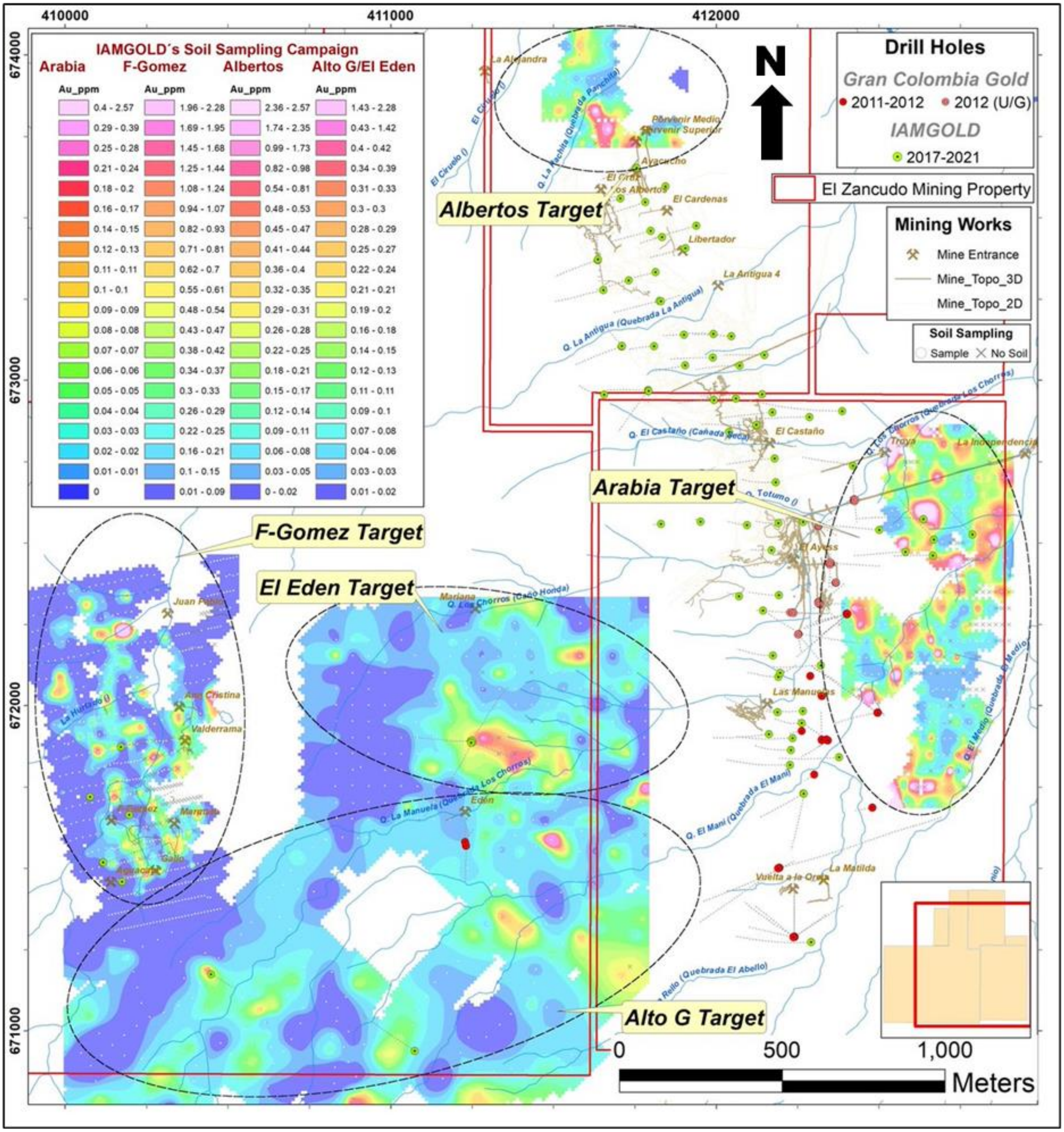
Table 9-1: Summary of Exploration Carried Out at the Zancudo Project

Year	Company	Survey	Units	Number	Notes
1994-2007	CDI	Underground mapping	m	Not known	
		Underground rock sampling	Samples	Not known	
2011-2012	Gran Colombia	Topography	ha	>1050	Aster satellite image, 30 m DEM and contours
		Geological mapping	ha	750	Concessions C5521011 and HDWA-02
		Rock sampling	Samples		
		Underground surveying	m	Not known	Digitize historical mine plans; survey mines
		Underground channel sampling	Samples	116	
		Thin section petrography	Samples	15	E. Tidy, (2012)
		Mineralogy by SEM-EDS	Samples	22	G. Di Prisco, (2013)
2014	Anglo American	Stream sediment sampling	Samples	26	
		Rock chip sampling	Samples	12	
2017-2021	IAMGOLD	Geological mapping	ha	1055	Whole property
		Soil sampling	Samples	1429	Albertos, Arabia, F-Gomez, Alto-G Targets, El Eden Targets
		Rock sampling	Samples	526	Surface and underground

Source: ESV, 2021

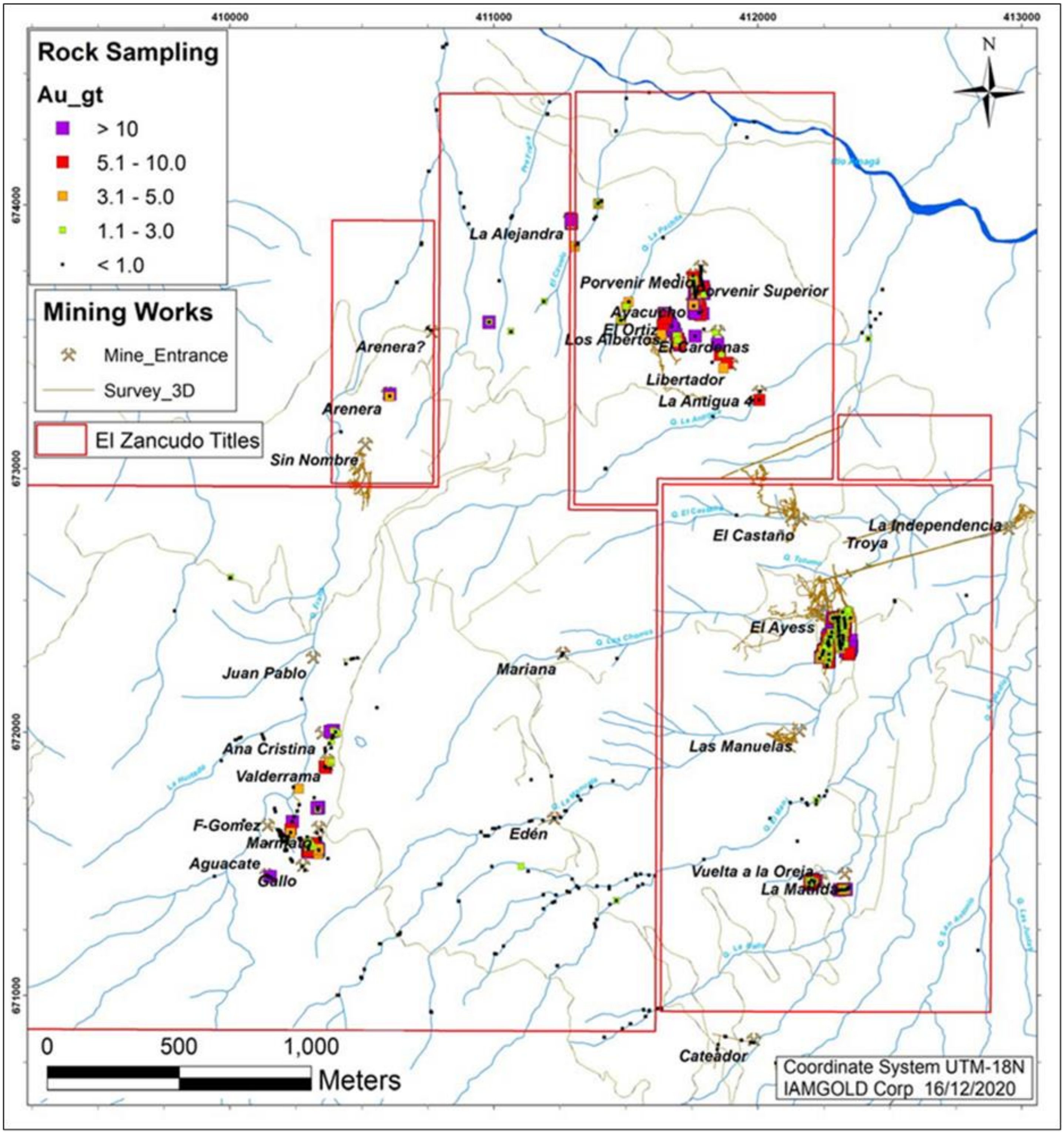
9.2 SAMPLING METHODS AND SAMPLING QUALITY

IAMGOLD carried out soil sampling in local grids in four targets, Albertos, Arabia, F-Gomez, and Alto-G. Limited sampling has been completed over the steep areas surrounding the historical mining areas, with the focus on new targets. The result for Au is shown in Figure 9-11, these results were used to plan exploration drillholes in the subsequent 2021/2022 campaigns. Additional to the soil sampling has included collection and assay of rock channel samples. Gran Colombia and IAMGOLD carried out extensive rock channel sampling both underground and on surface. A summary of the findings for Au are shown in Figure 9-2.



Source: IAMGOLD, 2021

Figure 9-1: Analysis of Soil Sampling Results for Gold at Zancudo



Source: IAMGOLD, 2021

Figure 9-2: Rock Sampling Results for Gold at the Zancudo Project

10 DRILLING

10.1 TYPE AND EXTENT

A reported total of 41,098 m of DD in 155 holes (Table 10-1) has been carried out at the Zancudo Project, including 33 underground holes drilled in the Independencia Mine. Denarius Metals has not carried out any drilling on the Zancudo Project to date. Only holes completed by Gran Colombia and IAMGOLD since 2011 have been used in the current estimates due to a lack of confidence in the historical data. In summary a total of 40,099.70 m of diamond drilling in 149 holes has been used in the current estimates.

All the drilling has been completed on the Project by the previous owners or as part of the Option Agreement between Gran Colombia and IAMGOLD. The following provides a brief summary of the total drilling completed during each exploration campaign:

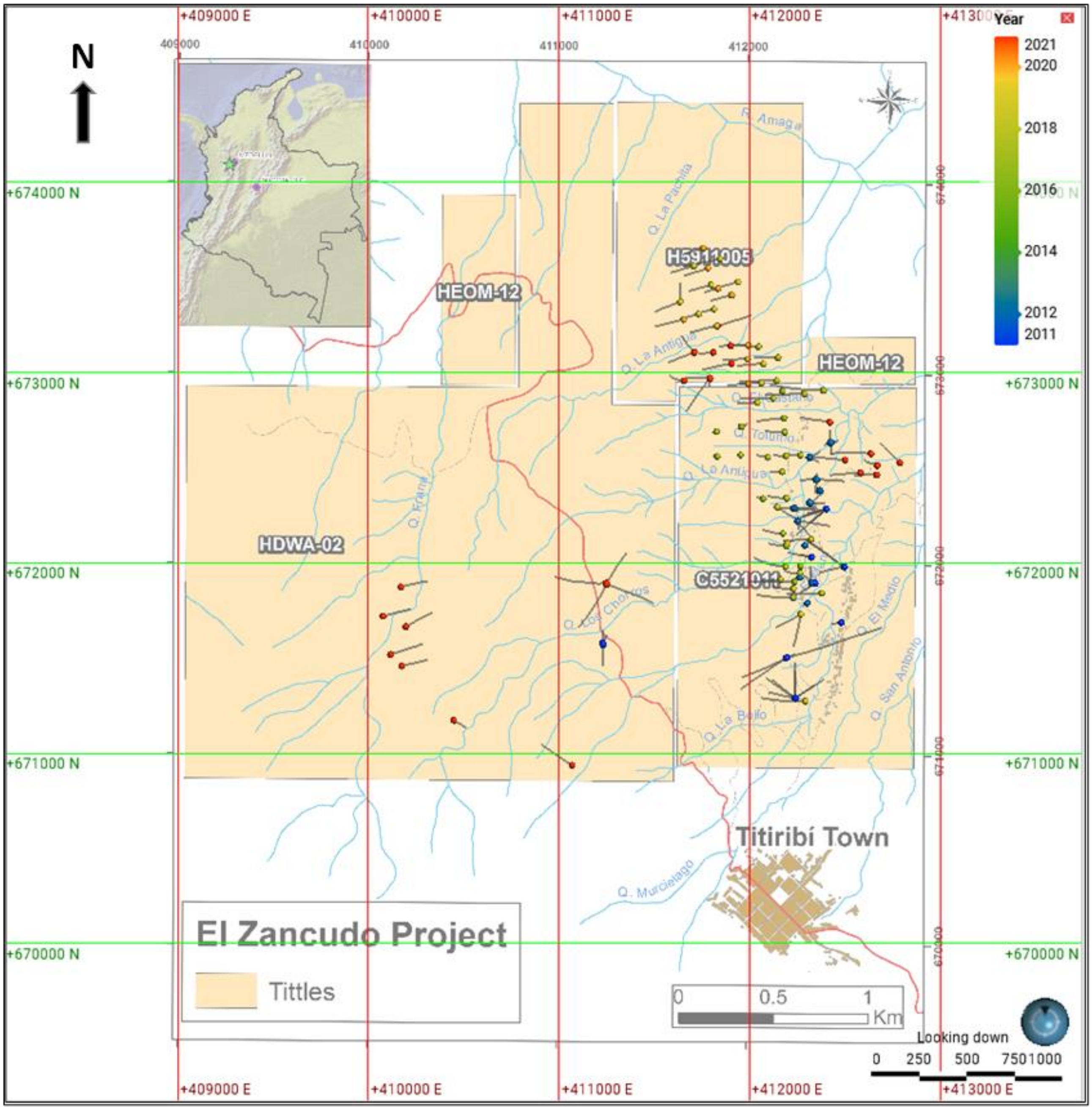
- CDI drilled at the Independencia Mine one hole from surface in 1999 and five underground holes in 2002 and 2003 for 998.2 m. The results of this drilling are not available.
- Gran Colombia drilled 66 holes for 14,121.9 m in 2011 and 2012 using a combination of surface (2011) and underground drilling (2022), with the drilling completed in the second half of the 2012 program was carried out by subsidiary company Mineros Nacionales. All drilling was completed using diamond drilling. Four holes were also drilled on a magnetic high anomaly at La Muriel in the western area (DDH-ZG-11-030 to 033).
- IAMGOLD commenced drilling at the Zancudo Project in September 2017 and used a single diamond drill rig drilling from surface and completed a total of 83 holes for 25,977.8 m in 2017 through 2021.
    - The 2017 drilling program was focused on testing the continuity along strike and downdip of the stacked mantos and the Santa Catalina structure in the north and west zones of the project.
    - The 2018 drilling program focused on the zone where the stacked mantos merge into the Santa Catalina structure and master fault, which usually shows wider and higher-grade intercepts.
    - The 2019 program was aimed at extending a new steeply dipping Porvenir structure in the footwall of the Santa Catalina structure in the northern zone, and at better delineating the high-grade mineralization outlined on the Manto Antiguo, Manto Inferior and La Miel shallow dipping structures.
    - The 2020 program was delayed by the COVID-19 pandemic but started in October 2020. As of the data effective date of this Technical Report, five holes had been drilled on the Manto Antiguo, El Porvenir and El Ortiz structures in the Albertos Target in the north, and results received for one hole.
    - Drilling continued in 2021 for a further 28 holes covering 8,560.9 m. Drilling was targeted on the main structures with some drilling completed in the west of the deposit testing potential F-Gomez, Alto G-Target and the El Eden targets (currently excluded from the current estimates).

A summary of the total drilling per Company is shown in Table 10-1 and collar plot in Figure 10-1.

Table 10-1 Summary of Drilling Completed by Company

Year	Company	Hole No. from	Hole No. to	Total Holes	Length (m)
1999	CDI*	CDI-01-1999		1	590.7
2002-2003	CDI*	CDI-02-2002	CDI-06-2003	5	407.5
2011	Gran Colombia	DDH-ZG-11-001	DDH-ZG-11-033	33	10,370.7
2012	Gran Colombia	DZ-0034	DZ-0049	16	2,003.5
2012	Mineros Nacionales	DZ-0050	DZ-0066	17	1,747.8
2017	IAMGOLD	17PZ-067	17PZ-077	11	3,905.4
2018	IAMGOLD	17PZ-078	17PZ-095	18	6,416.3
2019	IAMGOLD	17PZ-096	17PZ-116	21	5,903.8
2020	IAMGOLD	17PZ-117	17PZ-121	5	1,191.4
2021	IAMGOLD	17PZ-122	17PZ-149	28	8,560.9
Total				**155**	**41,098**

Source: ESV Resources, 2021
* Excluded from Mineral Resource estimates



Source: SRK, 2023

Figure 10-1 Location Map of Drillhole Collars

10.2 PROCEDURES

10.2.1 DRILLING CONTRACTORS

All of the drilling programs were carried out by DD with wireline core recovery with core diameters mostly of HQ (63.5 mm core diameter), with some NQ (47.6 mm core diameter) and BQ (36.5 mm core diameter). The drill contractors and rig types are listed in Table 10-2. All of the IAMGOLD core was HQ diameter and was oriented.

Table 10-2: Summary of Drilling Types and Drilling Contractors Used at the Zancudo Project

Year	Company	Contractor	Rig Type	Type	Rigs	Holes	Core Size
1999	CDI	Geominas	Not known	DDH	1	1	NQ
2002-2003	CDI	Geominas	Not known	DDH-UG	1	5	NQ
2011-2012	Gran Colombia	Mincivil	Longyear LF-70(?)	DDH	1	38	HQ, NQ
2012	Gran Colombia/Mineros Nacionales	Explomin	Sandvik H-200-1	DDH-UG	1	28	HQ, NQ, BQ
2017	IAMGOLD	Perfotec SAS	Longyear LF-70/Atlas Copco CS 1000 P4	DDH	1	11	HQ
2018	IAMGOLD	Perfotec SAS	Atlas Copco CS 1000 P4	DDH	1	18	HQ
2019	IAMGOLD	Perfotec SAS	Atlas Copco CS 1000 P4	DDH	1	21	HQ
2020	IAMGOLD	Perfotec SAS	Longyear LF-70	DDH	1	5	HQ
2021	IAMGOLD	Perfotec SAS	Atlas Copco CS 1000 P4	DDH	1	8	HQ

Source: Redwood, 2020, Modified Denarius 2023

10.2.2 COLLAR SURVEYS

Drillhole collars were initially laid out by the geologist using GPS. Upon completion the drill collars were surveyed by total station by a service company using a network of survey points that were surveyed by differential GPS. The underground drillhole collars were surveyed by total station.

All of the surface drill platforms were restored and revegetated after use. The Gran Colombia collars were marked by a cement monument with the hole number in paint and plastic pipe in the top of the hole. The IAMGOLD collars are marked by a cement monument with plastic pipe in the top of the hole and a metal plaque with the hole information.

10.2.3 DOWNHOLE SURVEYS

Downhole directional surveys using a wireline Reflex multishot instrument. IAMGOLD carried out downhole directional surveys with readings at every 50 m depth during drilling using a wireline Reflex RZ-Trac multishot instrument and corroborated this with a second multishot survey on completion of each hole. The drill collars were surveyed by total station in a closed polygon with to a local network of five survey points surveyed by differential GPS.

10.2.4 CORE TRANSPORT AND STORAGE

Core from the CDI, Gran Colombia, Mineros Nacionales and IAMGOLD drill programs is stored in several secure buildings at Sitio Viejo including two purpose-built core stores. A short description of the chain of custody for Gran Colombia and IAMGOLD are summarized below.

Gran Colombia

- The core is put in wooden boxes at the drill rig by the drillers.
- The core boxes are collected from the drill platform by a Gran Colombia pick-up truck and driver. The lids are screwed onto the wooden core boxes to ensure safe transport. Gran Colombia takes over custody of the core from the drill contractor.
- The core boxes are delivered to core logging facility at Sitio Viejo.

IAMGOLD

- IAMGOLD takes custody of the core from the drill contractor when it comes out of the core barrel. The company has a technician at the drill.
- The core is cleaned, oriented and marked with the orientation line.
- The core is put in plastic boxes with depth markers (tacos) and the boxes marked.
- The core boxes with lids are collected from the drill platform daily by an IAMGOLD pick- up truck and driver. If there is no road access to the platform, the boxes are carried to the road by mule.
- The core boxes are delivered to the core logging facility in Sitio Viejo, in 2022 this was adjusted to core logging and storage within the town of Titiribí which is in close proximity (walking distance), to the exploration office.

10.2.5 CORE LOGGING

Core logging for all Gran Colombia and IAMGOLD exploration drill holes has been completed at the Sitio Viejo facilities. A short summary of the processes is discussed below.

CDI

Core logging procedures completed by CDI are not documented.

Gran Colombia

- A quick geological log made of the mineralized zones.
- A geotechnical log is made on a paper log sheet to record recovery, RQD, number of fractures, joint condition, degree of breakage and hardness.
- A geological log is made on a paper log sheet.
- Samples intervals are selected for assay. The sampling is selective of the veins and wall rock only, and not of the complete hole. Sample cards with consecutive numbers are filled in, the samples are marked on the boxes, and sample tickets are stapled on the boxes.
- The core is cut by diamond saw.

- Half of the cut core is sampled and is put in a plastic bag. The sample number is written in indelible marker on the bag. The bag is sealed. The samples are stored in a secure room in the office at the logging facility.
- The cut core is photographed.
- The core boxes are stored in the secure core warehouse.

IAMGOLD

- A geotechnical log is made of recovery and RQD and input to Excel.
- A geological quick log is made and input to Excel.
- A geological log is made using Gems Logger software on a laptop computer.
- Magnetic susceptibility readings are made.
- Density measurements are made.
- Samples intervals are selected for assay. The sampling is selective of the veins and wall rock only, and not of the complete hole. The minimum sample length is 0.5 m, and the maximum is 1.5 m. Sample cards are filled in, the samples are marked on the boxes, and sample tickets are stapled on the boxes.
- Photographs are taken of the boxes of whole core.
- The core is cut lengthwise by a diamond saw. One half of the cut core is put in a plastic bag. The sample number is written in indelible marker on the bag and the sample number ticket is taped inside the top of the bag. The samples are stored in the patio of the office at the core logging facility.
- The core boxes are stored in the core warehouse.

10.3 INTERPRETATION AND RELEVANT RESULTS

Diamond drilling is the most appropriate test method for the mine and this technique has been applied by all operators since early exploration and mining. Drilling has been completed from surface with drillholes designed to provide reasonable intersections to the interpreted dip and strike of the mineralization.

There is insufficient knowledge of the CDI holes. These holes are considered to be low confidence and a recommended to not be used for mineral resource estimates for the Project.

A number of factors may influence the reporting of drilling results on the Project which should be considered due to the different orientations on the mineralization within the shallow dipping stacked mantos and the steeper dipping veins. These can be summarized as factors related to intersection length and the reporting of true thickness, or potential issues as related to core recovery and potential bias being introduced in zones of low recovery. Of note:

- The average core recovery of the Gran Colombia/Mineros Nacionales holes was 96.38% and of the IAMGOLD holes (up to 17PZ-120) was 97.15%.
- The drill targets were veins, and the holes were drilled at a high angle to the veins but usually not orthogonal, so that the intersection width is usually greater than the vein width. The true widths are estimated to be 80% to 90% of the intersection lengths.

The author considers recovery as presented to be reasonable for a deposit of this style and that the sampling taken should be considered representative of the mineralization. In terms of the reporting or modeling of the true thickness, the author has not reported significant intersections as the current level of reporting is at the Mineral Resource level. Professional due diligence has been used during the geological modeling and has placed emphasis on intersections which demonstrate geological continuity from multiple intersections when defining the mineralization units for the mineral deposit.

Results of the analysis of drilling have allowed for the interpretation of the key structural controls on the deposit. A number of mineralized domains can be connected both along strike and downdip in the case of the vein material. Drilling intersections are considered reasonable to provide confidence to the modeled domains. The main structures of the known deposit have been identified during geological logging and in conjunction with the assay information. The main zones defined modeled are:

- Manto Antiguo Lower
- Manto Antiguo Upper
- Manto Inferior
- Manto Antiguo
- Santa Catalina Vein

- Porvenir Vein
- Miel Vein
- Panal Vein
- Ortiz A Vein
- Ortiz B Vein

A summary of the key findings from the Gran Colombia and IAMGOLD drilling programs are summarized below.

10.3.1 GRAN COLOMBIA

The various drilling programs intersected numerous significant intervals of vein and manto style mineralization. The drilling returned high-grade gold and silver mineralization over a strike of 450 m and dip length of 170 m on the Santa Catalina structure south of the Independencia Mine. The reported intercepts range from 2.2 to 7.8 m with grades ranging from 0.5 to 21.9 g/t Au and 11.4 to 353.3 g/t Ag.

10.3.2 IAMGOLD

Drilling successfully extended the Santa Catalina structure 300 m to the north. In the South Zone, multiple higher-grade intercepts outline potential high-grade shoots on both the Manto Antiguo and Manto Inferior structures.

In the North Zone of the Project, old mining workings on the Manto Antiguo structure were intercepted with the wall rock showing good grades, such as 4.58 m at 5.15 g/t Au and 87.3 g/t Ag (6.37 g/t AuEq) (17PZ-086), which gives a higher level of exploration interest to the North Zone of the Project, despite extensive historical mining.

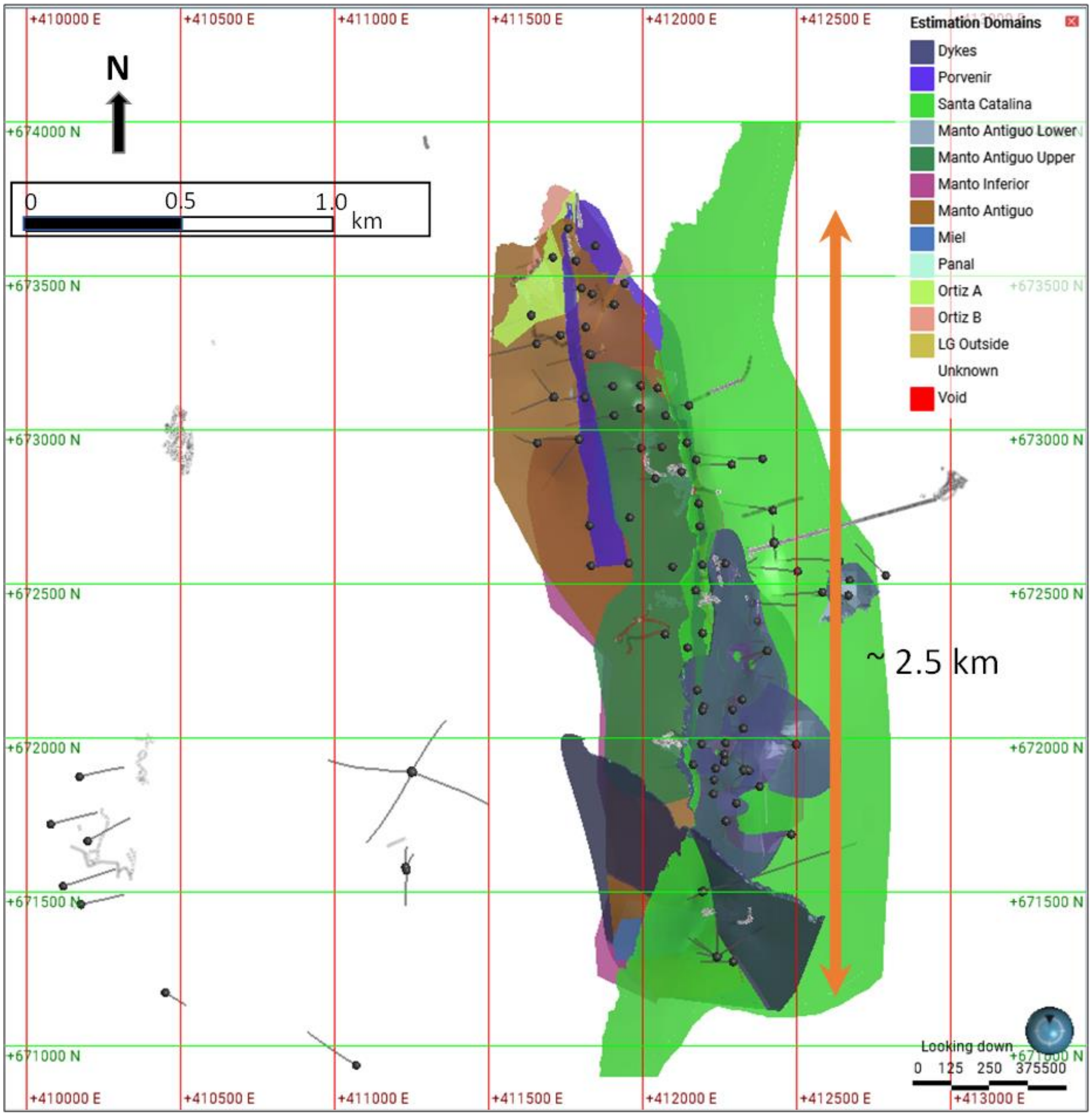
Wide intercepts were intersected in the sedimentary sequences such as 7.95 m at 3.43 g/t Au and 20.5 g/t Ag (3.72 g/t AuEq) (17PZ-068), and 3.95 m at 3.12 g/t Au and 5.7 g/t Ag (3.20 g/t AuEq) (17PZ-078). Additionally, a series of link-structures in between the stacked mantos were identified, which are interpreted as tensional structures.

In the Albertos Target located in the North Zone of the Project, a new steeply dipping vein named El Porvenir was intersected in the footwall of the Santa Catalina structure, with intersections of 2.00 m grading 2.43 g/t Au and 46.9 g/t Ag (3.10 g/t AuEq) (17PZ-094) and 2.20 m grading 5.66 g/t Au and 23.7 g/t Ag (6.00 g/t AuEq) (17PZ-099). Also, a set of subparallel mineralized veins named El Ortiz and El Libertador was intersected in the footwall of the El Porvenir vein and were interpreted to be oriented along the same structural trend. Intercepts range from 2.5 to 4.3 m in width and grades range from 5 to 9 g/t Au and 11 to 90 g/t Ag (approximately).

Drilling caried out on the El Castaño Target in the North Zone of the Project extended the Manto Antiguo structure by more than 200 m to the north. Assays received include 4.25 m at 11.71 g/t Au and 248.4 g/t Ag (15.17 g/t AuEq). Additionally drilling along the strike length of the Manto Antiguo structure was successful in extending and better delineating some of the potential high-grade shoots outlined by the 2018 drilling campaign. Intercepts range from 2.0 to 3.0 m in width and grades range approximately from 5.5 to 13.4 g/t Au and 60.6 to 124.7 g/t Ag.

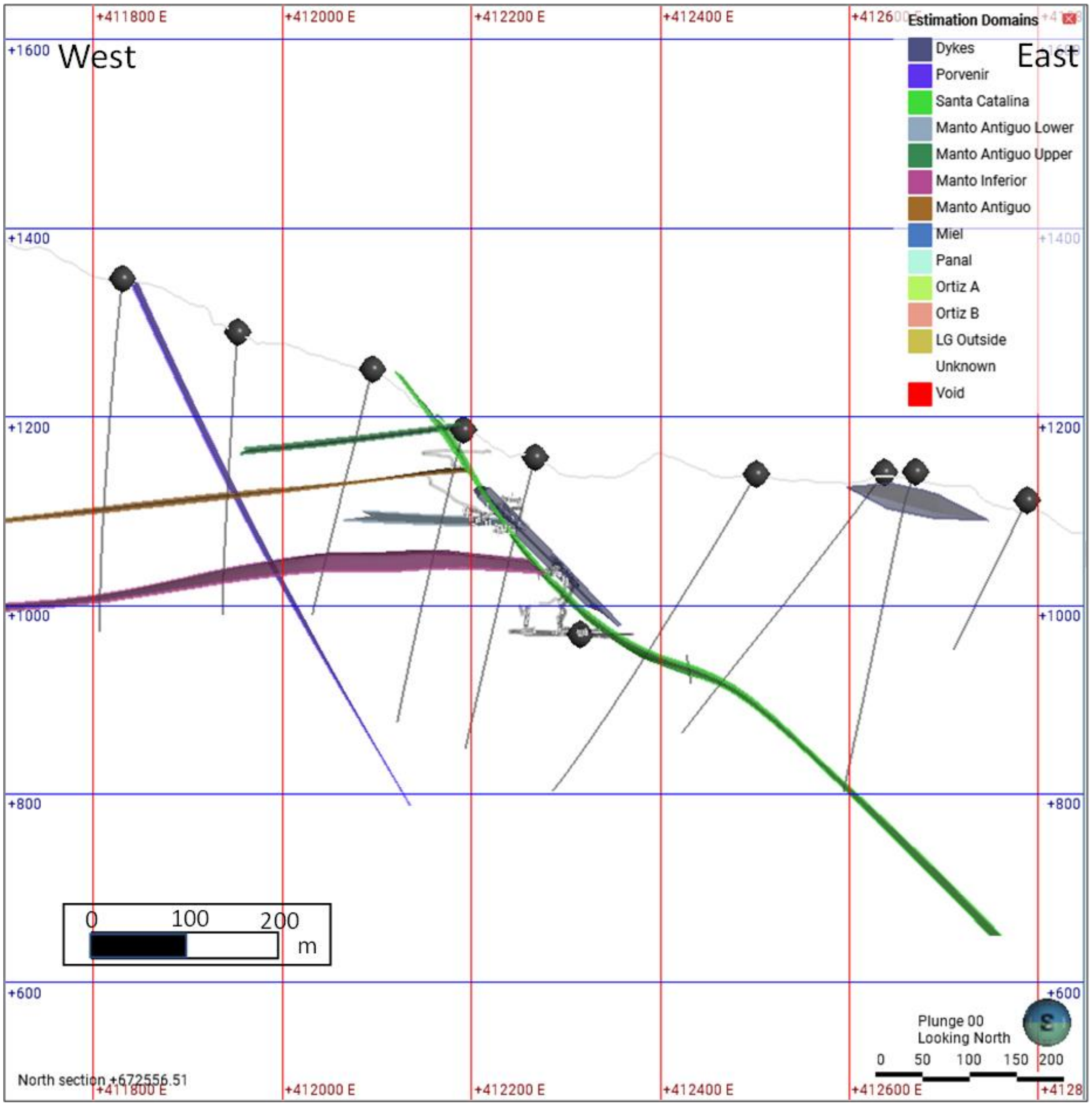
At the southern end of the deposit, a new northerly-dipping manto structure named La Miel was identified by several intercepts. The most significant interval returned 2.00 m at 6.27 g/t Au and 89.2 g/t Ag (7.50 g/t AuEq) (17PZ-114).

The ultimate results of the analysis of drilling by the author has allowed for the interpretation of the deposit geological sequences, consisting of an upper unit of both vein and vein manto style mineralization over a known strike length of approximately 2.5 km (Figure 10-2and a vertical extent of over 650 m from surface (Figure 10-3).



Source: SRK, 2023

Figure 10-2: Drillhole Collars Plan vs. Modeled Vein Interpretation Over 2.5 km Strike Length



Source: SRK, 2023

Figure 10-3: Cross Section vs. Modeled Vein and Manto Interpretation

11 SAMPLE PREPARATION, ANALYSIS AND SECURITY

11.1 SAMPLE LABORATORIES

Prior to 2011, there is no information of the procedures of sample preparation, analysis and security. Few holes were completed in 1999 and between 2002 and 2003. It is not known which laboratory CDI used for preparation and analysis of drill core samples, nor the sample preparation and analysis methods, and there are no assay certificates or laboratory reports. The core is stored at Sitio Viejo and could be re-logged and re-sampled.

The Gran Colombia/Mineros Nacionales samples collected after 2011 were prepared by SGS at their sample preparation facility in Medellin, Colombia, and were assayed at their laboratory in El Callao, Peru. SGS is certified to ISO 9001:2008.

The IAMGOLD samples were prepared by ALS Minerals at their laboratory in Medellin, Colombia and assayed at their laboratory in El Callao, Peru. ALS Minerals is certified to ISO 9001:2015. It is noted that a portion of the 2021 exploration program was assayed at SGS, following the same procedures used by Gran Colombia.

11.2 SECURITY MEASURES

All samples are delivered directly to the selected laboratory by Gran Colombia or IAMGOLD personnel as half core samples in labelled plastic sample bags sealed with cable ties. A hard copy sample submission document is sent with the samples along with a sample manifest. Digital copies of both documents are also sent to the laboratory.

11.3 SAMPLE PREPARATION FOR ANALYSIS

Gran Colombia and IAMGOLD utilized similar sample preparation methods (Table 11-1). Samples are dried at 105ºC for min. 8 hours before being further processed. Samples are initially crushed with QA/QC checks run at the laboratory for one in every twenty samples to ensure at least 90% pass through a 10 mesh. Subsamples are taken of the crushed sample is split off for pulverization. Samples are pulverized using a custom-built Ring Mill with a chrome steel grinding bowl. The samples are pulverized until 95% passing 140 mesh. Grind size QA/QC to ensure an adequate grind size are conducted one in every ten samples. Ceramic blank material and air lines are used to clean both the crusher and pulverize after each sample preparation.

Table 11-1: Summary of Sample Preparation Methods and Primary Laboratory Used

Program	Laboratory	Method	Code	Procedure
CDI	Not known	Preparation	Not known	Not known
Gran Colombia	SGS, Medellin & Callao, Peru	Preparation	PRP93	Dry, crush to >90% passing 10 mesh, split 250 g and pulverize to >95% passing 140 mesh.
IAMGOLD	ALS Minerals, Medellin & Callao, Peru	Preparation	PREP-33D	Dry, crush to >90% passing -2 mm, riffle split 1000 g and pulverize to >95% passing 106 microns.

Source: modified from Redwood, 2021

11.4 SAMPLE ANALYSIS

Gran Colombia and IAMGOLD performed two analysis methods for each core sample. The Gran Colombia samples used a combination of fire assay for gold using a standard AAS finish, with gravimetric used on higher grades. Other elements have been assayed using ICP-OES methods for a standard 34 element ICP-OES analysis. Additional assay for sulfur were completed during the Gran Colombia drilling phase using LECO.

The IAMGOLD samples were analyzed using equivalent methods to the Gran Colombia submissions with the exclusion of the sulfur. A summary of the codes used per phase and laboratory are shown in Table 11-2.

During the last campaign (2021), samples were originally submitted to ALS laboratory which accounted for 30 batches totaling 2,435 samples. In October 2021 there was a decision taken to switch the sampling from ALS to SGS which impacts a total of 10 batches, totaling 927 samples.

Table 11-2: Summary of Sample Analysis Methods and Primary Laboratory Used

<table>
<tr><th>Program</th><th>Laboratory</th><th>Method</th><th>Code</th><th>Procedure</th></tr>
<tr><td>CDI</td><td>Not known</td><td>Au, Ag</td><td>Not known</td><td>Not known</td></tr>
<tr><td rowspan="5">Gran Colombia</td><td rowspan="5">SGS, Medellin & Callao, Peru</td><td>Au</td><td>FAA313</td><td>Fire assay 30 g, AAS</td></tr>
<tr><td>Au overlimit</td><td>FAG303</td><td>Fire assay 30 g, gravimetry</td></tr>
<tr><td>Multielements</td><td>ICP12B</td><td>34 elements by nitric and hydrochloric acid digestion, ICP-OES</td></tr>
<tr><td>Ag, As, Fe, Pb, Zn grade</td><td>AAS41B</td><td>Multiacid digestion, AAS</td></tr>
<tr><td>S</td><td>CSA24V</td><td>LECO</td></tr>
<tr><td rowspan="5">IAMGOLD</td><td rowspan="5">ALS Minerals, Medellin & Callao, Peru</td><td>Au</td><td>Au-AA24</td><td>Fire assay 50 g, AAS</td></tr>
<tr><td>Au overlimit</td><td>Au-GRA22</td><td>Fire assay 50 g, gravimetry</td></tr>
<tr><td>Multielements</td><td>ME-ICP41</td><td>35 elements aqua regia digestion, ICP-AES</td></tr>
<tr><td>Ag overlimit</td><td>Ag-GRA22</td><td>Fire assay 50 g, gravimetry</td></tr>
<tr><td>As, Cu, Pb, Zn grade</td><td>AA46</td><td>Aqua regia digestion, AAS</td></tr>
</table>

Source: modified from Redwood, 2021

11.5 QUALITY ASSURANCE AND QUALITY CONTROL PROCEDURES

11.5.1 STANDARDS

Certified Standard Reference Material (CSRM) was submitted to the labs to check accuracy over given range reported by the laboratory. The CSRM was monitored on charts with reference to performance gates of the recommended value and the standard deviation (SD). A result between ±2SD and ±3SD was a warning, two or more consecutive results between ±2SD and ±3SD were a failure and results greater than ±3 SD were a failure. For batches where failures occurred the laboratory was requested to re-assay the batch.

