

# **SEC Technical Report Summary Mineral Resources San Martín Zacatecas, México**

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**Report Prepared for**

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# Table of Contents

<b>1</b>	<b>Executive Summary</b>	<b>1</b>
1.1	Property Description (Including Mineral Rights) and Ownership	1
1.2	Geology and Mineralization	1
1.3	Status of Exploration, Development and Operations	1
1.4	Mineral Resource Estimates	2
1.5	Conclusions and Recommendations	4
1.5.1	Property Description and Ownership	4
1.5.2	Geology and Mineralization	4
1.5.3	Mineral Resource and Mineral Reserve Estimates	4
1.5.4	Recommendations	5
<b>2</b>	<b>Introduction</b>	<b>6</b>
2.1	Registrant for Whom the Technical Report Summary was Prepared	6
2.2	Terms of Reference and Purpose of the Report	6
2.3	Sources of Information	6
2.4	Details of Inspection	7
2.5	Qualified Person	7
2.6	Report Version Update	7
<b>3</b>	<b>Property Description</b>	<b>8</b>
3.1	Property Location	8
3.2	Mineral Title, Claim, Mineral Right, Lease or Option Disclosure	9
3.3	Mineral Rights Description and How They Were Obtained	13
3.4	Encumbrances	15
3.5	Other Significant Factors and Risks	15
3.6	Royalties or Similar Interest	15
<b>4</b>	<b>Accessibility, Climate, Local Resources, Infrastructure and Physiography</b>	<b>16</b>
4.1	Topography, Elevation and Vegetation	16
4.2	Means of Access	17
4.3	Climate and Length of Operating Season	18
4.4	Infrastructure Availability and Sources	19
4.4.1	Water	19
4.4.2	Electricity	19
4.4.3	Personnel	19
4.4.4	Supplies	19
4.4.5	Plant/Tailings	19
<b>5</b>	<b>History</b>	<b>21</b>

5.1	Previous Operations.....	21
5.2	Exploration and Development of Previous Owners or Operators.....	24
<b>6</b>	<b>Geological Setting, Mineralization, and Deposit .....</b>	<b>25</b>
6.1	Regional, Local and Property Geology .....	25
6.1.1	Regional Geology.....	25
6.1.2	Local Geology .....	27
6.1.3	Property Geology .....	30
6.2	Mineralization .....	35
6.2.1	Mineralization and alteration .....	35
6.2.2	Structural Controls on Mineralization .....	36
6.3	Mineral Deposit .....	38
<b>7</b>	<b>Exploration .....</b>	<b>40</b>
7.1	Exploration Work (Other Than Drilling).....	40
7.1.1	Procedures and Parameters Relating to the Surveys and Investigations.....	40
7.1.2	Sampling Methods and Sample Quality .....	42
7.1.3	Information About the Area Covered.....	45
7.1.4	Significant Results and Interpretation .....	45
7.2	Exploration Drilling .....	46
7.2.1	Drilling Type and Extent .....	46
7.2.2	Drilling, Sampling, or Recovery Factors.....	48
7.2.3	Drilling Results and Interpretation .....	54
7.3	Hydrogeology .....	57
7.4	Geotechnical Data, Testing and Analysis .....	57
7.5	Property Plan View.....	62
7.6	Exploration Target.....	62
<b>8</b>	<b>Sample Preparation, Analysis and Security .....</b>	<b>63</b>
8.1	Sample Preparation Methods and Quality Control Measures .....	63
8.2	Sample Preparation, Assaying and Analytical Procedures.....	63
8.2.1	Density Analysis .....	63
8.2.2	Sample Preparation – Internal Laboratory .....	64
8.2.3	Chemical Analysis – Internal Laboratory.....	66
8.2.4	Sample Preparation – SGS Lab.....	66
8.2.5	Chemical Analysis - SGS Lab .....	66
8.3	Quality Control Procedures/Quality Assurance .....	67
8.3.1	Security Measures – Chain of Custody.....	67
8.3.2	Mine Geology Department .....	68
8.3.3	Exploration Department.....	68

8.4	Opinion on Adequacy.....	73
8.5	Non-Conventional Industry Practice .....	74
<b>9</b>	<b>Data Verification.....</b>	<b>75</b>
9.1	Data Verification Procedures .....	75
9.1.1	Results of the Validation Samples .....	75
9.2	Limitations .....	78
9.3	Opinion on Data Adequacy.....	79
<b>10</b>	<b>Mineral Processing and Metallurgical Testing .....</b>	<b>80</b>
10.1	Testing and Procedures .....	80
10.2	Sample Representativeness .....	80
10.3	Laboratories .....	81
10.4	Relevant Results .....	81
10.5	Adequacy of Data and Non-Conventional Industry Practice .....	84
<b>11</b>	<b>Mineral Resource Estimates .....</b>	<b>85</b>
11.1	Key Assumptions, Parameters, and Methods Used .....	85
11.1.1	Mineral Titles and Surface Rights .....	85
11.1.2	Database .....	85
11.2	Geological Model .....	85
11.3	Mineral Resources Estimates .....	87
11.3.1	Data Compilation and Verification .....	87
11.3.2	Calculation of Weighted Averages Grades and Volume Calculation.....	92
11.3.3	Capping .....	93
11.3.4	Density.....	93
11.3.5	Documentation .....	94
11.3.6	Depletion .....	95
11.4	Resource Classification and Criteria.....	96
11.4.1	Measured Resources .....	96
11.4.2	Indicated Resources.....	96
11.4.3	Inferred Resources.....	96
11.5	Uncertainty .....	99
11.6	Cut-Off Grades Estimates .....	101
11.7	Summary Mineral Resources.....	103
11.8	Opinion on Influence for Economic Extraction.....	105
<b>12</b>	<b>Mineral Reserve Estimates.....</b>	<b>106</b>
<b>13</b>	<b>Mining Methods.....</b>	<b>107</b>
<b>14</b>	<b>Processing and Recovery Methods .....</b>	<b>108</b>



<b>15 Infrastructure</b> .....	<b>109</b>
<b>16 Market Studies</b> .....	<b>110</b>
<b>17 Environmental Studies, Permitting, and Plans, Negotiations, or Agreements with Local Individuals or Groups</b> .....	<b>111</b>
<b>18 Capital and Operating Costs</b> .....	<b>112</b>
<b>19 Economic Analysis</b> .....	<b>113</b>
<b>20 Adjacent Properties</b> .....	<b>114</b>
<b>21 Other Relevant Data and Information</b> .....	<b>115</b>
<b>22 Interpretation and Conclusions</b> .....	<b>116</b>
22.1 Geology and Mineralization .....	116
22.2 Mineral Resource and Mineral Reserve Estimates.....	116
<b>23 Recommendations</b> .....	<b>118</b>
23.1 Mineral Resource and Mineral Reserve Estimates.....	118
23.2 Recommended Work Programs.....	118
23.3 Recommended Work Program Costs .....	118
<b>24 References</b> .....	<b>120</b>
<b>25 Reliance on Information Provided by the Registrant</b> .....	<b>121</b>

## List of Tables

Table 1-1: San Martín Summary Mineral Resources at End of Fiscal Year Ended December 31, 2021 – SRK Consulting (U.S.), Inc. <sup>(1)</sup> .....	4
Table 2-1: Site Visits.....	7
Table 3-1: Land Tenure at San Martín .....	9
Table 5-1: Production Table Summary – San Martín 2002 - 2020.....	22
Table 7-1: Comparison of Planned vs Real Tonnages and Grades for 2020 and 2021 .....	46
Table 7-2: Summary of RMR Values Determined Using Bieniawski’s Method .....	60
Table 7-3: Summary of Hoek-Brown Parameters Determined from Mapping.....	61
Table 7-4: Summary of Point Load Strengths by Rock Type .....	61
Table 7-5: Summary of Intact Rock Strength Parameters from Laboratory Testing Program .....	61
Table 7-6: Comparison of Uniaxial Compressive Strength Test Results .....	61
Table 8-1: Specific Gravity Measurements (2021) .....	64
Table 8-2: Detection Limits – Methods GE-ICP14B .....	67
Table 9-1: Validation Rock Samples from Underground Workings.....	76
Table 9-2: Results of the Validation Core Samples (Pulps) and the Original Data - Exploration Drilling .....	77
Table 10-1: Metallurgical Performance 2002 - 2020 .....	81
Table 10-2: Metallurgical Performance 2020 to 2021 .....	83

Table 10-3: Cumulative Recovery used for Cut-Off Grade Analysis .....	84
Table 11-1: Sources and Degree of Uncertainty .....	99
Table 11-2: Price Assumptions.....	102
Table 11-3: Metallurgical Recovery Assumptions (Recovery in Payable concentrates).....	102
Table 11-4: NSR Adjustment Factors.....	103
Table 11-5: Operating Unit Cost.....	103
Table 11-6: San Martín Summary Mineral Resources at End of Fiscal Year Ended December 31, 2021 – SRK Consulting (U.S.), Inc. <sup>(1)</sup> .....	104
Table 23-1: Recommended Work Program Costs .....	119
Table 25-1: Reliance on Information Provided by the Registrant.....	121

## List of Figures

Figure 3-1: Location Map of San Martín .....	8
Figure 3-2: Map showing Concession Value .....	11
Figure 3-3: Surface Rights Map – Area of Charcas Operation.....	12
Figure 3-4: Location of Ejidos within the San Martín Concessions .....	13
Figure 4-1: Photographs of the Surrounding Area of San Martín .....	17
Figure 4-2: Access Infrastructure to San Martín Mine.....	18
Figure 6-1: Regional Geology Map.....	26
Figure 6-2: Local Geology Map .....	28
Figure 6-3: Stratigraphic Column of San Martín.....	29
Figure 6-4: Schematic Cross Section of San Martín .....	30
Figure 6-5: Property Geology Map .....	32
Figure 6-6: Vertical Sections – Interpreted Mineralization.....	33
Figure 6-7: Plan Views – Interpreted Mineralization.....	34
Figure 6-8: Photographs of Core in Zones of Massive Sulfides (Sphalerite, Galena, Pyrite), Drillhole DDHMN21-11 .....	35
Figure 6-9: Scheme of Structural Evolution Model.....	37
Figure 7-1: Example of Channel Sampling Location Maps (AutoCAD Format) .....	40
Figure 7-2: Example of Geological Underground Maps (Paper and Digital AutoCAD).....	41
Figure 7-3: Marks Indicating Limits and Width of Samples .....	42
Figure 7-4: Rock Sampling: Use of Textile to Collect Rock Chips .....	43
Figure 7-5: Left: Rock Sampling using Hammer and Chisel. Right: Homogenization of Fragments Size .....	44
Figure 7-6: Recent Drillhole traces – San Martín .....	47
Figure 7-6: Core Drilling Logging Format Used at San Martín for Historical Information (1982) .....	49
Figure 7-7: Core Boxes of San Martín.....	50
Figure 7-8: Core Logging Room of the Exploration Department in San Martín .....	51

Figure 7-9: Core Boxes with Sample Marks and the Remaining Half of Core .....	52
Figure 7-10: Labeled Core Samples.....	53
Figure 7-11: Core Logging and Core Storage Facility at San Martín .....	54
Figure 7-12: Example of a Geology Interpretation in a Vertical Section, Including Completed Fan Drilling ....	55
Figure 7-13: Location of the Mina Nueva – San Martín Project .....	56
Figure 7-15: Map of the Operation and The Areas for Exploration in 2022 .....	62
Figure 8-1: Flow Chart of Sample Preparation (Internal Laboratory) .....	65
Figure 8-2: Values of the Certified Standard Reference Materials used by Exploration in San Martín .....	69
Figure 8-3: Results of Fine Blanks Controls .....	71
Figure 8-4: Results of Fine Duplicates (Acceptability Range $\pm 20\%$ ).....	72
Figure 8-5: Results of CSRM (CDN-ME-1414) .....	73
Figure 9-1: Scatter plots: X Axis: Validation Samples (Pulps); Y Axis: Original data.....	78
Figure 10-1: General Flow Chart of Process and Tailings .....	80
Figure 11-1: Example of Plan View of Underground Workings and Geological Interpretation .....	86
Figure 11-2: Example of Plan View of Underground Workings and Channel Sample Lines .....	89
Figure 11-3: Example of Plan View Including the Calculated Areas of Mineralized Zones .....	91
Figure 11-4: Example of Vertical Section Including the Drilling, Interpretation and Calculated Areas.....	92
Figure 11-5: Example of Table used for Calculation of Resources/Reserves in San Martín .....	95
Figure 11-6: Long Section of Veta Ibarra Including the Mineral Resource Blocks.....	98

## List of Abbreviations

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.