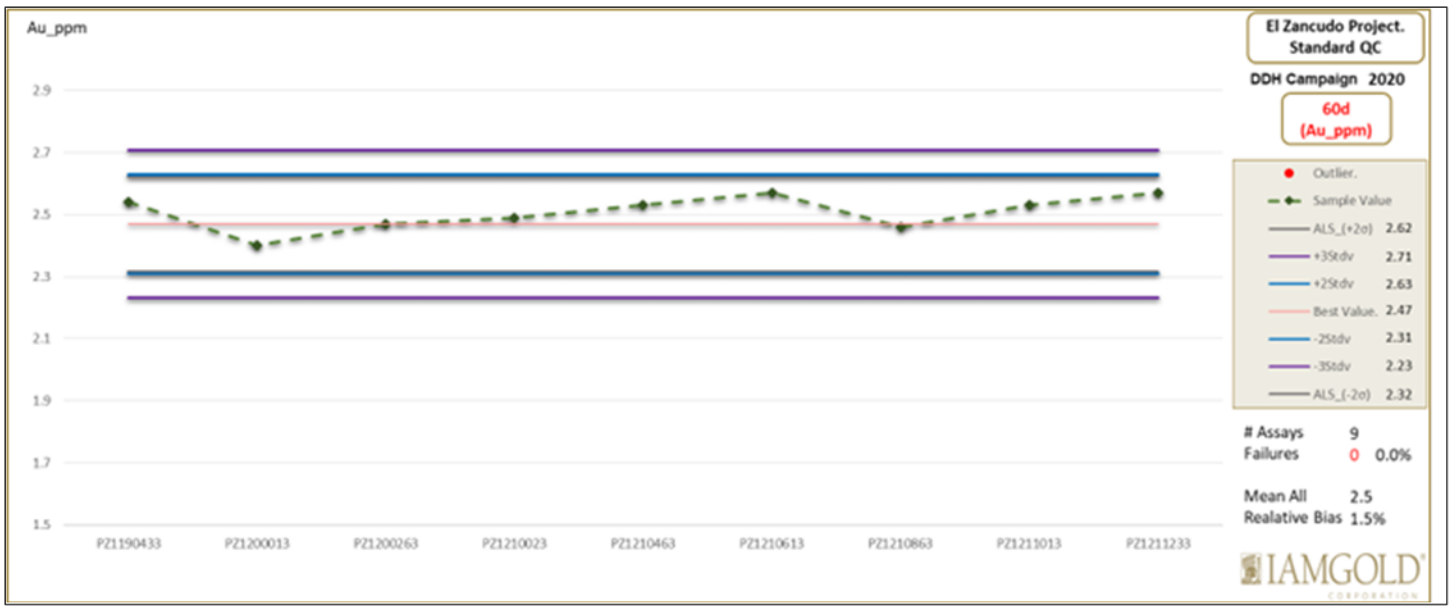
Most reference samples performed as expected with a few isolated incidents. Any corrective actions taken for sample results outside of expected ranges are not known. Further analysis of the reference materials was completed to determine the repeatability of results. This study showed some variability in the reference materials and blanks, but well within acceptable limits.

Figure 11-1 provides examples of the results obtained for the analysis of 38 standards used in 2020 and 295 used standards for the 2021 drilling campaign, all of these were used in the first laboratory batches, those used in the second check batch are not yet contemplated laboratory.

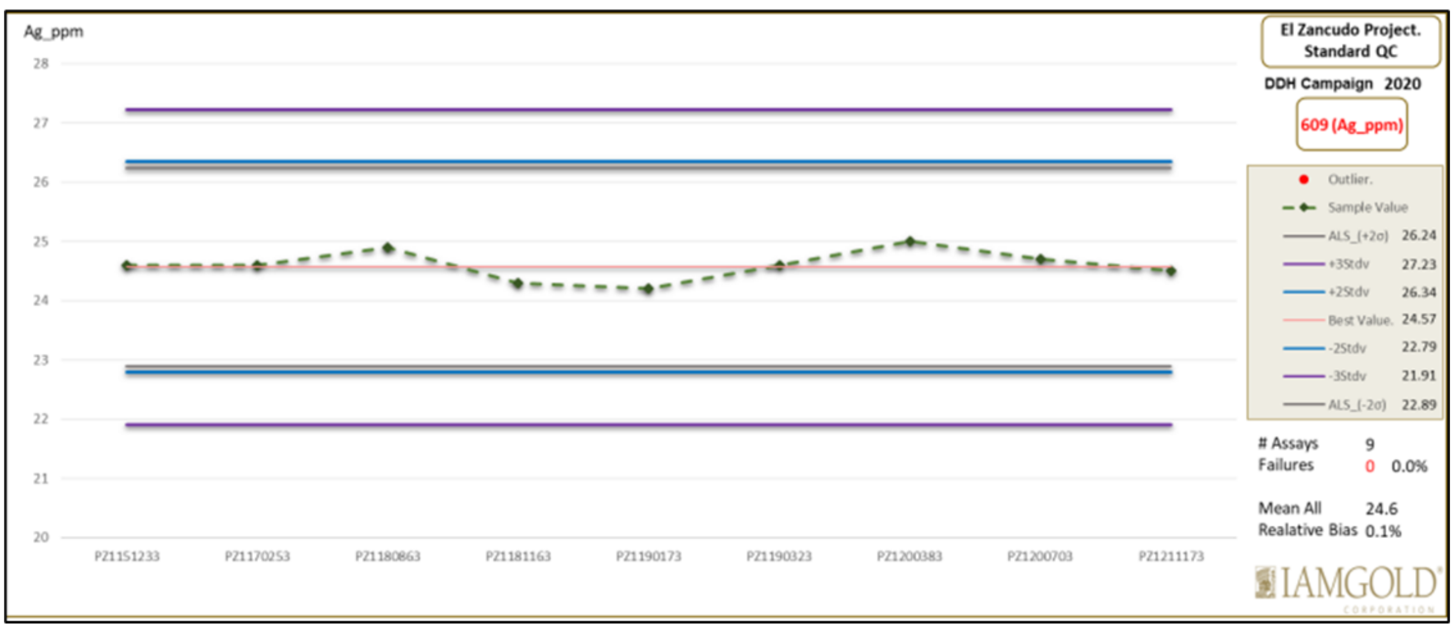
The analysis determined outliers for each certified element in the standards used, using limits defined by the certified reference value +- (3*standard deviation).

The data were treated globally for the campaign; however, controls were carried out on each batch sent to the laboratory, in the global analysis it is observed that the economic elements, Au and Ag, do not present a percentage of outliers que exceeds 10% given the accepted metric of this control.

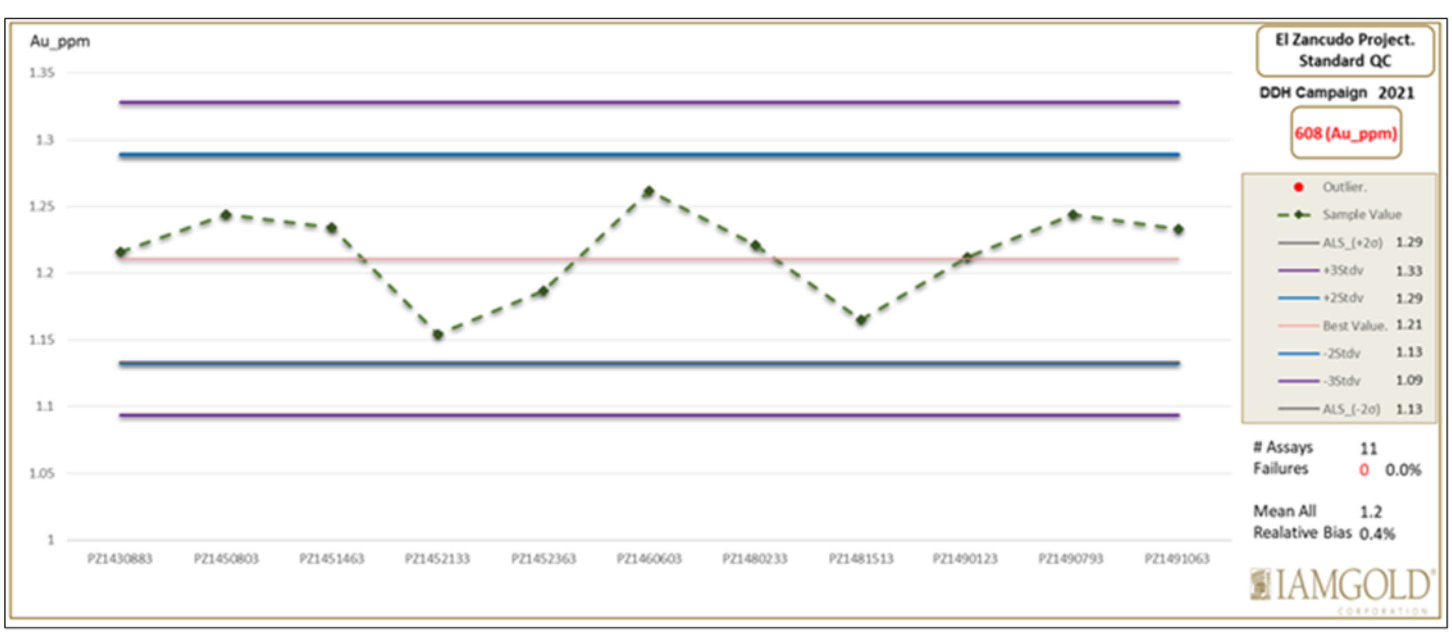
Standard behavior for gold and silver (2020 and 2021) showing a summary of results is demonstrated in Figure 11-1.



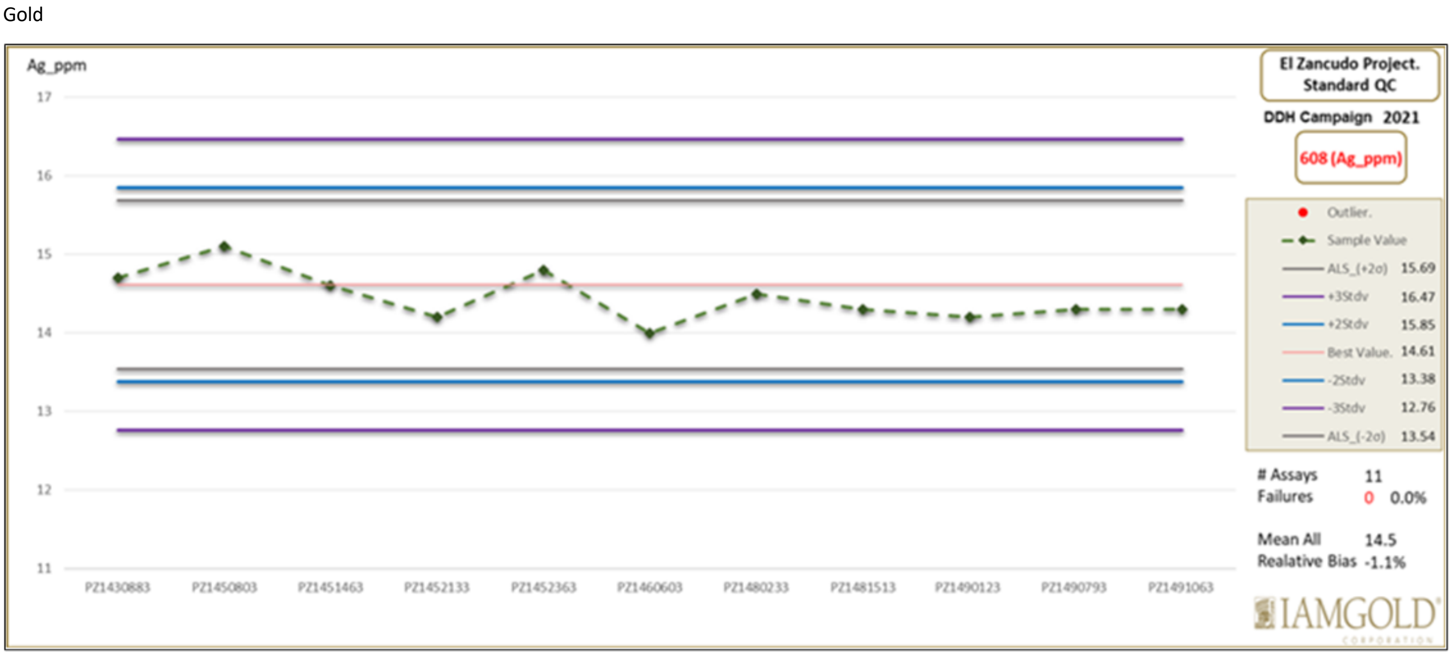
Gold



Silver



Gold



Silver

Source: GCG Titiribi, 2021

Figure 11-1: Example of Certified Reference Samples Submitted During IAMGOLD Submissions in 2020 and 2021

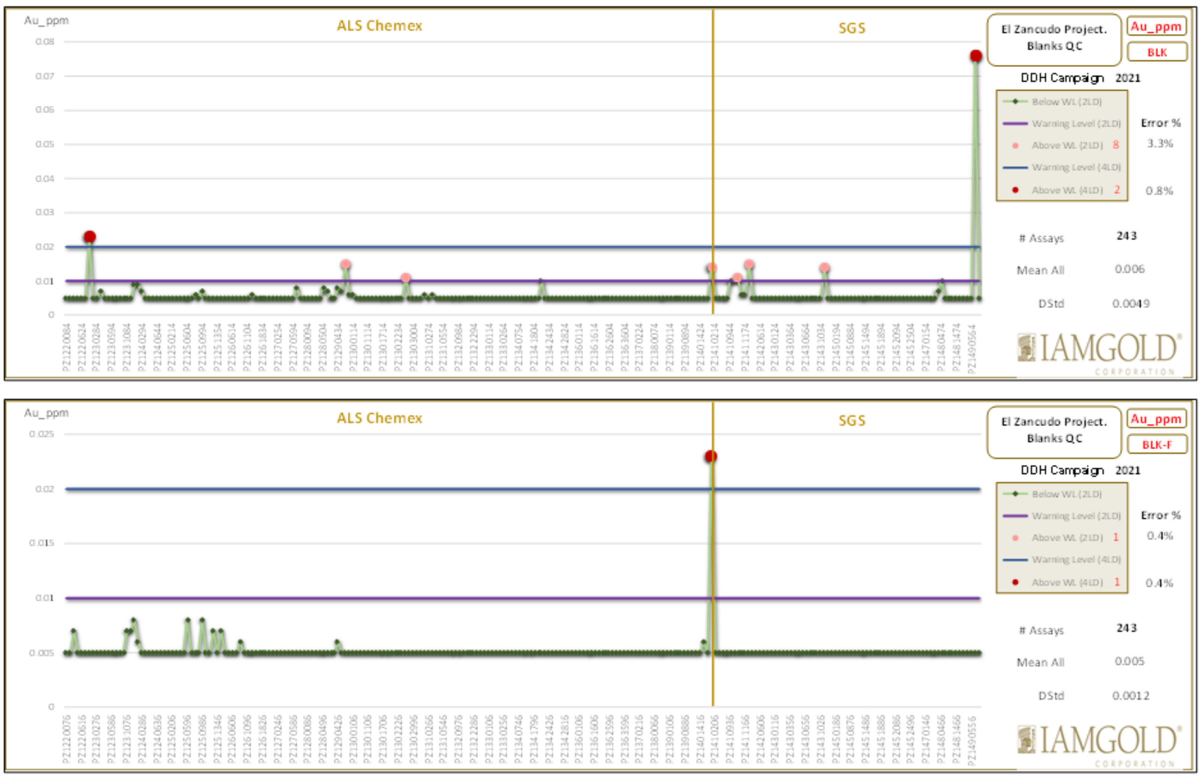
11.5.2 BLANKS

Course and Fine Blanks are inserted at various stages of the milling and measuring process for each element. Blanks are known materials with measured grades at or below the minimum measurable limit for each element. The coarse blank was quartz bought in Medellin for Gran Colombia and sourced from is unaltered andesite from an outcrop in Caramanta for the IAMGOLD submissions. For Gran Colombia submissions the blank samples were monitored for Au and Ag by charts with reference to the lower limit of detection (LLD) with a reference line at 5 times the LLD.

Iamgold monitors the blanks for Au, Ag and other certified elements by charts with reference to the LLD with warning and failure lines at 2 and 4 times the LLD respectively. IAMGOLD used fine blanks that are CSRM (OREAS 21e).

As noted in the 2020 technical report, no serious issues had been discovered with blanks which implies that contamination from sample to sample to sample is not an area of concern.

The outliers found in 2020 and 2021 (Figure 11-2) were not concentrated in a single batch or batch of samples and present values close to the limits established in the case of Au, Ag, Sb, Pb, Cu and Zn, for these elements there is no percentage of outliers that exceeds 10% meeting the standard for this method. No graphs were prepared for the 2022 campaign.



Source: IAMGOLD, 2021

Figure 11-2: Analysis of Blank and Fine Blank Material for Au (g/t) at ALS and SGS During 2021 Program

11.5.3 DUPLICATES

Duplicates are inserted in a variety of ways by use of submitting essentially the same sample to the lab(s) under different identifiers. Sample duplicates error can be measured under a variety of accepted tolerances but the accepted tolerance for Denarius is between 10% and 30% variation in economic elements depending on the type of sample preparation.

Duplicates are inserted into the sample stream as three different styles. These include:

<u>Field Duplicate (FDUP)</u>

The objective is to have control of the precision in the sampling stage by knowing if there is a high nugget effect or sampling errors such as a wrong cut of the core that strongly biases the mineralization. The relative error tolerated by the Company during the analysis is set as 30%.

Samples of at least 1.0 m in length were selected, with minimal fracturing and sufficient competence to guarantee the minimum required weights, 2 kg per field. Duplicates were distributed within the lot at the discretion of the geologist, contemplating that these represent at least 2% of total sample population.

Coarse Duplicate (RDUP)

The laboratory was ordered to make a duplicate of the selected sample once it had been reduced to 2 mm, thus obtaining a gross rejection. The distribution of these samples is given at random; their selection contemplates that they represent at least 2% of the total population of samples.

With this, the precision in the rock preparation process is measured, evidencing deficiencies in the homogenization processes or high nugget effects. The relative error tolerated in this case is 20%.

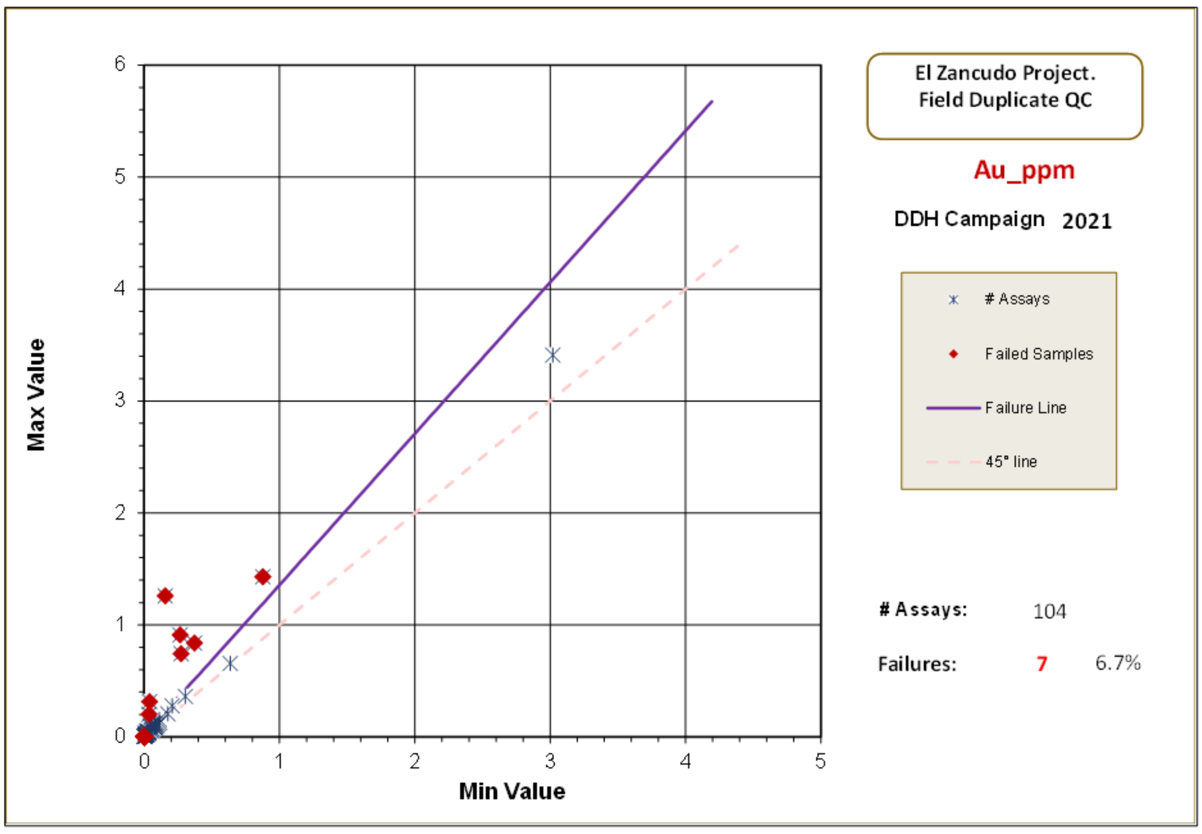
Pulp Duplicate (PDUP)

The laboratory was ordered to make a duplicate of the sample once it was pulverized, thus obtaining a pulp rejection. The distribution of these samples is given at random, and their selection contemplates that they represent at least 2% of the total population of samples.

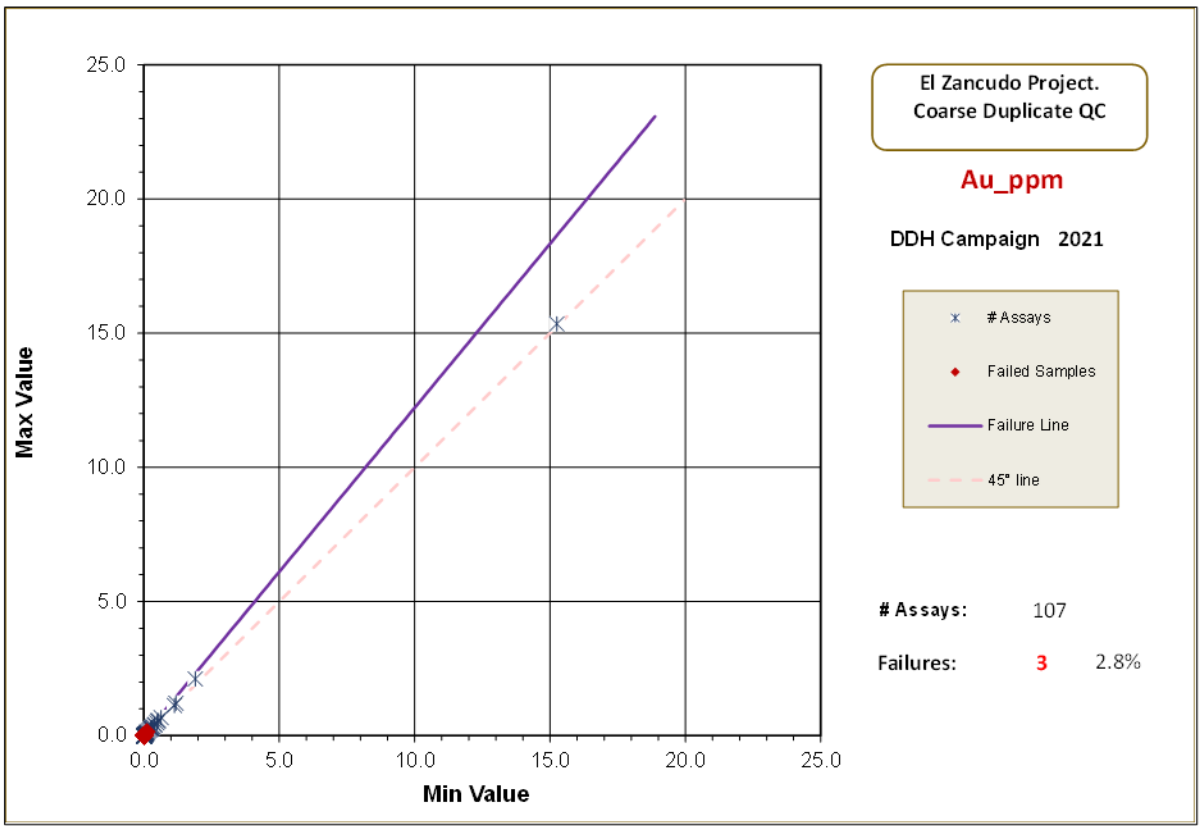
Though some isolated violations of the duplicate limits were measured in 2020 and 2021, the value was far below the 10% overall limit to establish a pattern of poor sampling. The results from these two years are accepted as accurate based on industry standard testing.

With this, the precision in the analytical process of the rock is measured, evidencing deficiencies in the homogenization processes or high nugget effects. The relative error tolerated in this case is 10%.

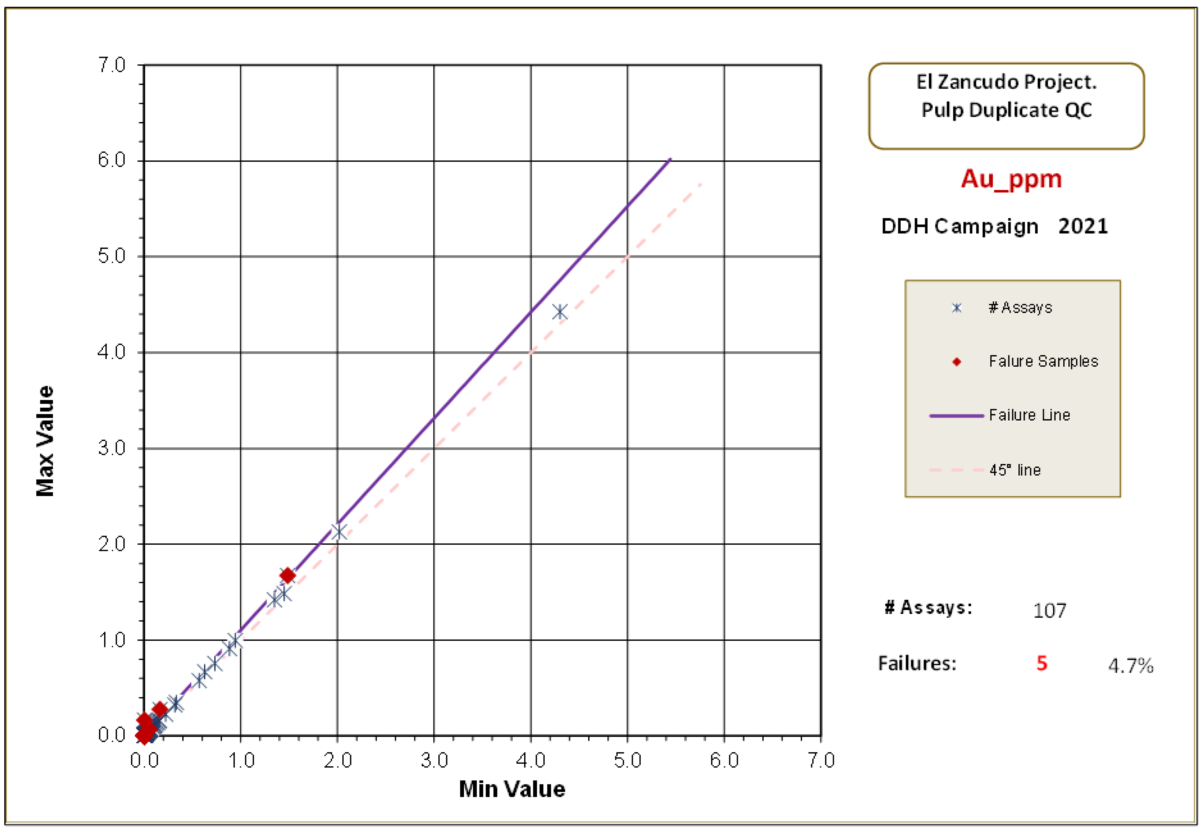
A summary of the performance for 2021 is shown in Figure 11-3.



Field Duplicates



Coarse Duplicates



Pulp Duplicates

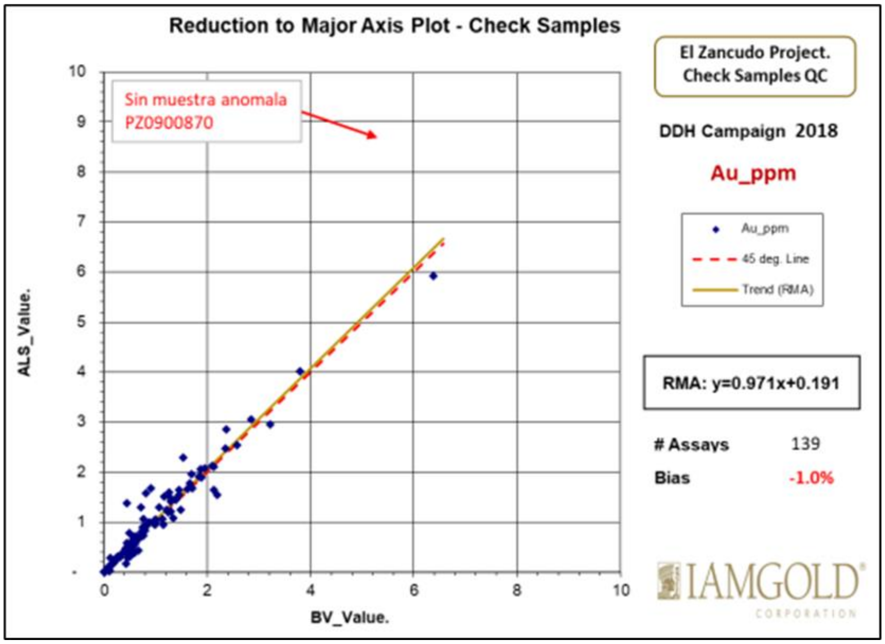
Source: ESV, 2022

Figure 11-3: Summary of Duplicate Submissions by Sample Type

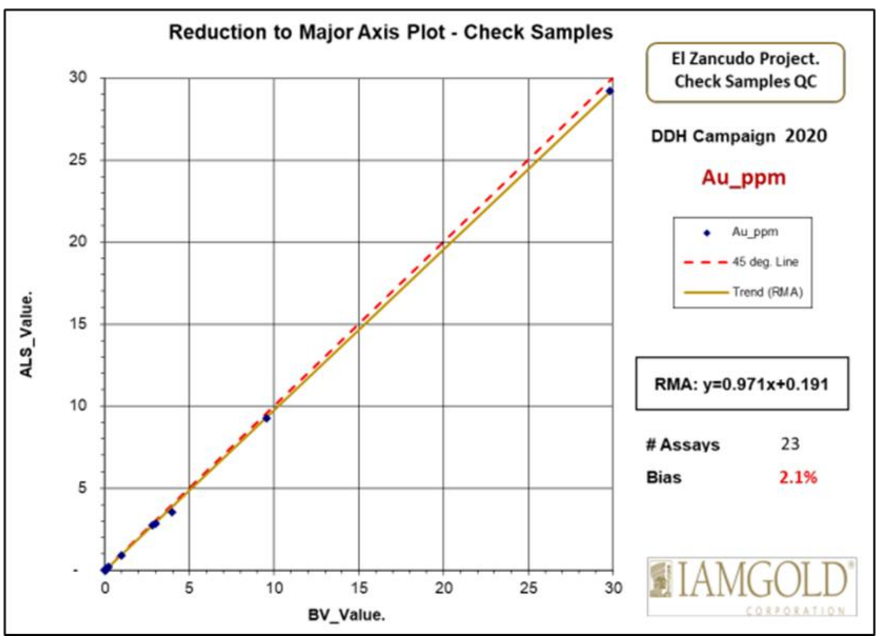
11.5.4 SECOND LABORATORY CHECKS

The second laboratory checks were carried out by Bureau Veritas, and 562 pulps were sent between 2017 and 2021. Fine blanks and standards were included for quality control of the control check batches. Using scatterplots and the calculation of the difference between the slope of the data and the reference line, it is possible to know the bias. If the bias is less than 10%, the control is accepted.

Examples of scatterplots of second laboratory checks are shown in Figure 11-4.



Au 2018



Au 2018
Source: IAMGOLD, 2022

Figure 11-4: Summary of Second Laboratory Checks Scatterplots

11.5.5 ACTIONS

No sampling is currently being completed as no drilling and exploration are being completed during 2023. Discussion with the client is that routine review of all QA/QC samples will be completed once drilling and sampling restarts and that when poor results exist these will be reported to the laboratory for further investigation and if required re-assay.

11.5.6 RESULTS

In general, the results of the QA/QC controls inserted during the different campaigns are acceptable and the failures have been managed with the laboratories, including the re-assaying of samples of batches with failures in standards, review of contamination with laboratories and communication with the laboratories.

11.6 OPINION OF ADEQUACY

Sample preparation and storage is deemed to be up to industry standards and within expectations. Sample preparation and handling is considered good with the vast majority of QA/QC data submitted performs within tolerance limits, and the previous owners have actioned where appropriate when these failed to keep within expectations (see action section).

In the opinion of the QP, the methods employed for sampling preparation, security, analytical procedures, and QA/QC protocols are in line with the industry's best practices and are satisfactory.

12 DATA VERIFICATION

The professionals responsible for the validation of the mineral resource estimate (SRK, 2023) completed a phased approach to the data validation on the digital sample database supplied by the Company, which included but was not limited to the following:

- Complete a meeting with a senior geologist in charge of the database to review the processes used to log, store and extract data from the central Access database during the site inspection.
- Search for sample overlaps or significant gaps in the interval tables, duplicate or absent samples, errors in the length field, anomalous assays and survey results. Company's geological team was notified of any issues that required correction or further investigation. No material issues were noted in the final sample database.
- Currently there is not a three-dimensional (3D) volume to accurately reflect the previous mining activity which still remains a risk. Th QP has accounted for this by generating a buffer around the digitized polylines reflecting the underground developed as known. Grade estimates are sterilized within 5m of all digitized underground.
- Undertook a review of assay certificates to extracts supplied from the Access database.

12.1 OPINION ON DATA ADEQUACY

There was no limitation placed on the qualified person for data verification. It is the opinion of the QP responsible for the preparation of this Technical Report that the data used to support the conclusions presented here are adequate for the purposes of defining the current geological model and associated mineral resource estimates.

13 MINERAL PROCESSING AND METALLURGICAL TESTING

13.1 TESTING AND PROCEDURES

13.1.1 HISTORIC

The Zancudo deposit has undergone limited metallurgical test work in the past. In 2012-13, Terra Mineralogical Services, using 22 core samples, conducted a predictive metallurgical study using scanning electron microscope SEM-EDS scans of polished thin sections to help determine gold deportment and metallurgical response. Initial results of the study indicated gravity extraction followed by regrind and whole ore cyanidation may be an efficient and economic extractive method for Zancudo gold-silver mineralization types. After additional metallurgical test work it was determined that the initial assessment was invalid for the global Zancudo deposit, and a simpler gravity and flotation flow sheet was selected. A summary of the metallurgical testing used to support the selected process follows in the following sections. Summary of Short Channel Sampling Program (December 2022).

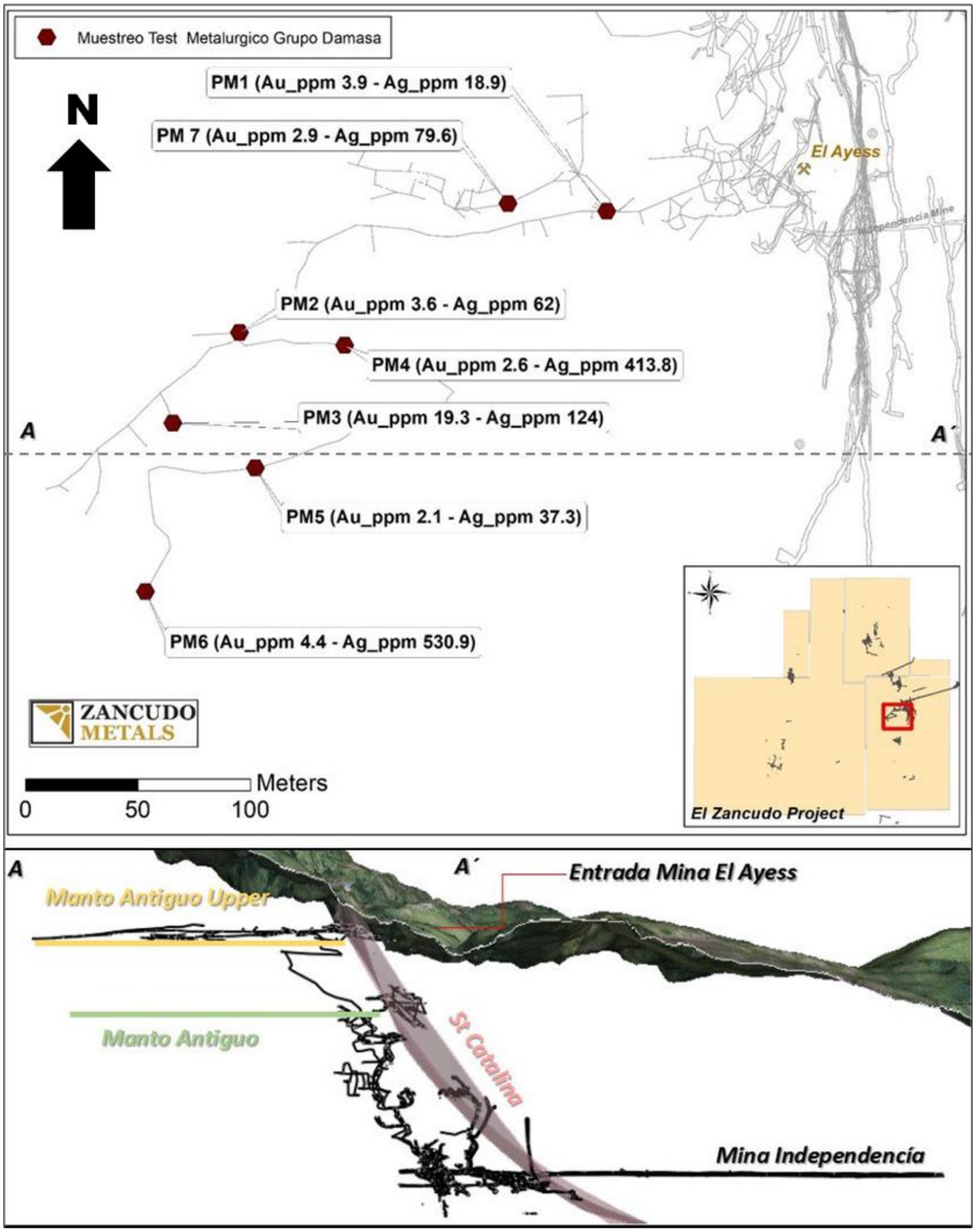
Sample Selection

A total of seven bulk composite samples were selected near the main portal of the Ayess Mine (Figure 13-1for initial test work. The combined composites weighed approximately 450 kg, and sampling was completed at Aris Mining Segovia's Laboratory in Colombia. The blended composites had an average grade of 7.4 g/t Au and 297.3 g/t Ag, with the results per composite shown in Table 13-1. It should be noted that the sample gold grade on Especial PM3 is much higher than the others, potentially skewing the results higher for both grade and recovery. The same can be said for samples Especial PM4 and PM6 for silver.

Table 13-1: Assay Results for Au and ag (g/t) for Samples

Description	% Moisture	Grade Au g/t	Grade Ag g/t
ESPECIAL PM1	15.6	3.9	18.9
ESPECIAL PM2	16.4	3.6	62
ESPECIAL PM3	4.5	19.3	124
ESPECIAL PM4	7.3	2.6	413.8
ESPECIAL PM5	8.3	2.1	37.3
ESPECIAL PM6	12	4.4	530.9
ESPECIAL PM7	5.1	2.9	79.6
Average Blend (PM1-7)	**9.4**	**7.4**	**297.3**
ESPECIAL TITIRIBÍ	8.6	5.2	129.8

Source: Denarius, 2023



Source: Denarius 2023

Figure 13-1: Location of Composites Taken for Initial Metallurgical Testwork

Leaching

The blended sample was ground to 400 mesh (38 µm) and put through a cyanide bottle roll test run. Gold and silver extractions average 85% and 90%, respectively. Benchmarking against other companies in the region and based on the reports from previous operators at Zancudo, the laboratory results were discounted due to the samples not being representative in terms of grade and addressed repeatability with further test work on more representative samples.

13.1.2 SUMMARY OF ARIS BLENDING TEST PROGRAM (JUNE 2023)

Introduction

A single sample of mineralization from Zancudo was sent to Aris Mining Corporation's ("Aris") Segovia Laboratory, Colombia, to evaluate gold recovery in the flotation and leaching processes, as well as to evaluate performance of the mineralization when blending concentrates from Zancudo with Aris material in a ratio of 12.5% and 87.5% respectively (to mimic the approximate daily production from each mine should a toll treatment agreement be reached).

Sample Selection

A 71.2 kg sample of gold bearing mineralization was sent from Zancudo for testing and was split, then ground to 80% passing (P80) 106 µm for rougher flotation tests and P80 38 µm for leaching test work.

A size-by-size assay analysis was completed on the material for determination of the gold distribution according to size fraction shown in Table 13-2.

Table 13-2: Analysis of Au Distribution by Size Fraction

Mesh	Au (g/t)	Mass (g)	% Distribution Au
Mesh +140	28.9	9.2	20%
Mesh +200	11.6	10.1	9%
Mesh +325	5.3	52.6	21%
Mesh -325	3.6	181.4	50%
Recalculated Head	5.2	253.3	

Source: Denarius 2023

Rougher Flotation

The rougher flotation tests were conducted at the Maria Dama process plant in Segovia under standard processing conditions, which included a rougher flotation slurry density of 35% solids and a retention time of 12 minutes. The Zancudo mineralization resulted in 62.5% Au recovery and 68.9% Ag recovery into a rougher flotation concentrate containing 31.6 g/t Au and 699.5 g/t Ag (Table 13-3).

Table 13-3: Bulk Rougher Flotation Results

	Mass (g)	Au (g/t)	Ag (g/t)	Rec Au%	Rec Ag%
Head	1000	4.8	96.5	62.5%	68.9%
Concentrate	95	31.6	699.5		
Tail	905	2.0	33.2		

Source: Denarius 2023

Cyanide Leaching

A blend of 12.5% Zancudo flotation concentrate and 87.5% Segovia flotation concentrate, based on the estimated mass fractions from each mine, was ground to P80 of 38µm and leached using standard cyanide leach tests at 1000 ppm NaCN and 31% solids. The gold and silver leaching rates from the blended concentrate were 96.6% and 62.1%, respectively, as shown in Table 13-4. These values only reflect the leaching performance and do not account for the losses during flotation.

Table 13-4: Leaching Results on the Blended Concentrate

	Au (g/t)	Ag (g/t)	Extraction Au%	Extraction Ag%
Head	101.40	301.62	96.6%	62.1%
Tail	3.46	114.21		

Source: Denarius 2023

The Zancudo test composite, ground to P80 of 38 µm, underwent direct cyanide leaching at 31% solids and 1000 ppm NaCN concentration. The gold and silver recoveries from the Zancudo test composite were lower than the blended leaching tests, with 62.3% Au extraction and 69.1% Ag extraction (Table 13-5). No cyanide leaching tests were performed on the Zancudo rougher flotation concentrate.

Table 13-5: Results of Direct Leaching Zancudo Ore

	Au (g/t)	Ag (g/t)	Extraction Au%	Extraction Ag%
Head	4.80	96.50	62.3%	69.1%
Tail	1.81	29.81		

13.1.3 SUMMARY OF SGS TEST PROGRAM (JUNE 2023)

Introduction

Zancudo hired SGS Laboratories in Lima, Peru, to test three composite samples from different mineralogical structures (Santa Catalina, Manto Antiguo, and La Miel) and evaluate the metallurgical performance of the deposit. The tests included mineralogy, grinding kinetics, gravity, rougher/cleaner flotation, and diagnostic leaching to estimate the gold and silver recoveries.

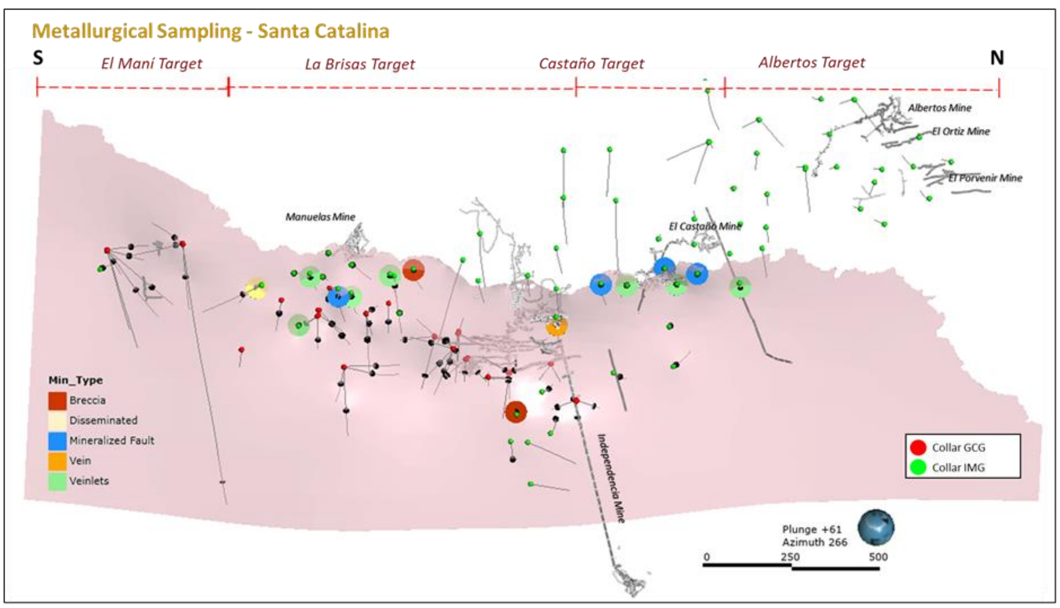
Sample Selection

The test samples received by SGS were graded and quantified as shown in Table 13-6. The gold content of each sample varied from 0.44 g/t to 22.36 g/t, while the silver content of each sample varied from 1.4 g/t to 788 g/t. A notable observation is that the arsenic content ranged from 153 ppm to 53,421 ppm. The test composites were derived from the drillhole locations depicted in Figure 13-2, Figure 13-3, and Figure 13-4.

Table 13-6: Metallurgical Test Composites

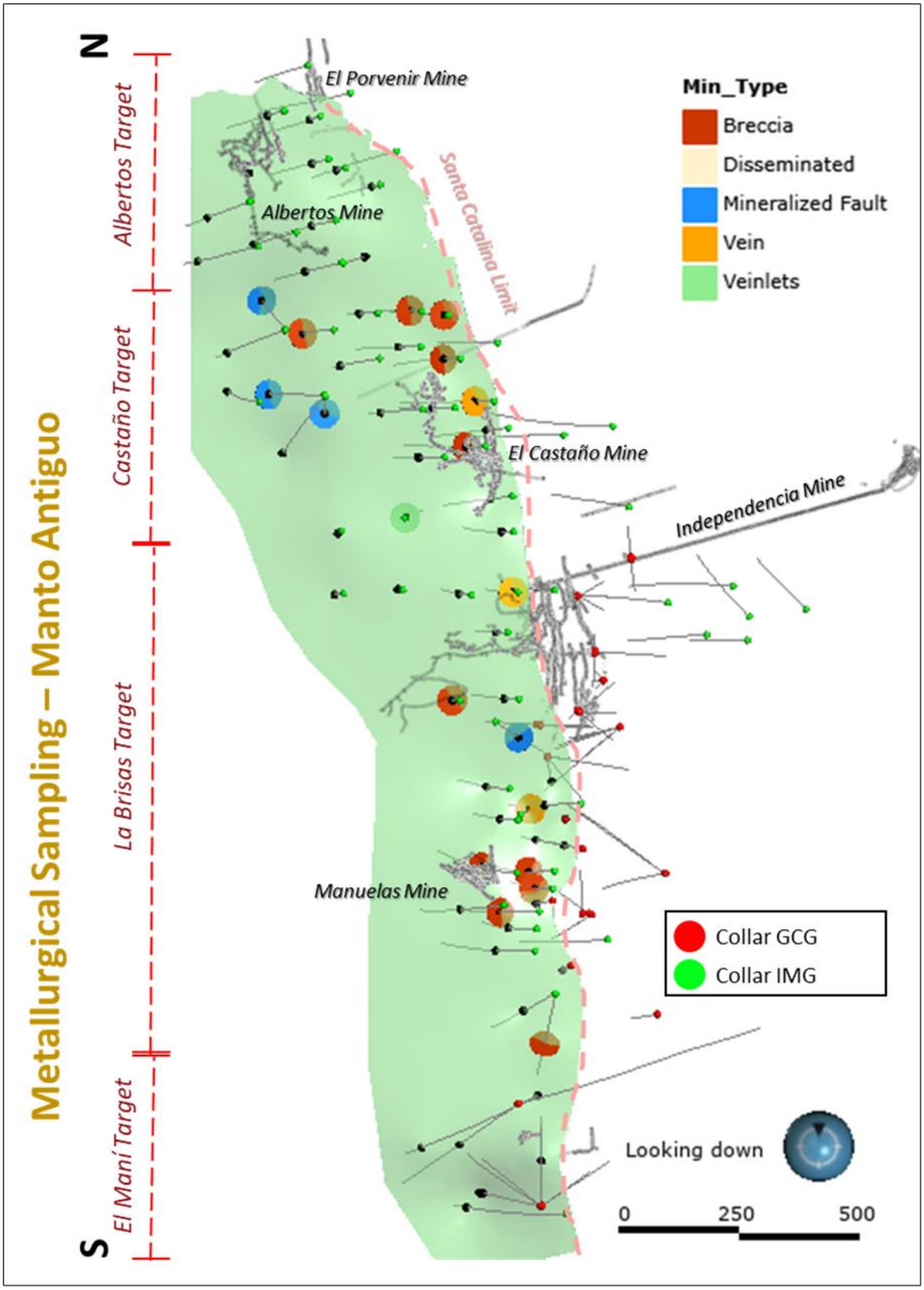
Structure	Metallurgical Sample	Number of Samples	Weight (kilograms (kg))	Assayed Au (g/t)	Assayed Ag (ppm)	Assayed As (ppm)
Santa Catalina	ZM-01M	16.00	35.2	2.23	58.67	3,855
Manto Antiguo	ZM-02M	26.00	53.0	6.15	166.60	14,299
La Miel	ZM-03M	16.00	43.9	2.15	21.12	6,173

Source: Denarius 2023



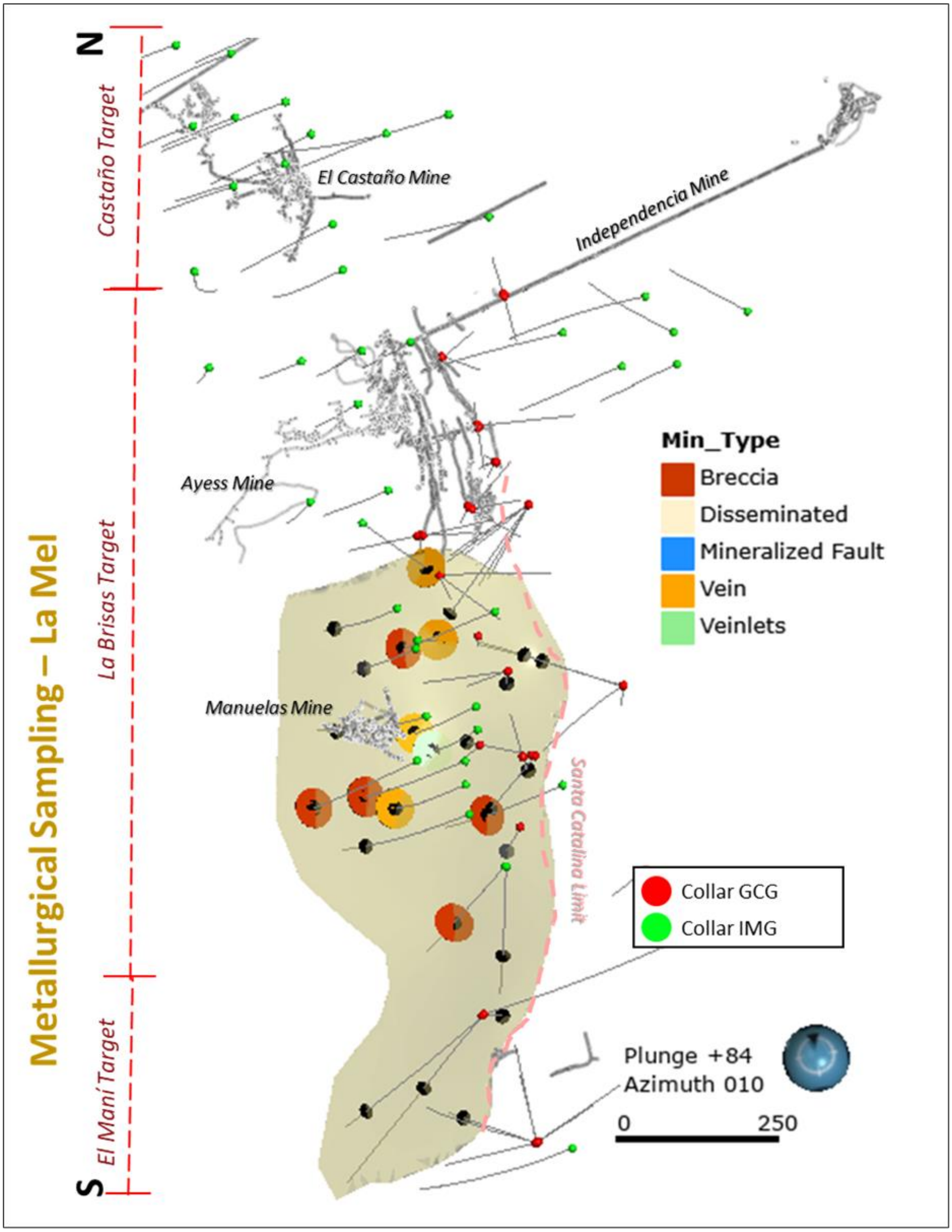
Source: Denarius 2023

Figure 13-2: Drillhole Locations for the Santa Catalina Metallurgical Composite



Source: Denarius 2023

Figure 13-3: Drillhole Locations for the Manto Antiguo Metallurgical Composite



Source: Denarius 2023

Figure 13-4: Drillhole Locations for the La Miel Metallurgical Composite

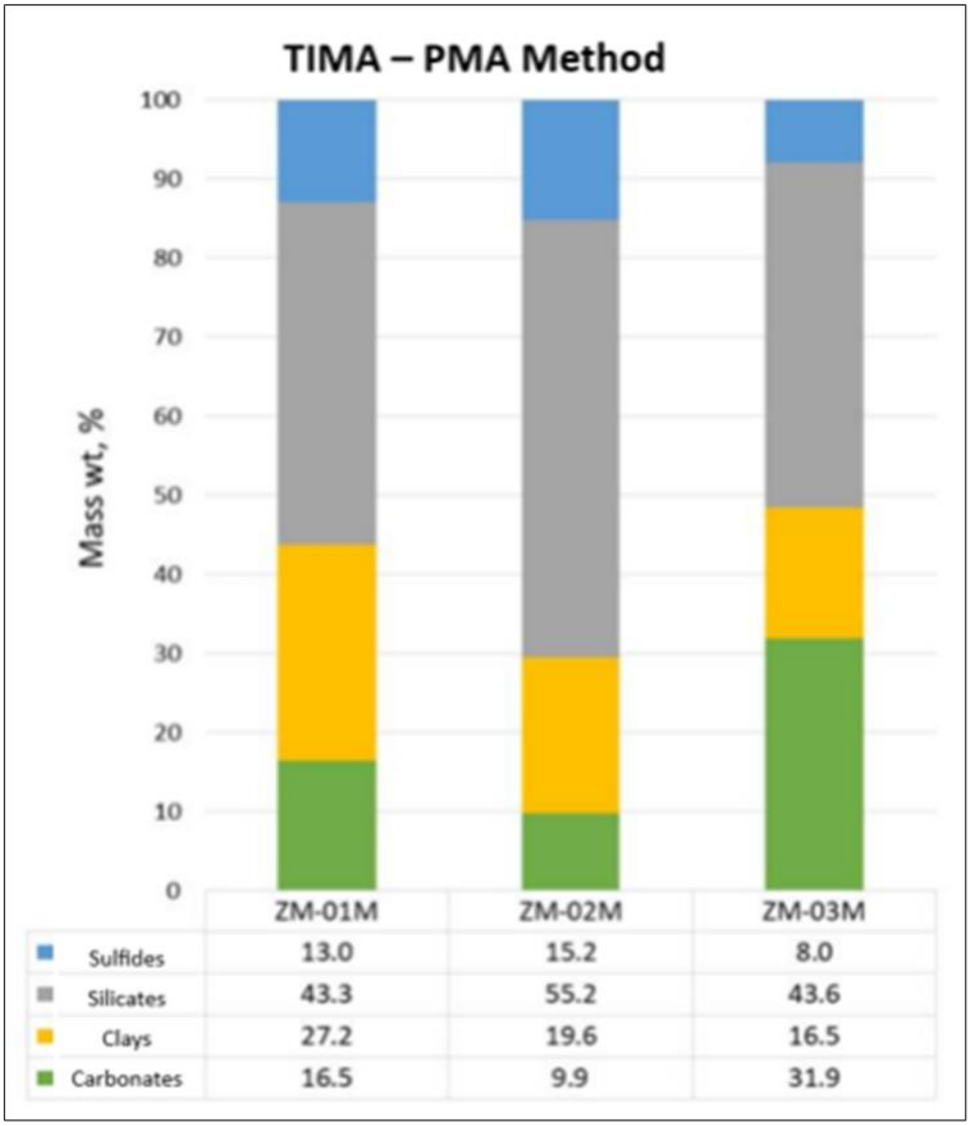
The tested domains (Santa Catalina, Manto Antiguo, and La Miel) represent 57% of the Inferred resource, while the remaining 43% comes from the non-tested domains (Porvenir, Manto Antiguo Lower, Manto Antiguo Upper, Manto Inferior, Panal, Ortiz A, and Ortiz B). The gold content of the tested domains varies significantly: Santa Catalina and La Miel have 10% and 13%, respectively, while Manto Antiguo has 39%. The average grades of Santa Catalina and La Miel are also lower (by a factor of 3 to 2) than the current mineral resources, which may affect the representativeness of the whole domains.

No samples were collected, composited, or tested from the Porvenir, Manto Antiguo Lower, Manto Antiguo Upper, Manto Inferior, Panal, Ortiz A, or Ortiz B structural domains.

Mineralogy

The mineralogical characterization of the three head mineral samples was done by grinding them to P80 of 212 µm and using the TESCAN Integrated Mineral Analyzer (TIMA) in two modes: trace mineral analysis (TMS) and particle mineral analysis (PMA). The samples were also analyzed by X-ray diffraction. The TIMA-TMS results revealed that gold occurs as native gold and electrum, which are amenable to gravity, flotation and cyanidation methods. The gold was found to be associated with sulfides: pyrite, arsenopyrite, galena and sphalerite.

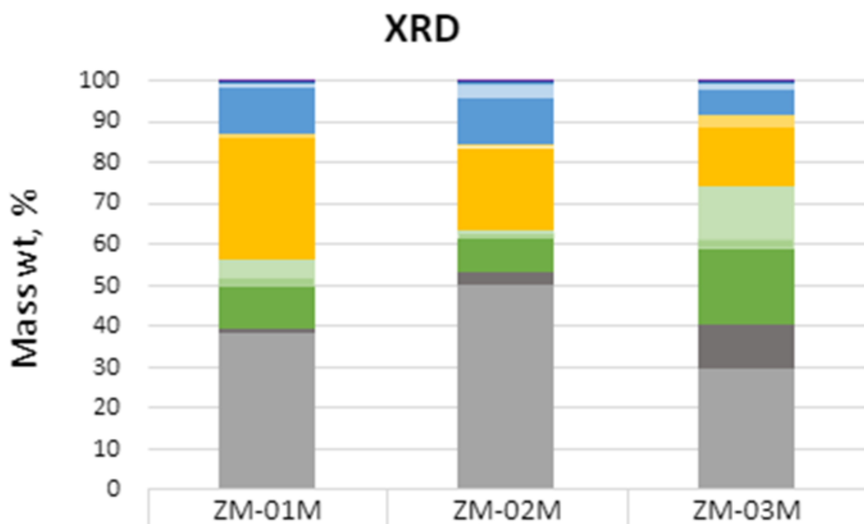
The TIMA-PMA results showed that silicates were the dominant minerals in all three samples. Sulfides varied from 8% to 15%, clays from 16% to 27% and carbonates from 10% to 32%. Clays and carbonates can affect the gold recovery during flotation, so dispersants and gangue mineral depressants were used in the flotation tests.



Source: Denarius 2023 (modified by SRK, 2023)

Figure 13-5: TIMA-PMA Mineralogy

The mineral content in the composite samples was determined by X-ray diffraction (XRD) analysis, as shown in Figure 13-6. The samples ZM-01M and ZM-02M had pyrite contents of around 11% and ZM-03M had 6.2%. Arsenopyrite, which can affect leach recovery and smelting costs, was highest in sample ZM-02M with a value of 3.2%. The clay mineral, which was identified as illite by further analysis, was present in high percentages in each sample, ranging from 14.3% to 29.3%, with ZM-01M being the highest. Ankerite, a carbonate that interferes with sulfide recovery, was between 8.2% and 18.7% across the composites. Quartz in the samples ranges from 29.4% to 50.1%.



	ZM-01M	ZM-02M	ZM-03M
Rutile	0.6	0.5	0.5
Sphalerite	0.2	0.5	0.4
Galena	0.1	0.3	0.1
Arsenopyrite	0.8	3.2	1.5
Pyrite	11.4	11.3	6.2
Chlorite	0.9	0.5	2.8
Kaolinite	0.4	0.5	0.3
Muscovite	29.3	20.2	14.3
Dolomite	4.8	0.7	12.7
Siderite	2.0	1.1	2.3
Ankerite	10.5	8.2	18.7
Albite	0.9	2.9	10.6
Quartz	38.0	50.1	29.4

Source: Denarius 2023 (modified by SRK, 2023)

Figure 13-6: XRD Mineralogical Analysis

Comminution

The SGS test program did not include any comminution test work. The next phase of metallurgical testing will need to perform comminution test work such as Bond low energy impact (CWi), Bond ball mill work index (BWi) and abrasion index (Ai) to establish the comminution criteria for designing the process plant.

Gravity

A two-stage gravity concentration test using a centrifugal Falcon concentrator was used to conduct tests on a 10 kg sample of each composite. The sample was ground to P80 of 212µm and fed to the concentrator. The concentrate was collected, and the tailings from the first stage were reprocessed in the concentrator. The concentrate from both stages was assayed and used to estimate the total gravity recovery. The recovery results for gold and silver are shown in Table 13-7.

As a side note, the gravity concentration method may be useful as an analytical method for grade control during future production operations.

Table 13-7: Gravity Recovery Results

Structure	Metallurgical Sample	Gravity Au Recovery (%)	Gravity Au Grade (g/t)	Gravity Ag Recovery (%)	Gravity Ag Grade (g/t)
Santa Catalina	ZM-01M	19.0	15.1	7.99	155
Manto Antiguo	ZM-02M	23.2	60.3	4.6	281
La Miel	ZM-03M	19.6	15.4	9.4	76.7

Source: Denarius 2023

A gravity circuit was used to extract gold and silver from three composites in two stages. The average extraction rate for both metals was 20.6% across the composites. The gravity concentrate had a low average grade of 30.3 g/t for gold, which may need further upgrading before selling. The leachability of the concentrate in normal and intensive conditions is still to be determined.

Flotation

To optimize the flotation response and achieve the highest precious metal recovery, while minimizing mass pull, a series of tests were performed on three different composites. The tests focused on the following parameters:

- Grind size
- Dispersants
- pH
- Depressants
- Frothers
- Collectors
- Activators

The effect of grind size on gold recovery was evaluated at three levels: P80 of 106 µm, 150 µm and 212 µm. The optimal grind size varied among the samples due to the presence of clays that affected the froth stability. However, a grind size of P80 150 µm was chosen for the rest of the metallurgical program and should be revisited in the next stage of the study. Additionally, de-sliming test work should be performed to determine if this should be included in the final process flowsheet.

Five separate dispersants were used to depress clays and silicates. Gold recoveries across the samples saw an increase with the use of dispersants, though did not fully depress the clay. Sodium silicate and guar gum dispersants performed the best, with guar gum being selected for the remainder of the test program due to better froth stability.

The influence of pH on gold recovery was investigated over a range from 7 to 11. The results showed that gold recovery increased with higher pH values. High pH may impact pyrite flotation impacting Au recovery.

Sodium carbonate was used as a depressant to minimize the effect of clays on gold and silver recovery and froth conditions. The use of sodium carbonate enhanced both gold and silver recovery and improved the froth quality. - without frothers, MIBC and MT352, were compared and MIBC was found to be superior.

The flotation collectors, PAX (potassium amyl xanthate) and MT4064, were assessed during the program and PAX was determined to be more effective and selective than MT4064. Therefore, PAX was used for the remaining test work.

The optimal dosages of CuSO4 and A-407 activator for gold recovery were investigated with five different conditions. The results showed that higher CuSO4 dosages (35 to 50 g/t) were more effective than lower ones.

However, the Santa Catalina composite (ZM-01M) did not have enough material to complete all the tests, so its recovery results may not be optimal. The recovery of the Manto Antiguo and La Miel composites improved later in the test work program, and the Santa Catalina composite might have a similar improvement since it behaved like them in the early tests. The best recovery results and the corresponding test numbers for each composite are summarized in Table 13-8.

Table 13-8: Metallurgical Rougher Flotation Test Composite Recovery Results

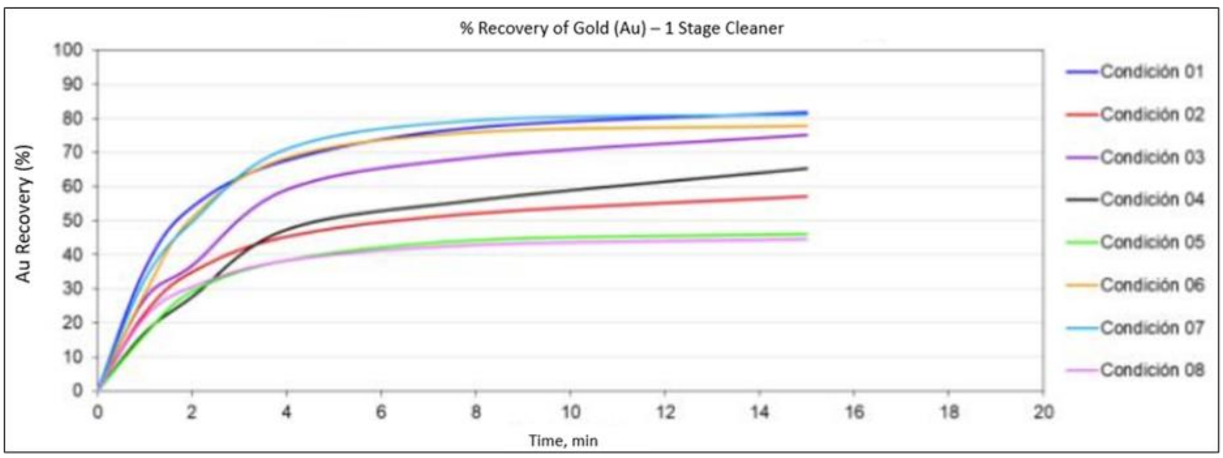
Structure	Metallurgical Sample	Au Recovery (%)	Conc Grade Au(g/t)	Program Test Number	Ag Recovery (%)	Conc Grade Ag(g/t)	Program Test Number
Santa Catalina	ZM-01M	75.8	7.7	15B	88.1	240	15B
Manto Antiguo	ZM-02M	82.5	28.5	24B	86.8	681	24B
La Miel.	ZM-03M	85.0	13	20	88.4	135	13F

Source: Denarius 2023

As shown in Table 13-8, the optimal individual tests for gold and silver recoveries are shown separately. Further optimization is required to find the conditions that maximize both gold and silver recoveries in a single test. Gold recovery varies from 75.8% to 85.0%, but this may be underestimated for the Santa Catalina composite, as discussed earlier. The gold grade of the concentrates is also low, ranging from 7.7 to 28.5 g/t Au and averaging 16.4 g/t Au.

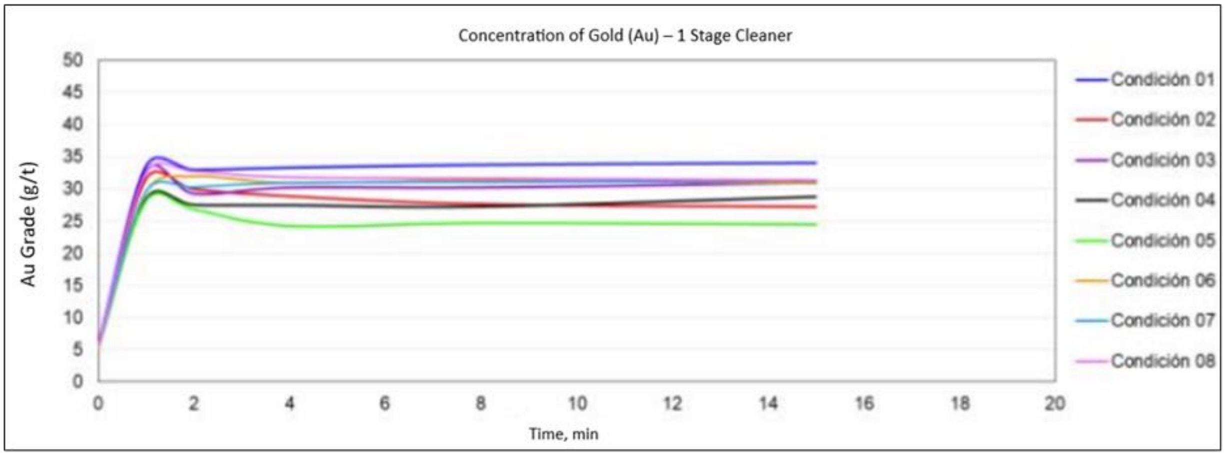
The flotation rougher concentrate was analyzed by ICP and the arsenic values exceeded 10,000 ppm. This should be considered when evaluating further processing options, such as bio-oxidation, and the potential penalties associated with smelting of a final concentrate.

Cleaner flotation tests were conducted on ZM-02M to assess if higher concentrate grades could be obtained while maintaining gold recoveries. The effects of particle size, pH, and PAX dosage were investigated in different conditions to optimize the cleaner flotation circuit. The results from these tests are summarized in the grade and recovery versus time curves in Figure 13-7and Figure 13-8.



Source: Denarius 2023

Figure 13-7: Gold Recovery vs. Time in Cleaner Flotation - Evaluation of P80, pH, and PAX



Source: Denarius 2023

Figure 13-8: Gold Grade vs. Time in Cleaner Flotation - Evaluation of P80, pH, and PAX

As shown in Table 13-9, ZM-02M without regrind, 20 g/t of PAX and pH of 11.5 achieved the highest cleaner grades for both gold and silver, with 4.6 g/t Au and 119.5 g/t Ag. However, this condition also resulted in lower recovery rates for both metals, with 5.5% Au and 4.7% Ag less than the rougher stage performance for the same condition.

Table 13-9: Metallurgical Cleaner Flotation Test Composite Recovery Results

Structure	Metallurgical Sample	Stage	Au Recovery (%)	Grade (g/t)	Program Test Number	Ag Recovery (%)	Grade (g/t)	Program Test Number
Manto Antiguo	ZM-02M	Rougher	84.9	26.5	32	87.4	640	32
		Cleaner	79.4	31.1	32	82.7	760	32

Source: SRK 2023

Diagnostic Leach Tests

To determine the gold and silver deportment and the refractory nature of the mineralized material, each composite was subjected to a diagnostic leach test (DLT) using 200g of material ground to P95 105 µm. DLTs are useful for identifying the mineral associations of gold and silver and the extent to which the material may need additional processing methods such as pressure oxidation, roasting or finer grinding.

Table 13-10: Diagnostic Leach Test Results

DLT Stage	Mineralogy Association	ZM-01M Au Extraction (%)	ZM-01M Ag Extraction (%)	ZM-02M Au Extraction (%)	ZM-02M Ag Extraction (%)	ZM-03M Au Extraction (%)	ZM-03M Ag Extraction (%)
NaCN	Free or liberated	47.2	68.6	49.19	76.36	16.55	64.86
Hydrochloric acid (HCl)	Associated with carbonates	6.85	4.97	1.77	10.41	4.95	10.29
Agua regia	Associated with sulfides	14.01	22.06	15.69	10.51	26.11	24.04
Residue	Encapsulated in silicates	31.94	4.37	33.34	2.72	52.39	0.82

Source: Denarius 2023

13.1.4 SAMPLE REPRESENTATIVITY

Each metallurgical test program describes the representativity of the samples and can be found in the corresponding sections. However, some of the mineralization domains have a limited number of samples, making it difficult to assess their variability. Additional testing and analyses are required when additional samples are available after exploration and drilling activities resume. Sample selection should be based on a geo-metallurgical model if possible.

13.2 RELEVANT RESULTS

The best results for recovering gold and silver from the ZM-02M composite were 52.5% and 65.8%, as shown in Table 13-11 and Table 13-12. The ZM-02M sample was the only one analyzed because the other two samples, ZM-01M and ZM-03M, did not match the current Mineral Resource and were not relevant for the study.

Table 13-11: Metallurgical Test Composite, Gold Recovery Results

Structure	Metallurgical Sample	Gravity Au Recovery (%)	Flotation Au Recovery* (%)	Leaching Au Extraction** (%)	Overall Au Recovery*** (%)
Manto Antiguo	ZM-02M	23.2	82.5	49.2	52.3

Table 13-12: Metallurgical Test Composite, Silver Recovery Results

Structure	Metallurgical Sample	Gravity Ag Recovery (%)	Flotation Ag Recovery* (%)	Leaching Ag Extraction** (%)	Overall Ag Recovery*** (%)
Manto Antiguo	ZM-02M	4.62	86.8	76.4	65.8

The test work on the Zancudo ZM-02M sample showed that gold recovery by gravity concentration was 23.2%, which is a reasonable value. However, more test work is needed to determine if this method is economically feasible and if gold is recovered by subsequent flotation without gravity concentration. Moreover, the gravity concentrate should be further tested to see how much gold can be extracted by additional processing. The industry preference is the recovery of the gold as soon in the process as possible, considering it is economically feasible.

Flotation recovery of gold varied from 62% to 87% depending on the sample and the test work program. This result could be improved by optimizing the test work on a representative sample of the ore body. Cleaner flotation tests on ZM-02M did not achieve higher concentrate grades without compromising gold recovery.

The cyanide leach recovery of gold was 49.2%, which is the result of the diagnostic leach test on whole mineral samples using sodium cyanide (NaCN). This result is lower than the previous leach test on the Aris whole ore sample, which had 62.3% recovery, but this is not a comparable sample and cannot be used with the ZM-02M gravity and flotation results. The bottle roll results for ZM-02M are still pending. There is a possibility of increasing the cyanide leach recovery by further optimization.

Table 13-13 summarizes the gravity and flotation results for ZM-02M, which had 86.6% gold recovery and 87.4% silver recovery. These values do not include cyanide leaching, which means they are only relevant for a final concentrate produced by gravity and flotation.

Table 13-13:Gravity and flotation results for ZM-02M

	Gravity Recovery (%)	Gravity Grade (g/t)	Flotation Recovery (%)	Flotation Grade (g/t)	Overall Recovery (%)	Overall Grade (g/t)
Gold (Au)	23.2	60.3	82.5	28.5	86.6	32.8
Silver (Ag)	4.6	281.2	86.8	680.9	87.4	626.5

Source: Denarius 2023

13.3 SIGNIFICANT FACTORS

Denarius Metals is procuring a turnkey mineral processing plant which includes crushing, grinding, gravity concentration, flotation, concentrate handling and tailings liquid/solid separation. The intent is to produce a gravity concentrate of on-site smelting and a bulk precious metal rich bulk sulfide concentrate for direct sale. A combined gravity circuit and rougher flotation recovery of 86.6% Au and 87.4% Ag can be expected based on the results of the ZM-02M, Manto Antiquo composite sample.

13.4 QP COMMENTS AND ASSUMPTIONS FOR MINERAL RESOURCE REPORTING

During the 2023 metallurgical test work presented above, two sets of recoveries were defined based on two different processing solutions that have been investigated. In terms of the reporting of the Mineral Resources and the assessment of Reasonable Prospects for Eventual Economic Extraction here remains two options, which can be summarized as:

- Production of a rougher concentrate product, which was based on three composite samples and returned average recoveries of 85% Au and 87% Ag. The use of these recoveries, may result in a decrease in the CoG from 4.0 g/t to approximately 3.5 g/t, assuming no other changes to the costs.
- Production of a concentrate using the plant conditions at Aris' Maria Dama Plant, based on test analysis of composite samples at Segovia, which returned lower recoveries than the previous estimate (reporting 62% Au and 69% Ag, compared to 75% Au used previously). The impact on the latest recoveries would result in an increase in the CoG from 4.0 g/t to approximately 4.6 g/t, assuming no other changes to the costs.

Based on the variability presented recoveries of 75% Au and 80% Ag were used for the basis of reporting Mineral Resources. Further test work and engineering work to assess the preferred processing route for the Project should be completed.

14 MINERAL RESOURCE ESTIMATES

14.1 DRILLHOLE DATABASE

No new drilling has been completed in 2023 since the completion of the previous MRE. The changes in the grade estimation are based on reinterpretation of the key structures with tighter control on the contacts between the manto structures and the host rocks (as discussed in Section 12.2).

A total of 40,099.70 m of diamond drilling in 149 holes has been carried out at the Project, including 33 underground holes drilled in the Independencia Mine. No further drilling has been completed in 2023 drilling on the Project. A breakdown of the drilling phases is detailed below, and Figure 14-1 shows collar location:

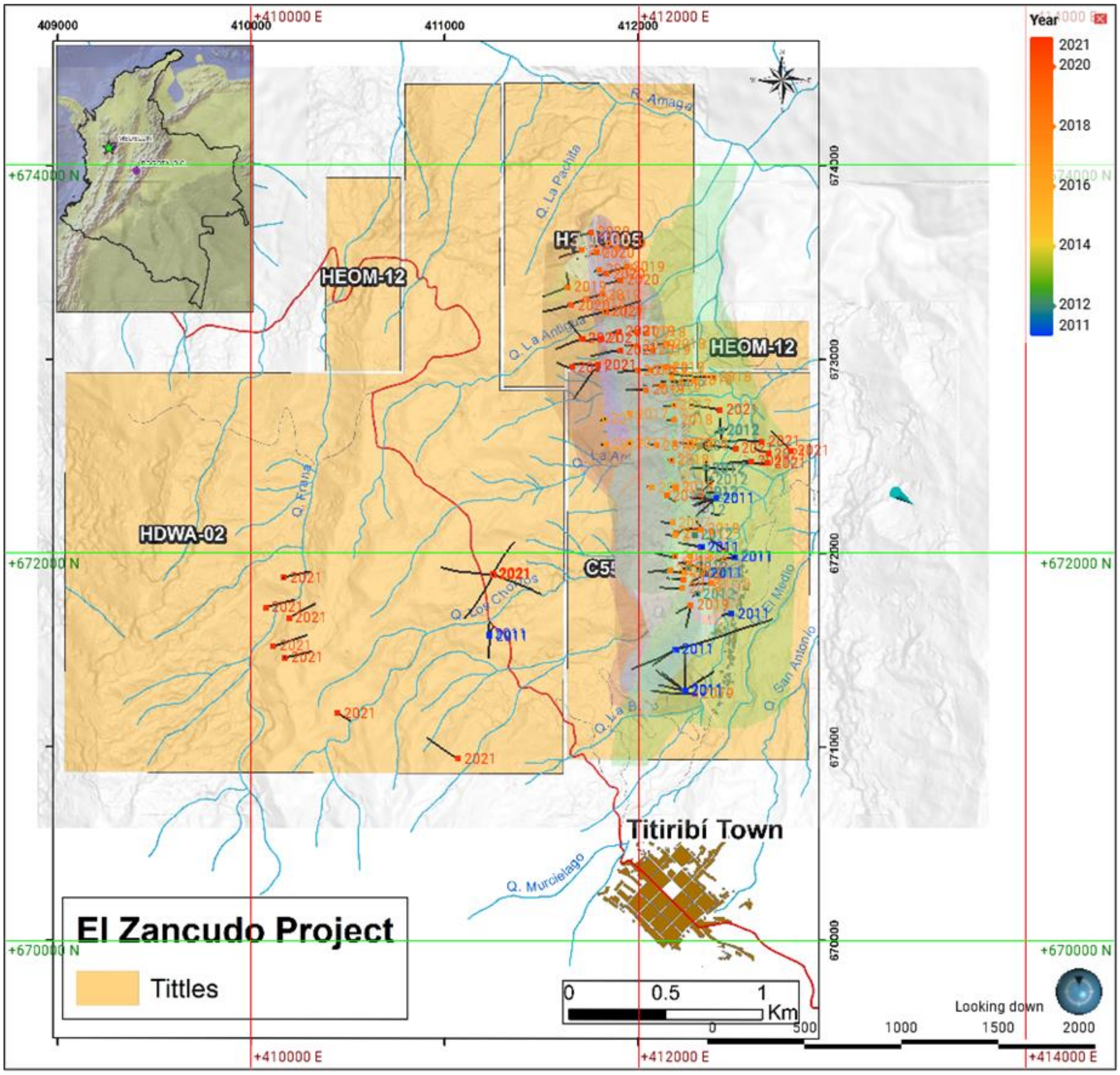
- Consorcio de Inversionistas (CDI) drilled at the Independencia Mine with one hole from surface in 1999 and five underground holes in 2002 to 2003 for 998.2 m. The results of this drilling are not available.
- Gran Colombia drilled 66 holes for 14,121.9 m in 2011 to 2012. Gran Colombia also focused on the Independencia Mine and on defining the continuity of the veins by surface drilling in 2011 to 2012 and by underground drilling in 2012; the second half of the 2012 program was carried out by subsidiary company Mineros Nacionales. Four holes were also drilled on a magnetic high anomaly at La Muriel in the western area (DDH-ZG-11-030 to 033).
- IAMGOLD commenced drilling at the Project in September 2017 and has had one diamond drill rig drilling from surface since that time. IAMGOLD drilled a total of 83 holes for 25,977.8 m in 2017 to 2021:
  - The 2017 drilling program was focused on testing the continuity along strike and downdip of the stacked mantos and the Santa Catalina structure in the north and west zones of the Project.
  - The 2018 drilling program was to test the zone where the stacked mantos merge into the Santa Catalina structure, interpreted as a master fault, which usually shows wider and higher-grade intercepts.
  - The 2019 program was aimed at extending a new steeply dipping structure (called Porvenir), which occurs in the footwall of the Santa Catalina structure in the northern zone, and at better delineating the mineralization shoots outlined on the Manto Antiguo, Manto Inferior, and La Miel shallow dipping mantos.
  - The 2020 program was delayed by the COVID-19 pandemic but started in October 2020 and totaled 1,191.4 m. The program continued in 2021 for a further 28 holes covering 8,560.9 m. Drilling was targeted on the main structures, with some drilling completed in the west of the deposit testing potential F-Gomez, Alto G-Target, and the El Eden targets (excluded from the current estimates).
  - Drilling continued in 2021 for a further 28 holes covering 8,560.9 m. Drilling was targeted on the main structures with some drilling completed in the west of the deposit testing potential F-Gomez, Alto G-Target and the El Eden targets (currently excluded from the current estimates).