Abbreviation	Unit or Term
A	ampere
AA	atomic absorption
A/m <sup>2</sup>	amperes per square meter
ANFO	ammonium nitrate fuel oil
Ag	silver
Au	gold
AuEq	gold equivalent grade
°C	degrees Centigrade
CCD	counter-current decantation
CIL	carbon-in-leach
CoG	cut-off grade
cm	centimeter
cm <sup>2</sup>	square centimeter
cm <sup>3</sup>	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 <sup>2</sup>	square foot (feet)
ft <sup>3</sup>	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
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 <sup>2</sup>	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

<b>Abbreviation</b>	<b>Unit or Term</b>
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 <sup>2</sup>	square meter
m <sup>3</sup>	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 <sup>2</sup>	square millimeter
mm <sup>3</sup>	cubic millimeter
MME	Mine & Mill Engineering
Moz	million troy ounces
Mt	million tonnes
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
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

# 1 Executive Summary

This report was prepared as an initial assessment (mineral resource) technical report summary in accordance with the Securities and Exchange Commission (SEC) S-K regulations (Title 17, Part 229, Items 601 and 1300 until 1305) for Southern Copper Corporation (SSC) on their Industrial Minera México, S.A. de C.V (IMMSA or Company), a wholly owned subsidiary of Southern Copper Corporation, by SRK Consulting (U.S.), Inc. (SRK) on the San Martín Mine (San Martín), located in México.

## 1.1 Property Description (Including Mineral Rights) and Ownership

The San Marin Project consists of 73 mining concessions with a total surface of 10,360.9508 Ha, with the titles held 100 percent (%) by IMMSA. The 73 mining concessions are valid for 50 years and extendable to 50 more years. The oldest concession was originally awarded in 1979 and has a current expiration date of 2029; however, the concession may be extended 50 more years.

IMMSA owns sufficient surface lands with rights to conduct any work or exploration required to advance or continue of activities within the San Martín project.

## 1.2 Geology and Mineralization

San Martín mine is located in the Central Mesa of México, between Sierra Madre Occidental and Sierra Madre Oriental. The Cuesta del Cura (Upper Cretaceous) limestone is the main sedimentary formation in the district. This is a sequence of shallow marine limestone and black chert which is overlain by Indura Formation that consists of alternating shales and fine-grained clayey limestones.

The mineral deposits in this district are associated with replacement veins and bodies formed in the skarn in close proximity to the Cerro de la Gloria granodiorite intrusion. The main mineralized veins are San Marcial, Ibarra and Gallo-Gallina which are oriented parallel to the intrusive contact and have thicknesses varying from 0.4 m to 4 m and horizontal extents of up to 1,000 m to the east/northeast from the granodiorite contact. The mineralization is associated with massive and disseminated sulfides occurring in replacement ore bodies between the main veins and in the skarn and include chalcopyrite (CuFeS), sphalerite (ZnS), galena (PbS), bornite (Cu<sub>5</sub>FeS<sub>4</sub>), tetrahedrite (Cu<sub>12</sub>FeSb<sub>4</sub>S<sub>13</sub>), native Silver (Ag), Pyrite (FeS), arsenopyrite (FeAsS) and stibnite (Sb<sub>2</sub>S<sub>3</sub>).

## 1.3 Status of Exploration, Development and Operations

IMMSA has been exploiting the deposit since 1948. At the beginning of the 1950s, the surface and interior exploration of the mine began in San Martín, from this period until 2005, approximately 100,000 m were drilled from surface and 220,000 m from underground chambers. During the years 1990-1997 approximately 67,000 meters with a total in 165 holes were completed.

Between the years 1990-1997, a large surface exploration program was completed in the area surrounding the San Martín mine. The exploration program included application of standard modern exploration techniques such as satellite imagery, geophysical surveys, mapping.

In 2008, a geological-geochemical study was carried out in the eastern area of the San Martín unit, Sombrerete, Zacatecas; which indicated a number of anomalous N-S striking anomalies in the limestones, associated with the intrusive contact. A total of five holes were completed to test the

intrusive-limestone contact, and in order to explore the contact at depth and possible replacement mineralization in the Skarn.

The San Martín Mine was operated by Grupo México until the late 2007 when it closed due to labor unrest. The mine reopened August 21, 2018, upon resolution of the labor issues and has been in continuous production since.

Exploration at San Martín is ongoing with drills targeting economic extensions of the main deposit and new satellite orebodies. Drilling activities are generally conducted following industry best practices including quality assurance/quality control (QA/QC) protocols. However at the internal laboratory used for some of the assays, no certification has been completed, which in the QP's opinion does not meet the required standards for reporting under international best practice. More detailed validation and external checks should be completed if the laboratory is not certified given the lack of independence presented. The QP recommends that IMMSA undertake a program to certify the laboratory as is completed at their other operation Charcas.

## 1.4 Mineral Resource Estimates

Historically, San Martín has collected samples from diamond core drilling (surface and underground) and channel samples from underground workings. This work was conducted by the mine geology department but is not supported by QA/QC protocols. The Qualified Person (QP) notes that the drillholes lack downhole surveys, which in the QP's opinion is not in-line with industry best practices.

Despite this, the variability of the mineralization at San Martín appears to be appropriately interpreted based on the available information. SRK reviewed the reconciliation of the planned versus actual grades and tonnages reported at San Martín and, based on the long mining history, considered the drilling and channel rock sampling grades reported to be representative of the mined material.

Most of the data is obtained for use in the current estimate is from historical paper copies, such as geological mapping within the mine workings and vertical section and plan view interpretations of the geology and mineralization. Very little information is available in digital format to facilitate the construction of both a three-dimensional (3D) geological and 3D resource block model as well as supporting typical statistical analyses used in resource estimation.

The current resource estimation used a combination of manual methods to define the areas/volumes and grades, supported by AutoCAD and Excel software. These estimates are updated periodically using historical and recent information.

The mineralized area is determined from maps, sections, and assay results. The volumes are calculated by the projecting these areas based on the true width of the mineralization. The grade of each mineralized area is based on average grades that are weighted by the area of influence of each sample or group of samples, which are determined from plan and/or vertical views of the geological interpretations and sampling.

A single density value of 3.3 tonnes per cubic meter ( $t/m^3$ ) is used to obtain tonnages. The San Martín operation uses this density value for an extended period of time, and the density value is reportedly based on historical tests that have not been documented and are not available. The QP considers the lack of testwork and documentation to represent a potential risk to estimating the correct tonnage and has therefore considered this during the classification process. The QP notes that this is also the same tonnage applied by the operation.

Mineral resources have been categorized based on relative confidence in the modeling, estimation, or reporting of the tonnage and grades from the model. There are no Measured mineral resources, as insufficient overall confidence exists to confirm geological and grade continuity between points of observation to the level needed to support detailed mine planning and final evaluation studies. In the QP's opinion, other limitations are a lack of density measurements and insufficient QA/QC protocols in the mine samplings protocols.

Indicated mineral resources are defined by material that is interpreted to be continuous in size, shape, and grade and must be located within 30 meters (m) of either underground development or surface/ underground drilling results. Indicated mineral resources may be projected 30 m above or below levels or 30 m beyond the stope face; however, the projection distance is limited to 15 m below the last developed level. No Indicated mineral resources are permitted above the first level in the mine. Inferred Mineral Resources represent the remaining mineral between two levels, with a maximum separation of 120 meters, when there is no diamond drilling, or areas determined by diamond drilling, when a systematic drilling is carried out, with a separation of no more than 60 meters between drillholes. When the above is not complied with, only a radius of influence of 15 meters is allowed from the sampling information.

The estimate was categorized in a manner consistent with industry standards. Mineral resources have been reported using economic and mining assumptions to support the reasonable potential for economic extraction of the resource. A cut-off grade (CoG) has been derived from these economic parameters, and the resource has been reported above this cut-off. The mineral resource is reported exclusive of reserves.

San Martín mineral resources are in compliance with the S-K 1300 resource definition requirement of reasonable prospects for economic extraction. Using the mining blocks (panels) defined by the geologist, the QP has reviewed each panel relative to the defined CoGs. Depletions have been accounted for within each panel using the latest survey information for most of the panels, and only a few panels that were exploited in the last two months of 2021 were adjusted according to the planned exploitation. It is SRK's opinion that the differences with the real exploited material are not material.

Given that process recoveries and costs in the resource model are grade and/or domain dependent, the resources are reported with respect to a block Net Smelter Return (NSR) value which is calculated on a stope block (panel) basis.

NSR cut-off values for the Mineral Resources were established using a zinc price of US\$1.32/lb Zn, a lead price of US\$1.04/lb Pb, a silver price of US\$23.0/oz Ag, and a copper price of US\$3.80/lb Cu. While minor amounts of gold exist at the project (0.1 g/t head grade) gold has not been used as a revenue driver within the NSR calculation.

The Mineral Resources for the San Martín underground operation as of December 31, 2021, are summarized in Table 11-6 and are reported on an in-situ basis. Mineral Resources have been reported in total (which in effect are exclusive of Reserves) as currently no Mineral Reserves are declared for the Project in compliance with the new S-K 1300 standards.



**Table 1-1: San Martín Summary Mineral Resources at End of Fiscal Year Ended December 31, 2021 – SRK Consulting (U.S.), Inc.<sup>(1)</sup>**

IMMSA Underground – San Martín							Cut-Off <sup>(2)</sup>	NSR <sup>(3)</sup> \$54.6			
Category	Tonnage Quantity (kt)	Grade					Metal				
		Ag (g/t)	Zn (%)	Pb (%)	Cu (%)	NSR <sup>(3)</sup> (US\$)	Ag (koz)	Zn (kt)	Pb (kt)	Cu (kt)	
Measured											
Indicated	11,728	97	2.65	0.55	0.62	117	36,647	310.9	64.2	73.2	
M+I	11,728	97	2.65	0.55	0.62	117	36,647	310.9	64.2	73.2	
Inferred	8,369	107	2.18	0.61	0.53	109	28,716	182.7	51.2	44.3	

(1) Mineral resources are reported Exclusive of Mineral reserves. Mineral resources are not ore reserves and do not have demonstrated economic viability. All figures rounded to reflect the relative accuracy of the estimates. Silver, lead, zinc and copper assays were capped where appropriate. Given historical production, it is the company's opinion that all the elements included in the metal equivalents calculation have a reasonable potential to be recovered and sold.

(2) Mineral resources are reported at metal equivalent cut-off grades based on metal price assumptions\*, variable metallurgical recovery assumptions\*\*, mining costs, processing costs, general and administrative (G&A) costs, and variable NSR factors\*\*\*. Mining, processing, and G&A costs total US\$54.6/t.

\* Metal price assumptions considered for the calculation of metal equivalent grades are: Gold (US\$/oz 1,725.00), Silver (US\$/oz 23.0), Lead (US\$/lb 1.04), Zinc (US\$/lb 1.32) and Copper (US\$/lb 3.80)

\*\*Cut-off grade calculations and metal equivalencies assume variable metallurgical recoveries as a function of grade and relative metal distribution. Average metallurgical recoveries are: Silver (65%), Lead (30%) and Zinc (72%) and Copper (57%), assuming recovery of payable metal in concentrate.

\*\*\*Cut-off grade calculations and metal equivalencies assume variable NSR factors as a function of smelting and transportation costs. The NSR Values (inclusive of recovery) are calculated using the following calculation  $NSR = Ag*0.417+Pb*6.074+Cu*43.418+Zn*17.181$

The mineral resources were estimated SRK Consulting US Inc, a third Party QP under the definitions defined by S-K 1300.

## 1.5 Conclusions and Recommendations

### 1.5.1 Property Description and Ownership

The San Marin Project consists of 73 mining concessions with a total surface of 10,360.9508 Ha, with the titles held 100 percent (%) by IMMSA.

IMMSA owns sufficient surface lands with rights to conduct any work or exploration required to advance or continue of activities within the San Martín project.

### 1.5.2 Geology and Mineralization

The overall geology of San Martín is well understood as a result of the long mine life to date which is supplemented with more recent exploration. The mineralization styles and exploration models are well established, to aid in the determination of the geometry of future Mineral Resources and Mineral Reserves.

### 1.5.3 Mineral Resource and Mineral Reserve Estimates

It is SRK's opinion that the mineral resources stated herein are appropriate for public disclosure and meet the definitions of Indicated and Inferred resources established by SEC guidelines and industry standards.

SRK recommends the construction of a 3D geological model for the deposit of San Martín and the digitizing of all the supporting information, including geological/mineralization maps and sections, drilling, and rock sampling information. The new 3D geological model will be the base for the construction of a block model and future Mineral Resource Estimates using industry standard procedures.

In the QP's opinion, the assumptions, parameters, and methodology used for the Charcas underground mineral resource estimates, while not optimized to provide flexibility in the planning processes, are appropriate for the style of mineralization and mining methods.

The QP has recommended to IMMSA that a commercial geologic database be created to provide secure storage of drilling data. The database will provide better data control and a potential audit trail for any changes made in the system over time.

#### 1.5.4 Recommendations

It is the QP's opinion that measures that should be taken to mitigate the uncertainty include, but are not limited to:

- Continual infill drilling in the most critical areas of the deposit, locally to spacing of less than 50 x 50 m.
- Introduction of more routine density sampling within the mineralization to confirm level of fluctuation from the current uniform assignment of a single 3.3 t/m<sup>3</sup> value.
- SRK recommends reviewing the procedures of drilling and sampling and design and implement a complete QA/QC protocol for the drilling and rock sampling activities performed by the mine geology department of San Martín.
- Obtain certification for the internal mine laboratory to international standards.
- QA/QC protocol of the Exploration Department: Implement the use of an umpire laboratory (commercial laboratory) to send the second laboratory check samples periodically (quarterly), and the review of the acceptability ranges for fine duplicates (10% relative error).
- Digitization of all geological information and storage of data into a commercial secure database.
- Detailed geological modeling methods using the new digital database which integrates all relevant geological data into defining the model and achieving the most accurate model possible at the current level of study.
- Extensive QA/QC analysis and monitoring to understand relative impacts to local inherent variability within resource domains.
- SRK recommends digitizing all the existing information in paper related to geological interpretations and the results of drilling and rock sampling.
- Database capture of historical all data including drilling, historical mapping, channel sampling and geological interpretations to support the construction of a 3D geological model and future mineral resource estimates using a block model.
- Construction of a 3D geological model and update mineral resource and reserve estimates

## 2 Introduction

### 2.1 Registrant for Whom the Technical Report Summary was Prepared

This Technical Report Summary was prepared in accordance with the Securities and Exchange Commission (SEC) S-K regulations (Title 17, Part 229, Items 601 and 1300 through 1305) for Southern Copper Corporation (SSC) on its subsidiary Industrial Minera México, S.A. de C.V (IMMSA or Company) by SRK Consulting (U.S.), Inc. (SRK) on the San Martín Mine (San Martín), located in the state of Zacatecas, México.

### 2.2 Terms of Reference and Purpose of the Report

The quality of information, conclusions, and estimates contained herein are consistent with the level of effort involved in SRK's services, based on:

- i) information available at the time of preparation and
- ii) the assumptions, conditions, and qualifications set forth in this report.

This report is intended for use by IMMSA subject to the terms and conditions of its contract with SRK and relevant securities legislation. The contract permits IMMSA to file this report as a Technical Report Summary with American securities regulatory authorities pursuant to the SEC S-K regulations, more specifically Title 17, Subpart 229.600, item 601(b)(96) - Technical Report Summary and Title 17, Subpart 229.1300 - Disclosure by Registrants Engaged in Mining Operations. Except for the purposes legislated under US federal securities law, or with other securities regulators as specifically consented to by SRK, any other use of this report by any third party are at that party's sole risk. The responsibility for this disclosure remains with IMMSA.

The purpose of this Technical Report Summary is to report mineral resources for the Project.

The effective date of this report is December 31, 2021.

References to industry best practices contained herein are generally in reference to those documented practices as defined by organizations such as the Society for Mining Metallurgy and Exploration (SME), the Canadian Institute of Mining, Metallurgy, and Petroleum (CIM), or international reporting standards as developed by the Committee for Mineral Reserves International Reporting Standards (CRIRSCO).

### 2.3 Sources of Information

This report is based in part on internal Company technical reports, previous studies, maps, published government reports, and public information as cited throughout this report and listed in the References Section 24.

Reliance upon information provided by the registrant is listed in the Section 25 when applicable.

SRK's report is based upon the following information:

- Site visits to the project.
- Discussions and communications with the key personnel of the operation of San Martín.
- Data collected by the Company from historical mining operation.
- Review of the data collection methods and protocols, including sampling, QA/QC, assaying, etc.

- Review of plan maps including geological interpretations, sampling, sampling location, in both paper format and Autocad files.
- Review of the original drillhole logging sheets.
- Review of paper documents supporting the resource/reserve estimates by blocks, including interpretation on sections, spreadsheets and manual calculations. Part of this information was provided in digital format (Autocad, Excel, Word).

## 2.4 Details of Inspection

Table 2-1 summarizes the details of the personal inspections on the property by each qualified person or, if applicable, the reason why a personal inspection has not been completed.

**Table 2-1: Site Visits**

Expertise	Date(s) of Visit	Details of Inspection
Geology, Exploration and Mineral Resources	June 13 – 16 / 2021	Review drilling and sampling procedures, visit to underground workings, review of procedures of estimation of Resources,
Geology, Exploration and Mineral Resources	October 11 -15 / 2021	Review of procedures of resources estimation and supporting data. Review of QA/QC procedures for sampling. Validation sampling
Geology, Exploration and Mineral Resources	November 28 -30 / 2021	Review of procedures of estimation, check of resource blocks and supporting data.

Source: SRK, 2021

## 2.5 Qualified Person

This report was prepared by SRK Consulting (U.S.), Inc., a third-party firm comprising mining experts in accordance with § 229.1302(b)(1). IMMSA has determined that SRK meets the qualifications specified under the definition of qualified person in § 229.1300. References to the Qualified Person or QP in this report are references to SRK Consulting (U.S.), Inc. and not to any individual employed at SRK.

## 2.6 Report Version Update

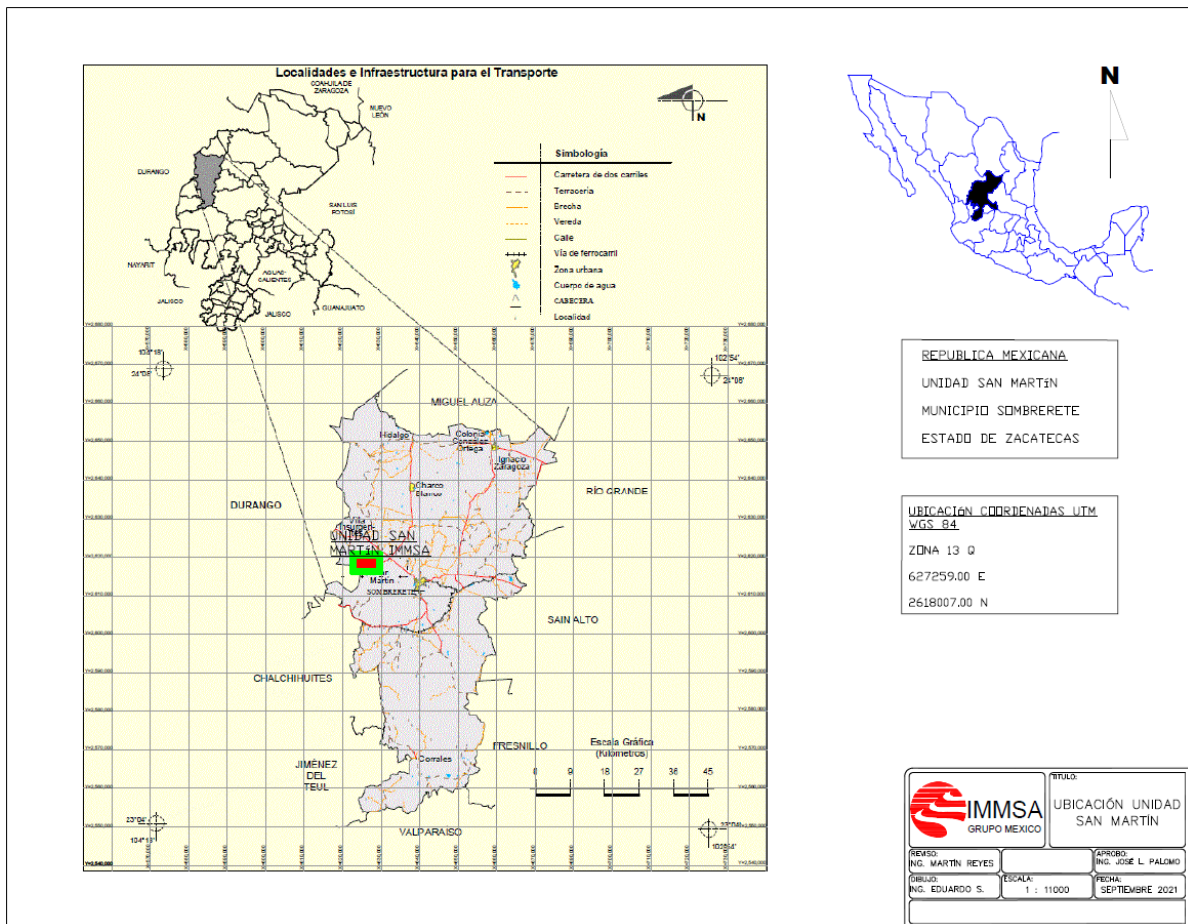
This Technical Report Summary is not an update of a previously filed Technical Report Summary and is the most recent report.

### 3 Property Description

#### 3.1 Property Location

The San Martín mining district is located in the northwest portion of the state of Zacatecas, approximately 185 kilometers (km) from the city of Zacatecas. Elevation is approximately 2,600 meters (m) with geographic coordinates of 629,000 E and 2,614,000 N (WGS84, UTM Zona 13)(Figure 3-1). The nearest major town is the municipality of Sombrerete (17 km away) in the Sierra Madre Occidental geographic province. This is an area with considerable mining history, dating back to 1555.

The area is located at the intersection of the physiographic provinces of the Sierra Madre Occidental and La Mesa within the high plains of México. The characteristic relief in the region is considered as elevated open plains, with average elevations in Sombrerete of 2,351 meters above sea level (masl). Sabinas is located in more mountainous terrain to the west of the city with elevations ranging from 2,000 to 3,000 masl.



Source: IMMSA, 2021

**Figure 3-1: Location Map of San Martín**

### 3.2 Mineral Title, Claim, Mineral Right, Lease or Option Disclosure

In México, mining concessions are granted by the Economy Ministry and are considered exploitation concessions with a 50-year term. Mining concessions have an annual minimum investment to complete and an annual mining rights fee to be paid to keep the concessions effective. Valid mining concessions can be renewed for an additional 50-year term as long as the mine is active.

SRK was provided legal documentation by IMMSA and has relied on that information for the purposes of this section as discussed in Section 25 of this report. SRK has relied on this information and disclaims responsibility for its accuracy or any errors or omissions in that information.