The drilling database provided by Denarius for use in the current MREs covers all drilling. A summary of the drilling statistics by year is shown in Table 14-1 and Figure 14-1.

Table 14-1: Summary of Drillholes by Year

Year	Count	Length (m)
2011	33	10,370.7
2012	33	3,751.2
2017	11	3,905.4
2018	18	6,416.3
2019	21	5,903.8
2020	5	1,191.4
2021	28	8,560.9
Grand Total	**149**	**40,099.7**

Source: SRK 2023



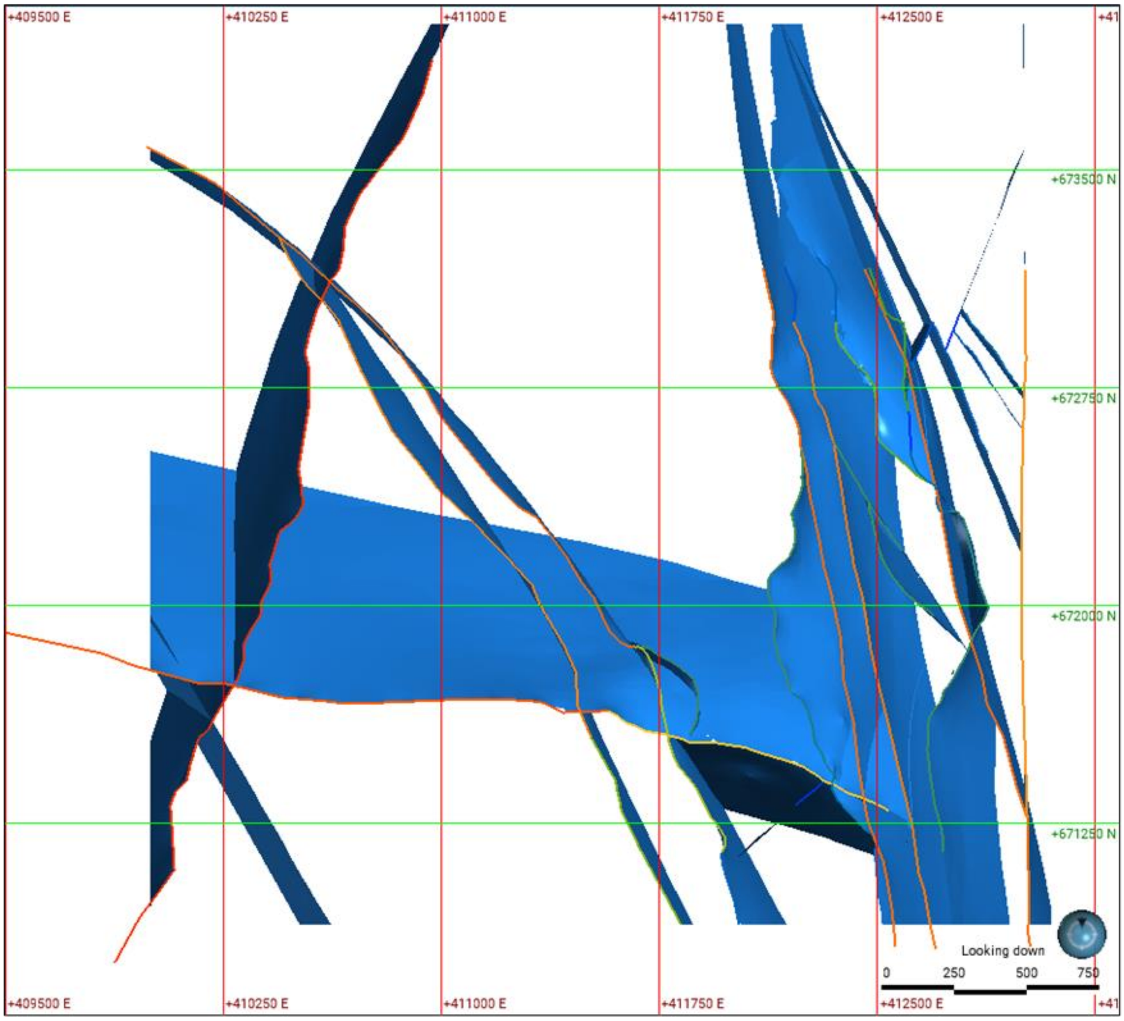
Source: SRK 2023

Figure 14-1: Collar Plot by Year

14.2 GEOLOGIC MODEL

Structural Review

Several faults have been mapped and logged at the Zancudo property which are believed to be direct controls on mineralization paths and vein geometry. Previously (Redwood, 2021) detailed a structural study carried out in 2012 and 2013 by Telluris Consulting which identified the primary structures and fault chronology of the area. The geologist received 35 GIS fault lines and fault segments in polyline format. Based on the format provide geologists have used these initial shapes as a guideline to produce and updated structural model. The 35 mapped lines segments were compiled into 24 three dimensional (3D) shapes which are chronologically reasonable. The geologists revised 3D interpretation has integrated all the available geological information as remains consistent with the information contained in the technical report. The result of the reinterpretation is shown in Figure 14-2. Errors and overlaps within the fault systems were corrected honoring findings from prior studies. The fault model has been utilized to inform and restrict the mineralized units and associated grade estimates.



Source: SRK 2023

Figure 14-2: Modeled Fault System Plan View

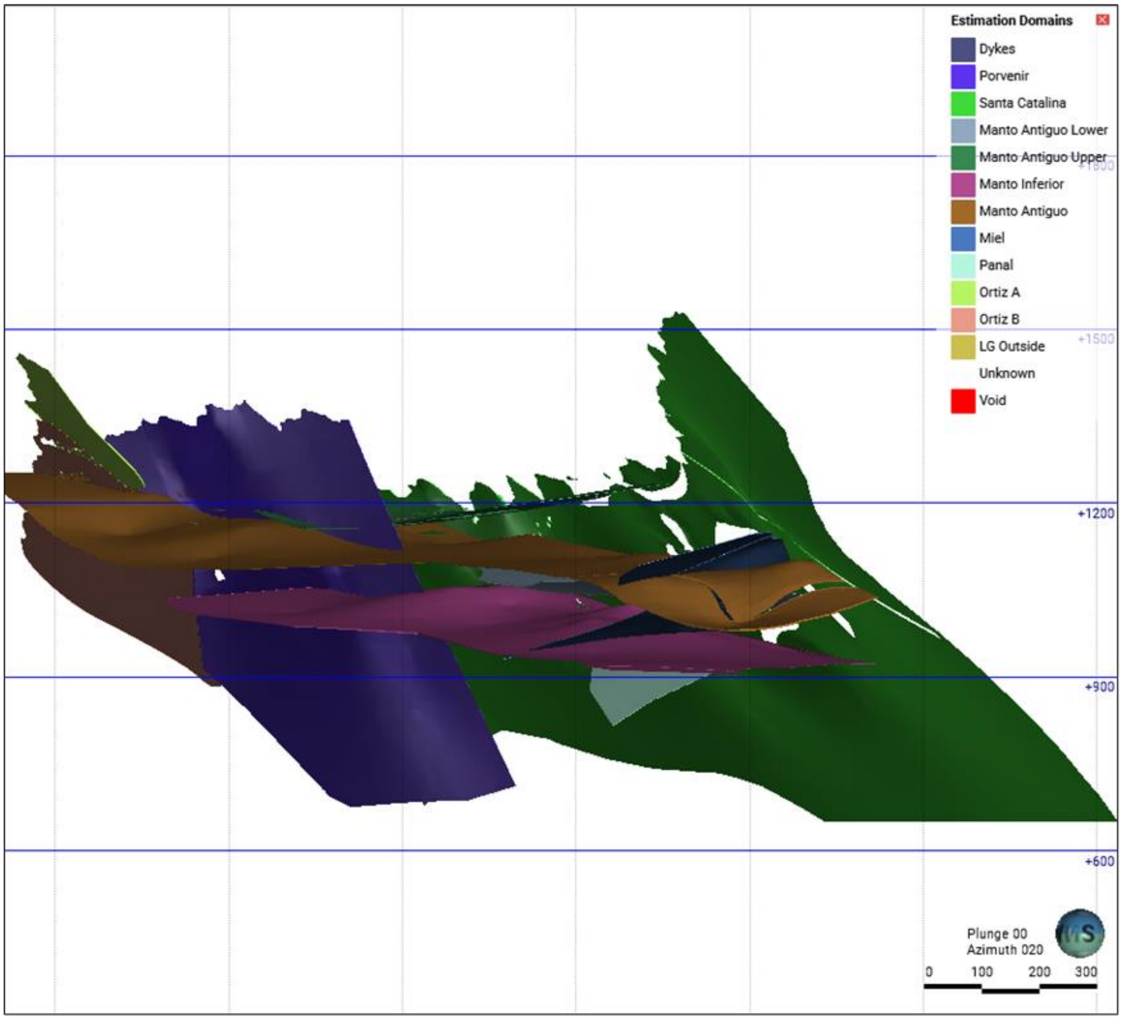
Lithological model

A complete geological model has not been created for all of the lithological units on the Property but has restricted the interpretation to the key mineralized domains. The veins and manto zones at Zancudo are sufficiently understood well enough through drilling, mapping, and prior mining to inform a geological model to a sufficient level of confidence to define Mineral Resources i.e. continuity is established along strike and downdip. The host rock and surrounding material is less well understood due to limited drilling and is not known to host mineralization in quantities that meet economic cutoffs, and therefore the QP made the decision not to model at this stage. During future studies this should be considered to better understand potential ground conditioning for mining during any engineering study.

In the absence of new information, drilling or mapping, a mineralization model of the main known features has been created using more current methods than have been previously employed, specifically referring to the use of Seequent Leapfrog Geo and Leapfrog Edge to create vein solids and perform the estimations, respectively. The previous interpretation was used to provide guidance with minor changes observed in the geometry and volumes when implicit modeling algorithms were employed but overall, the modeled lithology has the same thickness and shape.

Based on statistical analysis of mineralized samples within close proximity of the modeled veins, new samples were incorporated into the volumes that had been omitted in prior iterations. These samples were generally low grade but influential in analyzing true width and geometric variation in the structures. It should be noted that a larger property wide geological model has not been created at this early stage of the project, but maybe needed for future engineering studies. The Lithology is best represented at an oblique angle as demonstrated below in Figure 14-3 which shows the various vein zones.

Additionally, dike material was modeled and subtracted from the veins and manto material. The current interpretation is that the dikes intruded in late stage and displaced the existing vein material. The dike material is not shown in Figure 14-3 so the veins appear to have missing zones.



Source: SRK 2023

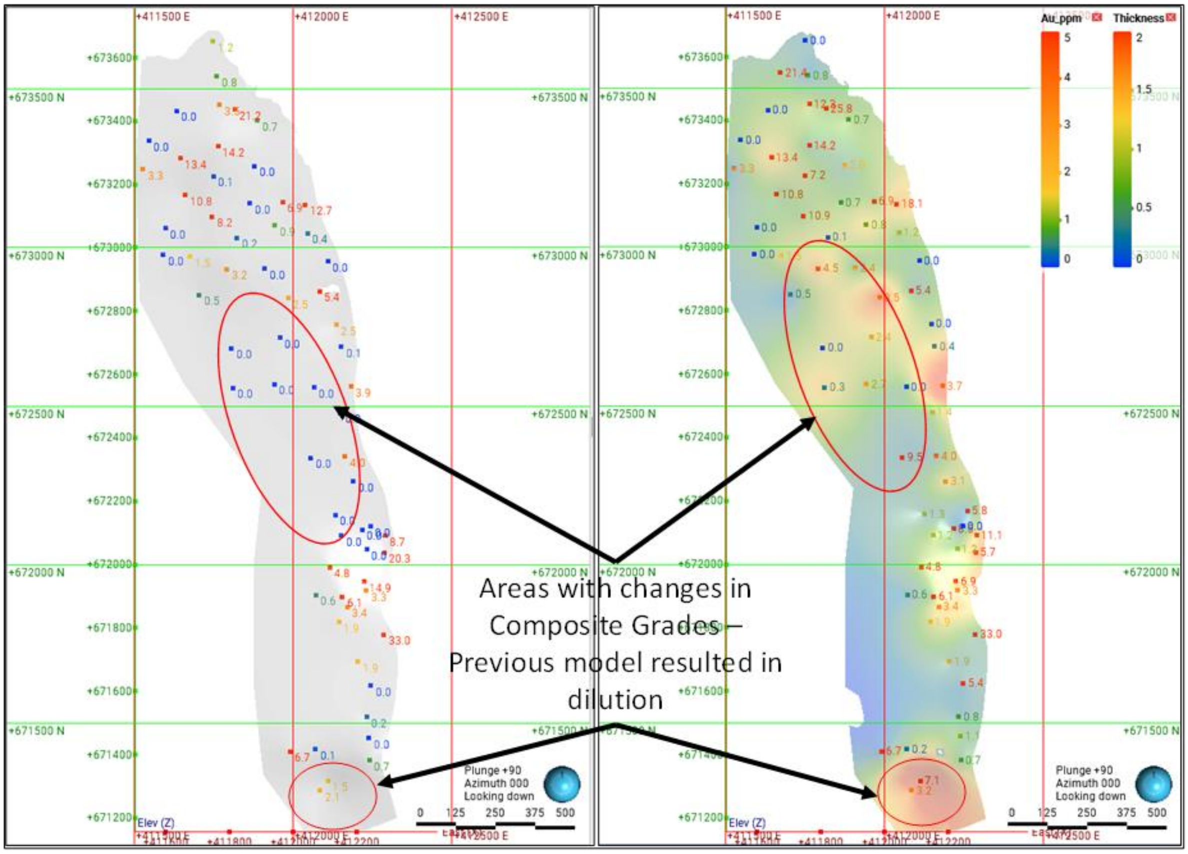
Figure 14-3: Vein Zones Oblique Angle North-Northeast with Zero Dip (Azimuth 20, Dip 0)

<u>Mineralization Model</u>

Mineralization associated with structures in the Zancudo deposit was strictly based on vein and manto geometry. Updated mineralization wireframes were created based on the revised intersections selected as part of the validation process discussion in Section 12.2 of this report. The mineralization model to the vein and manto domains of the Project.

Previous models defined a low-grade halo around this mineralization, which is understood to represent more disseminated mineralization with lower geological continuity in a less preferential host material. This zone was made into a domain by use of implicit numerical modeling and used as an estimation domain. Given the lower confidence in this domain, the domain is considered to be poorly understood and therefore was only completed to a conceptual level. During the current process, sufficient geological review has been relied upon to capture portions of this mineralization as part of the reinterpretation. All other mineralization was considered to lack sufficient continuity with sufficient confidence to support mineral resources, and therefore has been excluded from the current update. Further drilling will be required to define this domain.

A further validation through visual comparison of the selected composites was evaluated, for each domain, as well as an analysis of the wireframe volumes, to ensure no significant bias from the revised model. An example of the visual comparison in composite grades (gold Au g/t), for Manto Antiguo is shown in Figure 14-4.



Source: SRK 2023

Figure 14-4: Plan View Showing Dec22 vs. July23 Composites (Au, g/t) for Manto Antiguo

A final review composites is considered to be reasonable and from visual inspection on the sample lengths no significant bias was created during the process, with most changes being incrementation along the boundary of the previous estimates, with the exception of a few intersections which demonstrated more significant changes during the validation process. A comparison of the volume per domain is presented in Table 14-2. The QP considers there to be minimum overall change in the wireframe volumes based on the global comparison (3%), however a review of the individual veins shows there is more variability. The most significant change in terms of percentage is within the Ortiz B vein, which has increase some 68%, but this is also due to the relatively small size of this domain.

Table 14-2: Comparison of Changes in Volume per Domain between Dec22 and July23

Domain	DEC22_MRE WF		07/2023 WF		Changes (Volume)	
	Area (m^2)	Volume (m^3)	Area (m^2)	Volume (m^3)	Volume Change	Change (%)
Manto Antiguo	2,358,800	1,463,100	2,349,300	1,349,000	(114,100)	-8
Manto Antiguo Lower	914,540	500,350	905,190	469,320	(31,030)	-6
Manto Antiguo Upper	827,130	460,680	806,580	543,129	82,449	18
Manto Inferior	1,940,500	1,200,500	1,946,800	1,147,500	(53,000)	-4
Miel	715,850	389,790	715,130	411,090	21,300	5
Ortiz A	147,640	150,400	150,780	179,380	28,980	19
Ortiz B	322,680	88,591	321,370	148,990	60,399	68
Panal	96,251	35,288	104,830	43,520	8,232	23
Porvenir	1,532,500	552,140	1,597,900	536,520	(15,620)	-3
Santa Catalina	4,605,300	2,199,000	4,428,900	2,017,800	(181,200)	-8
Subtotal	**13,461,191**	**7,039,839**	**13,326,780**	**6,846,249**	**(193,590)**	**-3**

Source: SRK 2023

A boundary analysis has not been completed between the host rocks and the veins / manto mineralization. All vein material honored hard boundaries for estimation purposes (to be discussed further in Section 14.5).

14.3 ESTIMATION DOMAIN ANALYSIS

The final estimates for the 2023 MRE efforts are limited to the vein and mantos shapes, the previous low-grade domain as presented in the December 31, 2022, model has been removed from the current estimate. Where possible the previous manto and vein models have been adjusted to incorporate additional mineralization which was located in close proximity to the previous models or excluded from the current model due a lack of continuity. A number of structures outside of the current domains remains but further test work will be required to test these domains. It should be highlighted that there is no guarantee that further exploration result in Mineral Resources outside of the known mineralization.

The current model has focused on the known mineralization which has been update based on the procedures discussed in sections 12.2 and 14.2.

The statistical analysis for each is demonstrated in Table 14-3. The populations for gold and silver were used as the benchmarks for estimation accuracy. The gold population is better-behaved (less variability) than silver as indicated by the Coefficient of Variation (CoV) in each domain. The CoV is a unitless measure of stationarity calculated by dividing the SD by the mean. A CV of < approximately 1 to 1.5 is considered a reasonable population for estimation. When the CV approaches two or three, the population is expected to produce a less reliable estimate. As demonstrated in below, all domains show elevated CoV's, with silver being higher in all domains than gold.

Table 14-3: Comparison of Summary Statistics of Raw Sampling per Domain between Models

Name	December 2022				July 2023				Change (Mean) (%)
	Length (m)	Mean (g/t)	Std Dev	CoV	Length (m)	Mean (g/t)	Std Dev	CoV	
Ag (g/t)	40,201	1.8	28.8	15.8	39,164	1.7	18.5	10.8	
Manto Antiguo	93	64.7	181.7	2.8	93	84.1	124.6	1.5	30
Manto Antiguo Upper	18	16.7	32.9	2.0	28	24.9	44.2	1.8	49
Manto Antiguo Lower	52	19.9	70.3	3.5	50	49.3	121.9	2.5	147
Manto Inferior	64	31.4	107.7	3.4	68	39.5	101.9	2.6	26
Miel	40	37.7	110.3	2.9	40	40.6	99.3	2.4	8
Santa Catalina	180	50.1	180.8	3.6	156	52.4	110.5	2.1	4
Porvenir	43	24.3	53.1	2.2	31	37.4	70.0	1.9	54
Panal	6	78.7	263.3	3.3	9	123.3	229.3	1.9	57
Ortiz A	15	51.8	94.6	1.8	15	52.2	90.1	1.7	1
Ortiz B	5	111.3	229.0	2.1	8	105.2	222.2	2.1	-5
LG Outside	4,706	4.4	38.0	8.7	Not used				

Name	December 2022				July 2023				Change (Mean) (%)
	Length (m)	Mean (g/t)	Std Dev	CoV	Length (m)	Mean (g/t)	Std Dev	CoV	
Au (g/t)	40,201	0.11	1.4	12.0	39,164	0.1	0.9	8.0	
Manto Antiguo	93	3.5	6.1	1.8	93	4.9	5.8	1.2	40
Manto Antiguo Upper	18	0.5	0.8	1.8	28	0.8	1.0	1.1	83
Manto Antiguo Lower	52	1.2	3.0	2.4	50	2.7	3.5	1.3	117
Manto Inferior	64	2.1	5.2	2.5	68	2.6	3.8	1.4	25
Miel	40	3.2	7.3	2.3	40	3.4	6.7	1.9	8
Santa Catalina	180	2.2	7.2	3.3	156	2.7	4.2	1.6	22
Porvenir	43	1.5	3.8	2.6	31	2.7	5.9	2.2	81
Panal	6	2.8	13.7	4.9	9	6.5	12.2	1.9	134
Ortiz A	15	4.7	5.5	1.2	15	4.7	4.8	1.0	1
Ortiz B	5	6.3	6.2	1.0	8	6.5	6.1	0.9	4
LG Outside	4,706	0.3	1.8	5.8	Not used				

Source: SRK 2023
CoV: Coefficient of variability
g/t: grams per tonnes
StdDev: Standard deviation

14.4 ESTIMATION METHODOLOGY

The MRE process was completed using the initial geological models provided by Zancudo geological staff and refined by the QP as discussed in Section 5. The Company provided an exploration database with logging indicating the main geological features and units. In addition to the database, The QP has worked with the preliminary geological interpretations. Minor alterations were made accordingly.

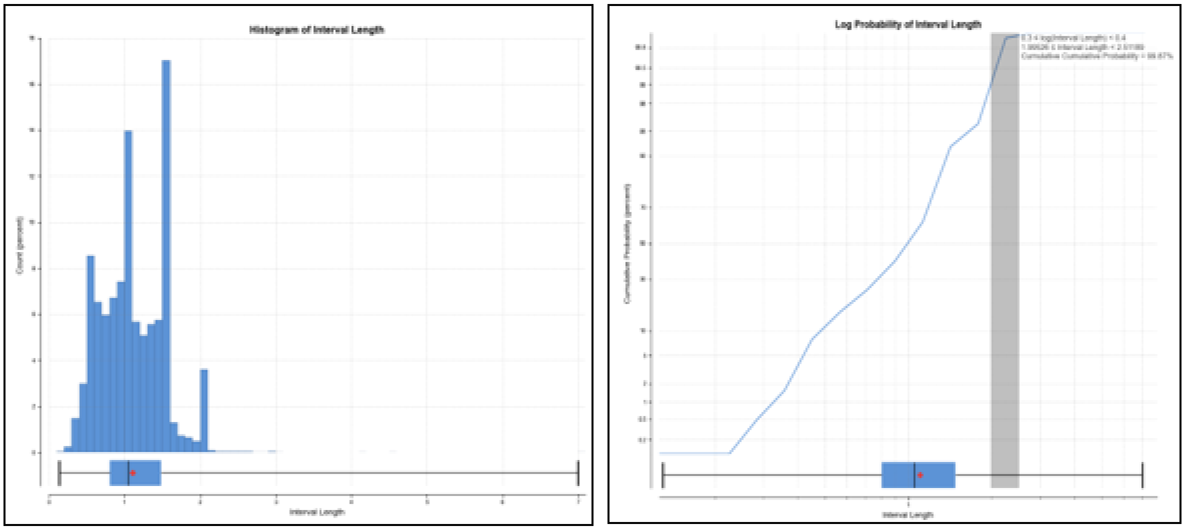
The resource estimation methodology involved the following procedures:

- Database compilation and verification
- Construction of wireframe models for the fault networks and centerlines of mining development per vein
- Definition of resource domains
- Data conditioning (compositing and capping) for statistical analysis, geostatistical analysis
- Variography
- Block modeling and grade interpolation
- Resource classification and validation
- Assessment of “reasonable prospects for economic extraction” and selection of appropriate reporting cut-off grades (CoG)
- Preparation of the Mineral Resource Statement

14.5 ASSAY CAPPING AND COMPOSITING

14.5.1 COMPOSITING

Composites were created to stabilize the deposit variability as well as represent as many samples as possible in each zone. Missing assay data was set to zero and composites were created at “vein width” which were length weighted. This methodology produced variable length composites a total of 99.7% were under 2 m in length (Figure 14-5). Upon compositing a review of the sample populations was performed to confirm no bias is generated from the processes. It is the QP’s opinion that the assay populations maintained their distribution and shape in a reasonable manner consistent with common behavior when going from assay scale to composite scale data. Table 14-5 and Table 14-6 demonstrate population changes for gold and silver.



Source: SRK 2023

Figure 14-5: Analysis of Sample Lengths in Assay File at Zancudo

14.5.2 OUTLIERS

High grade capping is undertaken where data is no longer considered to be part of the main population. An analysis was completed based on log probability plots, raw and log histograms which can be used to distinguish the grades at which samples have significant impacts on the local estimation and whose effect is considered extreme. It is noted that the mean grades within the different veins are sensitive to changes in the capping values. During the analysis the percentage of metal loss was tracked. The capping analysis was completed for all elements and a summary of the final capping levels is shown in Table 14-4.

Elevated CoV's indicate high variability, which was demonstrated in the poor variography that is observed in all veins. Note that from the raw statistics, even with the higher means shown in the refined new model, the CoV is often lower than previous, indicating a more-homogenous (less-variable) domain. Based on the statistical review of the updated coded samples, it was decided to maintain the composites lengths used in the previous model (set at 10 m but effectively the width of the structure) and only made a minor adjustment to the capping levels (Table 14-4) to increase the capped value from 24.0 to 25.0 g/t Au.

Table 14-4: Comparison of Capping levels used in the December 2022 and July 2023 Model

	Domain	Ag (g/t)	Au (g/t)	As (g/t)
December 2022 Model	Higher Angle Vein System	790	68	46,000
	Manto Vein System	640	24	41,000
July 2023 Model	Higher Angle Vein System	790	68	46,000
	Manto Vein System	640	25	41,000

Source: SRK 2023

Capping has been applied during the estimation process after compositing. Table 14-5 (Au) and Table 14-6 shows a comparison of the raw grades to capped composites.

Table 14-5: Gold Assay vs. Capped Composite Statistics in All Veins

AU	kz101	kz102	kz103	kz104	kz105	kz201	kz202	kz203	kz204	kz205
ASSAYS										
Count	142.00	33.00	74.00	107.00	70.00	244.00	50.00	18.00	22.00	19.00
Mean	4.89	0.84	2.65	2.63	3.46	2.70	2.67	6.49	4.74	6.53
Std Dev	6.71	1.21	6.27	5.19	7.48	7.29	6.08	19.82	5.48	5.80
CoV	1.37	1.44	2.37	1.97	2.16	2.70	2.28	3.05	1.16	0.89
Variance	45.00	1.46	39.28	26.96	55.99	53.17	36.97	393.02	30.03	33.65
Minimum	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum	34.51	3.91	41.86	29.98	38.89	68.96	28.00	91.07	20.50	20.10
COMPOSITES										
Count	67.00	19.00	41.00	44.00	27.00	67.00	30.00	7.00	6.00	8.00
Mean	4.61	0.89	2.05	2.73	4.61	2.70	2.67	6.29	5.48	8.56
Std Dev	5.84	0.98	3.17	3.95	8.48	5.20	5.49	12.34	7.65	6.34
CV	1.27	1.11	1.54	1.45	1.84	1.92	2.06	1.96	1.40	0.74
Variance	34.10	0.97	10.06	15.57	71.84	27.00	30.15	152.36	58.59	40.14
Minimum	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.61
Maximum	25.00	3.38	13.13	18.89	32.68	36.09	28.00	33.90	19.82	20.10
VARIANCE										
% Difference	**-5.6%**	**5.8%**	**-22.4%**	**3.6%**	**33.2%**	**0.1%**	**0.2%**	**-3.1%**	**15.5%**	**31.2%**

Source: SRK 2023

Table 14-6: Silver Assay vs. Capped Composite Statistics in All Veins

AG	kz101	kz102	kz103	kz104	kz105	kz201	kz202	kz203	kz204	kz205
ASSAYS										
Count	142	33	74	107	70	244	50	18	22	19
Mean	84.1	24.9	49.3	39.5	40.9	52.4	37.4	123.3	52.2	105.2
Std Dev	182.5	48.6	226.8	114.2	115.8	183.2	71.7	331.8	95.0	210.9
CoV	2.2	2.0	4.6	2.9	2.8	3.5	1.9	2.7	1.8	2.0
Variance	33,304.8	2,359.9	51,444.5	13,042.2	13,399.6	33,580.2	5,147.5	110,073.6	9,019.1	44,463.3
Minimum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Maximum	1,796.0	174.0	2,312.0	1,268.0	751.0	1,880.0	276.0	1,436.0	424.0	782.0
COMPOSITES										
Count	67.0	19.0	41.0	44.0	27.0	67.0	30.0	7.0	6.0	8.0
Mean	79.4	25.6	44.3	58.7	58.5	50.5	35.9	135.1	88.3	163.6
Std Dev	125.5	43.5	116.5	136.4	138.0	113.7	64.4	232.0	160.8	268.6
CV	1.6	1.7	2.6	2.3	2.4	2.2	1.8	1.7	1.8	1.6
Variance	15,746.1	1,892.2	13,576.5	18,599.1	19,033.6	12,923.3	4,146.0	53,810.1	25,853.6	72,146.1
Minimum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	14.2
Maximum	640.0	170.5	560.3	640.0	663.4	790.0	276.0	592.7	409.7	782.0
VARIANCE										
% Difference	**-5.6%**	**2.9%**	**-10.2%**	**48.7%**	**42.9%**	**-3.5%**	**-3.8%**	**9.6%**	**69.1%**	**55.5%**

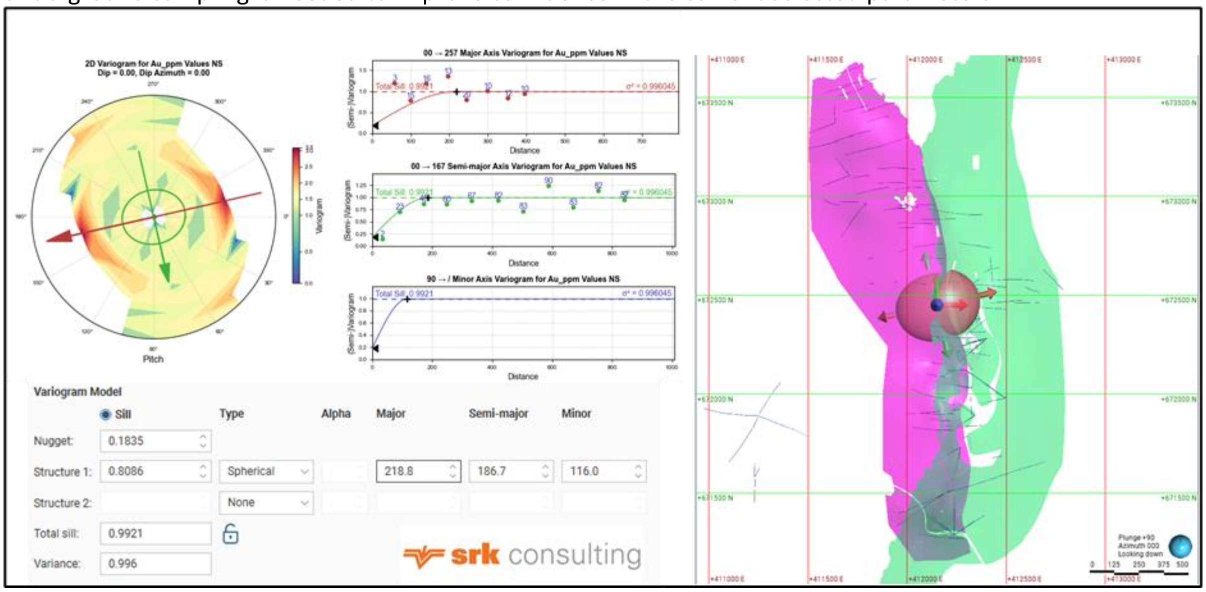
Source: SRK 2023

14.6 VARIOGRAM ANALYSIS AND MODELING

Geostatistical properties of the domains were reviewed using Leapfrog variogram analysis, this included review of the radial plot (to define the general orientation), then definition of the major, semi major and minor axis variograms.

Elevated CV's indicate high variability which was demonstrated in the poor variography that is observed in all veins. Further, low sample counts make variogram analysis difficult. An example variogram from Santa Catalina vein is shown Figure 14-6.

Low sample populations and relatively wide sample spacing the analysis resulted in poor variograms with limited structure. Therefore, Inverse Distance (ID) modeling techniques were used for the estimation process. Infill drilling combined with potential underground sampling is needed to improve confidence in the current selected parameters.



Source: SRK 2023

Figure 14-6: Example of Variogram Analysis for Manto Antiguo Gold with a CV of 1.3

14.7 BLOCK MODEL

Leapfrog Edge was used to produce the block models for the Project. The procedure involved construction of wireframe models for the fault networks, key geological/mineralization domains, data conditioning (compositing and capping) for statistical analysis, geostatistical analysis, variography analysis, block modeling and grade interpolation followed by validation.

The block model was estimated into 20 m cubed parent blocks. Parent blocks were sub-blocked into 64 divisions along each axis creating ~262,000 sub-blocks for each block that sits on the border of each vein. Sub-blocking was used to accurately reflect the defined mineralization and lithological models, with a sub-block size of 0.3125 m x 0.3125 m x 0.3125 m used to reflect the wireframes (based on Leapfrog's method of splitting parent cells by equal division).

Model extents are listed in Table 14-7.

Table 14-7: Block Model Origin, Extents, and Block Sizes

	Easing (X)	Northing (Y)	Elevation (Z)
Base Point	411,400 m	671,000 m	1,440 m
Extension	1,300 m	3,000 m	860 m
Parent Block Dimensions	20 m	20 m	20 m
Sub-Cell Size	0.3125 m	0.3125 m	0.3125 m

Source: SRK 2023

14.8 GRADE ESTIMATION

Grade estimation has been based on block dimensions of 20 m x 20 m x 20 m, for the 2023 model. The block size reflects the QP's opinion on a representative size variation for any underground smallest mining units (SMU). The primary estimation has been completed using Inverse Distance methodology using a power of 2.5 for all domains.

The search ellipses follow the typical orientation of the mineralized structures, and where appropriate, were aligned along higher-grade plunging features within the mineralized domains where possible. Statistical characteristics such as search volume used, variance measures, and number of samples used in an estimate, were also computed, and stored in each individual block for descriptive evaluations. Estimation parameters are listed below for each domain in Table 14-8.

Table 14-8: Search Parameters by Domain

Domain	Ellipsoid Ranges			Variable Orientation	Number of Samples		Drillhole Limit
	Maximum (m)	Intermediate (m)	Minimum (m)		Minimum	Maximum	Max Samples per Hole
Manto Antiguo	250	250	60	yes	2	7	1
Manto Antiguo Lower	250	250	60	yes	2	7	1
Manto Antiguo Upper	200	200	60	yes	2	7	1
Manto Inferior	150	150	60	yes	2	7	1
Miel	300	150	150	yes	2	7	1
Ortiz A	200	200	60	yes	2	7	1
Ortiz B	200	200	60	yes	2	7	1
Panal	150	150	60	yes	2	7	1
Porvenir	300	250	60	yes	2	7	1
Santa Catalina	200	200	20	yes	2	7	1

Source: SRK 2023

14.9 DENSITY

Density

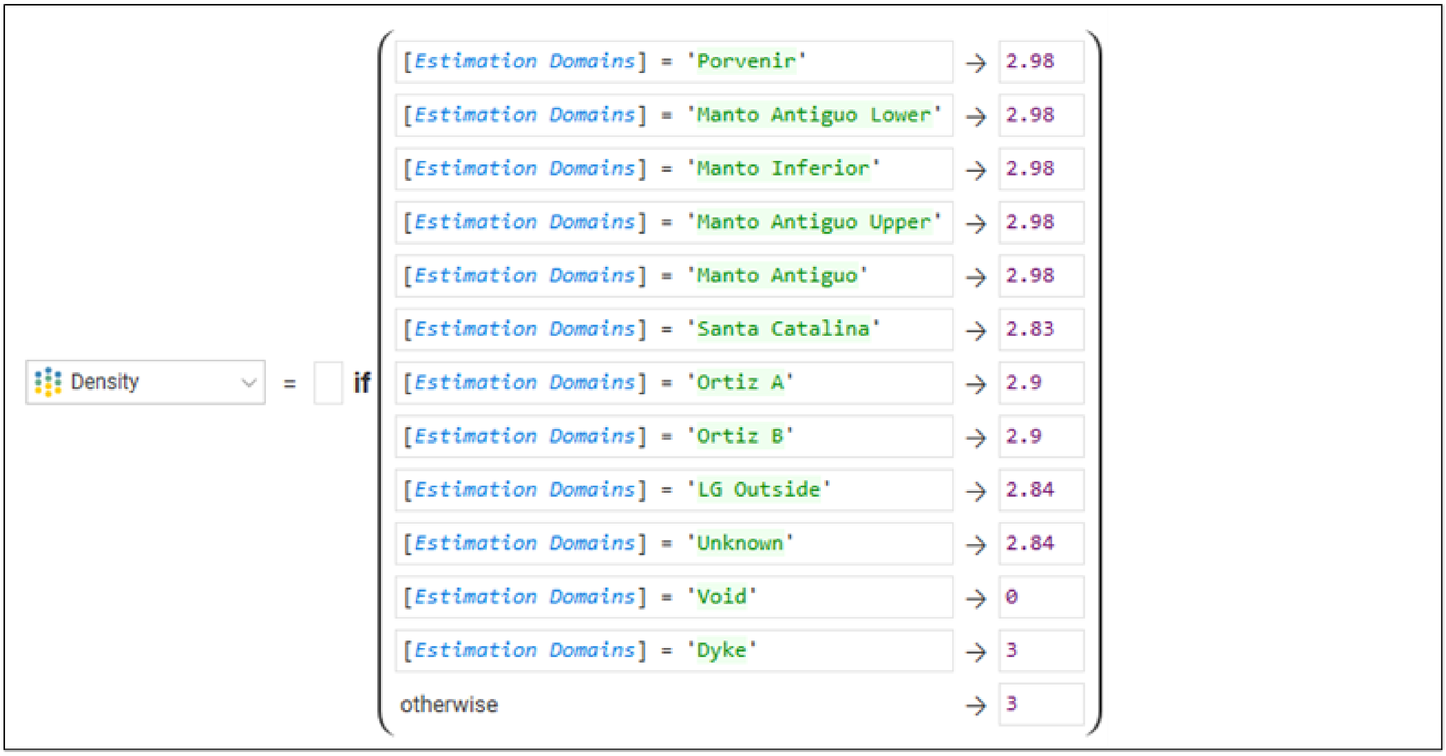
A total of 222 values were included in the density analysis which consisted of samples from most domains in the model. Only 60 samples lie within the vein and mantos solids, creating an area of risk to the current mineral resource. These samples have been coded by the final estimation domain models for final analysis. It should be noted this may result in some splitting of samples and therefore the sum of the s Average Density by Company and Estimation Domain from Mineralization Model samples may differ slightly from the original. A breakdown of the average density per domain is shown in Table 14-9.

Table 14-9: Average Density by Company and Estimation Domain from Mineralization Model

Name	Count	Sum Length (m)	Mean (g/cm^3)
Miel	7	0.77	3.15
Manto Inferior	6	0.51	3.14
Manto Antiguo	15	1.43	2.94
Manto Antiguo Lower	1	0.13	2.65
Porvenir	2	0.12	2.39
Subtotal	**31**	**0.98**	**2.98**
Santa Catalina	24	2.02	2.83
Subtotal	**24**	**2.02**	**2.83**
Ortiz B	3	0.20	2.93
Ortiz A	2	0.21	2.86
Subtotal	**5**	**0.20**	**2.90**
LG Outside	24	2.58	2.83
Unknown	138	17.82	2.85
Subtotal	**162**	**0.27**	**2.84**

Source: SRK 2023

Density has been applied in the final model based on an average density by unit based on grouped statistics for the Manto style mineralization, veins and a minor change for the main Santa Catalina, as summarized in Figure 14-7.