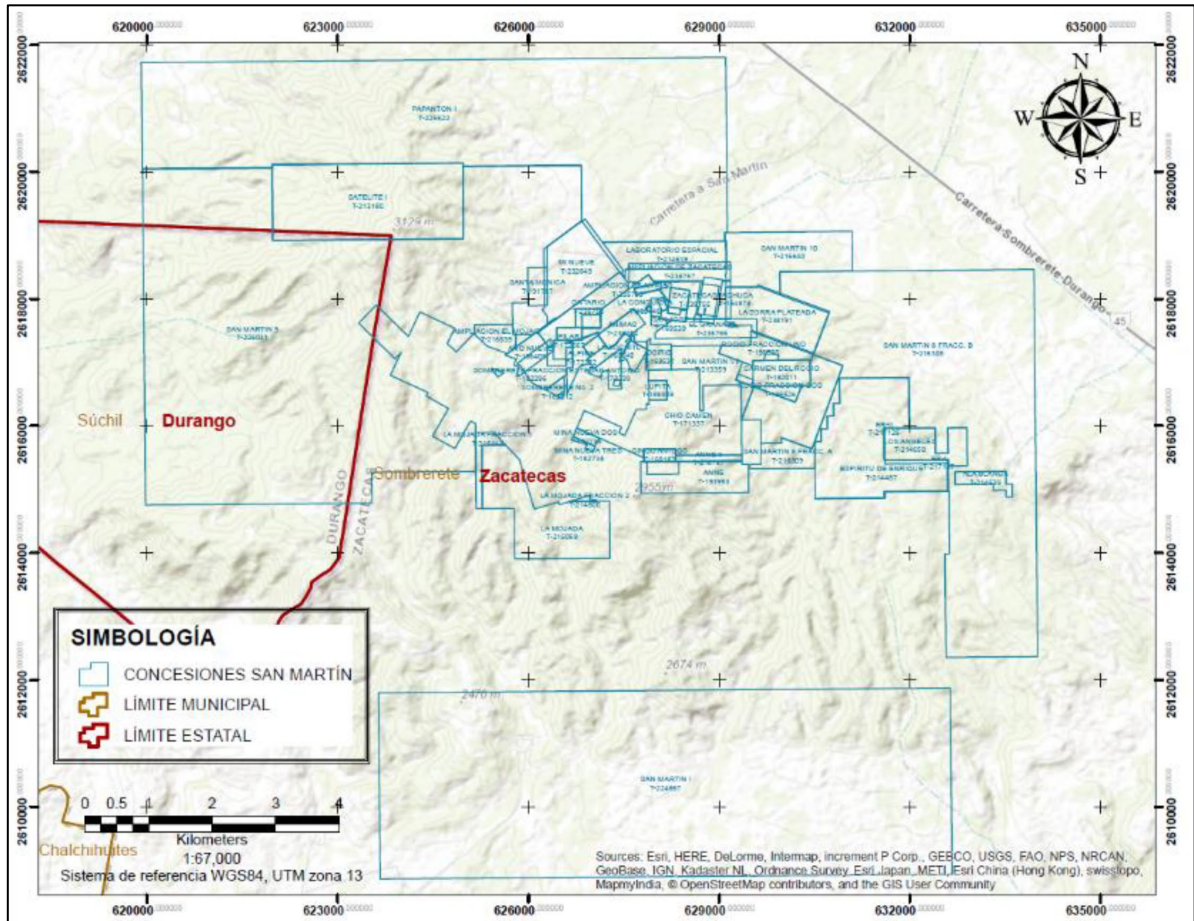
The San Marin Project consists of 73 mining concessions with a total surface of 10,360.9508 Ha, which are owned by IMMSA. Table 3-1Table and Figure 3-2 show San Martín mining concessions.

**Table 3-1: Land Tenure at San Martín**

No.	Title	Name of the Concession	Expedition	Validity	Surface
1	164419	SAN JUAN	05/07/1979	05/06/2029	4.51
2	164878	PACHUCA	07/11/1979	07/10/2029	17.11
3	168182	CINCO AMIGOS	19/03/1981	18/03/2031	10.00
4	169533	LA FE	12/03/1981	12/02/2031	6.60
5	169534	TAJO DE SAN ANTONIO	12/03/1981	12/02/2031	6.00
6	169535	HUECO No. 3	12/03/1981	12/02/2031	0.01
7	169536	HUECO No. UNO	12/03/1981	12/02/2031	0.07
8	169537	OSIRIS	12/03/1981	12/02/2031	15.87
9	169538	BETANIA	12/03/1981	12/02/2031	1.68
10	169539	SAN JOSE	12/03/1981	12/02/2031	5.26
11	169540	LA XOCHITL	12/03/1981	12/02/2031	11.74
12	171337	CHIO CAMEN	20/09/1982	19/09/2032	209.95
13	171830	SAN EXPEDITO	15/06/1983	14/06/2033	1.00
14	172222	ALPINE	27/10/1983	26/10/2033	15.89
15	172223	INDEPENDENCIA Y LIBERTAD	27/10/1983	26/10/2033	2.00
16	172224	SAN VICENTE DE PAUL	27/10/1983	26/10/2033	2.00
17	172239	SAN ANTONIO	27/10/1983	26/10/2033	15.95
18	172667	PILAR	28/06/1984	27/06/2034	8.96
19	182008	SEGUNDA FRACC. DE AÑO NUEVO	04/08/1988	04/07/2038	1.05
20	182010	LA JOYA	04/08/1988	04/07/2038	5.00
21	182011	CARMEN DEL ROCIO	04/08/1988	04/07/2038	36.00
22	182012	SOMBRERETE No. 2	04/08/1988	04/07/2038	4.60
23	182013	LA ESMERALDA	04/08/1988	04/07/2038	8.00
24	182014	PROVIDENCIA	04/08/1988	04/07/2038	6.00
25	182015	LA ESMERALDA NOROESTE	04/08/1988	04/07/2038	6.00
26	182294	SOMBRERETE CUATRO FRACC. NORTE	31/05/1988	30/05/2038	0.58
27	182296	SOMBRERETE FRACC. ESTE	31/05/1988	30/05/2038	31.49
28	182738	MINA NUEVA TRES	16/08/1988	15/08/2038	2.29
29	182739	MINA NUEVA DOS	16/08/1988	15/08/2038	5.57
30	185879	25 DE OCTUBRE	14/12/1989	13/12/2039	10.66
31	186409	AÑO NUEVO	30/03/1990	29/05/2040	12.94
32	187017	LA ESPADA	29/05/1990	28/05/2040	0.23
33	188009	LUPITA	22/11/1990	21/11/2040	8.57
34	190015	EL MOJA'O	12/06/1990	12/05/2040	2.67
35	191787	SANTA MONICA	19/12/1991	18/12/2041	18.00
36	191993	ANNE	19/12/1991	18/12/2041	74.42
37	195372	EL VIRUTO	14/09/1992	13/09/2042	1.00
38	195448	LA CONQUISTA	14/09/1992	13/09/2042	9.00
39	196525	ROCIO FRACCION UNO	23/07/1993	21/09/2036	35.05
40	196526	ROCIO FRACCION DOS	23/07/1993	21/09/2036	13.00

No.	Title	Name of the Concession	Expedition	Validity	Surface
41	196527	ROCIO FRACCION TRES	23/07/1993	21/09/2036	0.37
42	213180	SATELITE I	30/03/2001	29/03/2051	360.00
43	213359	SAN MARTÍN VII	27/04/2001	26/04/2051	58.13
44	214487	ESPIRITU DE ENRIQUE	10/02/2001	10/01/2051	257.93
45	214539	ALA BLANCA	10/02/2001	10/01/2051	20.00
46	214619	LABORATORIO ESPACIAL	10/02/2001	10/01/2051	78.77
47	214650	LOS ANGELES	26/10/2001	25/10/2051	60.00
48	214800	LA MOJADA FRACCION 2	12/04/2001	12/03/2051	1.76
49	215069	LA MOJADA	02/07/2002	02/06/2052	194.10
50	215148	LA MOJADA FRACC. 1	02/08/2002	02/07/2052	17.60
51	216308	SAN MARTÍN 8 FRACC. B	30/04/2002	29/04/2052	1,000.77
52	216309	SAN MARTÍN 8 FRACC. A	30/04/2002	29/04/2052	34.69
53	216639	AMPLIACION EL MOJAO	17/05/2002	16/05/2052	22.26
54	216640	SAN MARTÍN 10	17/05/2002	16/05/2052	146.26
55	216787	ANNE II	28/05/2002	27/05/2052	10.76
56	217126	ER-II	18/06/2002	17/06/2052	0.67
57	217187	ER-I	07/02/2002	07/01/2052	7.60
58	224667	SAN MARTÍN I	31/05/2005	30/05/2055	2,640.35
59	225031	SAN MARTÍN 9	07/08/2005	07/07/2055	2,459.23
60	225622	PAPANTON I	23/09/2005	22/09/2055	1,804.97
61	232462	2a.FRACCION DE EL BRINCO	08/08/2008	08/07/2058	10.00
62	232649	MI NUEVE	10/02/2008	10/01/2058	109.76
63	234694	SOMBRERETE SEIS	29/07/2009	28/07/2059	110.70
64	235754	ANIMAS	03/02/2010	03/01/2060	18.40
65	235755	ZACATECAS	03/02/2010	03/01/2060	32.60
66	235756	EL GRANATE	03/02/2010	03/01/2060	44.68
67	235757	AMPLIACION DE ZACATECAS	03/02/2010	03/01/2060	45.15
68	235758	ONTARIO	03/02/2010	03/01/2060	37.66
69	235759	AMPLIACION ANIMAS	03/02/2010	03/01/2060	36.84
70	235760	LA NUEVA ERA	03/02/2010	03/01/2060	2.89
71	235761	EL GALLO	03/02/2010	03/01/2060	3.35
72	235762	LA GALLINA	03/02/2010	03/01/2060	0.31
73	238191	LA ZORRA PLATEADA	08/12/2011	08/11/2061	105.67

Source: IMMSA, 2021



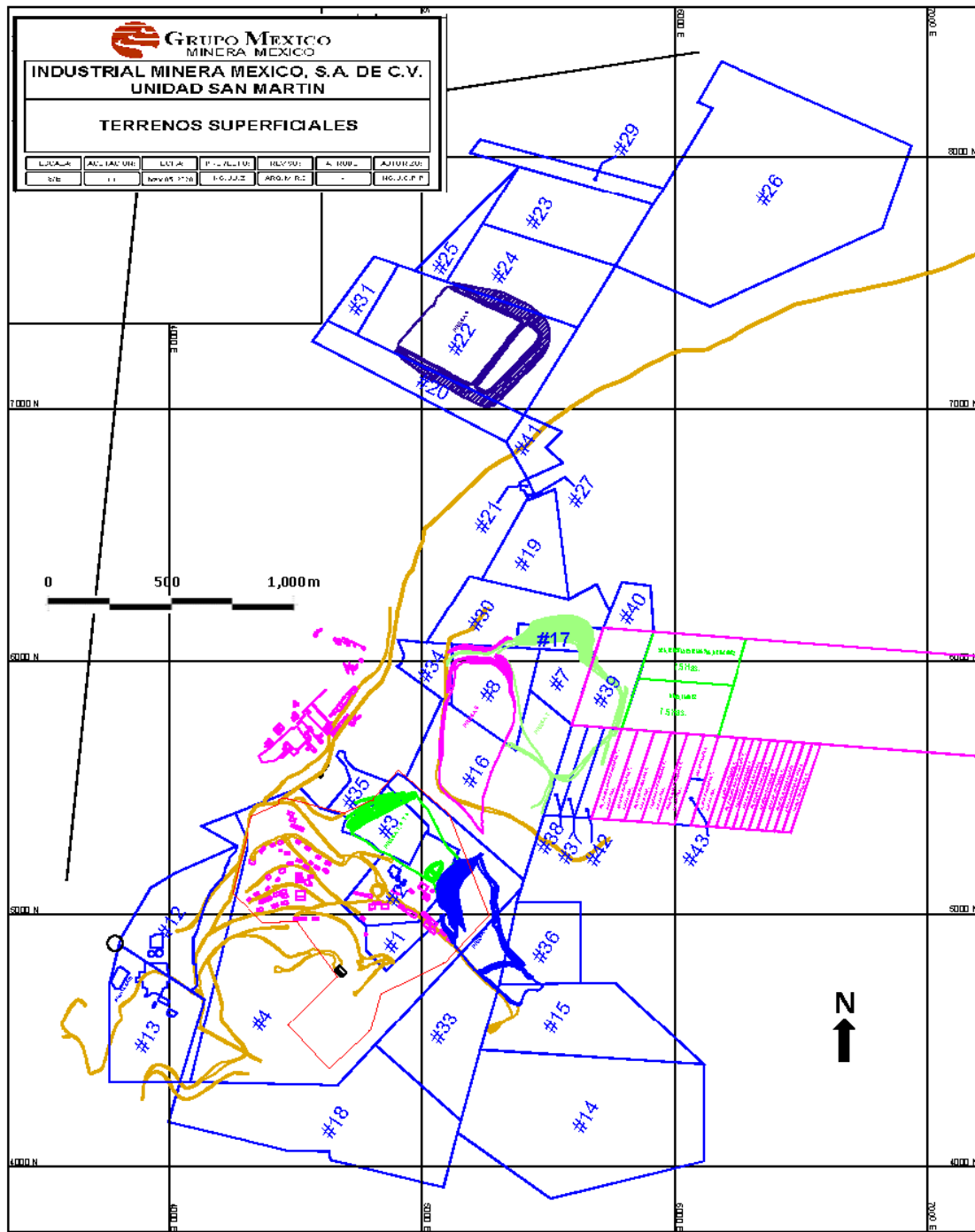
Source: IMMSA, 2021

**Figure 3-2: Map showing Concession Value**

Within the San Martín mining unit, there are surface lands covering an area of 878.96 hectares, owned by Industrial Minera México, S.A. de C.V. (Figure 3-3).