Source: SRK 2023

Figure 14-7: Extract from Leapfrog Edge Density Assignment Calculations

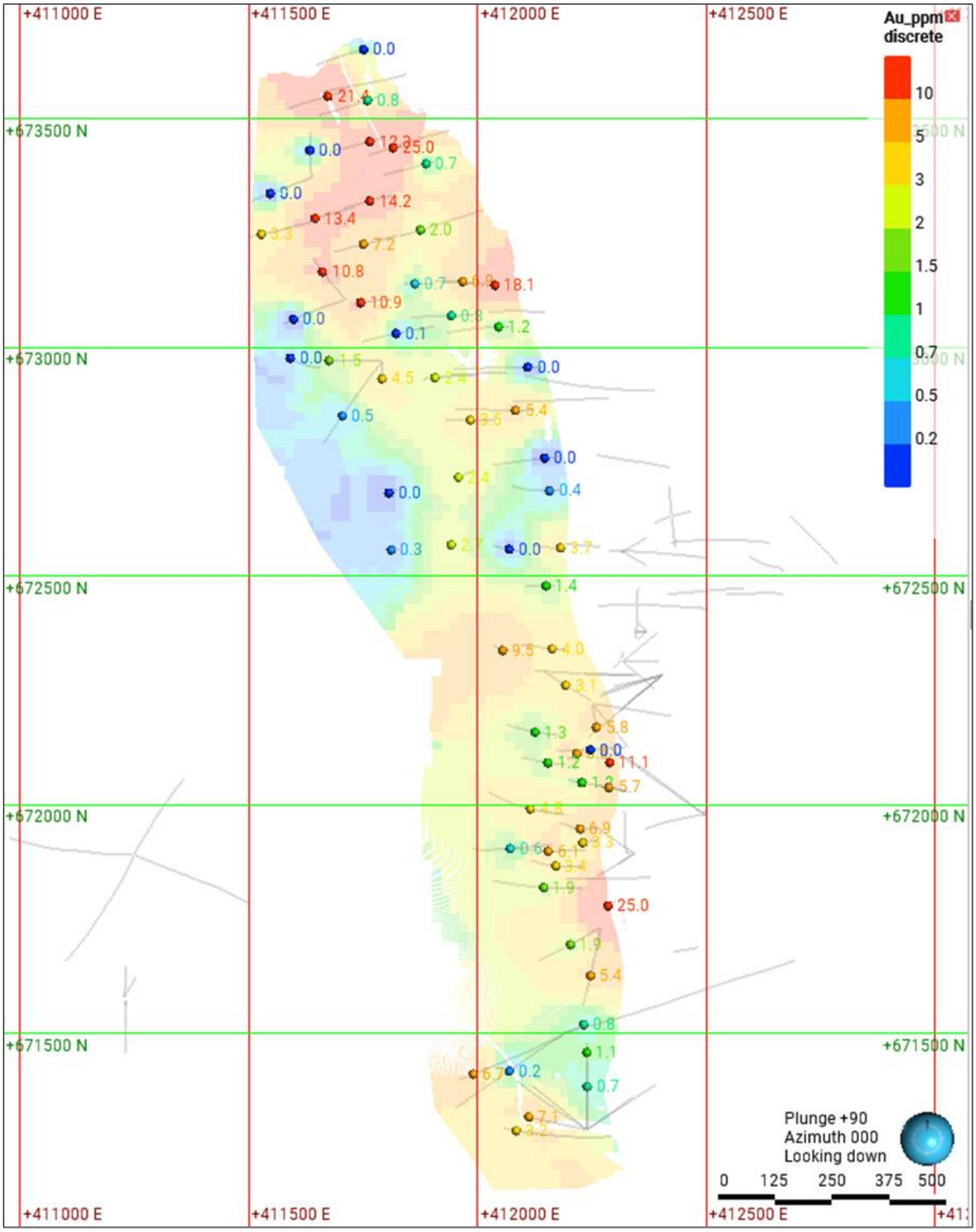
14.10 MODEL VALIDATION

All IDW estimations in individual domains were validated using visual comparison of grade to nearby sampling, statistical population comparisons, and swath plots comparing estimates to drilling and a Nearest Neighbor (NN) estimate.

14.10.1 VISUAL COMPARISON

Estimation results were verified by visual comparison of samples and estimated blocks. An example is shown below in Figure 14-8 for the gold grades in the Manto Antiguo domain. Note, that cool colors for gold grades in samples (spheres) are paired with areas of cool colors in the block model. The same is true for warmer colors, with a reasonable level of gradation between the two relatives to the level of sampling. More drilling may result in more variability in the future. This visual check was performed for each vein individually, to ensure reasonable estimations with as few artifacts as possible. Artifacts are defined as areas in the model where mathematically the estimation calculation produces improbable grade domains.

The visual comparison of the composites to the estimated grades shows no obvious bias with a fair reflection of both the high and low-grade samples. Given the variable sample coverage the QP also inspected the grade continuity which is supported by high-grades in the areas of the previous mining activity. It is the QP opinion that a reasonable correlation between the block estimates and composite data can be observed.



Source: SRK 2023

Figure 14-8: Plan showing Composite Grades (Au, g/t) vs. Grade Estimates for Manto Antiguo

14.10.2 COMPARATIVE STATISTICS

A comparative statistical analysis was completed for the validation in two ways, initially through exports of the global estimates which have been compared to the raw and declustered statistics, and via reporting of the weighted tonnage and grades for the ID and NN estimate. It is noted that each domain typically validated within 10% of NN estimates for gold with the exception of domain 103 (Manto Antiguo Lower), which reported lower grades in the NN model in the order of 16.3%, but the comparison to the capped composites within this domain were considered reasonable. Table 14-10 summarizes the results of the statistical comparison for gold and silver versus the estimates.

Table 14-10: Percent Difference Composites vs IDW vs NN for Gold and Silver

	Statistic	AU (g/t)				% Diff	AG (g/t)				% Diff
		Comp	Declust	ID Est	NN Est		Comp	Declust	ID Est	NN Est	
101	Mean	4.61	4.48	4.12	4.05	1.8%	79.41	79.62	66.14	69.11	-4.3%
	Std Dev	5.80	5.76	3.53	4.80		124.54	124.60	71.72	110.56	
102	Mean	0.89	0.89	0.88	0.89	-2.0%	25.58	25.58	27.32	30.41	-10.2%
	Std Dev	0.96	0.96	0.78	1.02		42.34	42.34	34.85	50.92	
103	Mean	2.05	1.76	2.22	1.91	16.3%	44.32	32.35	41.57	26.94	54.3%
	Std Dev	3.13	2.75	2.07	2.27		115.09	90.29	59.13	75.08	
104	Mean	2.73	2.56	2.22	2.27	-2.0%	58.74	59.34	44.44	44.58	-0.3%
	Std Dev	3.90	3.84	1.87	2.76		134.82	139.17	68.32	99.35	
105	Mean	4.61	3.90	4.03	3.78	6.6%	58.47	54.27	53.91	54.32	-0.7%
	Std Dev	8.32	7.54	4.80	5.41		135.38	136.97	80.67	114.73	
201	Mean	2.70	2.82	1.93	1.93	0.3%	50.54	49.07	36.42	40.34	-9.7%
	Std Dev	5.16	5.46	2.08	3.08		112.83	108.50	70.53	90.69	
202	Mean	2.67	2.83	2.71	2.79	-2.6%	35.94	38.01	38.39	37.91	1.3%
	Std Dev	5.40	5.52	3.93	5.35		63.31	64.15	44.83	64.69	
203	Mean	6.29	5.29	5.67	6.34	-10.6%	135.14	115.51	97.50	109.04	-10.6%
	Std Dev	11.43	10.61	6.20	11.88		214.76	202.50	112.99	214.23	
204	Mean	5.48	6.03	4.33	4.50	-3.8%	88.32	98.17	57.51	57.59	-0.1%
	Std Dev	6.99	7.10	3.86	5.10		146.78	152.58	76.35	99.62	
205	Mean	8.56	8.64	7.60	7.19	5.8%	163.56	163.64	123.72	97.44	27.0%
	Std Dev	5.93	5.95	4.49	6.37		251.25	252.77	133.09	192.22	

Source: SRK 2023

Table 14-11 compares the weighted estimates for ID and NN which show globally the ID estimates approached a <1% difference from NN values. Overall confidence in the estimate is maintained as gold is the primary contributor to block value.

Table 14-11: Summary report Inferred Material at zero cut-off

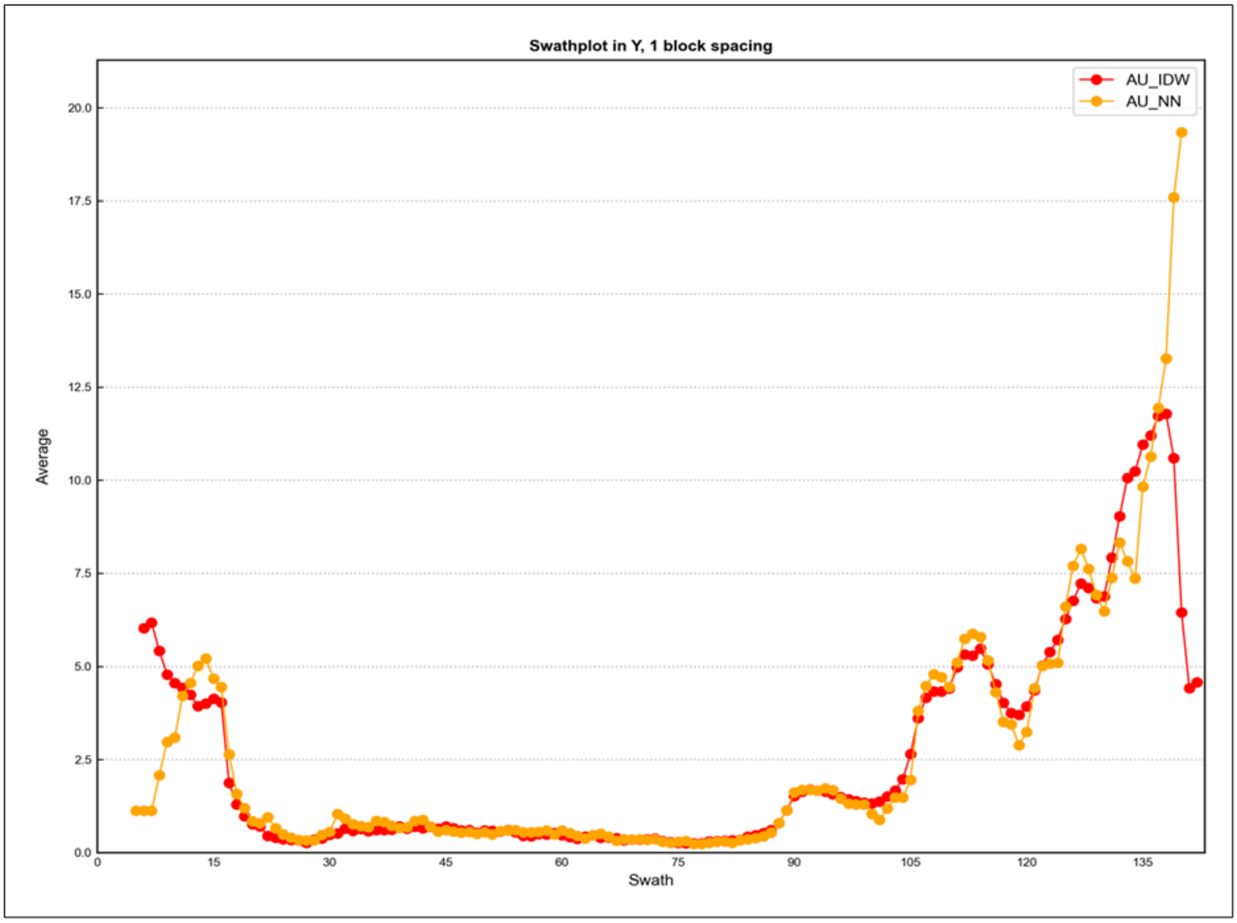
Estimation Domains	Class_V1	Mass (kt)	Average Value			
			AU_IDW (ppm)	AU_NN (g/t)	AG_IDW (ppm)	AG_NN (g/t)
Manto Antiguo	Inferred	3,312	4.30	4.33	69.2	72.4
Manto Antiguo Upper	Inferred	896	0.96	1.00	30.8	32.9
Manto Antiguo Lower	Inferred	1,019	2.62	2.67	49.9	42.9
Manto Inferior	Inferred	1,983	2.40	2.44	45.3	46.8
Miel	Inferred	1,179	4.07	3.71	54.7	50.3
Santa Catalina	Inferred	3,005	1.90	1.85	43.5	42.1
Porvenir	Inferred	1,078	2.75	2.75	39.5	38.5
Panal	Inferred	94	6.37	8.19	114.3	140.2
Ortiz A	Inferred	508	4.32	4.47	57.0	56.3
Ortiz B	Inferred	327	7.54	7.12	121.1	100.8
Total	**Inferred**	**13,401**	**3.08**	**3.06**	**53.3**	**52.8**

Source: SRK 2023

14.10.3 SWATH PLOTS

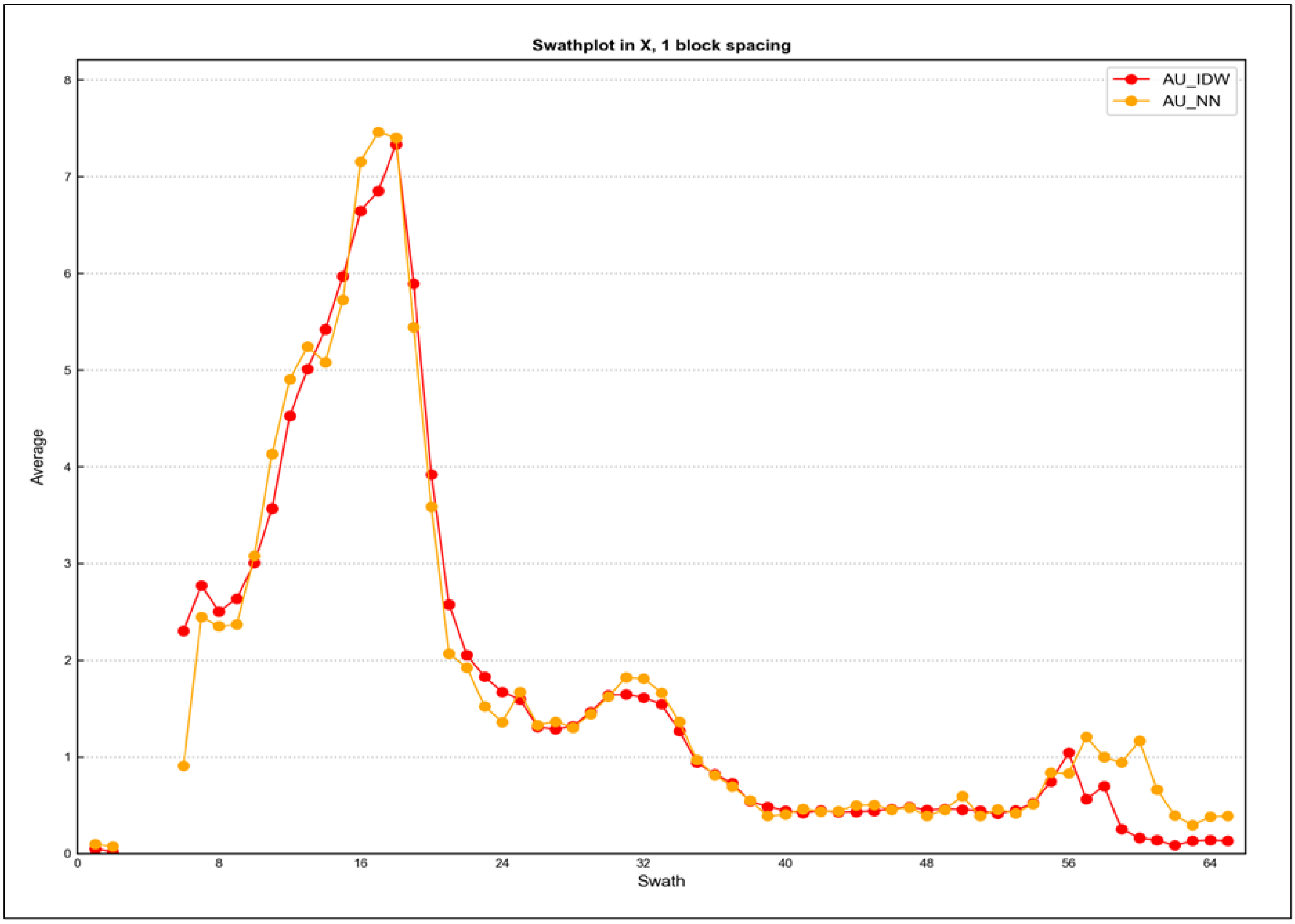
The more local check between the blocks and the composites is made using swath plots. The comparisons show both the varying means of the block and composites (declustered) along swaths or slices through the model, as well as the amount of data supporting the estimate in each swath. Values below in Figure 14-9 and Figure 14-10, show NN vs ID values along the northerly and easterly direction respectively, for the combined estimate in all veins.

Values were also compared in individual veins between NN and ID, which indicated reasonable correlation between the estimates, which were also compared back to the capped composites to ensure consistency. It is the QP's opinion that the swath analysis demonstrated a reasonable correlation with both high- and low-grade areas reflected in the ID estimates. Overall, no significant bias was identified during the analysis.



Source: SRK 2023

Figure 14-9: SWATH (Sectional Analysis) of Nearest Neighbor vs. Block Estimates (Manto Antiguo) by Northing Section Line (20-m Increments)

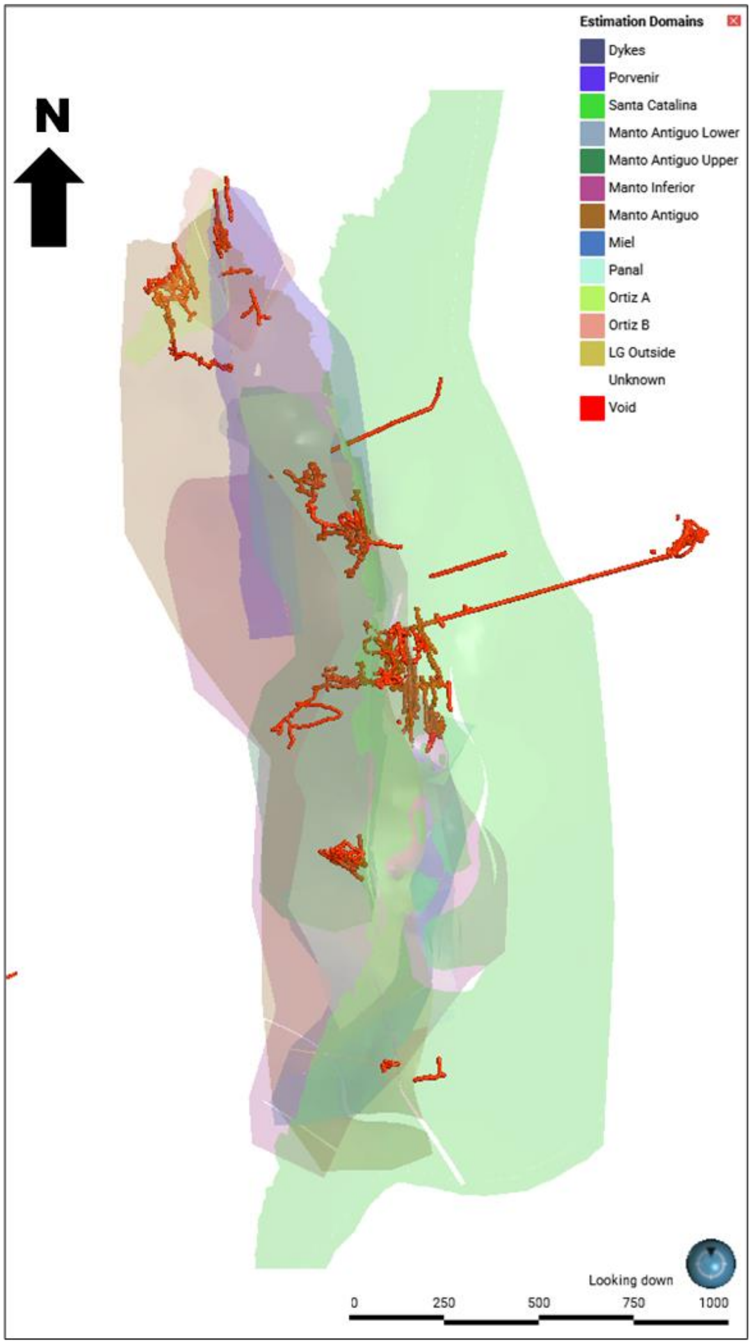


Source: SRK 2023

Figure 14-10: SWATH (Sectional Analysis) of Nearest Neighbor vs. Block Estimates (Manto Antiguo) by Easting Section Line (20-m Increments)

<u>Depletion</u>

Depletion is based on digitized maps (level plans) provided by Denarius. Given the historical nature of the mining, no 3D survey of the mine currently exists and will not be possible until the mine is back in production. The maps provided by the company were used to create wireframes incorporating a 5 m area around all lines. A singe depletion model was created using the same prototype as the geological and mineralization models. Overall, the depletion model accurately reflects the information provided while allowing for a margin of error on the conservative side. There is some risk that these maps do not accurately reflect complete picture of mined out areas but given the lack of contradictory information, the QP considers it reasonable for the definition of the current Mineral Resources. An isometric view of the depletion model is shown in Figure 14-11. For expediency and model confidence, all material within the void volume was sterilized (grades set to zero) and assigned a density of zero



Source: SRK 2023

Figure 14-11: Plan Showing Location of Underground Mining, Based on the Digitized Development

14.11 RESOURCE CLASSIFICATION

No changes have been made to the classification criteria as applied to the December 31, 2022 estimate. It remains the QP's opinion that the Zancudo deposit currently only supports a classification of "Inferred" based on a variety of poorly understood inputs to the study. Block model quantities and grade estimates for the Project were classified according to the CIM Definition Standards for Mineral Resources and Mineral Reserves (May 2014).

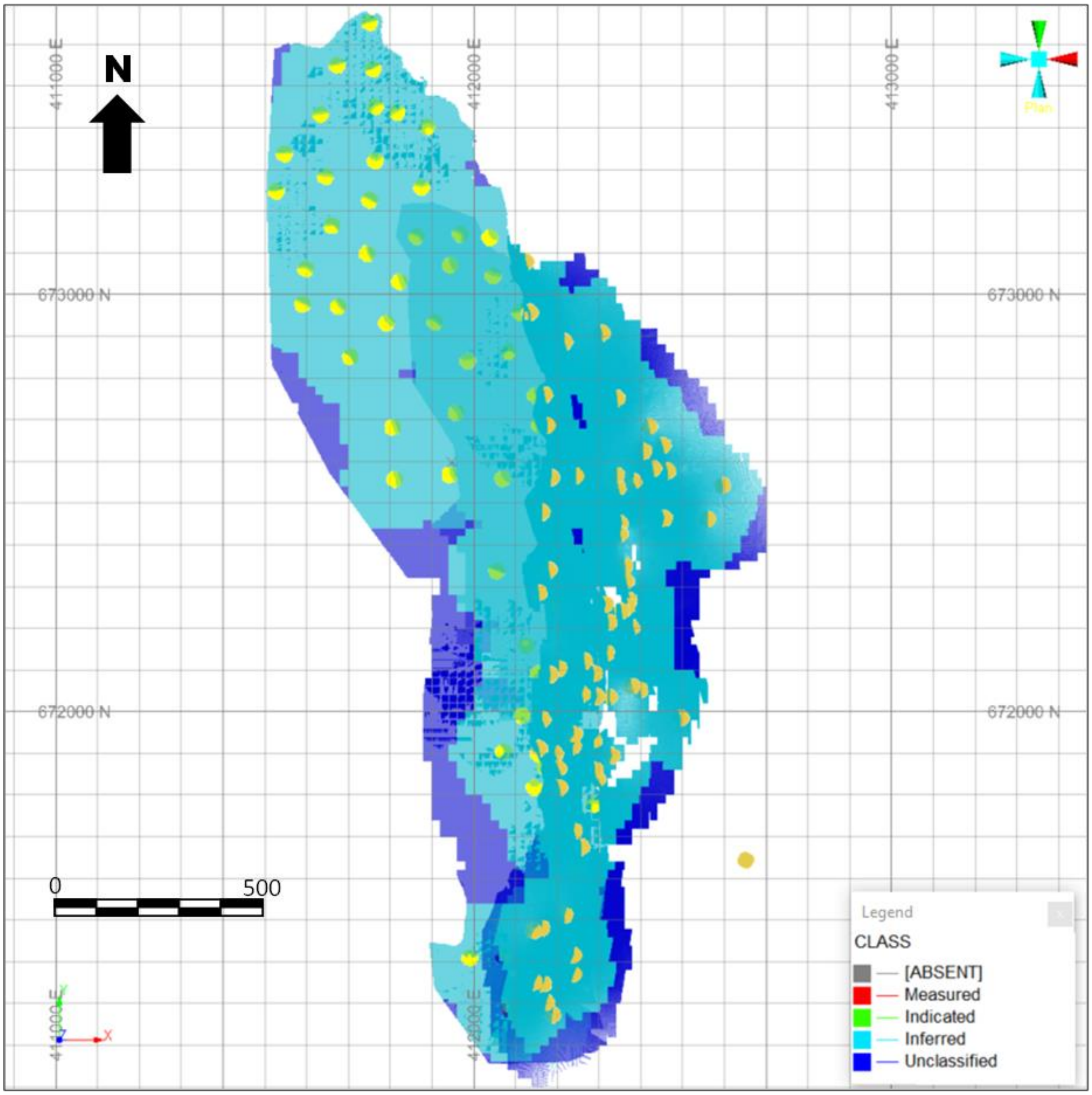
Mineral Resource classification is typically a subjective concept. Industry best practices suggest that classification should consider the confidence in the geological continuity of the mineralized structures, the quality and quantity of exploration data supporting the estimates, and the geostatistical confidence in the tonnage and grade estimates. Appropriate classification criteria should aim to integrate both concepts to delineate regular areas at similar resource classification.

Data quality, drillhole spacing and the interpreted continuity of grades controlled allowed the QP to classify the Project currently in the Inferred Mineral Resources category (Figure 14-12). A limitation to the declaration of Indicated Mineral Resources is a lack of knowledge related to the potential recoveries for several key elements, density data, and drill spacing appropriate to grade variance. For the purpose of this estimate, the QP has used bench marked assumed recoveries, while the current metallurgical test work is completed. This is considered to be sufficient to place the currently defined Mineral Resources in the Inferred category.

Drill spacing varies from 75 to 150 m, depending on the vein. Variography, where it could be reasonably understood, suggests predictable variation in grade out to a range of approximately 300 m with the majority of the variance being in the first 100 m. Variability over short distances is not well understood due to the current drill spacing and infill drilling will be required to improve the understanding of the short scale variability. Better understanding of the geostatistical parameters through additional sampling could potentially increase the confidence and support application of alternative estimation techniques such as ordinary kriging (OK).

For the reasons defined above, material that met the criteria listed below was assigned as Inferred:

- Within 125 m of the closest single hole
- Which is located only in the veins or mantos
- Was informed by more than two drillholes
- Held together in cohesive zones of more than three areas of influence



Source: SRK 2023

Figure 14-12: Plan View of Inferred Domain showing Manto Antiguo and Santa Catalina vein Estimates vs. Composites

14.12 MINERAL RESOURCE STATEMENT

CIM defines a Mineral Resource as:

"(A) concentration or occurrence of diamonds, natural solid inorganic material, or natural solid fossilized organic material including base and precious metals, coal, and industrial minerals in or on the Earth's crust in such form and quantity and of such a grade or quality that it has reasonable prospects for economic extraction. The location, quantity, grade, geological characteristics and continuity of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge".

The reasonable prospects for eventual economic extraction requirement generally implies that the quantity and grade estimates meet certain economic thresholds and that the mineral resources are reported at an appropriate cut-off grade (CoG), taking into account extraction scenarios and processing recoveries. To meet this requirement, the QP considers for the purpose of this exercise that the Project is amenable for underground mining.

Mineral resources are considered to have potential for economic extraction for the mineral resource based on a single CoG. To determine the potential for economic extraction, the following key assumptions of costing and a metallurgical recovery were used. Note that in the calculation below, the QP applied the recovery as defined in the previous estimates for comparison.

During the 2023 metallurgical test work, two sets of recoveries were defined based on two different processing solutions that have been investigated. The two options considered are:

- Production of a rougher concentrate product, which was based on three composite samples and returned average recoveries of 85% Au and 87% Ag. The impact of the latest recoveries would result in a decrease in the CoG from 4.0 g/t to approximately 3.5 g/t, assuming no other changes to the costs.
- Production of a concentrate using the plant conditions at Aris' Maria Dama Plant, based on test analysis of composite samples at Segovia, which returned lower recoveries than the previous estimate (reporting 62% Au and 69% Ag, compared to 75% Au used previously). The impact on the latest recoveries would result in an increase in the CoG from 4.0 g/t to approximately 4.6 g/t, assuming no other changes to the costs.

Changes in the metallurgical recovery will have a significant impact on the value of the Project and it is noted that changes from historical work may result in changes to the mineral resource. Based on the variability presented, the QP has elected to maintain the previous recoveries that sit within the range of the two cases presented above. Further test work and engineering work to assess the preferred processing route for the Project should be completed.

A review of the CoG has been adjusted for revised price assumptions. Based on the review of consensus market forecasts, the QP increased the gold price from US$1,800/troy ounce (oz) to US$1,850/oz and reduced the silver price from US$24/oz to US$23/oz. The impact on the cut-off is considered marginal, with a drop from 4.0 to 3.9 g/t gold equivalent (AuEq); therefore the 4.0 g/t AuEq CoG is used for reporting.

To determine the RPEEE the QP has used the key assumptions listed in Table 14-12 for the costing, and a metallurgical recovery for the base case and provide context to changes in the cut-off assumptions. Engineering work remains ongoing, which could further refine the cost assumptions that will be presented in the upcoming preliminary economic assumptions.

Table 14-12: Key Cost Assumptions – Comparing December 2022 to October 2023

Block Grades			
Metal	**Dec 31, 2022**	**October 24, 2023**	**Unit**
Gold – Average Grade	6	6	g/t
Silver – Average Grade	110	110	g/t
Equivalent Gold	7.56	7.56	g/t
Metal Prices			
Metal	**Value**	**Value**	**Unit**
Gold	1,800	1,850	US$/oz
Silver	24	23	US$/oz
Metallurgic Recoveries			
Metal	**Value**	**Value**	**Unit**
Gold	75%	75%	%
Silver	80%	80%	%
Production Costs			
Area	**Value**	**Value**	**Unit**
Mine (Underground)	105.0	105.0	US$/tonne (t)
Process	42.0	42.0	US$/t
General and Administrative (G&A)	10.0	10.0	US$/t
Sustaining	10.0	10.0	US$/t
Selling	1.0	1.0	US$/t
Subtotal	168.0	168.0	US$/t
Royalties			
Metal	**Value**	**Value**	**Unit**
Gold	3.20%	3.20%	% of revenue
Silver	3.20%	3.20%	% of revenue
Gold Revenue	260.42	267.65	US$/t
Silver Revenue	67.90	65.07	US$/t
Material Revenue	328.32	332.73	US$/t
Cut-Off Net Smelter Return (Underground)	178.51	178.65	US$/t
Cut-Off Equivalent Gold (Underground)	4.00	3.89	g/t

Source: SRK 2023

Based on the analysis above the gold equivalent ("AuEq") has been calculated on a block-by-block basis. AuEq considers both gold and silver with no other metals and is based on the assumed recovery and metal prices. The following equation has been used based on the economic assumptions shown in Table 14-12:

$$AuEq = \frac{[Au\ g/t * Au\ Recovery\ (0.75) * AuPrice] + [Ag\ g/t * Ag\ Recovery\ (0.80) * AgPrice]}{[Au\ Recovery\ (0.75) * Au\ Price]}$$

Further, the QP has limited the Resource based on a CoG of 4 g/t AuEq over a (minimum mining) width of 1 m. The Mineral Resource statement for the Project is shown in Table 14-13.

Table 14-13: Zancudo Mineral Resource Estimate, Effective Date: October 24, 2023

Class	**Tonnes (kt)**	**Grade (g/t)**			**Material Content (koz)**		
		Au	**Ag**	**AuEq**	**Au**	**Ag**	**AuEq**
Inferred	4,100	6.5	107	8.1	860	14,090	1,060

Source: SRK 2023

1. The Qualified Person for the mineral resource estimate is Scott Wilson AIPG CPG 10965
2. Mineral resources are not mineral reserves and do not have demonstrated economic viability. There is no certainty that all or any part of the mineral resources estimated will be converted into mineral reserves.

3. All figures are rounded to reflect the relative accuracy of the estimates. Gold, and silver assays were capped where appropriate.
4. Mineral resources are reported at an in situ CoG of 4.0 g/t AuEq over a 1.0-m mining width, which was derived using a gold price of US$1,850/oz, a silver price of US$23.0/oz, and suitable benchmarked technical and economic parameters for underground mining (mining = US$105.0, processing = US$42.0, G&A and selling costs = US$21.0, and royalties = 3.2%).
5. Metal equivalent is calculated with the formula AuEq = (Au *Au Recovery (75%) * AuPrice + Ag *Ag Recovery (80%) * AgPrice)) / (Au Recovery (75%) *Au Price).
6. It assumed that the Project will produce a concentrate product based on assumed conventional gold and silver processing recoveries of 75% Au and 80% Ag from initial preliminary metallurgical sampling and benchmarked projects within the region.

14.13 MINERAL RESOURCE SENSITIVITY

Mineral resources at Zancudo are sensitive to the selection of the reporting cut-off grade. To illustrate this sensitivity, the block model quantities and grade estimates are presented in Table 14-14 at linear increases in the cut-off grades for the Inferred Mineral Resources at Zancudo. The sensitivity of mineralization to the cutoff grade below the cutoff grade of 4g/t AuEq suggests there is a smooth distribution of mineralization and the any nugget effect in the mineralization has been constrained locally.

The reader is cautioned that Table 14-14 should not be misconstrued as a mineral resource. The reported quantities and grades are only presented as a sensitivity of the resource model to the selection of cut-off grade. Mineral resources are not mineral reserves and do not have demonstrate economic viability.

Table 14-14: Grades and Material Content at Various Equivalent Gold Cut-Off Grades

Cut-Off AuEq (g/t)	Mass (Mt)	Average Value				Material Content (koz)		
		AuEq (g/t)	Au (g/t)	Ag (g/t)	Width (m)	AuEq	Au	Ag
2.50	6.65	6.3	5.1	86	1.92	1,355	1,095	18,465
3.00	5.72	6.9	5.5	92	1.95	1,260	1,020	17,000
3.25	5.28	7.1	5.8	96	1.96	1,210	980	16,250
3.50	4.87	7.4	6.0	99	1.96	1,160	940	15,535
3.75	4.49	7.7	6.2	103	1.95	1,115	905	14,845
4.00	4.07	8.1	6.5	107	1.91	1,060	860	14,090
4.25	3.73	8.4	6.8	112	1.90	1,005	815	13,400
4.50	3.35	8.8	7.2	117	1.85	950	770	12,630
4.75	3.10	9.1	7.4	122	1.82	910	740	12,125
5.00	2.82	9.5	7.7	127	1.79	860	700	11,520

Source: SRK 2023

14.14 RELEVANT FACTORS

The QP is not aware of any additional environmental, permitting, legal, title, taxation marketing or other factors that could affect the mineral resource estimate. The Project contains anomalous levels of arsenic in the estimation domains (ranging from an average of 2,860 ppm to 14,554 ppm). The presence of high arsenic does not negatively affect the Au recovery as shown in met testing study run by SGS at their facilities in Lima. The results of the analysis indicate gravity and rougher flotation recoveries in the order of 86.6% Au and 87.4% Ag. Though high arsenic values are discussed in Chapter 13, the high metal recoveries mitigate any environmental concerns for the Project.

15 MINERAL RESERVES

There are no mineral reserves estimated for the Project.

16 MINING METHODS

16.1 MINERALIZED CONFIGURATION

Mineralization at Zancudo occurs in several near vertical veins and flat lying structures under mountainous terrain, as can be seen in Figure 16-1. Following completion of the December 2022 Resource Block Model by SRK and validated by Resource Development Associates (RDA); eight (8) distinct mining zones were identified. Five steeply dipping vein structures (Veins) consist of the Santa Catalina, Porvenir, Panal, Ortiz A, and Ortiz B; in addition, four flat lying mineralized structures (Mantos) have been identified as Manto Antiguo, Manto Antiguo Lower, Manto Inferior, and Miel. Mine Stope Optimization (MSO) has been applied to the block model to identify minable stope blocks. A mine plan has been developed to extract these stope blocks.

16.2 MINING METHOD – RESUE

VEINS: Based on the orientation and width of the mineralization, review of historic mining, and visible geotechnical performance, a resue mining method is appropriate where waste rock serves as backfill as the stope is advanced in an overhand manner. This method is highly selective and allows for mining narrow widths down to 0.5m.

A stope block is identified having minimum approximate dimensions of 100 to 300 meters along strike, 15 meters high, and minimum width of 1.5 meters. The centroid of the stope block is identified and an access drift is developed. A scram drift is developed along strike in both directions cautiously segregating the mineralized material from the waste. Following completion of the scram, an overhand mineralization extraction and removal is initiated, followed by installation of a cribbed manway and ore-pass. Drill and blast of the remaining waste which is used as backfill to create a working platform. Continuation of the cycle commences until the 15 meters are exhausted. Figure 16-2 demonstrates the phased cross section of the mining sequence.

Due to the low productivity of resue stoping; the schedule prioritizes quickly developing levels to ensure high quantity of headings are available to achieve the production targets. The production schedule is based on producing 50 tonnes/day per heading.

MANTOS: The resue room and pillar design are developed on a grid basis where applicable. Pillar sizes are determined by geotechnical calculations and practical observations. Additional work needs to occur to insure adequate pillar dimensions. The flat lying Mantos are planned to be mined in a room and pillar resue sequencing method.

The Mantos are accessed via spatially efficient ore cross cuts that allows maximum heading availability. The maximum drive cross-sectional dimensions are 2.5m x 2.5m; however, the mine contractor may adjust these dimensions to reflect improved efficiency. The ore drive is extracted by split shooting the face, first the waste will be shot and mined followed by the mineralization material. Contiguous drives are developed creating rooms, when the excavation meets geotechnical design constraints pillars are left to ensure geotechnical integrity. If applicable and ground conditions allow, pillar extraction may occur in a retreating method.

The extensive Manto mineralization allows for high quantity of headings. The Manto mine production schedule is based on 100/tonnes/day per heading.

Figure 16-1: Zancudo General Area of Mineralization and Visual Topography

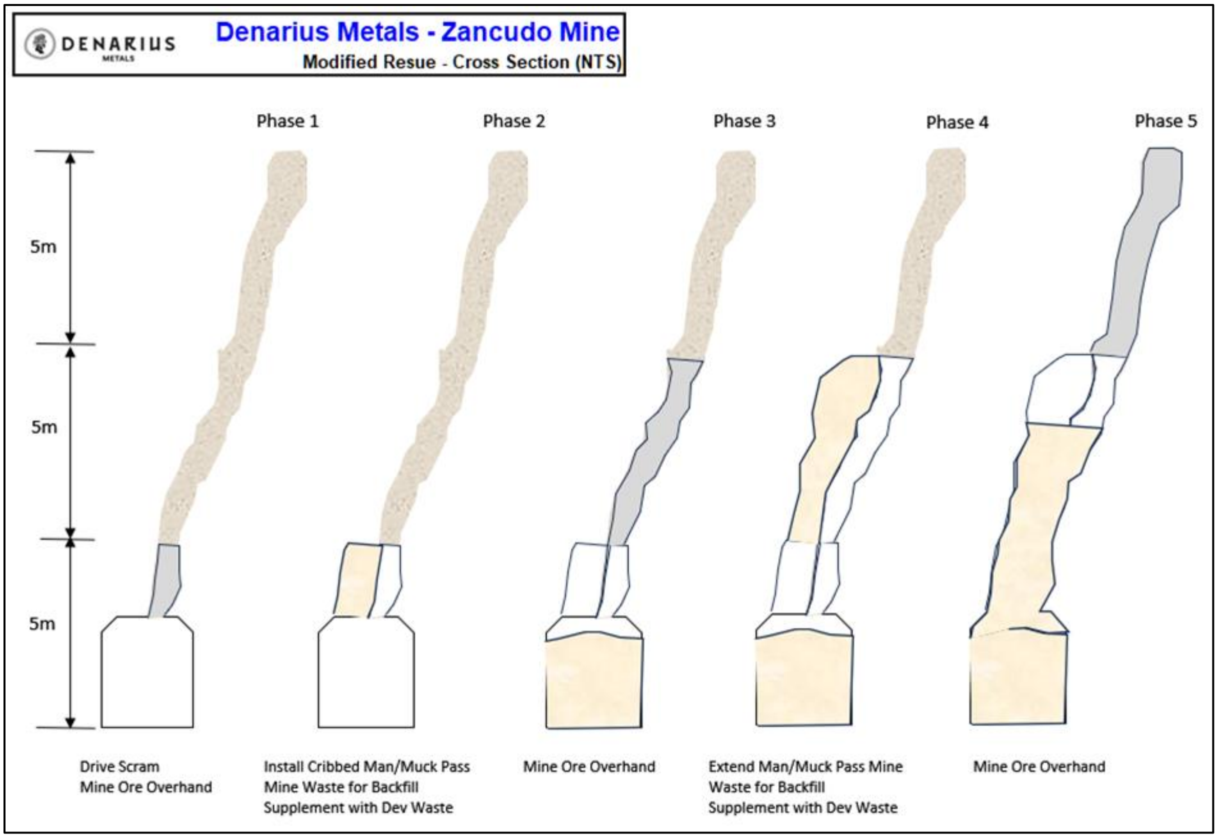


Figure 16-2 Modified Resue Vein Mining Sequence

16.3 GEOTECHNICAL FINDINGS AND ASSUMPTIONS

Work completed by others state that geotechnical core-logging data for 148 drill holes around the Zancudo project area were provided, with the holes being drilled and logged between 2011 and 2021. The provided data from the 148 drill holes at a minimum includes the basic geotechnical parameters of RQD per drill run, see Figure 16-3. Additionally, 82 of the 148 logged drill holes also include data (estimated across an entire drill run) for:

- Field Estimated Intact Rock Strength (following ISRM guidelines)
- Joint Roughness (Bieniawski RMR89 system)
- Joint Weathering (Bieniawski RMR89 system)
- Fill mineral type
- Estimated joint aperture (Bieniawski RMR89 system; note, joint aperture is best estimated from downhole televiewer, not from geotechnical core logging)

Estimated joint persistence (Bieniawski RMR89 system) was collected for only 1 drillhole (note, joint persistence is best estimated from mapping, not from geotechnical core logging).

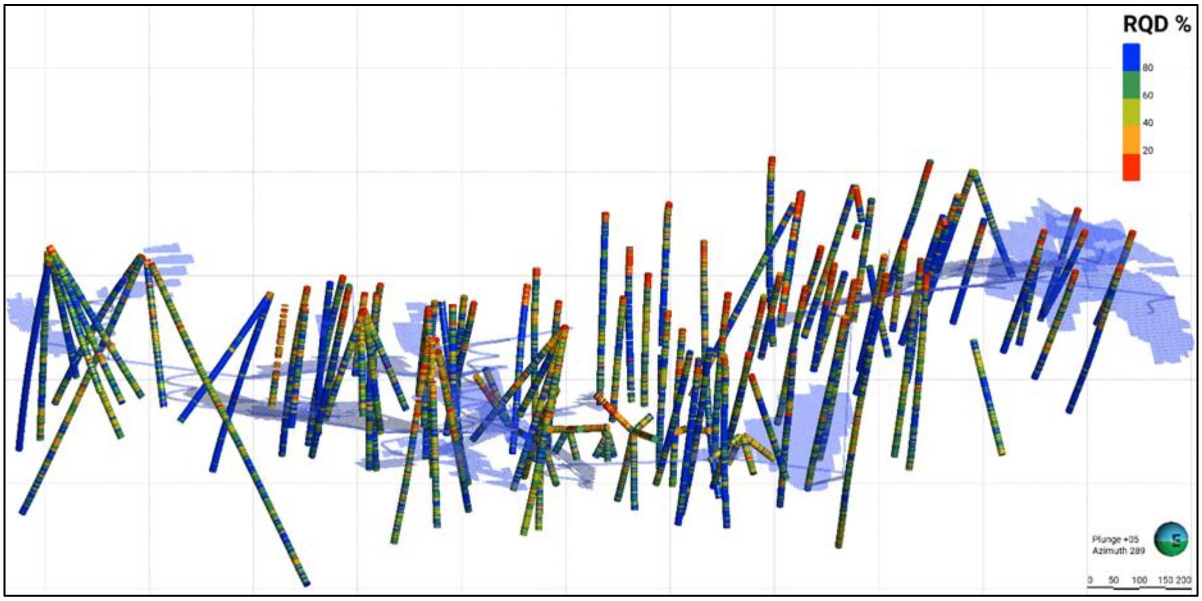


Figure 16-3: RQD Data

While full RMR89 logging parameters were not available for all intervals, RMR89 estimates were approximated based upon the geotechnical logging data provided, the available laboratory strength testing data, and assumed worst, medium, and best-case scenarios for each parameter based upon observations from the site visit to Zancudo and core photographs. Ground water was estimated (under the RMR89 classifications) to be 'damp' (<10 liters/minute) to 'wet' (10-25 liters/minute) based upon observations during the site visit and available hydrogeologic data. (Bieniawski) RMR89 ranges were then converted to (Barton) Q values utilizing the conversion formula: $RMR89 = 9 \cdot \ln(Q) + 49$.

The approximated Q values can be seen in Figure 16-4 as Low, Mid, and High estimates based upon the assumed worst, medium, and best-case scenarios for each geotechnical parameter. These approximated Q estimates are considered sufficient for a PEA level study, however are insufficient for final design and construction purposes. A more detailed assessment and additional data collection will be necessary during future studies to refine Q estimations.

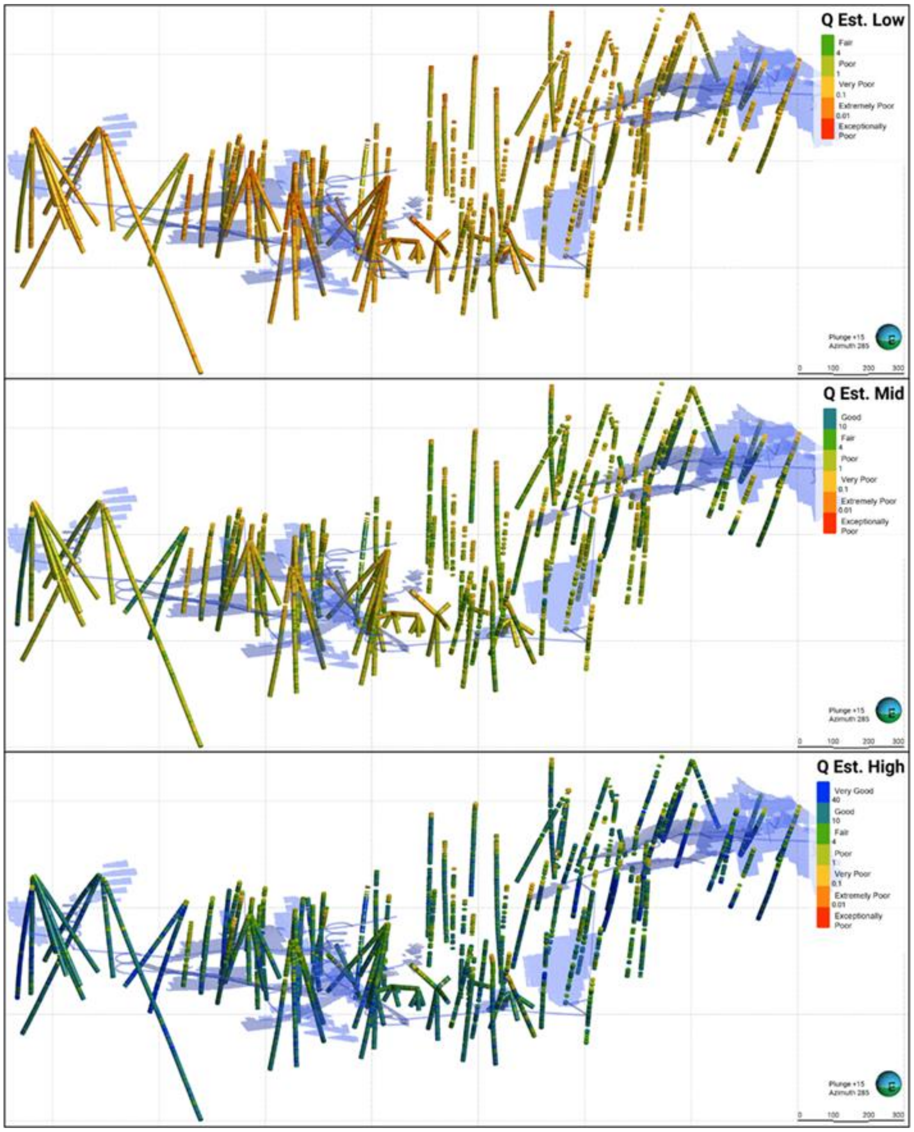


Figure 16-4:Approximate Q Estimates

In the Author's opinion, the rock stability of the excavated drifts is sufficient as a preliminary design basis, but confirming rock mechanics and geotechnical assumptions should be performed to verify the mining approach and details of the PEA layout and design.

16.3.1 GROUND SUPPORT ASSUMPTIONS

The rock stability in the existing Zancudo excavations as observed is assumed to be representative of the conditions that will occur with the progress of vertical and horizontal resue methods, and of the extensive waste development. If ground conditions deteriorate artificial ground support consisting of 1.8 m friction rock stabilizers (rock bolts) on a 1.2 m pattern in the back, with welded wire mesh and steel straps is recommended on the specified portion of the development drifts and stope excavations. In addition, on rare occasions it may be necessary to employ historical blocking methods by stacking waste material to support the compromised areas.

16.4 WASTE BACKFILL

Due to limited surface area for a waste dump, cost improvements and efficiencies, a mine plan had to be generated utilizing underground waste rock placement. The modified resue method and sequencing quickly provides the necessary platform for waste rock storage underground. Following the extraction of the primary ore cut and subsequent overhead excavation; partial waste fill can be placed to establish the next working level. All backfill requirements are produced from the resue waste cycle and development. The coordinated production sequencing and backfill placement is critical for direct underground placement in the open voids. Blasted waste assumes a swell factor of 30%; therefore, over the life of mine ore volumes exceed available waste. This variance is favorable as there is enough underground capacity to house all of the waste generated. The lack of backfill does not impact the production schedule as the resue sequence and spacing allows for unfilled stopes.

16.5 MINING LAYOUT

The mining layout is illustrated in Figure's 16-5, 16-6, and 16-7 providing isometric views of the mining and development layout of the Santa Catalina, Porvenir, Ortiz A, Ortiz B, and Panal Veins. Figures 16-8, 16-9, 16-10, and 16-11 provide isometric views of the Manto's access and development layout of the Manto Antiguo, Manto Antiguo Lower, Manto Inferior, and Miel; respectively. NSR values determined economic parameters and the block model dictated the nominal dimensions and orientation of the excavations. These parameters were applied to the MSO which produced the individual mining blocks containing volume and grade.

The development layout in the Vulcan model is produced by strings (lines), a primitive attribute was applied to theses strings producing a volume. Main development drifts, ventilation cross cuts and raises, and ore cross cuts can be observed in the illustrations

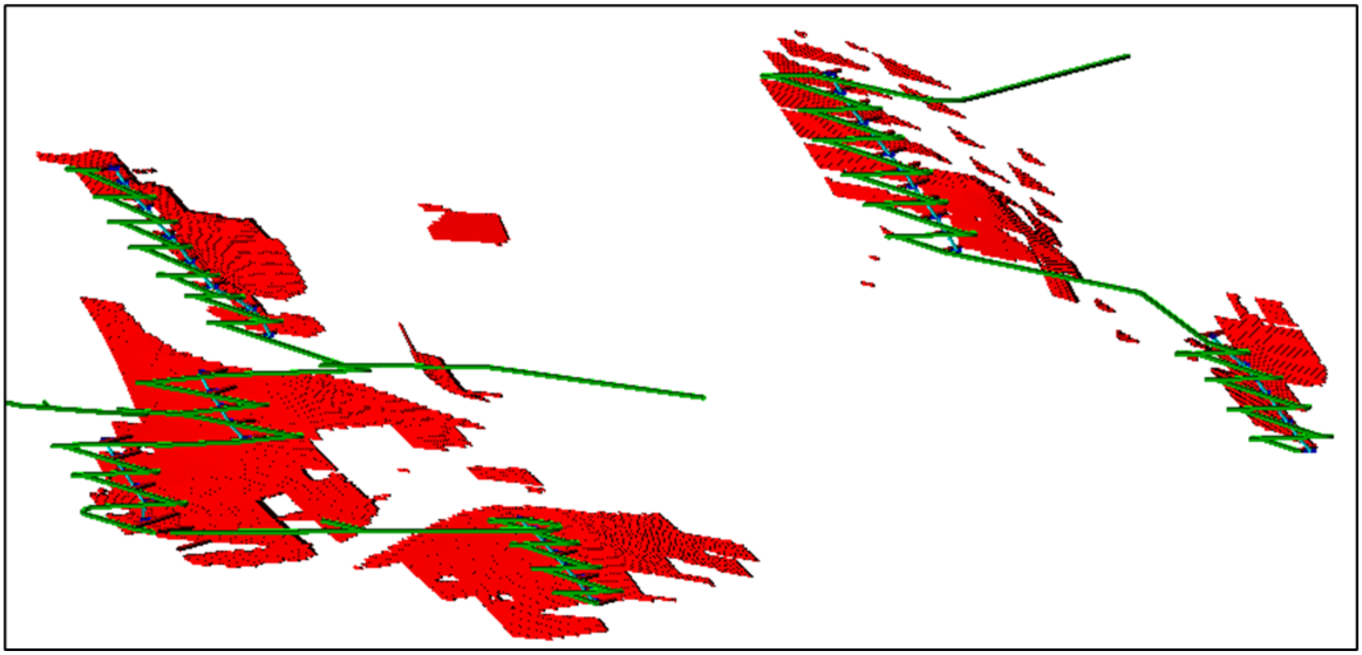


Figure 16-5: Santa Catalina Isometric View (NTS)

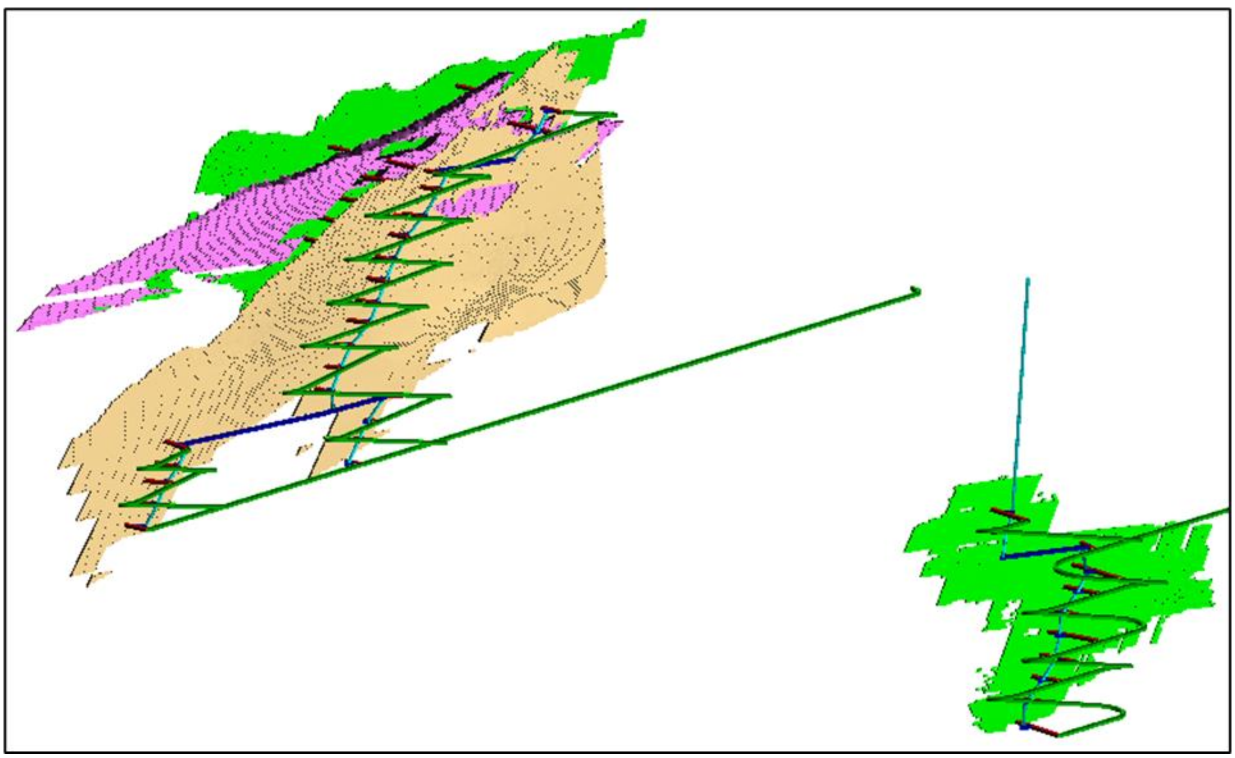


Figure 16-6: Porvenir, Ortiz A, Ortiz B Isometric View (NTS)

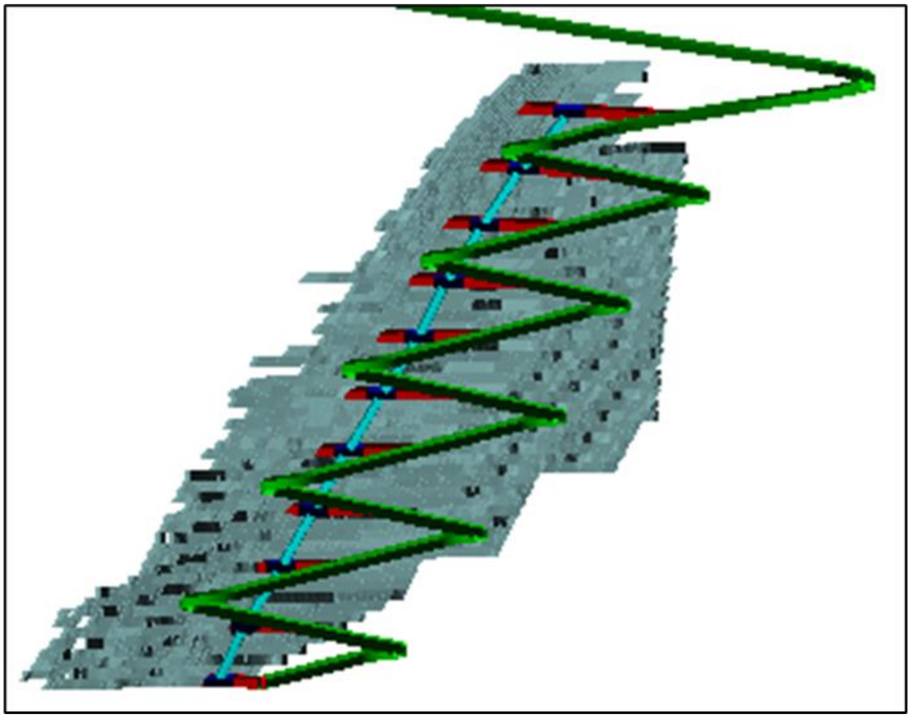


Figure 16-7: Panal Isometric View (NTS)

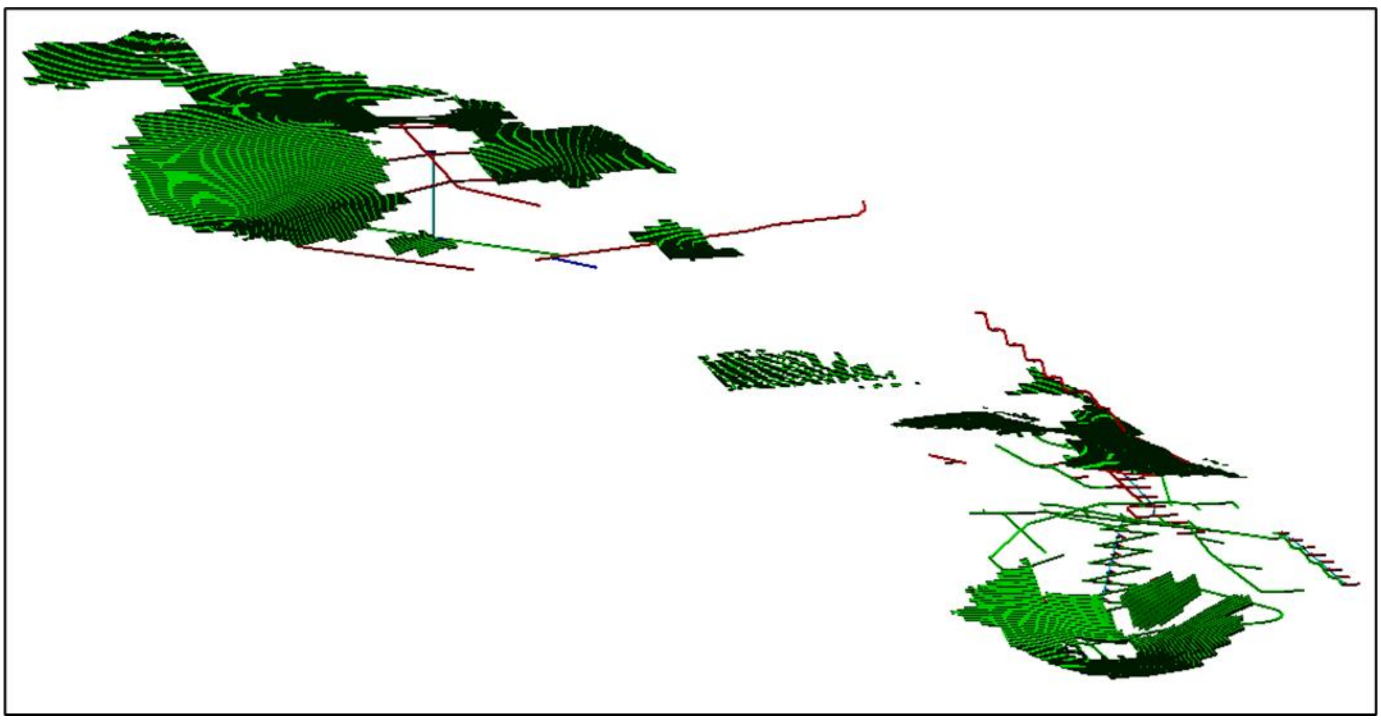


Figure 16-8: Manto Antiguo Isometric View (NTS)

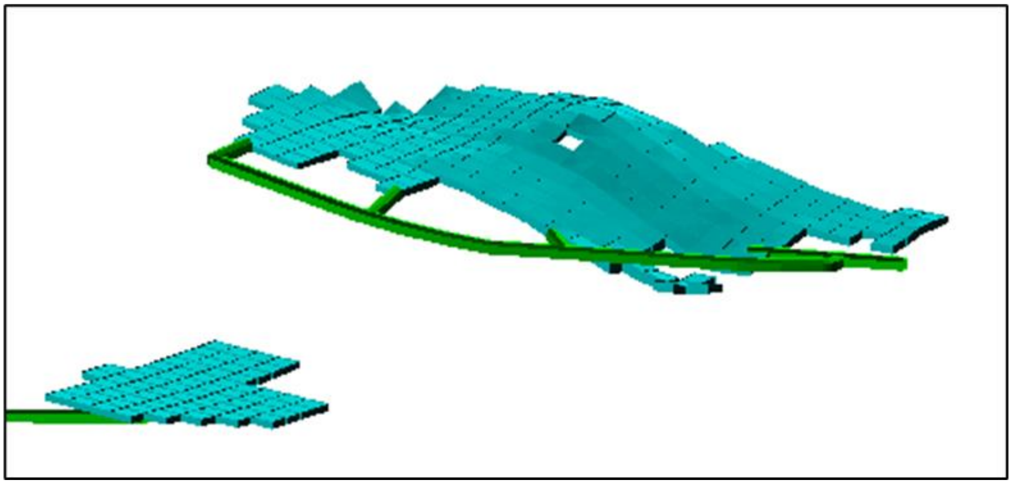


Figure 16-9: Manto Antiguo Lower Isometric View (NTS)

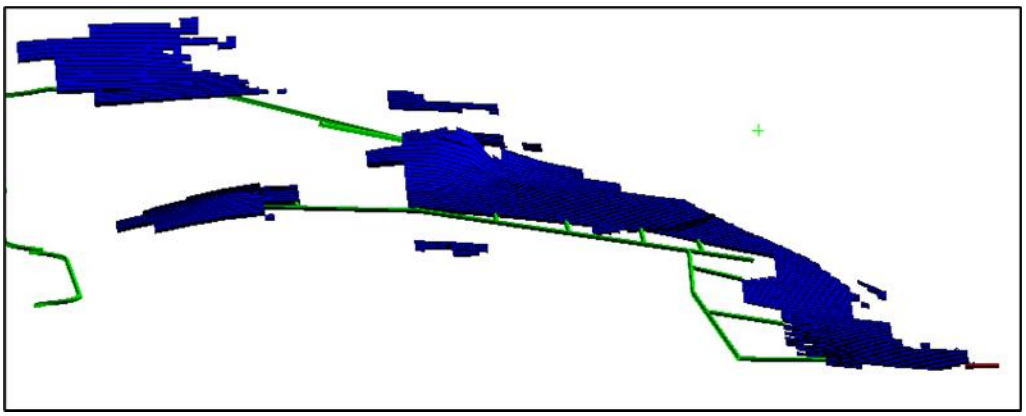


Figure 16-10: Manto Inferior Isometric View (NTS)

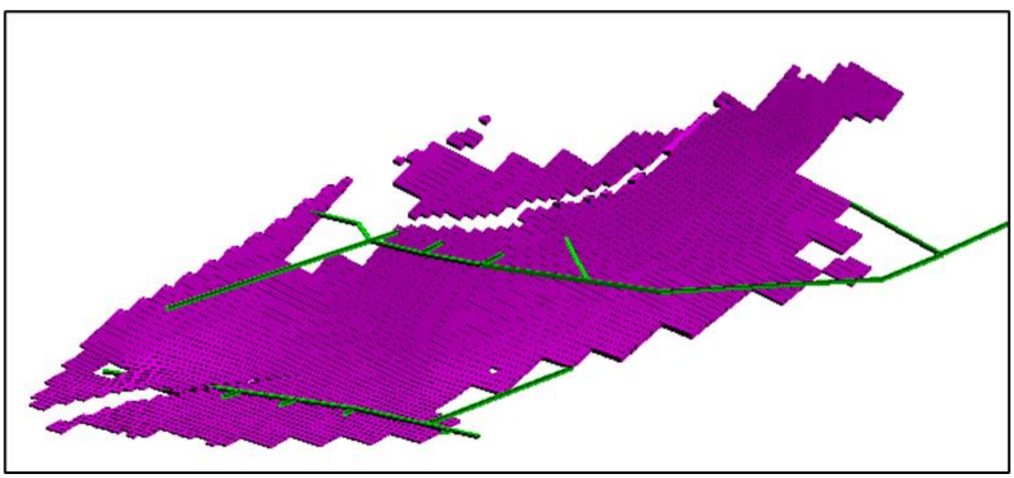


Figure 16-11: Manto Inferior Isometric View (NTS)

The mine is accessed from surface via existing portals or by new portals excavated at various locations on the mountain side. The location of the new portals is governed by the existing road network on the mountain side.

The Porvenir, Ortiz A, and Ortiz B veins are projected to be mined and conveyed to the surface through a new portal. The material is then transferred via truck haul from the portal to the process facility on a updated surface road. The remaining resource will be mined and transferred to the Indepencia level where it will be conveyed to the surface by rail.

Ventilation air would be drawn into the mine from surface portals (either existing mined excavations or newly developed ramps) and into the stopes. Ventilation raises will be excavated vertically along the stope blocks and would be connected between the main ventilation levels (intake and exhaust) before production could begin in the stope block. Ventilation raises (2.0 m x 2.0 m) would be constructed at each location with a short ventilation access drift connecting to the stope. The ventilation raises would provide conduits for electrical power, compressed air, make up water into the stope blocks, and a secondary egress ladder network would also be constructed.

Rock mechanics analysis of the layout should be conducted to project rock stability impacts of the planned geometry. No analysis of ramp locations in the hanging wall has been conducted, and interactions between historical workings need to be simulated. Stand-off distances of ramps and ventilation raises need to be evaluated to assure stability of the raise and infrastructure as the mining proceeds vertically.

16.6 MINING PRODUCTION

The MSO inventory of stope shapes and development strings were scheduled utilizing Microsoft Excel. The resulting schedule produced the development and production schedule including the metal profile. An external dilution factor of 7% at zero grade is included into the production schedule to account for over-break.

Mine scheduling was controlled by the development primary ramps and ventilation circuits which provide fresh air to the working areas. For individual stoping blocks, a ramp would be developed between the lower and upper extents of the contiguous stope areas, which would be connected by a vertical raise. The ventilation raises would also provide secondary egress from the stope working area and provide the pathways for electrical, compressed air and make-up water services required for mining. Sustaining development to the various stope production areas was scheduled to maintain a sufficient buffer of stopes ahead of required ore production.

Development and production schedules were driven by the peak mill throughput of 365,000 tonnes per year. Operating schedule is based on 24 hour – 7 day a week, 365 days per year.

The development and production rates per underground operating day used for the scheduling were:

- Ramps and access drifts = 3 meters/day (single heading); maximum advance 9 meters/day
- Vein Production Target = 50 tonnes/day, maximum headings 11
- Manto Production Target: 100 tonnes/day, maximum headings 5

The development for the mine initially focuses on creating the access and ventilation circuit for the first stoping block in the Panal. Development priorities then focus on the Porvenir, Ortiz A, Ortiz B Veins and the Miel Mantos. As the mine matures the Manto Antiguo, Manto Antiguo Lower, Manto Inferior, and Santa Catalina are developed respectively.

Initial ore production is targeted at 100 tonnes/day gradually ramping to 500 tonnes/day. Following completion of the Zancudo processing plant, production ramps to the desired target of 1,000 tonnes/day. The physical units in the underground production schedule are listed in Table 16-1 and Table 16-2, for the detailed mine output, the Production and Development Schedule by year, respectively.

Table 16-1: Detailed Mine Output

						LOM	Annual Summary												
	Zancudo Production	Tonnes	Au (g/t)	Ag (g/t)	As (ppm)	Q4 2023 - 2035	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
	Mantos																		
3	101 Manto Antiguo	1,239,362	7.43	109.70	10,561	1,239,362	-	-	-	17,937	178,656	341,275	286,185	240,000	175,309	-	-	-	-
4	103 Manto Antiguo Lower	257,982	5.33	123.35	8,012	257,982	-	-	-	-	-	-	55,090	101,275	99,205	2,412	-	-	-
5	104 Manto Inferior	308,535	5.45	92.89	7,760	308,535	-	-	-	-	-	-	-	-	37,741	148,040	112,054	10,700	-
2	105 Miel	334,355	9.78	142.17	10,714	334,355	-	29,742	161,275	143,338	-	-	-	-	-	-	-	-	-
	Veins																		
6	201 Santa Catalina	449,064	5.33	92.30	5,755	449,064	-	-	-	-	-	-	-	-	29,020	190,823	229,221	-	-
2	202 Porvenir	157,771	9.14	107.52	11,510	157,771	-	25,800	44,400	44,400	43,171	-	-	-	-	-	-	-	-
1	203 Panal	35,843	12.15	203.37	9,559	35,843	-	35,843	-	-	-	-	-	-	-	-	-	-	-
2	204 Ortiz A	280,127	6.48	89.09	5,479	280,127	-	41,500	84,000	84,000	70,627	-	-	-	-	-	-	-	-
2	205 Ortiz B	173,221	10.63	189.77	18,105	173,221	-	21,200	51,600	51,600	48,821	-	-	-	-	-	-	-	-
					UNDILUTED ORE TONNES	3,236,260	-	154,085	341,275	341,275	341,275	341,275	341,275	341,275	341,275	341,275	341,275	10,700	-
					Au (Ounces)	754,191	-	46,821	98,886	97,529	86,747	81,519	77,796	74,675	70,447	59,018	58,879	1,874	-
					Au (g/t)	7.25	-	9.5	9.0	8.9	7.9	7.4	7.1	6.8	6.4	5.4	5.4	5.4	-
					Ag (Ounces)	11,815,455	-	707,696	1,446,056	1,427,329	1,279,472	1,203,618	1,227,808	1,248,088	1,210,558	1,017,981	1,014,896	31,955	-
					Ag (g/t)	113.56	-	142.9	131.8	130.1	116.6	109.7	111.9	113.7	110.3	92.8	92.5	92.9	-
					As (ppm)	9,439	-	10,186	10,647	10,638	10,709	10,561	10,150	9,805	9,102	6,641	6,413	7,760	-
					AuEq	898,602	-	55,471	116,560	114,974	102,385	96,230	92,803	89,930	85,243	71,460	71,283	2,264	-
					JTED ORE TONNESS	3,462,798	-	164,871	365,164	365,164	365,164	365,164	365,164	365,164	365,164	365,164	365,164	11,449	-
					Diluted Au Grade	6.77	-	8.83	8.42	8.31	7.39	6.94	6.63	6.36	6.00	5.03	5.02	5.09	-
					Diluted Ag Grade	106.13	-	133.51	123.17	121.58	108.98	102.52	104.58	106.31	103.11	86.71	86.45	86.81	-
					Diluted AuEq Grade	8.07	-	10.46	9.93	9.79	8.72	8.20	7.90	7.66	7.26	6.09	6.07	6.15	-
					Diluted As Grade	8,821	-	9,519	9,950	9,943	10,008	9,870	9,486	9,163	8,506	6,206	5,994	7,252	-

Table 16-2: Zancudo Development Schedule

Zancudo Development	Design Total	Nominal		tonnes/m		Annual Summary												
		Width (m)	Height (m			2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
CAPITAL DEVELOPMENT																		
Lateral Development																		
Ramp Development																		
101 Manto Antiguo	2,527	2.5	2.5	18.19	2,527	-	-	-	287	1,429	811	-	-	-	-	-	-	-
103 Manto Antiguo Low	169	2.5	2.5	18.19	169	-	-	-	-	-	169	-	-	-	-	-	-	-
104 Manto Inferior	629	2.5	2.5	18.19	629	-	-	-	-	-	-	-	-	316	313	-	-	-
105 Miel	-	2.5	2.5	18.19	-	-	-	-	-	-	-	-	-	-	-	-	-	-
201 Santa Catalina	4,481	2.5	2.5	18.19	4,481	-	100	-	-	-	-	60	1,032	1,095	1,095	1,099	-	-
202 Porvenir	3,901	2.5	2.5	18.19	3,901	-	1,224	1,460	1,217	-	-	-	-	-	-	-	-	-
203 Panal	914	2.5	2.5	18.19	914	366	548	-	-	-	-	-	-	-	-	-	-	-
204 Ortiz A	-	2.5	2.5	18.19	-	-	-	-	-	-	-	-	-	-	-	-	-	-
205 Ortiz B	-	2.5	2.5	18.19	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				Advance (m)	12,621	366	1,872	1,460	1,504	1,429	980	60	1,032	1,411	1,408	1,099	-	-
				Waste Tonnes (t)	229,544	6,657	34,047	26,554	27,354	25,990	17,824	1,091	18,770	25,663	25,608	19,988	-	-
Ventilation Development																		
101 Manto Antiguo	31	2.5	2.5	18.19	31	-	-	-	-	31	-	-	-	-	-	-	-	-
103 Manto Antiguo Low	-	2.5	2.5	18.19	-	-	-	-	-	-	-	-	-	-	-	-	-	-
104 Manto Inferior	-	2.5	2.5	18.19	-	-	-	-	-	-	-	-	-	-	-	-	-	-
105 Miel	-	2.5	2.5	18.19	-	-	-	-	-	-	-	-	-	-	-	-	-	-
201 Santa Catalina	377	2.5	2.5	18.19	377	-	-	-	-	-	-	14	84	84	84	111	-	-
202 Porvenir	598	2.5	2.5	18.19	598	-	162	216	220	-	-	-	-	-	-	-	-	-
203 Panal	77	2.5	2.5	18.19	77	-	77	-	-	-	-	-	-	-	-	-	-	-
204 Ortiz A	-	2.5	2.5	18.19	-	-	-	-	-	-	-	-	-	-	-	-	-	-
205 Ortiz B	-	2.5	2.5	18.19	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				Advance (m)	1,083	-	239	216	220	31	-	14	84	84	84	111	-	-
				Waste Tonnes (t)	19,697	-	4,347	3,929	4,001	564	-	255	1,528	1,528	1,528	2,019	-	-
Total Horizontal Capital (m)					13,704	366	2,111	1,676	1,724	1,460	980	74	1,116	1,495	1,492	1,210	-	-
Total Waste Tonnes (tonnes)					249,242	6,657	38,394	30,482	31,355	26,554	17,824	1,346	20,297	27,190	27,136	22,007	-	-
Vertical Development																		
Ventilation/Secondary Escapeway																		
101 Manto Antiguo	91	2	2	11.64	91	-	-	-	-	91	-	-	-	-	-	-	-	-
103 Manto Antiguo Low	-	2	2	11.64	-	-	-	-	-	-	-	-	-	-	-	-	-	-
104 Manto Inferior	-	2	2	11.64	-	-	-	-	-	-	-	-	-	-	-	-	-	-
105 Miel	-	2	2	11.64	-	-	-	-	-	-	-	-	-	-	-	-	-	-
201 Santa Catalina	552	2	2	11.64	552	-	-	-	-	-	-	-	144	144	144	120	-	-
202 Porvenir	578	2	2	11.64	578	-	153	204	204	17	-	-	-	-	-	-	-	-
203 Panal	118	2	2	11.64	118	-	118	-	-	-	-	-	-	-	-	-	-	-
204 Ortiz A	-	2	2	11.64	-	-	-	-	-	-	-	-	-	-	-	-	-	-
205 Ortiz B	-	2	2	11.64	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				Advance (m)	1,339	-	271	204	204	108	-	-	144	144	144	120	-	-
				Waste Tonnes (t)	15,586	-	3,154	2,375	2,375	1,257	-	-	1,676	1,676	1,676	1,397	-	-
Total Vertical Capital (m)					1,339	-	271	204	204	108	-	-	144	144	144	120	-	-
Total Waste Tonnes (tonnes)					15,586	-	3,154	2,375	2,375	1,257	-	-	1,676	1,676	1,676	1,397	-	-
EXPENSED DEVELOPMENT																		
Ore Access																		
101 Manto Antiguo	1,083	2.5	2.5	18.19	1,083	-	-	-	-	720	363	-	-	-	-	-	-	-
103 Manto Antiguo Low	38	2.5	2.5	18.19	38	-	-	-	-	-	38	-	-	-	-	-	-	-
104 Manto Inferior	233	2.5	2.5	18.19	233	-	-	-	-	-	30	180	23	-	-	-	-	-
105 Miel	-	2.5	2.5	18.19	-	-	-	-	-	-	-	-	-	-	-	-	-	-
201 Santa Catalina	1,231	2.5	2.5	18.19	1,231	-	-	-	-	-	-	46	276	276	276	357	-	-
202 Porvenir	1,617	2.5	2.5	18.19	1,617	-	500	600	517	-	-	-	-	-	-	-	-	-
203 Panal	283	2.5	2.5	18.19	283	-	283	-	-	-	-	-	-	-	-	-	-	-
204 Ortiz A	-	2.5	2.5	18.19	-	-	-	-	-	-	-	-	-	-	-	-	-	-
205 Ortiz B	-	2.5	2.5	18.19	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				Advance (m)	4,485	-	783	600	517	720	431	226	299	276	276	357	-	-
				Waste Tonnes (t)	81,571	-	14,241	10,913	9,403	13,095	7,839	4,110	5,438	5,020	5,020	6,493	-	-
Total Horizontal Expensed (m)					4,485	-	783	600	517	720	431	226	299	276	276	357	-	-
Total Waste Tonnes (tonnes)					81,571	-	14,241	10,913	9,403	13,095	7,839	4,110	5,438	5,020	5,020	6,493	-	-

16.7 MINE MOBILE EQUIPMENT

Nummos Aureos S.A.S. ("Nummos") is the current planned contractor and has committed the necessary resources to meet the production profile. Currently, Zancudo is expecting to maintain this relationship and rely on the contractor to supply the necessary equipment to meet the targets. Therefore, underground equipment determination is not required and relies entirely on Nummos.

Aside from the surface support equipment, Zancudo will be responsible for all primary material haulage on the surface including from the portal to the process facility. The truck specification and quantity determination must be completed when the haulage profile is established.

16.8 UNDERGROUND MINE MANPOWER

The mine underground operating workforce is provided by Nummos. This includes mine contractor administration, operating labor, and direct maintenance. General and administrative workforce at the Project level are described in Section 21-2. Nummos has agreed to the development and production targets and have committed the necessary manpower resources to meet the targets.

16.9 UNDERGROUND VENTILATION

The Zancudo mine layout is based on vertical and horizontal stoping of different vein bodies which are located relatively close to the topographic surface. Historical mining excavations have been constructed at various elevations to allow access to the veins, and some have been incorporated into the mine access and ventilation system concepts for the PEA. The general ventilation system concept is the same for development of all the vein and manto systems and would rely on multiple intake and exhaust surface points controlled by fans in bulkheads. The establishment of individual vein ventilation circuits would follow the steps of:

- Develop primary access, haulage ramp, resource cross cuts, and ventilation bays;
- Construct a ventilation raise system (2.0 m x 2.0 m) between resource cross cuts at a nominal setback distance from the vein to direct intake air to the working faces;
- Install fans in bulkheads on the ventilation cross cut to draw air from the surface;
- Develop next raise on subsequent vent cross cuts and tie in with raise to pull fresh air to the next level.
- Fresh air reports to the working areas and exhaust out primary ramp

As mining develops in the stope areas, several raise fan installations would be working in parallel resulting in the total ventilation intake substantially exceeding the requirements of the operating equipment and personnel. Figure 16-12 illustrates the ventilation concept in the Penal Vein. The ventilation raises would be cast down with the individual raise fans controlling the split of air flow, and serial flow mixing as the air moves towards the exhaust level. The series of ventilation raises also act as a secondary egress.

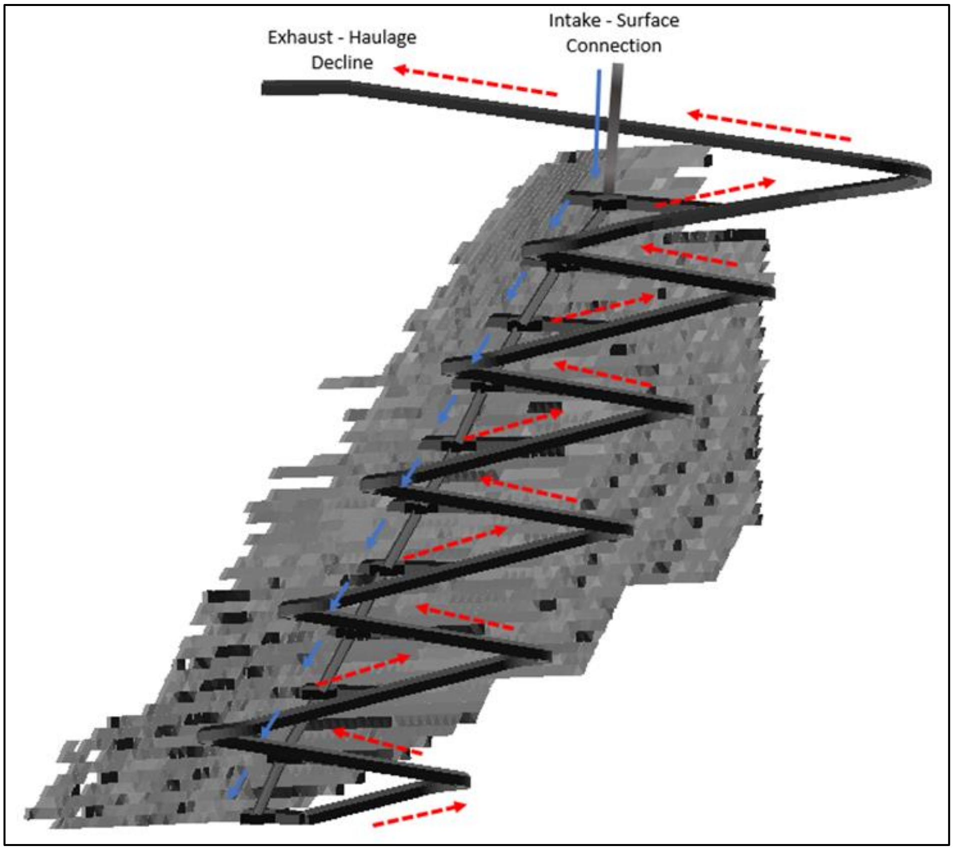


Figure 16-12: Penal Vein Conceptual Ventilation System

16.10 UNDERGROUND INFRASTRUCTURE

The Zancudo mine is scheduled to produce 30,000 tonnes per month at full production with direct feed to the process facility. Dry mining conditions are assumed based on the existing mine excavations, the proximity of the veins to the mountain side, and the elevation of the mining above the local river drainage. No extensive mine pumping system has been included in the design.