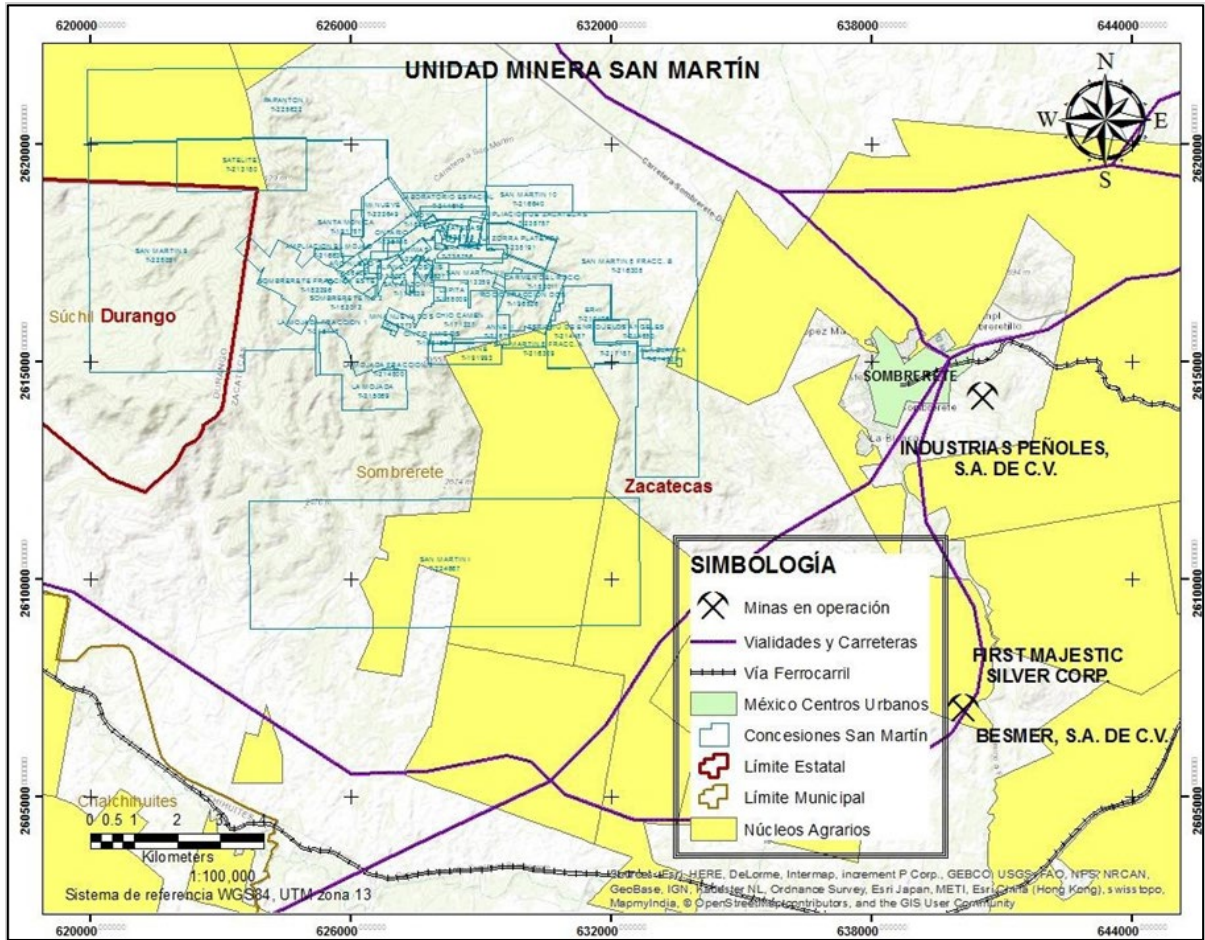
Surface rights in México are commonly owned either by communities (“Ejidos”) or by private owners (Figure 3-4). The San Martín mining district land is mainly owned by the Company but a number of Ejidos also exist within the current concessions. In either case, the mining concessions include “right of way” rights, although in many cases it is necessary to negotiate access to the land. Federal or state roads allow permission to access federal or state lands without other requirements. Additionally, the Mexican Mining Law includes provisions to facilitate purchasing land required for mining activities, installations and development.





Source: IMMSA, 2021

**Figure 3-3: Surface Rights Map – Area of San Martín Operation**



Source: IMMSA, 2021

**Figure 3-4: Location of Ejidos within the San Martín Concessions**

### 3.3 Mineral Rights Description and How They Were Obtained

Mining rights in México are granted with the concessions. Changes to the Mexican mining legislation incorporated in 2005 now grant the concession holder the right to conduct exploration, operate a mining operation, and/or operate a processing plant on each concession. The procedure for each of the mining concessions begins with the presentation to the Secretaría de Economía, Dirección General de Minas of México, of the Application for Concession or Mining Assignment, format SE-FO-10-001, with all the sections duly completed and accompanied by the required documentation, including payment of the application study and procedure, photographs of the physical evidences of the boundary markers following the standards of the mining law, information supporting the existence of the person or entity responsible of the application.

The following are the obligations of the registrant to retain the properties at San Martín:

- Execute and verify the works and works foreseen by the Mexican Mining Law in the terms and conditions established by it and its Regulations.
- Pay the mining rights established by the law on the matter.

- Comply all the general provisions and the official Mexican standards applicable to the mining-metallurgical industry in terms of safety in mines and ecological balance and environmental protection.
- Allow the personnel commissioned by the Mexican mining entity (Secretaría) to carry out inspection visits.
- The execution of works and works will be proven by means of investments in the area covered by the mining concession or by obtaining economically exploitable minerals. The Regulations of the Law will set the minimum amounts of the investment to be made and the value of the mineral products to be obtained.
- The holders of mining concessions or those who carry out works and works by contract, must designate an engineer legally authorized to practice as responsible for compliance with the safety regulations in the mines, as long as the works and works involve more than nine workers in the case of the coal mines and more than forty-nine workers in the other cases.
- The mining law stipulates the investments in works and works that are mandatory for the registrant of a mining concession:
- The investments in the works and works foreseen by the Law that are carried out in mining concessions or the value of the mineral products obtained must be equivalent at least to the amount that results from applying the quotas to the total number of hectares covered by the mining concession or the grouping of these.

The reports that are delivered to the Mexican mining entity (Secretaría) to verify the execution of the mining works and works, must contain:

1. Name of the holder of the mining concession or of the person who carries out the mining works and works by contract.
2. Name of the lot or of the one that heads the grouping and title number.
3. Period to review.
4. Itemized amount of the investment made or amount of the billing value or settlement of the production obtained, or an indication of the cause that motivated the temporary suspension of the works or works;
5. Surplus to be applied from previous verifications and their updating;
6. Amount to be applied in subsequent checks, and
7. Location plan and description of the works carried out in the period.

The mining entity (Secretaría) shall consider the works and works of exploration or exploitation to have not been executed and legally verified when, in the exercise of its powers of verification, it finds:

1. That the verification report contains false data or does not conform to what was done on the ground, or
2. That the non-adjacent mining lots object of the grouping do not constitute a mining or mining-metallurgical unit, from the technical and administrative point of view.

In the above cases, the Secretaría will initiate the cancellation procedure of the concession or of those mining lots incorporated into the grouping, in the terms of article 45 of the Mexican Mining Law, final paragraph of the Law.

It is considered by the QP that the Company holds sufficient rights to support operations including the processing plant installations, tailings storage, and other mine operations requirement

### **3.4 Encumbrances**

IMMSA has all necessary permits for current mining and processing operations, including an operating license, a mine water use permit, and an Environmental Impact Authorization (EIA) for the mines, processing plant, and tailings management facilities.

SRK is not aware of any legal encumbrances on IMMSA-owned or leased surface or mineral rights but has relied on IMMSA's legal documentation regarding this aspect of the project

Several obligations must be met to maintain a mining concession in good standing, including the following:

- Carrying out the exploitation of minerals expressly subject to the applicability of the mining law
- Performance and filing of evidence of assessment work
- Payment of mining duties (taxes)

The regulations establish minimum amounts that must be invested in the concessions. Minimum expenditures may be satisfied through sales of minerals from the mine for an equivalent amount. A report must be filed each year that details the work undertaken during the previous calendar year.

Mining duties must be paid to the Secretaria de Economía in advance in January and July of each year and are determined on an annual basis under the Mexican Federal Rights Law.

Duties are based on the surface area of the concession, and the number of years since the mining concession was issued. Mining duties totaled US\$171,638.59 in 2020 and US\$182,804.16 in 2021.

### **3.5 Other Significant Factors and Risks**

The mine is subject to risk factors common to most mining operations in México, and IMMSA has an internal process in place to study and mitigate those risks that can reasonably be mitigated. No known factors or unusual risks affect access, title or the ability to conduct mining. Specific exploration activities are authorized into 2022.

Since the reopening of the unit in 2018 to date, the Company has signed agreements (Company-group of affiliates) to obtain benefits and benefits for employees, which have helped the stability of today's operations in the unit. mining.

There are still some legal issues to be resolved with striking personnel (2007 to 2018) which are being legally addressed with Company lawyers to resolve them.

### **3.6 Royalties or Similar Interest**

There is no payment for royalties, 100% of the concessions are owned by Industrial Minera México, S.A. of C.V.

## **4 Accessibility, Climate, Local Resources, Infrastructure and Physiography**

### **4.1 Topography, Elevation and Vegetation**

The Sierra Madre Occidental is a north-to-northwest-trending range with mountains reaching elevations more than 3,000 m. It comprises peaks, plateaus and elongated valleys along the range which merge into the mountains to the northwest. Deep canyons carved by drainage cross the Sierra Madre Occidental with increasing depth in the northwest portion of the range.

The Mesa Central province includes a great portion of the north-central part of México. It comprises a large plateau composed of Mesozoic sedimentary rocks at elevations of 1,500 m to 2,300 m covering parts of the states of Zacatecas, Durango, San Luis Potosí, Coahuila and Chihuahua. Occasional ranges originated by folding or igneous activity break the flat extensions of the Mesa Central.

The mine is located in more mountainous terrain to the west of the city of Sombrerete with elevations ranging from 2,500 to 2,850 masl. The hydrographic system consists of two basins, the Pacific basin (integrated by the Chapala-Río Grande de Santiago system) and the endorheic inland basin (without access to the sea).

Vegetation in the area consists of xerophile plants in the lower elevations and grasslands, including cactuses (maguey, nopal and biznaga), while in the higher elevations the predominant vegetation consists of coniferous or evergreen oak forests (pine and oak trees). Figure 4-1 shows the characteristics of the surrounding area of San Martín.