Underground electrical power is sourced via the existing local overhead power lines distribution. The underground power cable will be installed during the excavation of the of the primary ramp to each working area that requires power. Mine Load Centers (MLC) and switchgear will be strategically placed next to the working areas. As mining progresses, the power MLC will be advanced corresponding to development and production. Voltage loss shall occur with long runs; therefore, when applicable boreholes will be drilled and power cable installed to minimize run length.

Make up water would be supplied by a pipe network that connects to the existing natural mine drainage and the many tributaries located near the mine.

Infrastructure utility costs are included in the Nummos set contract rate.

16.11 MINING OPERATING COSTS

Mine operating and capital development costs have been provided by Nummos. The agreed terms between Zancudo and Nummos is a simple straight charge of 42% of Gold Net Smelter Return (NSR). This is a unique concept which has been implemented at other Columbian mines in particular Segovia, an Aris Mining property. Figure 16-13 projects total site mine costs as currently scheduled.

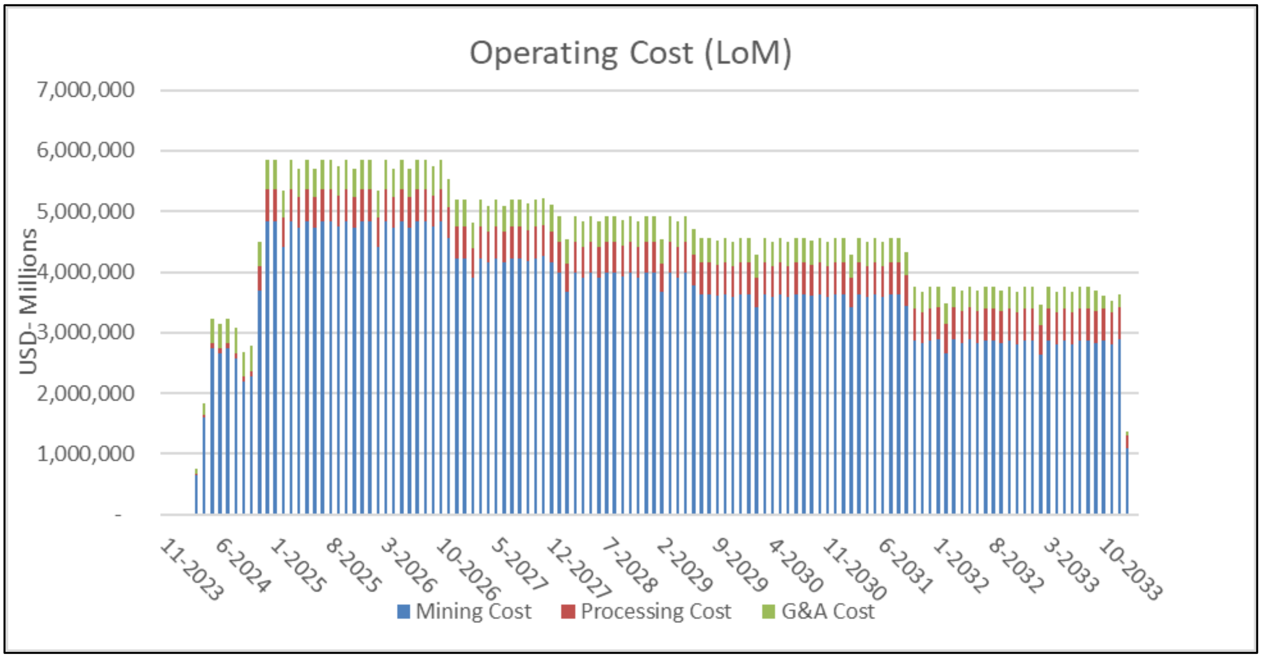


Figure 16-13: Site Operating Costs

17 RECOVERY METHODS

17.1 HIGH LEVEL DESIGN CRITERIA

To support development a High-Level Process Design Criteria (HLPDC) was developed to document key process variables and assumptions. The HLPDC is provided in Table 17-1. Key points are the daily production rate of 1,000 tpd with a nominal feed grade of 6.15 ppm Au and 166.6 ppm Ag. The process method includes crushing, grinding, gravity concentration and froth flotation to produce a high precious metal content bulk sulfide concentrate consisting of primarily pyrite and arsenopyrite and other base metals. Precious metal recoveries are expected to be 85 % and 87 % for gold and silver respectively using gravity concentration followed by flotation.

Table 17-1High Level Process Design Criteria

Revision	**D**	**Design Parameters**	
Design Criteria, Bulk Flotation-Gravity	**Units**	**Parameter**	**Source**
Feed Source	**ID**	**Zancudo Mine**	**Denarius Metals**
Resource Tonnes Material	t		
Au Head Grade	g/t	6.15	ZM-02M-Composito
Ag Head Grade	g/t	166.60	ZM-02M-Composito
Process Annual Throughput	dktpy	328.5	Calc.
Operation Days per Year	dpy	365	Calc.
Shifts per Day	shifts/d	2	Calc.
Hours per Shifts	h/shift	12	WPS
Hours per Day	h/d	24	Calc.
Process Availability	%	90%	Calc.
Hourly Throughput	dtph	46	Calc.
Daily Throughput	dtpd	1,000	Denarius Metals
Ore Prep. Method		**Crushed 3 Stages Closed Circuit**	JLW
Feed % Moisture	%	4.00	JLW
Feed SG		2.76	Testwork
Crusher Work Index	kWh/t	TBD	Testwork
Ball Mill Bond Work Index	kWh/t	13.50	JLW
Crusher Availability	%	80%	JLW
Crushing Rate	tph	52.08	Calc

Feed P100	mm	150	
Product P80	mm	9.60	JLW
Grinding Circuit Type		**Conventional Direct Closed Circuit**	
Process Availability	%	95%	
Feed F80	mm	9.525	
Product P80	microns	212	
Concentration Process		Gravity + Flotation	
Gravity Concentrator		Knelson	
Gravity Conc Mass Pull	%	2%	TBC
Au Recovery	%	23%	Testwork
Ag Recovery	%	10%	Testwork
Flotation Circuit Configuration		**Rougher + Scavenger with 2 Cleaners Stages**	
Residence Time Rougher	min	14.3	WSP
Residence Time Scavenger	min	10.7	WSP
Mass Pull Rougher	%	16.0%	Testwork
Collector Type		PAX	Testwork
Frother Type		MIBC	Testwork
Promotor Type		A -407	Testwork
Ro + Scv Au Recovery	%	84.9%	Testwork
Ro + Scv Ag Recovery	%	87.4%	Testwork
Ro + Scv Grade Conc Au	g/t	26.5	Testwork
Ro + Scv Grade Conc Ag	g/t	640.0	Testwork
Final Conc Slurry	m^3/h	5.28	Calc
Final Concentrate	dt/h	0.89	Calc
Cleaner Au Recovery	%	79.40%	Testwork
Cleaner Ag Recovery	%	82.70%	Testwork
Cleaner Grade Conc Au	g/t	31.1	Testwork
Cleaner Grade Conc Ag	g/t	759.5	Testwork
Bulk Concentrate Thickener	Type	High Rate	WPS
Quantity	#	1	WPS
Feed rate	dtph	0.89	Calc
Concentrate Filter	Type	Filter Press	WPS
Quantity	#	1	WPS
Cake Moisture	%	10	PPWM
Tailings Thickener	Type	High Rate	WPS

Quantity	#	1	WPS
Thickener Unit Area	m^2/tpd	TBD	Testwork
Tailings Filter press	Type	Filter Press	WPS
Quantity	#	1	WPS
Dry Stack Cake Moisture	%	15	PPWM
Fresh Water Make Up	m^3/d	265	calc
Process: Installed Power	hp	3,450	PPWM

17.2 PROCESS DESCRIPTION

The envisioned process method consisting of crushing, grinding, gravity separation, froth flotation and liquid solid separation via thickening and filtration are considered industry standard process operations. The following sections describe the process in greater detail.

17.2.1 CRUSHING

The process begins with the arrival of raw material coming from the mine through the portal via underground haulage equipment discharging into Ore Bin (OB-01). The material then reports to a Crusher Feed Chute Feeder (CF-01) equipped with a grizzly. Grizzly oversize reports to the primary Jaw Crusher (JC-01) where it is crushed to smaller fragments. Jaw Crusher JC-01 is capable of processing 1,000 metric tons per day. Grizzly undersize goes directly to Primary Crushed Product Belt Conveyor (CV-01), this conveyor moves material to a Circular Vibratory Screen (VS-01). The Vibratory Screen separates the material into three fractions, coarse, medium coarse and fine. Coarse material is directed to a Fine Crushing Jaw Crusher (JC-02), with the crushed product reporting to Belt Conveyor (CV-02), medium coarse product reports directly to Belt Conveyor (CV-02) as well, and fines are sent to Belt Conveyor (CV-03) which transfers the material to a (FB-01) Storage Bin ready for the next processing stage (Grinding).

Material on Belt Conveyor CV-02 passes through a Belt Magnet (IR-01) to remove tramp iron or other metallic scrap. Following the Belt Magnet, the material passes through a Metal Detector (MD-01) which will trip the belt if tramp metal is detected. The Belt Magnet and Metal Detector and intended to protect the tertiary crusher, a Cone Crusher (CC-01) which operates in closed circuit reporting Belt Conveyor CV-01 (Figure 17-1).

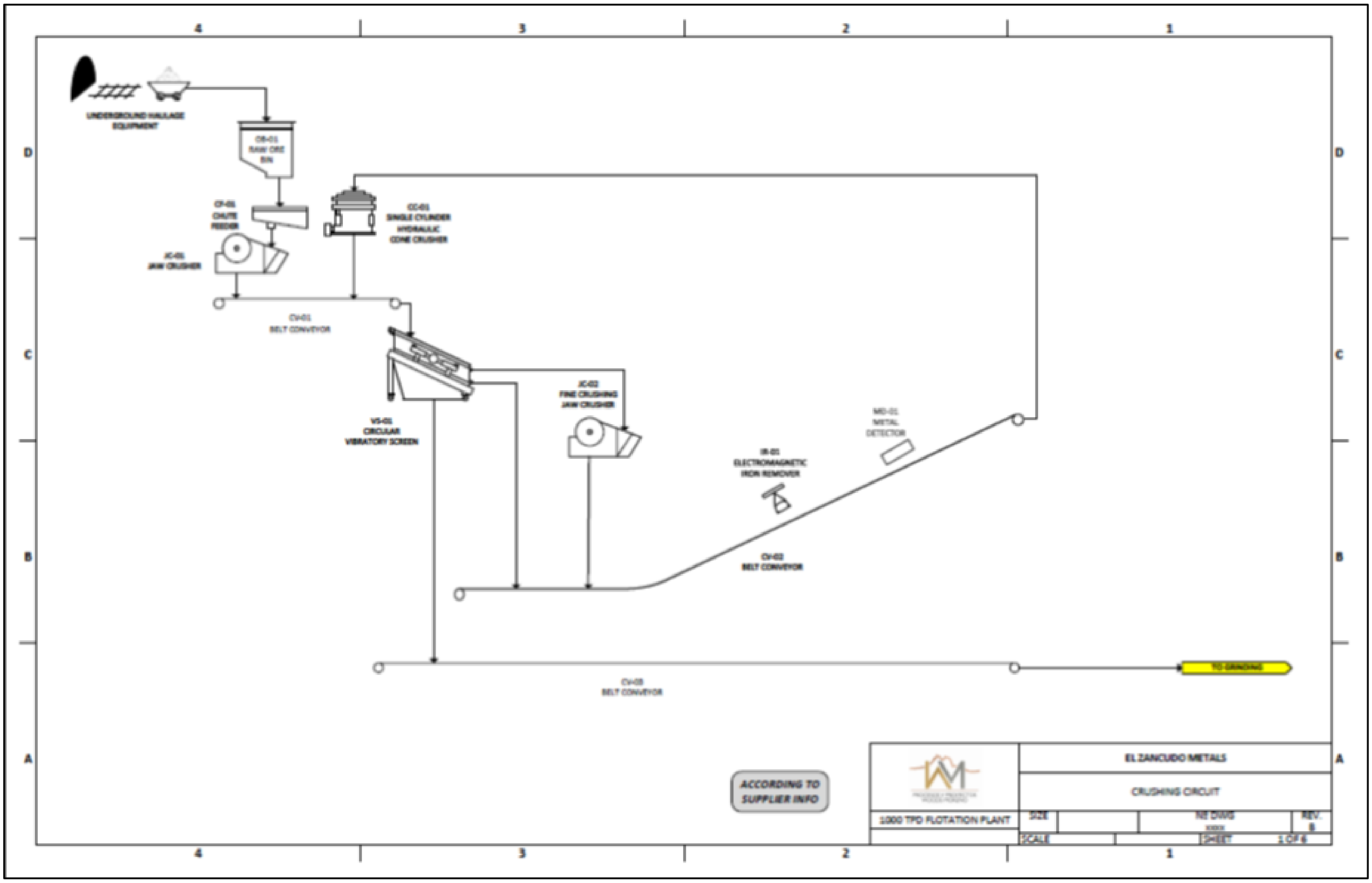


Figure 17-1: Crushing Circuit

17.2.2 GRINDING AND CONCENTRATION

Once the material has been finely crushed to a P80 of 3/8" and sent to Buffer Storage Bin (FB-01) the material is reclaimed via Belt Feeder (BF-01A, BF-01B) reporting to the Ball Mill Feed Conveyor (CV-04) which feeds the primary grinding Ball Mill (BM-01). The Primary Ball Mill operates in closed circuit with the Grinding Vibrating Screen (VS-02). The Ball Mill discharges to the Vibrating Screen (VS-02), that separates product in two fractions oversize and undersize. Oversize material returns to the Ball Mill via Belt Conveyor (CV-05), undersize material reports to a pump box (PB-01).

Once is in the pump box, material flows forward using a XPA wear resistant rubber slurry pump (PP-01 A PP-01B) which feeds a Knelson Concentrator (KC-01), the underflow product of the concentrator moves to a XS Shaking Table (ST-01), while the overflow product bypass the Shaking Table to a Pump Box (PB-02). Shaking Table coarse gold/silver (for melting after settling), and the underflow goes to Pump Box (PB-02).

From PB-02 the material is pumped to a Classification hydro-cyclone for separation based on size (HC-01). Cyclones are crucial for classification and separating the finely ground material into two streams:

- Cyclone Overflow: The finer material reports to the cyclone overflow. It is then processed using a trash screen (linear vibrating screen VS-03) for further removal of large particles, wood scrap and trash.
- Cyclone Underflow: The coarser fractions report to the cyclone underflow.

The trash free material from the cyclone overflow, now considered flotation feed proceeds to rougher flotation circuit for processing to recovery precious metals in a bulk sulfide concentrate.

The cyclone underflow reports back to the ball mill for additional grinding., which contains the coarser and any material that has not been successfully liberated, is sent back to the ball mill. This recirculation process is crucial for maximizing the efficiency of the milling operation and ensuring that no valuable material is wasted.

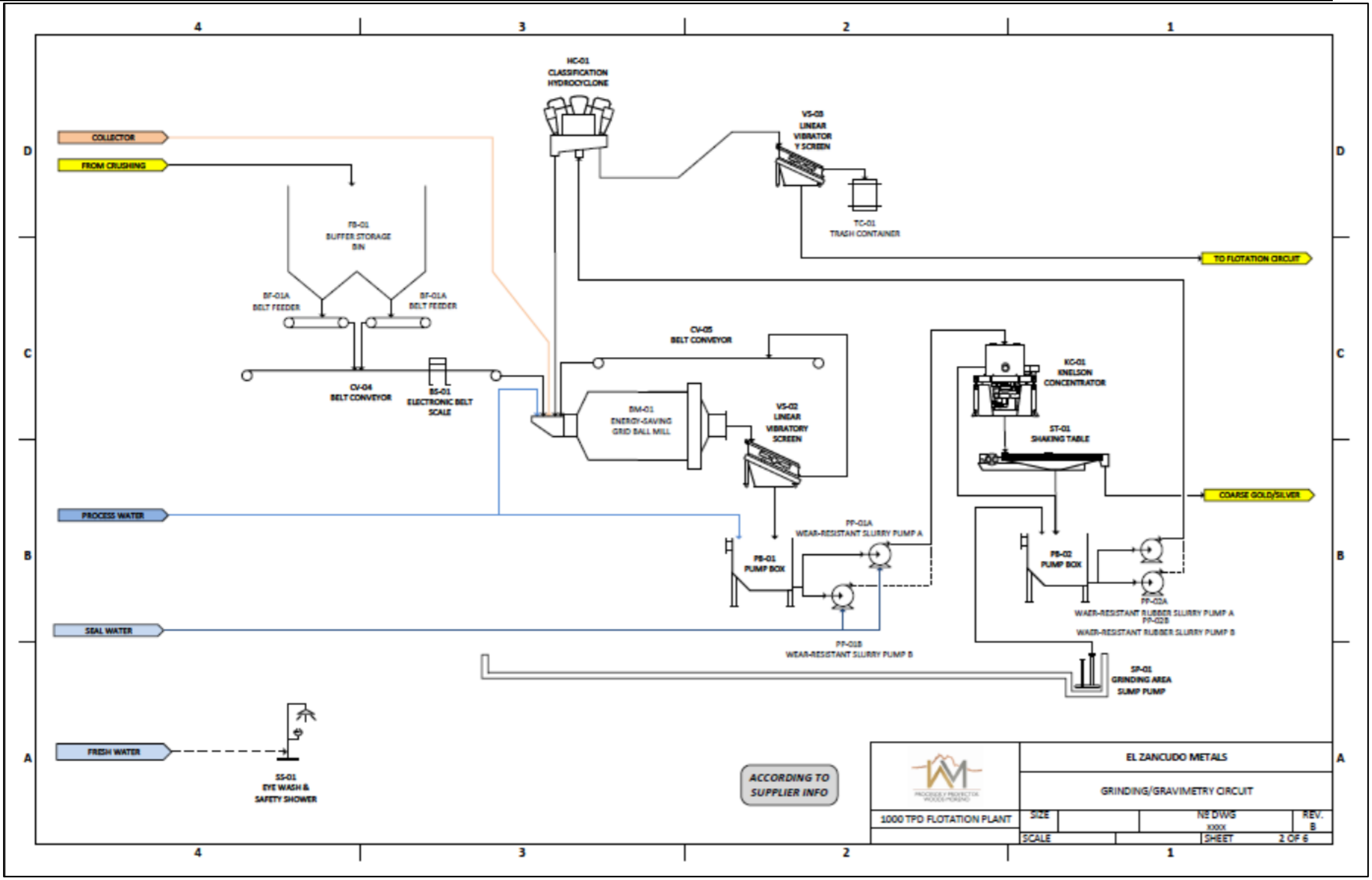


Figure 17-2: Grinding and Gravity Circuit

17.2.3 ROUGHER SCAVENGER AND CLEANER FLOTATION

From the grinding circuit the material is introduced to the Flotation Conditioning Tank (TK-01), where flotation reagents are added to the slurry. A specific type of reagent called a collector is added to the slurry in the conditioning tank and is adsorbed on the desired mineral surface rendering it hydrophobic.

After conditioning, the conditioned material is directed to a bank of five rougher flotation cells (FC-01). These cells are designed to create an initial separation, where desired minerals are attached to air bubbles and float to the surface in the mineral frother separating it from the waste minerals.

The tailings from the rougher flotation cells are then directed to a bank of four scavenger flotation cells operating in series (FC-05). These cells recover any remaining desired minerals that may have escaped the initial rougher flotation stage.

From scavenging 1st stage, the material flows into a bank of 2nd scavenger flotation cell (FC-04) inflatable stirring flotation unit (scavenging 2nd stage))., 2nd stage flotation concentrate flows countercurrent back to scavenging 1st stage where the 1st scavenger concentrate reports back to roughing flotation trough cell number 2. The Second Scavenger Flotation residue reports directly to the tailing s pump box, Pump Box (PB-03)

Flotation concentrate from roughing flotation flows reports to the 1st cleaning stage (FC-02). And then from cleaning 1st stage to cleaning 2nd stage (FC-03) if required, once this procedure is performed the concentrate is dumped into Foam Pump (PP-04) waiting to be sent to next process stage. Rejected material reports back to roughing flotation.

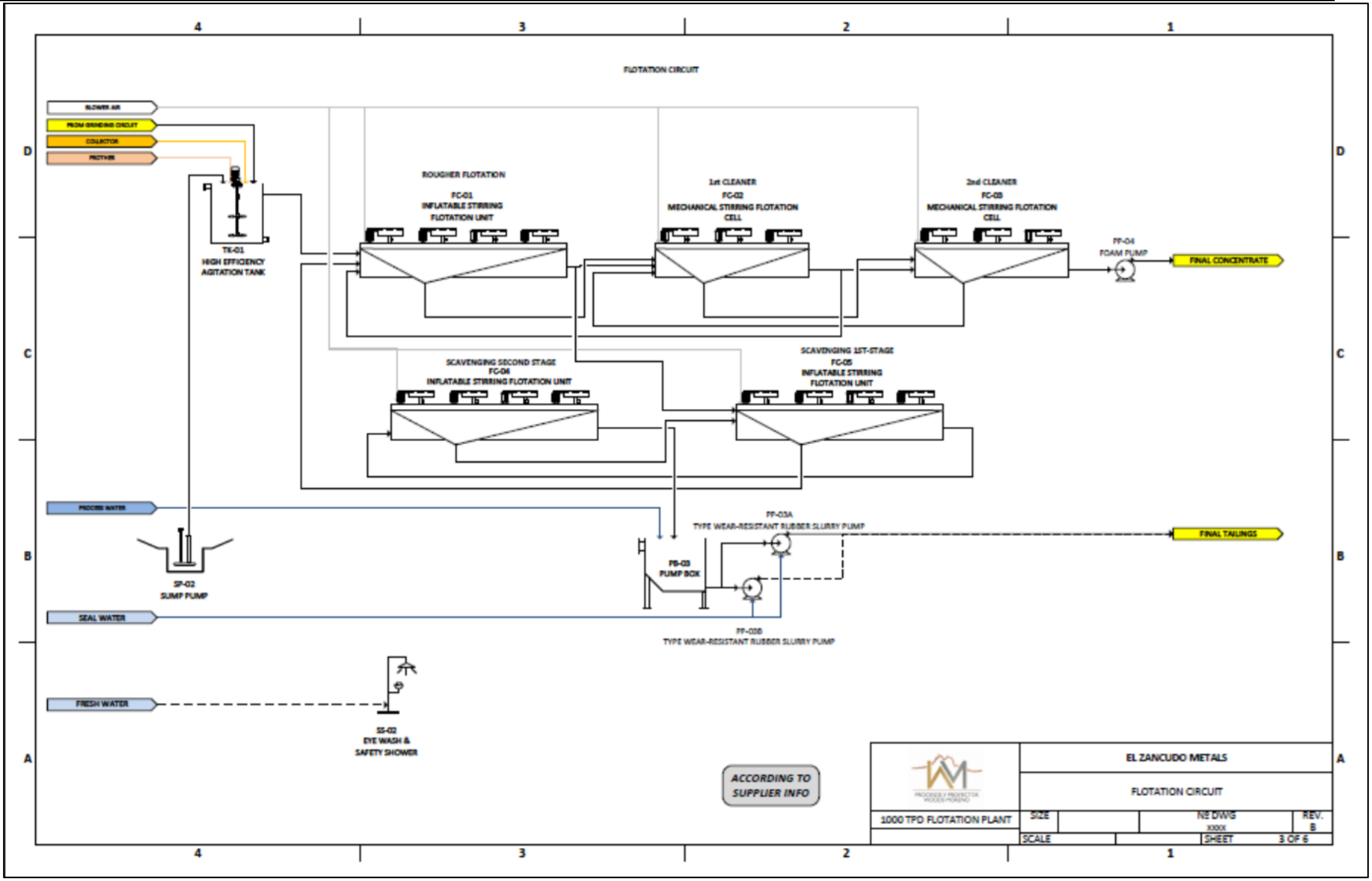


Figure 17-3: Flotation Circuit

17.2.4 TAILINGS FILTRATION

The tailings filtration circuit focuses on the efficient management of flotation tailings generated by the Flotation Stage where the connecting point is Rougher Scavenger 2nd stage.

From Pump Box (PB-03), the flotation tailings are pumped to the High-Rate Thickener (TH-01) using a wear resistant rubber lined slurry pump (PP-03A PP-03B), To the tailings thickener feed, flocculant is added to facilitate liquid/solids separation, with the thickened slurry reporting to the thickener underflow and the clear solution reporting to the thickener overflow.

The tailings slurry now concentrated and thickened, settle at the bottom of the thickener. The underflow from the thickener consists of a slurry with a high concentration of solids. This underflow via (PP-05) is then reports to the thickener underflow pump box (PB-04) and move the material with a process pump (PP-06A PP-06B) , which pumps the material to a thickened tailings storage tank (TK-02). The thickener slurry is temporarily stored in a storage tank before further processing.

From the thickened tailings storage tank, the thickened slurry is pumped to Filter Press (FP-01) for additional dewatering by way of the wear resistant rubber slurry pump (PP-07A PP-07B). The filter press applies pressure to filter excess water from the slurry, leaving a filter cake.

The filter cake discharges from the filter press on a batch basis and is conveyed through (CV-06) to a stockpile designed for dry stacking. Dry stacking is a method for the efficient and environmentally responsible disposal of filtered tailings. It involves stacking the dried waste material in a manner that minimizes environmental impact. (There may be an option to transport the unfiltered wet tailings to an old coal mine many kms away)

The thickener overflow, being a clear decant, is recycled in the plant for further use. Excess solution is directed to a sedimentation pond and after a recycling water pond, where it can be treated and reused within the mineral-processing operation or managed in an environmentally responsible manner. The water is reclaimed back to the flotation plant through SH Water Pump.

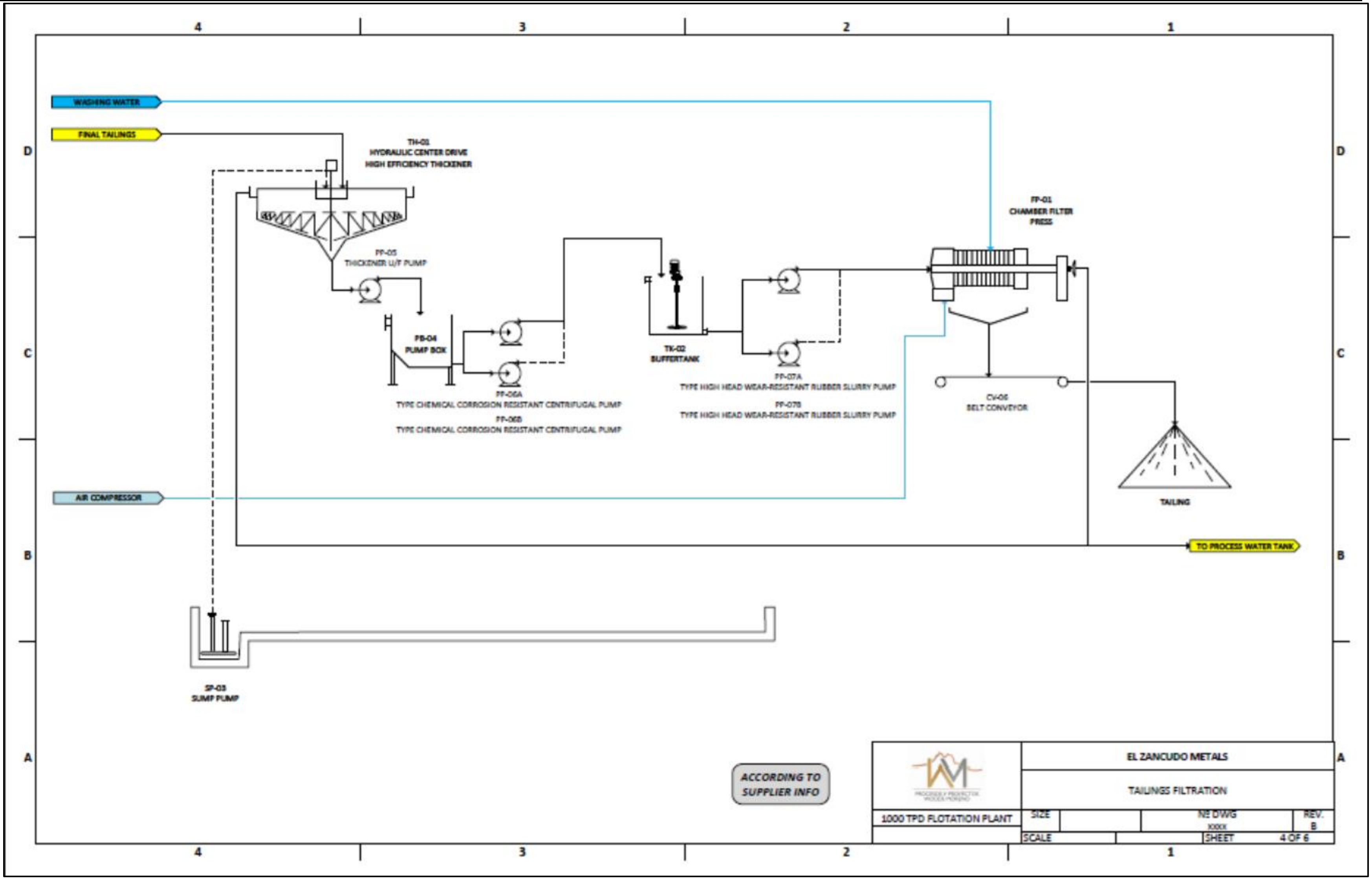


Figure 17-4: Tailings Filtration

17.3 POWER, WATER AND PROCESS MATERIALS

Using the process flow diagram, a preliminary equipment list was generated and preliminary equipment installed horse powers determined. The connected horsepower loads are summarized by Process Operating Area in (Table 17-2). Process power requirements are expected to be below 2.6 MW.

Table 17-2 Horsepower load summary

Area	HP Summary	Kw
Cushing	655	489
Grinding/Gravity	971	724
Flotation	572	427
Concentrate Handling	244	182
Tailings Filtration	288	215
Reagents 1	4	3
Reagents 2	1	1
Utilities	715	533
Total	**3449**	**2573**

Make-up water requirements are estimated to be 265 m3/d and will likely be supplied by mine dewatering activities.

18 PROJECT INFRASTRUCTURE

The following site infrastructure and ancillary facilities will adhere to excellent engineering and construction practices and comply to municipal and federal government regulations.

18.1 SITE ACCESS ROAD

Access to the city of Titiribi is by paved or improved roads. Small and large cities surround the Zancudo project providing a significant workforce. Figure 18-1 displays the road infrastructure in relation to surrounding communities.

In lieu of directing traffic through Titiribi, Zancudo Colombia is currently developing a more direct route on the outskirts of the city to alleviate congestion. The new road connects the highway directly to the process and mine facilities.

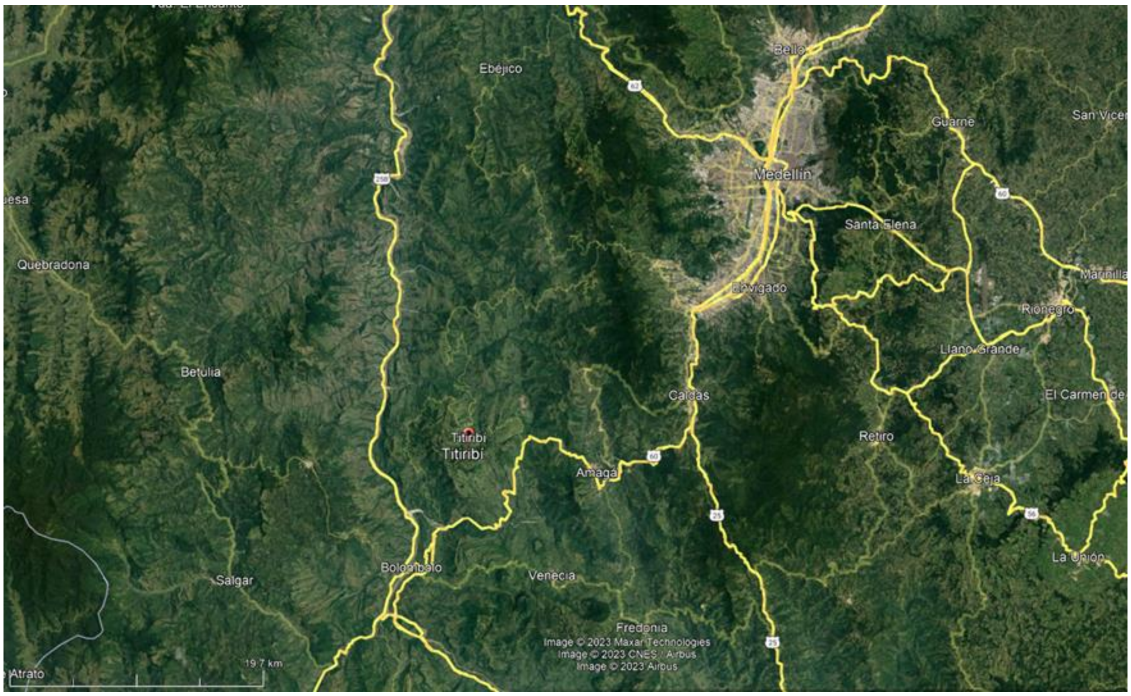


Figure 18-1: Titiribi Road Infrastructure

18.2 POWER SUPPLY AND DISTRIBUTION

The electricity required for the Zancudo Project is sourced from the existing overhead country distribution system. Mine personnel indicated that up to 8 Megawatts of power are available which is assumed to be more than sufficient to operate the underground mine and process facility. Final load tabulation needs to be completed to confirm this assumption.

No secondary system has been considered.

18.3 WATER SUPPLY AND DISTRIBUTION

Water for mining and milling operations will be supplied from the underground natural flowing dewatering system. If necessary, additional make-up water will be supplied through the extensive river tributary network located near the mine.

Process water will be recycled within the milling circuit with an estimate of approximately 70% of mill process water being recovered and reused in ongoing milling operations.

18.4 WAREHOUSE

A general warehouse will be built for the storage and control of all materials and spare parts required for the total operation of the Mine. Due to the proximity of the mine to extensive industrial businesses, limited amount of warehousing will be required.

18.5 MINE DRY

A separate mine dry will be provided, that will include showers and lockers to be used by mine, plant, and maintenance personnel.

18.6 ASSAY LABORATORY

Facilities for the assay laboratory will include sample preparation with drying, crushing and pulverizing. An AA spectrometer for multi metal analysis, fire assaying for gold-silver and complete equipment for metallurgical testing is considered. This lab will have the sufficient capacity to assay all samples.

18.7 FUEL STORAGE

Diesel fuel and gasoline for the equipment will be transported to the mine via local distributors and stored in surface tanks. All the fuel storage tanks and fuel transport equipment will meet existing regulations and safety requirements.

19 MARKET STUDIES AND CONTRACTS

There are markets worldwide for the sale of gold concentrates. Denarius has tendered several international offtake customers for the sale of gold concentrates. No contracts have been signed as of the effective date of the technical report. The QP has reviewed the terms of a proposed agreement which was the basis of the economic analysis for this report, and the results support the assumptions in the technical report.

20 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT

20.1 PROJECT PERMITTING REQUIREMENTS

20.1.1 GENERAL MINING AUTHORITY

Since 1940, the Ministry of Mines and Energy (MME), formerly the Mines and Petroleum Ministry, has been the main mining authority with the legal capacity to regulate mining activities in accordance with the laws issued by the Colombian Congress. The MME can delegate its mining related powers to other national and departmental authorities. Mining regulations in Colombia follow the principle that (except for limited exceptions) all mineral deposits are the property of the state and, therefore, may only be exploited with the permission of the relevant mining authority, which may include the MME, the National Agency for Mining, or the regional governments designated by law.

In 2001, the Congress issued Law 685 (the Mining Code). This law established that the rights to explore and exploit mining reserves would only be granted through a single mining concession agreement (the 2001 Concession Agreement). This new form of contracting did not affect the pre-existing mining titles (licenses, aportes and concessions) which continue to be in force until their terms lapse. The 2001 Concession Agreement includes the exploration, construction, exploitation and mine closure phases and are granted for periods of up to 30 years. This term may be extended upon request by the title holder for an additional 30-year term. According to the Mining Code, the initial term was divided into three different phases:

- **Exploration** – During the first three years of the concession agreement, the title holder will have to perform the technical exploration of the concession area. This term may be extended for two additional years upon request.
- **Construction** – Once the exploration term lapses, the title holder may begin the construction of the necessary infrastructure to perform exploitation and related activities. This phase has an initial three-year term which may be extended for one additional year.
- **Exploitation** – During the remainder of the initial term minus the two previous phases, the title holder will be entitled to perform exploitation activities

20.1.2 ENVIRONMENTAL AUTHORITY

In 1993, Law 99 created the Environmental Ministry and then in 2011 the Decree 3570 modified its objectives and structure and changed the name to Environment and Sustainable Development Ministry. The Ministry is responsible for the management of the environment and renewable natural resources and regulates the environmental order of the territory. Also, the Ministry defines policies and regulations related to rehabilitation, conservation, protection, order, management, use, sustainable use of natural resources. Article 33 of the same Law created the regional environmental authorities with the responsibility to manage the environment and renewable natural resources. For the Zancudo Project, the regional environmental authority is Corantioquia.

In 2011, Decree 3533 created the National Authority of Environmental Licenses (Autoridad Nacional de Licencias Ambientales, ANLA). ANLA is responsible that all project, works or activities subject to licensing, permit or environmental procedures comply with the environmental regulations and contribute to the sustainable development of the country. ANLA will approve or reject licenses, permits or environmental procedures according to the law and regulations, and will enforce compliance with the licenses, permits and environmental procedures.

With regard to the licensing process of mining projects, the competence of either ANLA or the designated regional environmental authority (Corantioquia) is determined by the annual volume of material to be exploited. For projects exploiting more than 2 Mt/y, the responsibility will be with ANLA. Both ANLA and Corantioquia can enforce project compliance with the terms of their licenses or permits.

20.1.3 ENVIRONMENTAL REGULATIONS AND IMPACT ASSESSMENT

Colombian laws have distinguished between the environmental requirements for exploration activities, and those that have to be fulfilled for construction and exploitation works. During the exploration phase, the concession holder is not required to obtain an environmental license. However, the concession holder requires environmental permits which will be obtained from the regional environmental authority (Corantioquia). The concession holder will have to comply with the mining and environmental guidelines issued by the MME and the Environmental Ministry.

In order to begin and perform construction and exploitation operations, the concession holder must obtain an environmental license or the approval of an existing Environmental Management Plan (Plan de Manejo Ambiental, or PMA) either from ANLA if the project exploits more than 2 Mt/y or from the regional environmental authority if the mineral exploitation is less than 2 Mt/y.

The approval process begins with the request for Terms of Reference (ToR) to prepare an Environmental Impact Statement (EIS) or update an existing PMA. The approval of the EIS and PMA by the jurisdictional environmental authority includes all environmental permits, authorizations and concessions for the use, exploitation or affectation, or all of the above, of natural resources necessary for the development and operation of a project, work or activity. Additionally, other permits and requirements (non-environmental) are required in order to begin construction and operation of a project.

Non-Governmental Organizations (NGOs) and the local communities have the opportunity to participate in the environmental administrative procedures leading up to the issuance of an environmental license. The environmental process will include participation of, and information to, all communities in the project area including indigenous communities and Afro-descendant communities.

20.1.4 WATER QUALITY AND WATER RIGHTS

The Colombian regulations that principally govern water quality, including the maximum permissible limits for discharge of wastewater into the environment and freshwater abstraction and their requirements, are Decree 2811 of 1974, Decree 1541 of 1978, Decree 1594 of 1984, and Decree 3930 of 2010, all of which are compiled in Decree 1076 of 2015, and Resolution 631 of 2015. Resolution 631 of 2015 provides updated parameters and maximum limits on point discharges. Corantioquia will enforce compliance with these regulations with respect to the Zancudo Project.

Water rights for mining activities are granted by means of a water concession which is granted by the regional environmental authority (Corantioquia), and which is independent to the mining concession or to land ownership. The water rights related to mining activities are included in the environmental licenses or in an approved PMA and are normally granted for five years. The terms and conditions under which a water concession is granted may depend, amongst others, on the amount of water available in the specific region, the possible environmental impact of the concession, water demand, the ecological flow and the different users that the water source services. The water concession is accompanied with a discharge permit.

20.1.5 AIR QUALITY AND AMBIENT NOISE

Decree 948 of 1995, Resolution 650 of 2010 and Resolution 2154 of 2010 provide the main regulations on protection and control of air quality. These regulations set forth the general principles and regulations for the atmospheric protection, prevention mechanisms, control and attention of pollution episodes from fixed, mobile or diffused sources. These regulations also provide emission levels or standards. Among the emission sources regulated are: controlled open burnings, discharge of fumes, gases, vapors, dust or particles through stacks or chimneys; fugitive emissions or dispersion of contaminants by open pit mining exploitation activities; solid, liquid and gas waste incineration; operation of boilers or incinerators by commercial or industrial establishments, etc.