Source: IMMSA, 2021

**Figure 4-1: Photographs of the Surrounding Area of San Martín**

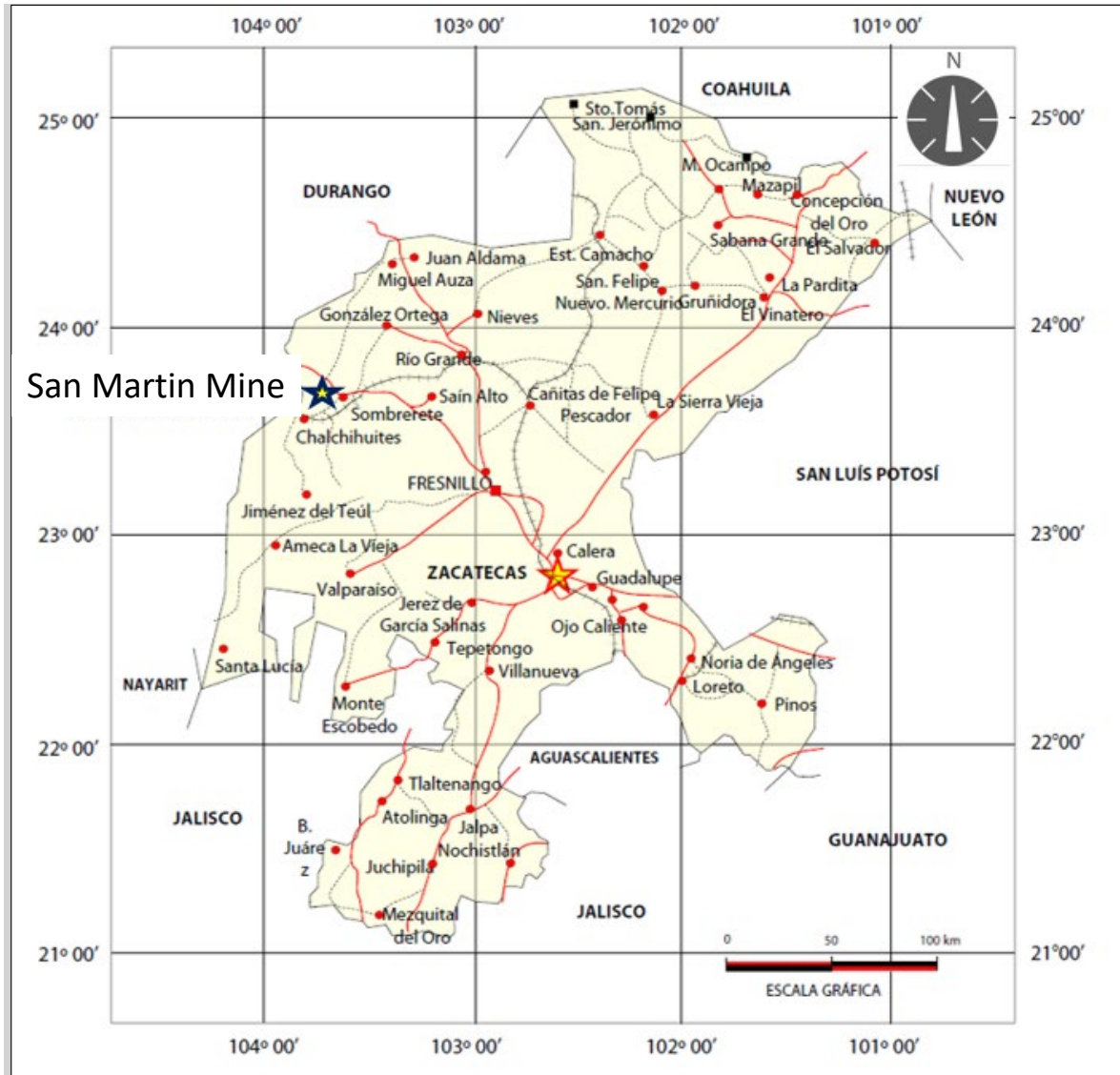
## 4.2 Means of Access

The state of Zacatecas has an extensive infrastructure of roads and highways that connect the San Martín to the rest of the country (Figure 4-2).

The San Martín mining unit has a paved road to Highway 45, which leads to the town of Sombrerete, 17 km away. Highway 45 then connects Sombrete to Fresnillo, Zacatecas and Durango at distances of 110km, 171km and 125 km respectively.

The Secretariat of Communications and Transport (SCT) highlighted the modernization of the Jerez-Tepetongo highway, which has a length greater than 21 km, in which 544.6 million pesos were invested. Meanwhile, the modernization of the Fresnillo-Valparaíso and Fresnillo-Jerez roads continues, as well as the conservation of the federal network of toll-free roads and the feeder roads that communicate the agricultural and producing communities with the headwaters.





Source: IMMSA, 2021

**Figure 4-2: Access Infrastructure to San Martín Mine**

### 4.3 Climate and Length of Operating Season

The climate is considered a semiarid, mild temperature climate according to the Köppen climate classification (BS1kw). The average temperature for the year in at the Project is between 5 and 26°C. The warmest month on average is May, with an average temperature of 26°C. The coolest months on average is December and January, with an average temperature of 17°C ranging from 5 and 17°C.

The average amount of precipitation for the year in Sombrerete is between approximately 15 and 260 mm. The rainy season occurs in the San Martín area during the months of July to October. The month with the most precipitation on average is August (263 mm), and the month with the least precipitation on average is April (12 mm). Exploration and mining operations are conducted on a year-round basis

## 4.4 Infrastructure Availability and Sources

Local roads connect the mining district to various population centers within the region. The towns of Sombrerete in the state of Zacatecas (58,000 inhabitants at an elevation of 2,300 m) and Vicente Guerrero in the state of Durango (21,000 inhabitants at an elevation of 1,960 m), are located within 50 km of the Del Toro area.

All basic facilities such as hotels, restaurants, and telephone (including cellular), banking and postal services are available in Sombrerete. Elementary and secondary schools are available in all medium to major cities within the region. Higher education institutions and international airports are established in Durango and Zacatecas.

### 4.4.1 Water

The San Martín Unit has a water concession title for the extraction of 1,841,079 m<sup>3</sup> per year. Currently, water is extracted via three deep wells in the Proaño area, storing it in a pool adjacent to the wells. Next it's pumped to the intermediate pools re-pumping station and then finally pumped to pools and freshwater tanks within the industrial area of operation for a total pumping distance 10.2 km.

### 4.4.2 Electricity

Electric power is provided by the national grid via a 45km extension constructed by FMS in 2011-2012.

The unit receives a power supply of 115 KV, the main substation has a capacity of 24 MWA. The administration of electrical energy is in charge of the Federal Electricity Commission (CFE), the unit has an average annual consumption of 68.3 GWH.

### 4.4.3 Personnel

The site provides good access to qualified personnel with a history of mining within the region and from the neighboring region. The San Martín mine site currently employs 166 staff and 563 unionized employees.

### 4.4.4 Supplies

Highly favorable location and infrastructure, local communities in the surrounding area are well suited with basic accommodations, fuel, industrial materials, contractor services, and bulk suppliers. Supplies to the mine can be transported with ease via the rail or road network system.

### 4.4.5 Plant/Tailings

The Minera San Martín unit has two processing plants or concentrators, one with an operating capacity of 2,400 tons/day (plant 2-400) and another with a capacity of 4,400 tons/day (plant 4-400), and discussed in more detail in Section 10.1. At San Martín three concentrates are produced:

- Zinc Concentrate
- Copper Concentrate
- Lead Concentrate



Tailings Dam of the San Martín Mining Unit has programmed a total storage capacity of 4,071 million m<sup>3</sup> or 7.3 million metric tonnes, with a monthly load of 40.5x10<sup>3</sup> dry metric Tonnes with a total volume of water and tailings of 106.57x10<sup>3</sup> m<sup>3</sup>. This structure has the foundation, drainage, filtration and diversion of appropriate stormwater and runoff.

According to the documents of design, construction and operation discussed in this document, this Dam presents a consolidation and stabilization of the tailings such that a very low probability of tailings sludge overflow. However, if an extraordinary event of high rainfall occurred on the site and According to the superior water storage capacity (7,000 m<sup>3</sup>), this volume would be the total sent downstream with a solid content of 20% or less. Assuming this volume, the total overflowed sludge would not reach transported beyond 2 km (shortly before reaching the pumping station, company-owned).

## 5 History

San Martín is one of the oldest mining districts in México. The first vein discovered by the Spanish was the Ibarra Vein in 1548, other important veins such as the Noria de San Pantaleón, San Marcial, Ramal Ibarra, Las Animas, Sabinas, were discovered later.

### 5.1 Previous Operations

Prior to 1948 the San Martín Mine exploited narrow high-grade veins that cut the skarn and extend beyond it. These structures continue to depth and appear to be the principal feeders for the sulfide mineralization stage. At great depth (>18 Level) these structures contain massive sulfide mineralization consisting of almost pure chalcopyrite and bornite, locally laced by late native silver.

Kohls and Amezaga (1956) estimated that during the period 1548-1821 250,000 tons of oxidized ore were produced with grades of 450 g / t Ag and 0.5 g / t Au. In the period 1938-1943, primary sulfides were exploited with grades of 450 g / t Ag, 1-3% Pb, 1 to 4.5% Cu and 6% Zn. The QP has done insufficient work to confirm these production figures.

At the beginning of the 1950s, surface and interior mine exploration began in San Martín, from this period to 2005 approximately 100,000 m on the surface and 220,000 m in the interior mine have been drilled, which discovered new mineral resources that have extended the mine life.

In the same period, approximately 42 million tons have been mined, without considering the mineral from the Noria de San Pantaleón and Sabinas. The historical production of the district and the current reserves of the two mines in production (San Martín and Sabinas), are estimated at approximately 95 million tons in this deposit, with a potential of an additional 40 million in the northern, western and southern parts of the La Gloria stock (Maldonado-Espinosa D., IMMSA Report, 2004).

Between the years 1990-1997, a large surface exploration program was completed in the area surrounding the San Martín mine. The exploration program included application of standard modern exploration techniques such as satellite imagery, geophysical surveys, mapping. Over the same period approximately 67,000 meters of diamond drilling with a total of 165 holes. (Sánchez H., J.M-Vega Saldaña J.A., IMMSA Report, 1998), was completed.

In 2008, a geological-geochemical study was carried out in the eastern area of the San Martín unit, Sombrerete, Zacatecas; which indicated a number of anomalous N-S striking anomalies in the limestones, associated with the intrusive contact. A total of five holes were completed to test the intrusive-limestone contact, and in order to explore the contact at depth and possible replacement mineralization in the Skarn (Flores EJ, Álvarez HE, Guerra Paez J., 2008).

The San Martín Mine was operated by Grupo México until the late 2007 when it closed due to labor unrest. The mine reopened in August 21<sup>st</sup>, 2018, upon resolution of the labor issues and has been in continuous production since. A summary of the production is shown in Table 5-1.

**Table 5-1: Production Table Summary – San Martín 2002 - 2020**

<b>C O N C E P T</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008 - 2018</b>	<b>2019</b>	<b>2020</b>
<b>Milled Tonnes</b>	<b>1,237,051</b>	<b>1,287,239</b>	<b>1,259,220</b>	<b>1,231,476</b>	<b>925,807</b>	<b>625,341</b>		<b>625,090</b>	<b>1,355,065</b>
Grades Mill Feed									
Au g/t.								0.03	0.02
Ag g/t	122	107.73	101	87.97	84.51	96		88	108
Pb %	0.24	0.21	0.20	0.20	0.20	0.18		0.34	0.34
Cu %	1.4	1.34	1.01	0.80	0.71	0.69		0.45	0.50
Zn %	2.91	2.65	2.21	2.03	2.18	1.76		1.73	1.68
<b>Lead concentrate tonnes</b>	<b>1,798</b>			<b>2,367</b>	<b>2,575</b>	<b>1,151</b>		<b>2,001</b>	<b>4,882</b>
Grades									
Au g/t.								0.65	0.28
Ag g/t	1,934			2,800	2,176	2,595		3,458	3,679
Pb %	32.20			31.61	34.00	32.24		23.41	29.20
Cu %	11.22			7.15	5.65	6.51		11.93	10.61
Zn %	3.44			2.94	2.92	2.55		5.52	6.38
<b>Copper concentrate tonnes</b>	<b>66,652</b>	<b>67,429</b>	<b>54,537</b>	<b>39,227</b>	<b>27,898</b>	<b>17,668</b>		<b>7,105</b>	<b>20,077</b>
Grades									
Au g/t.								0.31	0.19
Ag g/t	1,480	1,535	1,939	1,904	1,906	2,464		3,332	2,959
Pb %	2.84	3.48	4.01	2.98	2.37	3.31		11.15	6.64
Cu %	20.95	21.09	20.70	19.87	18.38	19.59		17.11	17.92
Zn %	5.16	5.65	4.85	3.36	3.78	3.93		10.16	12.95
<b>Zinc Concentrate tonnes</b>	<b>46,067</b>	<b>44,324</b>	<b>40,532</b>	<b>36,745</b>	<b>29,902</b>	<b>16,007</b>		<b>14,411</b>	<b>31,577</b>
Grades									
Au g/t.								0.12	0.08
Ag g/t	161	161	131	118	138	148		343	323
Pb %	0.30	0.30	0.26	0.23	0.31	0.36		0.90	0.90
Cu %	1.59	1.59	1.57	1.13	1.14	1.11		2.26	2.02
Zn %	48.77	48.77	49.91	52.20	51.12	51.45		42.07	46.33
<b>Metallic content in Lead concentrate</b>									
Au kg								1.31	1.32
Ag kg	3,477			6,626	5,602	2,986		6,919	17,962
Pb Tonnes	579			748	876	371		468	1,425
Cu Tonnes	202			169	146	75		239	517
Zn Tonnes	62			70	75	29		110	311
<b>Metallic content in Copper concentrate</b>									
Au kg								2.19	3.80

Ag kg	98626	103515	105724	74736	53180	43542		23,675	59,404
Pb Tonnes	1891	2344	2188	1168	660	585		792	1,332
Cu Tonnes	13945	14223	11289	7800	5127	3461		1,216	3,601
Zn Tonnes	3436	3807	2648	1317	1054	695		722	2,600
<b>Metallic content in Zinc concentrate</b>									
Au kg								1.71	2.69
Ag kg	7,409	5,805	4,803	5,084	5,084	2,815		4,938	10,194
Pb Tonnes	138	114	93	113	109	59		129	284
Cu Tonnes	732	698	459	419	332	192		326	639
Zn Tonnes	22,443	22,180	21,157	18,782	15,385	8,272		6,062	14,631
<b>Total metallic content</b>									
Au kg								5.209	7.807
Ag kg	109,512	109,320	110,527	86,446	63,866	49,343		35,533	87,560
Pb Tonnes	2,608	2,458	2,281	2,029	1,645	1,016		1,390	3,042
Cu Tonnes	14,879	14,921	11,748	8,388	5,605	3,728		1,780	4,758
Zn Tonnes	25,941	25,987	23,805	20,169	16,514	8,996		6,895	17,542

Source: IMMS, 2021

## **5.2 Exploration and Development of Previous Owners or Operators**

Detailed information of previous exploration and development completed in San Martín by previous owners is not available. As mentioned in the history section, the exploitation is known in the district since 1548 until around 1950 when IMMSA, took control of the operation. Exploration and sampling used to contribute to the current Mineral Resources are limited to work by the current company and are detailed in Section 7 of this report.

## 6 Geological Setting, Mineralization, and Deposit

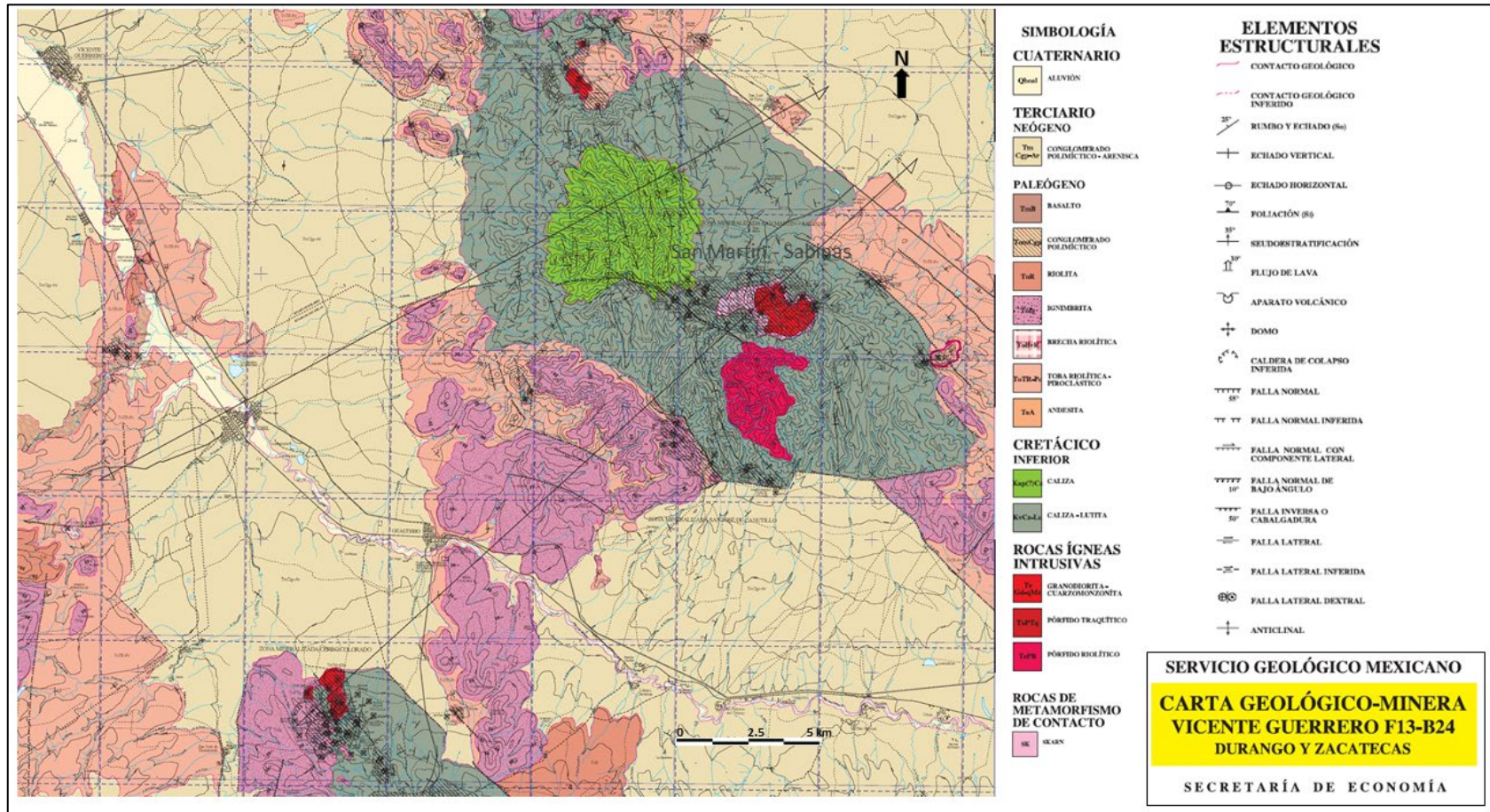
### 6.1 Regional, Local and Property Geology

#### 6.1.1 Regional Geology

San Martín lies in the Mesa Central which occurs between two major tectono-stratigraphic provinces. The Sierra Madre Occidental, a region of extensive horizontal or gently dipping volcanic rocks, lies to the west. The Sierra Madre Occidental is dominated by two complexes of post-Jurassic igneous rocks (McDowell and Clabaugh, 1979). The lower volcanic complex ranges in age from 100 to about 45 m.y., and the upper volcanic complex from 34 to 23 m.y. Most of the lower complex consists of calc-alkaline intrusions and andesitic lavas and rhyolitic ash flows, whereas the upper complex is dominated by rhyolitic ash-flow tuffs (McDowell and Keizer, 1977; McDowell and Clabaugh, 1979). The Sierra Madre Oriental lies to the east of the Mesa Central and consists of parallel folds of Jurassic and Cretaceous carbonate and siliciclastic rocks, which are unconformably overlain by minor Tertiary and Quaternary sediments. The transition between the Sierras Madres and the Mesa Central is gradational. (Rubin and Kyle, 1988)

The Mesa Central consists of plateaus and valleys dominated by thick Cretaceous carbonate sequences with interbedded chert and shale units; these are commonly overlain, especially toward the western boundary, by Tertiary volcanic rocks of the Sierra Madre Occidental. In addition, Tertiary calc-alkaline intrusions, ranging in composition from granite to diorite, are quite common. These intrusions and their associated hydrothermal systems are largely responsible for the Mesa Central being one of México's most important metal producing regions. Many districts actively produce one or more of the following commodity groups: Pb-Zn-Ag, Sn (+-W), Cu, Ag-Au, and CaF<sub>2</sub> (Clark et al., 1982). (Rubin and Kyle, 1988)

In San Martín, the union of the two physiographic provinces, also marks the proposed contact of the Guerrero and Parral units, which in this area are oriented W-NW (Figure 6-1). A trend of regional faults extends from the SE of Real de Ángeles to the NW of San Martín. At both ends of the region the rocks are covered by volcanic rocks of the Sierra Madre Occidental. This structure is a series of subparallel faults that are very evident in México, and that are strongly associated with mineral deposits formed during and after the Laramide Orogeny (Taxco, San Martín and Santa Barbara; Starling, T. 1997). These fault zones appear to have been influenced by local patterns of folds during Laramide deformation in several districts. (Velardeña, San Martín) and mark a fundamental control of magmatic and hydrothermal systems during the early and middle Tertiary.



Source: Servicio Geológico Mexicano, 2001

**Figure 6-1: Regional Geology Map**

## 6.1.2 Local Geology

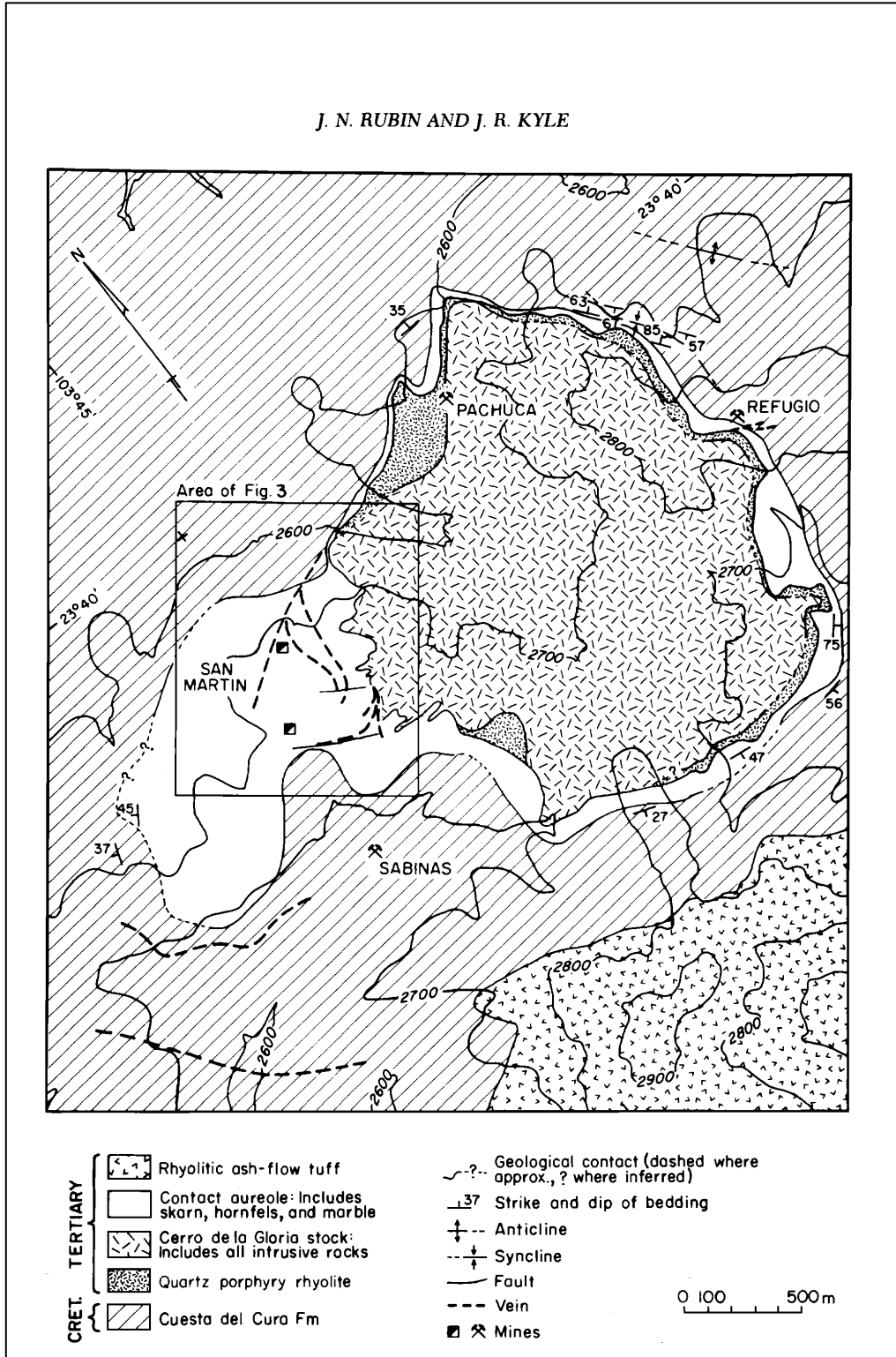
The San Martín-Sabinas district occurs at the NW end of a trend of subparallel regional faults, trending N65°W; extending from Real de Ángeles, with both ends covered by volcanic rocks. The San Martín mining district contains Ag, Pb, Cu, Zn and Au mineralization in veins, and replacement bodies and skarn (andradite, hedenbergite-clinopyroxene). The mineralization is hosted in carbonate rocks of marine origin, proximal to an Eocene-Oligocene granite stock showing multiple phases and textures (Cerro de la Gloria). The granite stock appears to have been emplaced by W-NW striking faults with sinistral-extensional movement. These W-NW faults join districts of base sulfides such as Fresnillo, Zacatecas, Guanajuato, on the west slope of the Sierra Madre Occidental.