Also, Resolution 627 of 2006 regulates noise emissions in terms of ambient noise. The parameters regulated are: SO2, NO2, CO, TSP, PM10, O3, and noise. Corantioquia will enforce compliance with these regulations with respect to the Zancudo Project.

20.1.6 FAUNA AND FLORA PROTECTION

The main regulations for the protection of fauna and flora are contained in the Natural Resources Code and the Agreement about Biological Diversity entered into in Rio de Janeiro on June 5, 1992, within the framework of the Rio Convention. Also, forest management and use is regulated by Decree 1791 of 1996 and the compensation for biodiversity loss is regulated by Resolution 15717 of 2012. In addition, there are other important regulations on the matter such as the Cartagena Protocol on Biotechnology Security of the Agreement about Biological Diversity entered into in Montreal on January 29, 2000, and the Convention on International Trade of Threatened Wild Fauna and Flora Species (CITES). Endangered species are protected by environmental and criminal law.

In order to perform biodiversity studies, a permit for scientific investigation must first be obtained from the regional environmental authority (Corantioquia).

20.1.7 PROTECTION OF RIPARIAN AREAS AND DRAINAGES

Resolution No. 077 of March 2, 2011, regarding riparian and water channel protection, strictly prohibits the filling of perennial water courses except under very specific terms: road and pipeline crossings, bank and slope protection measures, and installation of public service networks (Title III, Article 9). The backfilling of intermitted or ephemeral channels can be authorized under permit by the regional environmental authority (Corantioquia), provided that the design is appropriate for the conditions, and that surface water and groundwater are properly managed.

20.1.8 PROTECTION OF CULTURAL HERITAGE OR ARCHEOLOGY

Cultural and natural heritage protection in Colombia is stated in the political constitution and developed through several international treaties and laws of the state. There are strict legal provisions, such as Law 397 of 1997 and Decree 763 of 2009, whereby the heritage is safeguarded and protected. For example, if a citizen finds an archeological specimen, they must inform the Ministry of Culture of the discovery within 24 hours; otherwise they could be sanctioned by the competent authority.

20.1.9 PERFORMANCE AND RECLAMATION BONDING

The termination of a mining concession can happen for several reasons: resignation, mutual agreement, and expiration of the term, the concession holder's death, free revocation and reversion. In all cases, the concession holder is obliged to comply or guarantee the environmental obligations payable at the time the termination becomes effective.

The 2001 Mining Code requires the concession holder to obtain an Insurance Policy to guarantee compliance with mining and environmental obligations which must be approved by the relevant authority, annually renewed, and remain in effect during the life of a project and for three years from the date of termination of the concession contract. The value to be insured will be calculated as follows:

- During the exploration phase of the project, the insured value under the policy must be 5% of the value of the planned annual exploration expenditures;
- During the construction phase, the insured value under the policy must be 5% of the planned investment for assembly and construction; and
- During the exploitation phase, the insured value under the policy must be 10% of the value resulting from the estimated annual production multiplied by the pithead price established annually by the government.

According to the law, the concession holder is liable for environmental remediation and other liabilities based on actions and or omissions occurring after the date of the concession contract, even if the actions or omissions are by an authorized third-party operator on the concession. The owner is not responsible for environmental liabilities which occurred before the concession contract, from historical activities, or from those which result from non-regulated mining activities.

Danarius holds an Environmental Insurance Policy.

20.2 ENVIRONMENTAL, SOCIAL AND GOVERNANCE CONSIDERATIONS

To date the exploration activities completed by Denarius and the previous owners have had a limited social impact. There are currently no regulations directly related to social impacts that limit the exploration activities. Denarius has been proactive and implemented a set of activities in order to promote local employment and social benefit in the area of influence of the project. There was reported to have been previous opposition to potential open pit mining in the local area, but with current focus on underground mining methods, which are used in numerous Projects in the area it is not assumed there will be any resistance to potential mining.

ESG is an integral component of Denarius approach to the projects, and they are working with the local community to ensure they are incorporating the project within the local economy. An example of such actions is the use of a local contract miner who has already commenced activities to rehabilitate the mine workings to ensure safe access for future exploration.

It is the QP's opinion that the Company is continuing to consider Social, Environmental and Governance to an adequate level to support the current study, and by having systems in place which involve direct engagement with community and administration, definition of the required studies for future development can be completed with additional work.

20.3 MINE CLOSURE

Article 209 of Law 685 of 2001 requires that the concession holder, upon termination of the agreement, shall undertake the necessary environmental measures for the proper reclamation and closure of the operation. To ensure that these activities are carried out, the Environmental Insurance Policy shall remain in effect for three years from the date of termination of the contract. Little else regarding the specifics of mine closure is provided in the Law. Decree 2820 Article 40 Paragraph 2 of 2010 specifically indicates that the concession holder must submit a plan for dismantling and abandonment.

20.4 ARSENIC

Though high arsenic values are discussed in Chapter 13, the high metal recoveries mitigate any environmental concerns for the Project. The presence of arsenic does not affect the Au recovery as shown in met testing study run by SGS at their facilities in Lima. The results of the analysis indicate gravity and rougher flotation recoveries in the order of 86.6% Au and 87.4% Ag. This indicates most arsenic will be recovered in the production of gold concentrates which will be removed from the property. Low arsenic values are expected in the mill tailings which will be dry-stacked and contained at the project site.

21 CAPITAL AND OPERATING COSTS

Capital and operating costs used for the Zancudo Project were developed from cost build up from first principles engineering along with vendor and contractor quotations. In addition, all available project technical data and metallurgical test work were considered to build up a processing operating cost estimate.

A project configuration which included the underground mines and a central process facility was developed as the basis for capital cost estimation. Preliminary site infrastructure alternatives (process plant, tails storage facility, and power) were examined as a basis to estimate costs. Generalized arrangements were evaluated to establish a physical basis for the capital costs estimates. Cost accuracy is estimated to be + or - 20%.

21.1 CAPITAL COSTS

Capital costs were developed based production rates and from design assumptions. The costs are collected in two separate categories; initial capital (construction costs to initiate mining operations including Engineering, Procurement, and Construction Management (“EPCM”), mining and processing equipment, and contingency), and sustaining capital (additional equipment and equipment rebuilds). The estimated capital costs are listed in Table 21-1. Contingency was calculated on applicable items at a rate of 15.6%. Contingency was applied to all direct initial capital cost items. The contingency rate was determined based on confidence levels on capital used in the cost build up. Table 21-2 indicates the capital depiction between Initial and sustaining.

Table 21-1 Zancudo Total Capital Costs

Initial Capital Costs	Costs (US$)
Mine access rehabilitation (initial work excluded from mine contractor responsibility)	29,000
Access road	2,492,000
Crushing plant	752,000
Crushing plant electrical	806,000
Civil works	325,000
Processing plant	5,284,000
Tailings storage facility	1,000,000
Permitting	408,000
Indirect costs	1,200,000
Owner's costs, including lab and other site infrastructure	500,000
Total initial capital costs before contingency	**12,796,000**
Contingency	2,000,000
Total initial capital costs	**14,796,000**

Table 21-2: Zancudo Capital Depiction

LOM Capital	Costs (US$)
Initial CAPEX	14,796,000
Sustaining CAPEX (including a 10,000 m drilling program)	5,208,333
Total initial capital costs	**20,004,333**

21.2 OPERATING COSTS

Operating costs are listed in Table 21-3.

Table 21-3: Zancudo Unit Operating Costs

Operating Costs	LOM (US$M)	Per Oz Au (US$)
Mining	435.1	756
Processing	57.6	100
Site administration and social programs	16.1	28
Shipping and port handling	31.4	55
Royalties	49.6	86
Total operating costs and royalties	**589.7**	**1,025**
Refining and treatment charges	208.4	**362**
Less: silver by-product credits	(193.8)	**(337)**
Total cash costs	**604.3**	**1,050**
Sustaining capital and exploration	**5.2**	**9**
All-in sustaining costs	**609.5**	**1,059**

22 ECONOMIC ANALYSIS

The economic performance of the Zancudo Project was evaluated with a cash flow based economic model using project costs and revenues as the financial basis. The revenue factors for the project are dependent on metal prices calculating into the net smelter return. Key parameters and assumptions are shown in Table 22-1.

Table 22-1: Key Parameters and Assumptions

Assumption / Results	2023 PEA
Total tonnes processed over the LOM	**3,463,000**
Total waste mined over the LOM	**346,000**
Gold grade mined – LOM average (g/t)	**6.77**
Silver grade mined – LOM average (g/t)	**106.13**
Gold recovery – LOM average	**85%**
Silver recovery – LOM average	**87%**
Expected long-term gold price (US$/oz)	**$1,800**
Expected long-term silver price (US$/oz)	**$22**
Total gold production (payable ounces)	**575,514**
Total silver production (payable ounces)	**8,809,108**
LOM net revenue, after refining and treatment charges (US$ millions)	**$1,021.3**
Initial capital costs (US$ millions) (Table 1-3)	**$14.8**
Sustaining capital costs (US$ millions)	**$5.2**
LOM operating costs and royalties (US$ millions) (Table 1-4)	**$589.7**
LOM cash cost per ounce of gold (US$) (Table 1-4)	**$1,050**
LOM AISC per ounce of gold (US$) (Table 1-4)	**$1,059**
Mine Life	**10.3 Years**
Average LOM process rate (tpd)	**925**
After-tax undiscounted LOM Project Cash Flow (US$ millions)	**$266.4**
After-Tax NPV (5% discount) (US$ millions)	**$206.3**
After-Tax IRR	**287%**
Payback Period	**1.2 Years**

The preliminary economic assessment is preliminary in nature, and there is no certainty that the reported results will be realized. The Mineral Resource estimate used for the PEA includes Inferred Mineral Resources which are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as Mineral Reserves, and there is no certainty that the projected economic performance will be realized. The purpose of the PEA is to demonstrate the economic viability of the Zancudo Project, and the results are only intended as an initial, first-pass review of the Project economics based on preliminary information. Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability

22.1 LOM OPERATING AND FINANCIAL DATA

The net revenue of the project is based on the net smelter return. The costs and payable metal values from the produced concentrate are calculated to give the NSR. The detailed LOM operating and financial data from Zancudo is detailed in Table 22-2.

Table 22-2: LOM Operating and Financial Data

Year	Production [3]		Net Revenue[4]	Operating Costs & Royalties	Operating Cash Flow [5]	Sustaining Capex	Initial Capex	Project Cash Flow	AISC[6]
	Gold	Silver							
	Kozs		US$ Millions						
2023	-	-	-	-	-	-	6.2	(6.2)	N/A
2024 [2]	34	167	61.2	33.8	12.5	0.2	8.6	3.7	1,007
2025	76	1,118	132.3	75.5	37.3	1.4	-	35.9	1,067
2026	75	1,104	130.5	74.6	37.7	0.5	-	37.2	1,058
2027	66	990	116.3	67.3	32.5	0.5	-	32.0	1,070
2028	62	932	109.3	63.7	30.4	0.5	-	29.9	1,078
2029	60	956	105.7	61.3	29.7	0.5	-	29.2	1,062
2030	57	977	102.7	59.2	29.0	0.5	-	28.5	1,047
2031	54	948	97.5	56.3	28.2	0.5	-	27.7	1,046
2032	45	797	81.7	48.5	22.4	0.5	-	21.9	1,076
2033	45	795	81.5	48.0	22.3	0.1	-	22.2	1,059
2034 [7]	2	25	2.6	1.5	4.4	-	-	4.4	1,027
Total	**576**	**8,809**	**1,021.3**	**589.7**	**286.4**	**5.2**	**14.8**	**266.4**	**1,059**

Notes:

1. All figures are rounded to reflect the relative accuracy of the estimate.
2. Includes production and cash flow from early-stage mining operations and sale of run-of-mine (“ROM”) material during the construction period. Processing plant operations and sale of gold-silver concentrates commencing November 1, 2024.
3. Production represents payable gold and silver from the sale of ROM material and concentrates.
4. Net revenue is based on spot gold and silver prices of US$1,800 and US$22 per ounce, respectively, and is shown net of refining and treatment charges. Refer to Table 22-1.
5. Operating cash flow is shown after working capital adjustments and income taxes. Refer to Table 21-3.
6. AISC is a non-IFRS measure and is calculated on a by-product credit basis by deducting revenue from silver production from the sum of operating costs and royalties, refining and treatment charges and sustaining capex, divided by the number of gold ounces produced.
7. Ending January 31, 2034.
8. Please see “Cautionary Statement on PEA and Use of Inferred Resources” below for the limitations, explanations and cautionary language on the use of the PEA

The preliminary economic assessment is preliminary in nature, and there is no certainty that the reported results will be realized. The Mineral Resource estimate used for the PEA includes Inferred Mineral Resources which are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as Mineral Reserves, and there is no certainty that the projected economic performance will be realized. The purpose of the PEA is to demonstrate the economic viability of the Zancudo Project, and the results are only intended as an initial, first-pass review of the Project economics based on preliminary information. Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability.

22.2 CASH FLOW

The production schedules presented in Section 16 and 17 have been used in conjunction with the cost data discussed in Section 21 to create a model for the Zancudo Project’s economic performance. Costs are in constant 2023 US$, no escalation of cost has been assumed. Operating costs are generated based on production physicals (tonnes) and unit rates. The detailed cash flow model for the Zancudo Project is presented in Table 22-3.

Table 22-3 Zancudo Project Cash Flows

Cash Flow (USD)	LOM (US$000)	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034 (1)	2035
Revenue	1,021,288	-	61,239	132,308	130,521	116,267	109,284	105,708	102,707	97,447	81,692	81,487	2,628	-
OPEX	(540,158)	-	(31,068)	(69,084)	(68,252)	(61,609)	(58,390)	(56,099)	(54,175)	(51,576)	(44,533)	(43,997)	(1,375)	-
Royalties	(49,564)	-	(2,707)	(6,467)	(6,380)	(5,682)	(5,341)	(5,159)	(5,006)	(4,746)	(3,979)	(3,969)	(128)	-
Working Capital Adjustments	-	-	(5,351)	-	744	107	200	209	-	827	135	(173)	3,302	-
Tax Paid	(145,148)	-	(9,590)	(19,516)	(18,980)	(16,543)	(15,327)	(14,924)	(14,583)	(13,725)	(10,927)	(11,033)	-	-
Operating Cash Flow	**286,418**	**-**	**12,523**	**37,241**	**37,653**	**32,540**	**30,426**	**29,735**	**28,943**	**28,227**	**22,388**	**22,315**	**4,427**	
Initial CAPEX	(14,796)	(6,205)	(8,591)	-	-	-	-	-	-	-	-	-	-	-
Sustaining CAPEX	(5,208)	-	(250)	(1,333)	(500)	(500)	(500)	(500)	(500)	(500)	(500)	(125)	-	-
NET Cash Flow	**266,414**	**(6,205)**	**3,682**	**35,908**	**37,153**	**32,040**	**29,926**	**29,235**	**28,443**	**27,727**	**21,888**	**22,190**	**4,427**	**-**

(1) Ending January 31, 2023.

22.3 TAXES, ROYALTIES AND OTHER INTERESTS

Tax calculations in the financial model are based on current tax laws in Colombia which are 35%. Payable royalties for the project are outlined in Table 22-3.

22.4 SENSITIVITY ANALYSIS

Metal price sensitivities have been calculated compared to the After-Tax Internal Rate of Return (IRR). The results demonstrate little effect on the viability of the Zancudo Project. Figure 22-1demonstrates gold sensitivity and Figure 22-2 demonstrates silver sensitivity.

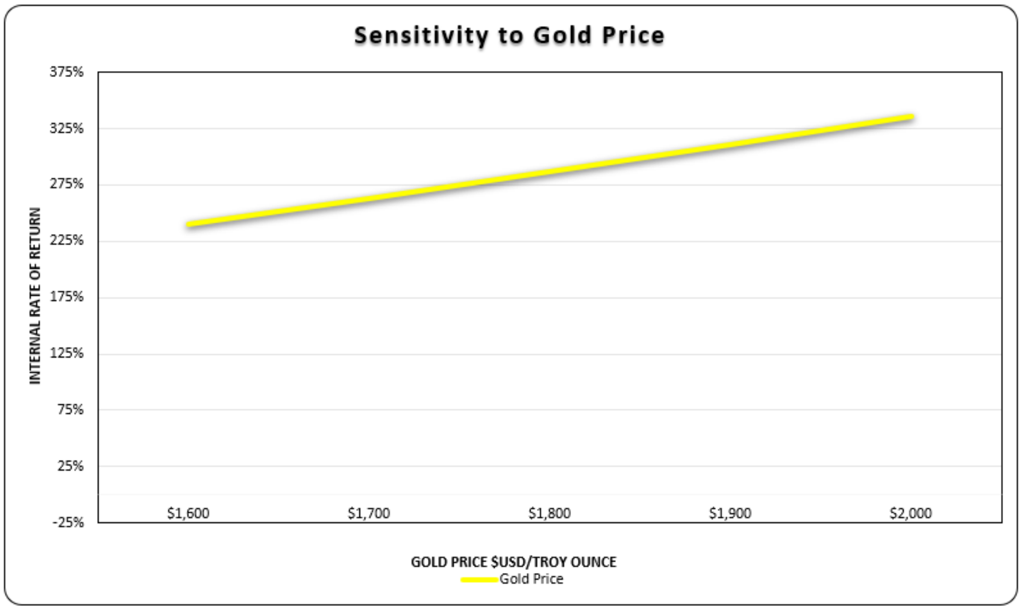


Figure 22-1 Zancudo Project Sensitivity to Gold Price

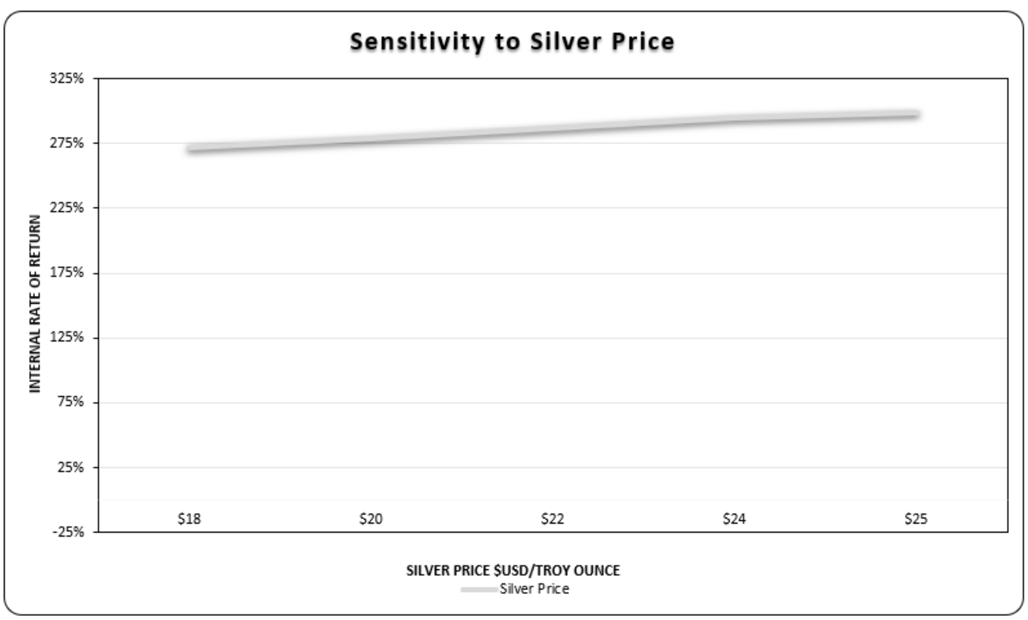


Figure 22-2 Zancudo Project Sensitivity t Silver Price

23 ADJACENT PROPERTIES

The Zancudo Project lies on the northern side of the Titiribí Project where porphyry Au-Cu mineralization was discovered by Gold Fields of South Africa Limited and Muriel Mining S.A. in 1998 (Meldrum, 1998). The project was subsequently explored by Gold Plata Mining (formerly Muriel Mining) with partners Debeira Goldfields in 2006-2008, Windy Knob Resources in 2008 and 2009, and Sunward Resources Ltd. in 2009 through 2013 (Kantor & Cameron, 2013). Sunward Resources was subsequently acquired by NovaCopper Inc. in 2015, Brazil Resources Inc. in 2016, and is now called GoldMining Inc. No drilling has been carried out at the Titiribí Project since 2013.

The Titiribí project has NI 43-101 mineral resources that comprise measured mineral resources of 51.6 Mt grading 0.49 g/t Au and 0.17% Cu containing 0.82 Moz Au and 195.1 million pounds (Mlb) Cu, indicated mineral resources of 234.2 Mt grading 0.51 g/t Au and 0.09% Cu containing 3.82 Moz Au and 459.3 Mlb Cu and inferred mineral resources of 207.9 Mt grading 0.49 g/t Au and 0.02% Cu containing 3.26 Moz Au and 77.9 Mlb Cu, all estimated at a 0.3 g/t Au cutoff (Kantor & Cameron, 2016). The resources are hosted in three deposits: the Cerro Vetas porphyry Au-Cu deposit, the Chisperos breccia Au deposit, and the NW Breccia Au deposit.

However, the author has been unable to verify the information in this report regarding the Titiribí project and the information is not necessarily indicative of the mineralization on the Zancudo Project that is the subject of this Technical Report.

24 OTHER RELEVANT DATA AND INFORMATION

The Authors know of no other relevant data and information that would make the report understandable and not misleading.

25 INTERPRETATIONS AND CONCLUSIONS

This report was prepared by a group of independent consultants, all Qualified Persons as defined by NI 31-101, to demonstrate the economic viability of open pit mining and processing, based on the estimated Mineral Resources at the Zancudo Project. This report provides a summary of the results and findings to the level that should be expected for a preliminary economic assessment. Standard industry practices and assumptions have been applied in this study.

Mineral Resources meet the reasonable prospects of eventual economic extraction due two main factors; 1) cut-off grades are based on scientific data and assumptions related to the project and 2) Mineral Resources are estimated only within geology shapes derived by the scientific data as well as by using generally accepted practices. Confidence in the Mineral Estimate was used to classify Mineral Resources based upon drill hole spacing, geological knowledge of the deposits and metallurgical studies.

25.1 PRELIMINAY ECONOMIC ASSESSMENT

Estimated Mineral Resources were assumed to be conventionally mined and processed with a conventional process facility to produce a gold and silver concentrate that would be shipped to an external refinery.

The Zancudo Project is expected to yield an after-tax undiscounted LOM net cash flow of $266.4 million, and an NPV of $206.3 million, $179.2 Million and $163.9 Million at a discount rate of 5%, 8% and 10% per year respectively.

Based on the assumptions of this PEA, the report suggests that the Project could be put into production and return capital investments within 1.2 years of startup.

Mining production estimates included Inferred Mineral Resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves. Thus, this PEA is preliminary in nature and is based on technical and economic assumptions that should be evaluated in more advanced studies.

25.2 LOCATION

The Zancudo Project is currently a Mineral Resource stage gold Project located in the near the town of Titiribí, Department of Antioquia, Republic of Colombia. It is approximately 30 km southwest of the city of Medellin, Colombia.

Zancudo has been exploited intermittently by numerous operations over a long period of time. Gold was first discovered in the Zancudo district in 1746. Mining has been carried out at Zancudo since 1793 in 58 mines. The most important company was the Sociedad de Zancudo that operated for a century from 1848 to 1948, with the most important mining period being from 1863 to 1927. Further small-scale mining has taken place in the early 21st Century (2009 to 2011) but was focused on reprocessing old scoria (glassy slag), from the historical dumps, with a total of approximately 135 kt, with an average grade of 4 g/t Au, producing approximately 337 kg (10.8 koz) of Au and 5,632 kg (181.1 koz) of Ag.

25.3 GEOLOGY

Geologically the Zancudo deposit is located on the western side of the Central Cordillera of the Colombian Andes. The deposit lies within the Romeral terrane, covered by continental sediments comprising gray to green colored conglomerates, sandstones, shales, and coal seams.

Gold mineralization occurs in two types of structures at Zancudo:

- Mineralization in flat-lying stacked mantos and disseminations in conglomerates and sandstones.
- Mineralization in N-S striking, steeply dipping veins.

Mineralization is interpreted to be of intermediate sulfidation epithermal in style. The fluid source in interpreted to be a porphyry gold-copper system located 3.5 km to the southwest outside of the current mining concessions. The minerals, in order of abundance, are pyrite, galena, arsenopyrite, sphalerite, silver-sulfosalts, bournonite, boulangerite and jamesonite, native gold and native silver.

25.4 EXPLORATION

More recently, exploration on the project was initially completed by CDI between 1999 and 2003 completing six holes for 998.2 m. CDI drilling information is not used in the current estimates due to a lack of records and concerns over data quality.

Between 2011 and 2022, Gran Colombia and IAMGOLD (through its Option Agreement with Gran Colombia) completed multi-staged exploration programs on the Zancudo Project including, geological mapping, rock chip sampling, underground sampling, geophysical surveys, thin section analyses, preliminary metallurgical studies, and DD.

In the opinion of the QP, the geological logging, sampling preparation, and analytical procedures used by Gran Colombia and IAMGOLD are consistent with generally accepted industry best practices and are therefore adequate. No current drilling was being completed during the time of the site inspection, the current personal inspection has been limited to review of procedures, interviews with the geological staff and review of the historical core.

Drilling core is currently being stored outside under plastic covers in two separate locations. This is not considered to be at industry standards and it is recommended Denarius identify a potential facility in the local town to consolidate the storage and provide space for future logging. At minimum the core should be stored in a covered facility to avoid potential degradation.

Both Gran Colombia and IAMGOLD completed detailed QA/QC programs during their exploration. Insertion rates for standard reference materials, blanks and duplicates submitted during the routine submissions exceeded 20% with typical insertion rates of each QA/QC sample at 1 per 25. In the opinion of the QP this is at or above typical industry best practices for an exploration stage project.

Analytical quality control data produced are sufficiently reliable for the purpose of MRE. Continued diligence in monitoring the performance of standard reference materials is encouraged and implementing corrective action as required.

It is the opinion of the QP responsible for the preparation of this Technical Report that the data used to support the conclusions presented here are adequate for the purposes of the defining the current geological model and associated mineral resource estimates.

25.5 MINERAL RESOURCE ESTIMATE

The current Mineral Resource provides an update on the previously disclosed Mineral Resources (effective date, December 31, 2022). No new drilling has been completed since the previous estimate but during initial studies for underground mining it was apparent potential existed to improve the geological model through a more rigorous process of validation of the historical holes should be completed.

This work was completed between July and August 2023 by SRK, with assistance from Denarius geological team. Scott Wilson CPG, President of Resource Development Associates is taking responsibility for the current MRE.

The MRE process was completed by using the initial geological models provided by Zancudo geological staff, which have been independently reviewed and refined by the QP. The Company provided the resource modeler with an exploration database with logging indicating the main geological features and units. In addition to the database, the preliminary geological interpretations were used, and minor alterations were made accordingly. The resource estimation methodology involved the following procedures:

- Database compilation and verification
- Construction of wireframe models for the fault networks and centerlines of mining development per vein
- Definition of resource domains
- Data conditioning (compositing and capping) for statistical analysis, geostatistical analysis
- Variography
- Block modeling and grade interpolation
- Resource classification and validation
- Assessment of “reasonable prospects for economic extraction” and selection of appropriate reporting CoG
- Preparation of the MRE

The MRE and geologic models were completed using Seequent Leapfrog Geo and Leapfrog Edge, respectively. The procedure involved construction of wireframe models for the fault networks, key geological/mineralization domains, data conditioning (compositing and capping) for statistical analysis, geostatistical analysis, variography analysis, block modeling and grade interpolation followed by validation. Grade was estimated using IDW (power 2) estimates for gold and silver. Grade estimation has been based on block dimensions of 20 m x 20 m x 20 m, for the current model. The block size reflects potential size variations for any underground smallest mining units. Classification has been limited to estimates within 125 m of the closest single hole, located in either vein or manto domains, and by more than two drillholes.

The resource evaluation work was completed by Mr. Benjamin Parsons, MAusIMM (CP#222568), according to CIM Definition Standards, who undertook a site inspection in January 2023.

Historical mine plans were digitized by Gran Colombia and the accessible mines were surveyed, but a complete detailed survey of the previous mining is not currently available. Depletion was accounted for using the best information available (digitization).

The MRE is classified as Inferred based on a combination off the drillhole spacing and the high-level nature of the initial metallurgical test work used to support the benched marked recoveries to determine the cut-off grade.

Further work is required to improve the confidence in the MRE.

The work to date is sufficient to confirm the presence of the mineralization which has been intersected at various locations over the strike length of 2.5 km and over a downdip extension of 650 m. The drilling has confirmed mineralization in the form of either shallow dipping manto veins in the upper portion and steeply dipping veins in the lower portions of the deposit.

It is noted that the Project contains relatively high levels of arsenic in the estimation domains (ranging from an average of 2,860 ppm to 14,550 ppm). These high levels as supported in the metallurgical test work that high arsenic values (>10,000 ppm) in the flotation rougher concentrate should be considered when evaluating further processing, such as oxidation, and the potential penalties that can be incurred with final concentrate smelting. During more detailed studies tracking of arsenic levels through estimation maybe required for engineering and metallurgical purposes.

25.6 UPSIDE POTENTIAL

There remains potential to increase the Mineral Resources at the Project, which should be supported by further exploration to increase the confidence in the geological model via selected infill drilling, and from underground drilling and sampling once access is available to reduce the current drill spacing.

25.7 RISKS

The QP is not aware of any additional environmental, permitting, legal, title, taxation marketing or other factors that could affect resources. It is noted that the Project contains relatively high levels of arsenic in the estimation domains (ranging from an average of 2,860 ppm to 14,554 ppm). These high levels as supported in the metallurgical test work indicate that high arsenic values (>10,000 ppm) in the flotation rougher concentrate should be considered when evaluating further processing, such as oxidation, and the potential penalties that can be incurred with final concentrate smelting. During more detailed studies tracking of Arsenic levels through estimation may be required for engineering and metallurgical purposes.

26 RECOMMENDATIONS

26.1 RECOMMENDED WORK PROGRAMS

In terms of the current Mineral Resources and potential extensions, and the work completed to date, the QP is recommending the following work program:

- The current drill spacing does not statistically support Indicated Mineral Resource in terms of understanding of the shorter scale grade variability, so a series of infill drilling is recommended to increase the confidence in the estimates.
- Additional underground sampling of mineralized faces is also recommended using protocols which ensure sample representativity via pre-cut channels at the equivalent sample support as drilling.
- It is estimated that the next drilling campaign will be in the order of 10,500 m split between infill drilling and attempts to extend the current mineralization in the northern areas of the Project (Figure 26-1).
- Investigate options for improved confidence in the underground mine surveys once access is available.
- On-going validation of the density studies should be completed and with additional routine sampling further analysis of estimates versus regressed assignment of density in future models will need to be completed.

Recommend work program costs are summarized in Table 26-1.

Table 26-1: Recommended work program for Zancudo mineral resource development

Type of Work	Description	Cost
Exploration Drilling	In-fill drilling to convert some of the Inferred Resources to Indicated within Area A and to confirm grade continuity within Area B (Figure 26-1), aimed to improve the geological confidence to a sufficient level to define Mineral Resources outside the estimated blocks.	US$1,200,000
Study	Complete and update Mineral Resource Estimate	US$75,000
Subtotal		**US$1,275,000**
Contingency	Monte Carlo Simulation suggests there is a 55% probability the program will exceed $1,275,000. A contingency of 14% has been added to the work program budget.	**US$177,000**
Total		**US$1,452,000**

The QP has not recommended successive phases.

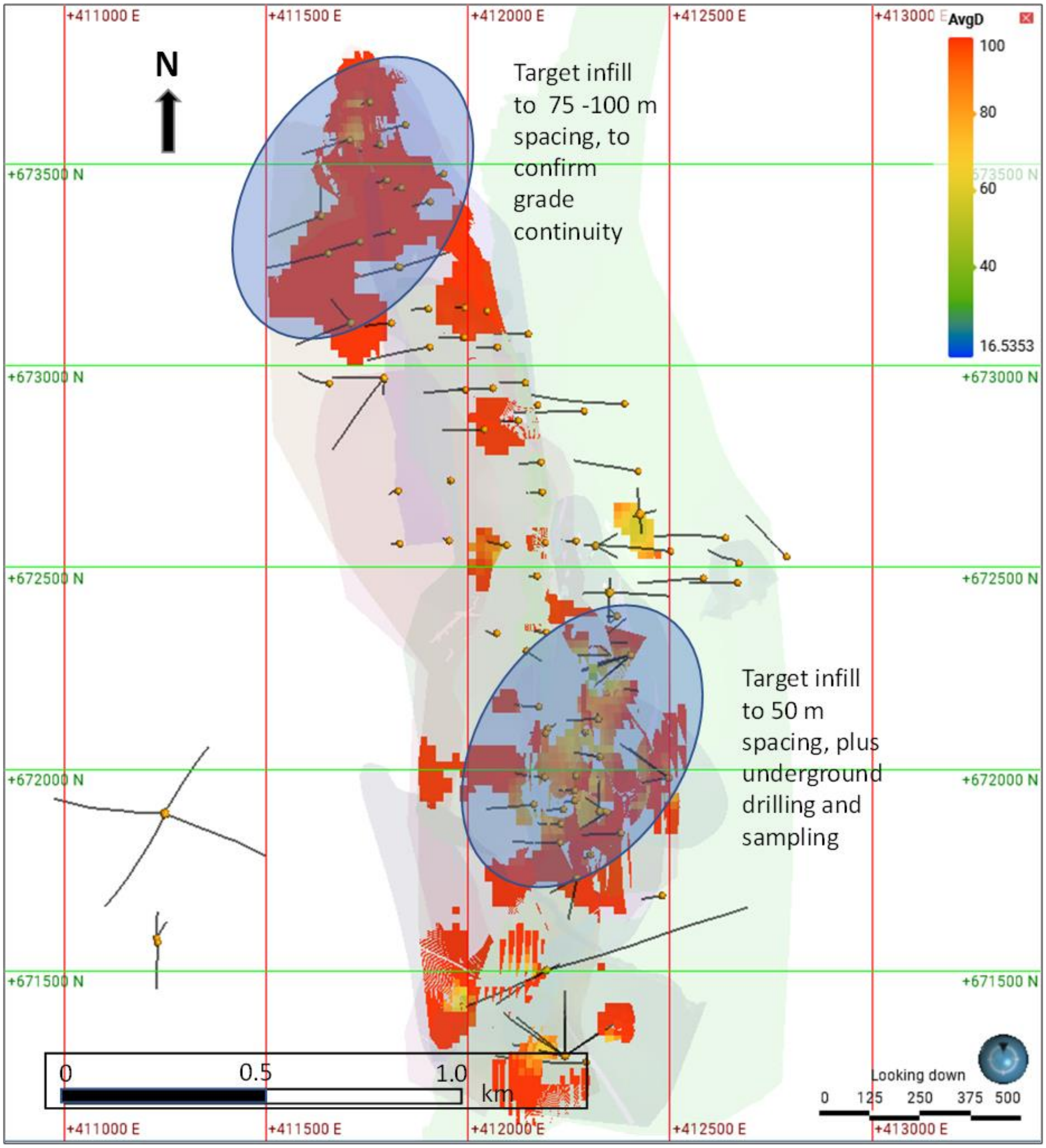


Figure 26-1: Summary of Key Areas for Further Exploration and Infill for Detailed Drill Planning (Estimated at 10,500 m)

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Definition of Terms

Term	Definition
Assay	The chemical analysis of mineral samples to determine the metal content.
Capital Expenditure	All other expenditures not classified as operating costs.
Composite	Combining more than one sample result to give an average result over a larger distance.
Concentrate	A metal-rich product resulting from a mineral enrichment process such as gravity concentration or flotation, in which most of the desired mineral has been separated from the waste material in the ore.
Crushing	Initial process of reducing ore particle size to render it more amenable for further processing.
Cut-off Grade (CoG)	The grade of mineralized rock, which determines as to whether or not it is economic to recover its gold content by further concentration.
Dilution	Waste, which is unavoidably mined with ore.
Dip	Angle of inclination of a geological feature/rock from the horizontal.
Fault	The surface of a fracture along which movement has occurred.
Footwall	The underlying side of an orebody or stope.
Gangue	Non-valuable components of the ore.
Grade	The measure of concentration of gold within mineralized rock.
Hangingwall	The overlying side of an orebody or slope.
Haulage	A horizontal underground excavation which is used to transport mined ore.
Hydrocyclone	A process whereby material is graded according to size by exploiting centrifugal forces of particulate materials.
Igneous	Primary crystalline rock formed by the solidification of magma.
Kriging	An interpolation method of assigning values from samples to blocks that minimizes the estimation error.
Level	Horizontal tunnel the primary purpose is the transportation of personnel and materials.
Lithological	Geological description pertaining to different rock types.
LoM Plans	Life-of-Mine plans.
LRP	Long Range Plan.
Material Properties	Mine properties.
Milling	A general term used to describe the process in which the ore is crushed and ground and subjected to physical or chemical treatment to extract the valuable metals to a concentrate or finished product.
Mineral/Mining Lease	A lease area for which mineral rights are held.
Mining Assets	The Material Properties and Significant Exploration Properties.
Ongoing Capital	Capital estimates of a routine nature, which is necessary for sustaining operations.
Ore Reserve	See Mineral Reserve.
Pillar	Rock left behind to help support the excavations in an underground mine.
RoM	Run-of-Mine.
Sedimentary	Pertaining to rocks formed by the accumulation of sediments, formed by the erosion of other rocks.
Shaft	An opening cut downwards from the surface for transporting personnel, equipment, supplies, ore and waste.
Sill	A thin, tabular, horizontal to sub-horizontal body of igneous rock formed by the injection of magma into planar zones of weakness.
Smelting	A high temperature pyrometallurgical operation conducted in a furnace, in which the valuable metal is collected to a molten matte or doré phase and separated from the gangue components that accumulate in a less dense molten slag phase.
Stope	Underground void created by mining.
Stratigraphy	The study of stratified rocks in terms of time and space.

Term	Definition
Strike	Direction of line formed by the intersection of strata surfaces with the horizontal plane, always perpendicular to the dip direction.
Sulfide	A sulfur bearing mineral.
Tailings	Finely ground waste rock from which valuable minerals or metals have been extracted.
Thickening	The process of concentrating solid particles in suspension.
Total Expenditure	All expenditures including those of an operating and capital nature.
Variogram	A statistical representation of the characteristics (usually grade).

Abbreviations

Abbreviation	Unit or Term
A	ampere
AA	atomic absorption
A/m^2	amperes per square meter
ANFO	ammonium nitrate fuel oil
Ag	silver
Au	gold
AuEq	gold equivalent grade
°	degree
°C	degrees Centigrade
CCD	counter-current decantation
CIL	carbon-in-leach
CoG	cut-off grade
cm	centimeter
cm^2	square centimeter
cm^3	cubic centimeter
cfm	cubic feet per minute
ConfC	confidence code
CRec	core recovery
CSS	closed-side setting
CTW	calculated true width
°	degree (degrees)
dia.	diameter
EIS	Environmental Impact Statement
EMP	Environmental Management Plan
FA	fire assay
ft	foot (feet)
ft^2	square foot (feet)
ft^3	cubic foot (feet)
g	gram
gal	gallon
g/L	gram per liter
g-mol	gram-mole
gpm	gallons per minute
g/t	grams per tonne
ha	hectares
HDPE	Height Density Polyethylene
hp	horsepower
HTW	horizontal true width

Abbreviation	Unit or Term
ICP	induced couple plasma
ID2	inverse-distance squared
ID3	inverse-distance cubed
IFC	International Finance Corporation
ILS	Intermediate Leach Solution
kA	kiloamperes
kg	kilograms
km	kilometer
km^2	square kilometer
koz	thousand troy ounce
kt	thousand tonnes
kt/d	thousand tonnes per day
kt/y	thousand tonnes per year
kV	kilovolt
kW	kilowatt
kWh	kilowatt-hour
kWh/t	kilowatt-hour per metric tonne
L	liter
L/sec	liters per second
L/sec/m	liters per second per meter
lb	pound
LHD	Long-Haul Dump truck
LLDDP	Linear Low Density Polyethylene Plastic
LOI	Loss On Ignition
LoM	Life-of-Mine
m	meter
m^2	square meter
m^3	cubic meter
masl	meters above sea level
MARN	Ministry of the Environment and Natural Resources
MDA	Mine Development Associates
mg/L	milligrams/liter
mm	millimeter
mm^2	square millimeter
mm^3	cubic millimeter
MME	Mine & Mill Engineering
Moz	million troy ounces
Mt	million tonnes
Mt/y	million tonnes per year
MTW	measured true width
MW	million watts
m.y.	million years
NGO	non-governmental organization
NI 43-101	Canadian National Instrument 43-101
OSC	Ontario Securities Commission
oz	troy ounce
%	percent
PLC	Programmable Logic Controller
PLS	Pregnant Leach Solution

Abbreviation	Unit or Term
PMF	probable maximum flood
ppb	parts per billion
ppm	parts per million
QA/QC	Quality Assurance/Quality Control
RC	rotary circulation drilling
RoM	Run-of-Mine
RQD	Rock Quality Description
SEC	U.S. Securities & Exchange Commission
sec	second
SG	specific gravity
SPT	standard penetration testing
st	short ton (2,000 pounds)
t	tonne (metric ton) (2,204.6 pounds)
t/h	tonnes per hour
t/d	tonnes per day
t/y	tonnes per year
TSF	tailings storage facility
TSP	total suspended particulates
µm	micron or microns
V	volts
VFD	variable frequency drive
W	watt
XRD	x-ray diffraction
y	year