Generally, the Laramide deformation produced compression structures of N-NW course, however, in this mine area the main mineralization trends are W-NW, N-S, NE and E, due to phases of extension N-NE, N-S, to the reactivation of W-NW structures and to the intrusion contacts. It is currently interpreted by IMSSA that the high-angle mineralized fault structures have helped fluid control during mineralization to be concentrated at the top and consequently, the Skarn area.

The various phases of intrusion were controlled to the north and south by two W-NW fault zones representing elements of pre-Laramide basement failure zones; these structures were initially developed as dextral faults and later reactivated as sinistral - trans tensional faults during post Laramide extension. The E and W limits of the intrusion are defined by fault zones which have been reactivated with SW throw. The main trends of W-NW fault zones controlled the distal vein systems of Ag-Pb.

The intrusion in turn produced N-NE, NE, E faults, which are the origin of the main veins known as San Marcial, Ramal Ibarra, Ibarra and Gallo-Gallina. The WNW basement structures appear to have been reactivated during intrusion, joining the main veins and causing wide replacement bodies within the skarn alteration.

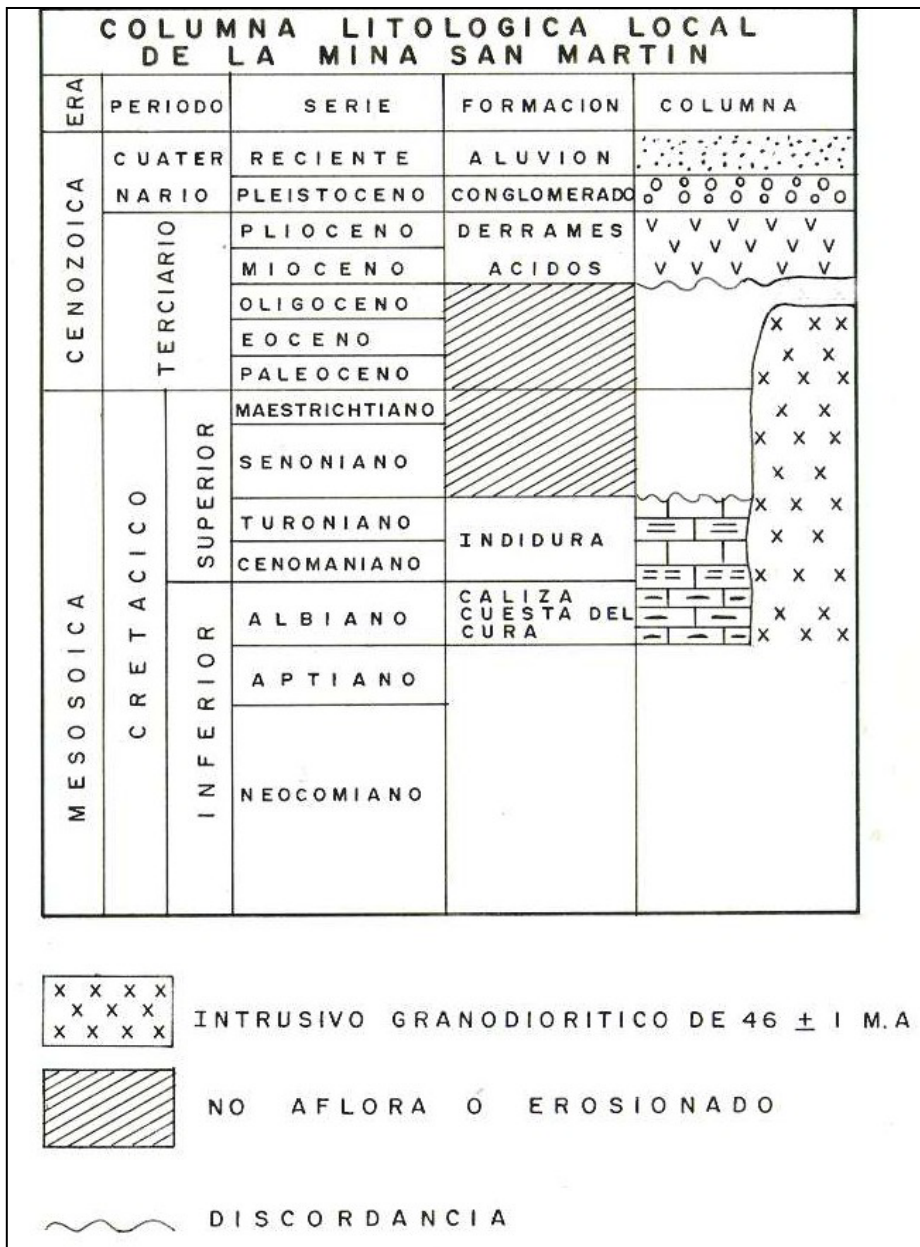




Source: Rubin and Kyle, 1988

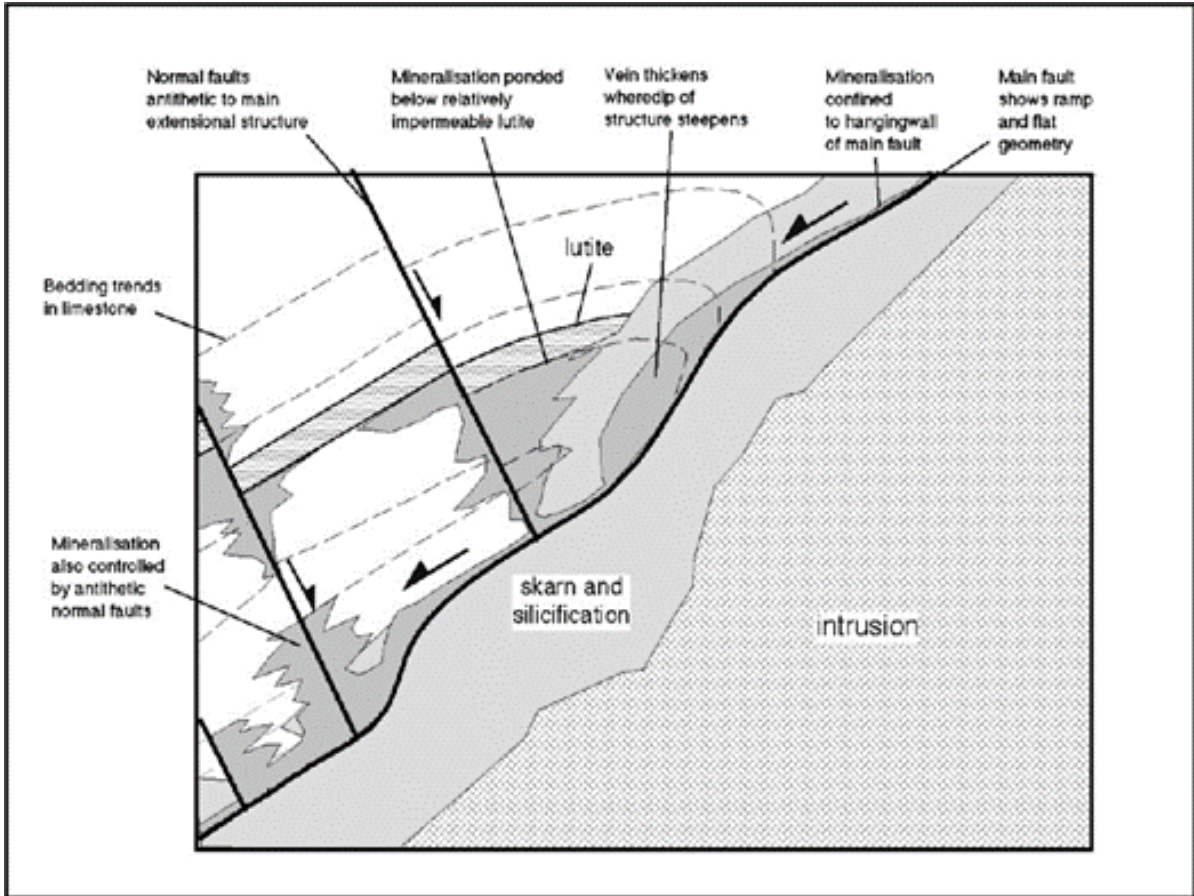
**Figure 6-2: Local Geology Map**

Figure 6-3 shows the stratigraphic column of San Martín. Figure 6-4 presents the schematic cross section showing structural and lithological mineralization control relations at San Martín.



Source: Maldonado, 2004

**Figure 6-3: Stratigraphic Column of San Martín**



Source: Maldonado, 2004

**Figure 6-4: Schematic Cross Section of San Martín**

### 6.1.3 Property Geology

In the area of San Martín the Cretaceous Cuesta del Cura and Indidura Formations consist of limestones with thin interbeds of flint and shale. It has been observed in the lower levels of the San Martín mine, as well as in deep diamond holes of exploration, that the Cuesta del Cura Formation is approximately 900 m thick, presents changes such as: the presence of carbonaceous shale horizons and almost absence of flint. The Peña formation are intensely folded and faulted by the Laramide orogeny of (40 to 80 Ma), and discordantly covered by tertiary conglomerates, and by Rhyolites and Basalts of the Quaternary across the region.

#### Lithology of the Intrusive

The stock of Cerro de la Gloria presents an irregular elliptical shape on the surface, in which the largest diameter N–S is 2.1 kms and the smallest E–W, 1.7 kms.

The Stock Cerro de la Gloria, dated at 46 Ma by K-Ar methods on biotite (Damon et al., 1983) intrudes the limestones of the Cuesta del Cura formation. The stock presents several types of rocks and textures, culminating in fluids related to late porphyritic phases. The igneous evolution in San Martín and the nature of the igneous evolution has been a contributing factor in mineralization.

San Martín has similarity in ore with other deposits of this type in México, however it is apparently richer in Cu – Fe in exoskarn and Cu – Mo in intrusion (endoskarn).

The earliest igneous phase is a medium to fine grain granodiorite, with euhedral grains of hornblende, Plagioclase (An 35-40), abundant biotite and subhedral grains of quartz. Accessory minerals include sphene, magnetite, allanite.

The alteration observed at depth are quartz veins with potassium feldspar envelope, chloritization of biotite, as well as fine-grained sericite.

Exploration intercepted a granitic-dioritic Porphyry which considered to be one of the earliest phases, as demonstrated by the composition of plagioclase (An 45 – 60). Petrographic analyses indicate a dominance of plagioclases and hornblende in phenocrystals, with a lower proportion of quartz, biotite and pyroxene.

The largest dominant phase of Cerro de La Gloria is Granite (Monzogranite), (Figure 6-5). This phase is equi-granular to slightly porphyritic; having potassium feldspar (12mm), subhedral quartz, euhedral plagioclase, and minor hornblende. Accessory minerals include apatite, zircon, sphene and as iron oxides, magnetite and ilmenite. At depth it has an overall increase in grain size and is more equi-granular. Most of the bodies can be seen to the east of the mine forming the body of the Cerro de La Gloria. Inside the mine they are cut by dikes of medium grain of granite porphyry, with similar composition.

The alteration of this granite is located adjacent to the Quartz-Porphyritic dikes, especially in fracture zones where biotite is chloritized and plagioclase is seicitized. Where alteration occurs the rocks are characterized by the presence of quartz, quartz- feldspar- potassium (chalcopyrite - arsenopyrite), and veins are present which include pyrite and pyrrhotite.

#### **Medium Grain Porphyritic Granites**

Porphyritic granite bodies can be mapped at surface and in the mine. While the composition is similar to the Cerro de la Gloria and the Granite Porphyry, potassium feldspar crystals show a uniform direction. These porphyritic dikes are more common in the western part of the Cerro de la Gloria and in the eastern part south of the Refugio.

In composition this porphyry granite is similar to the granite of the Cerro de la Gloria and the Granite Porphyry, the main concentration of these masses of dike occurs in the western part of the Granite of the Cerro de la Gloria , as well as in the eastern part of this Intrusive complex south of the Refugio.

#### **Coarse Grain Porphyritic Granites**

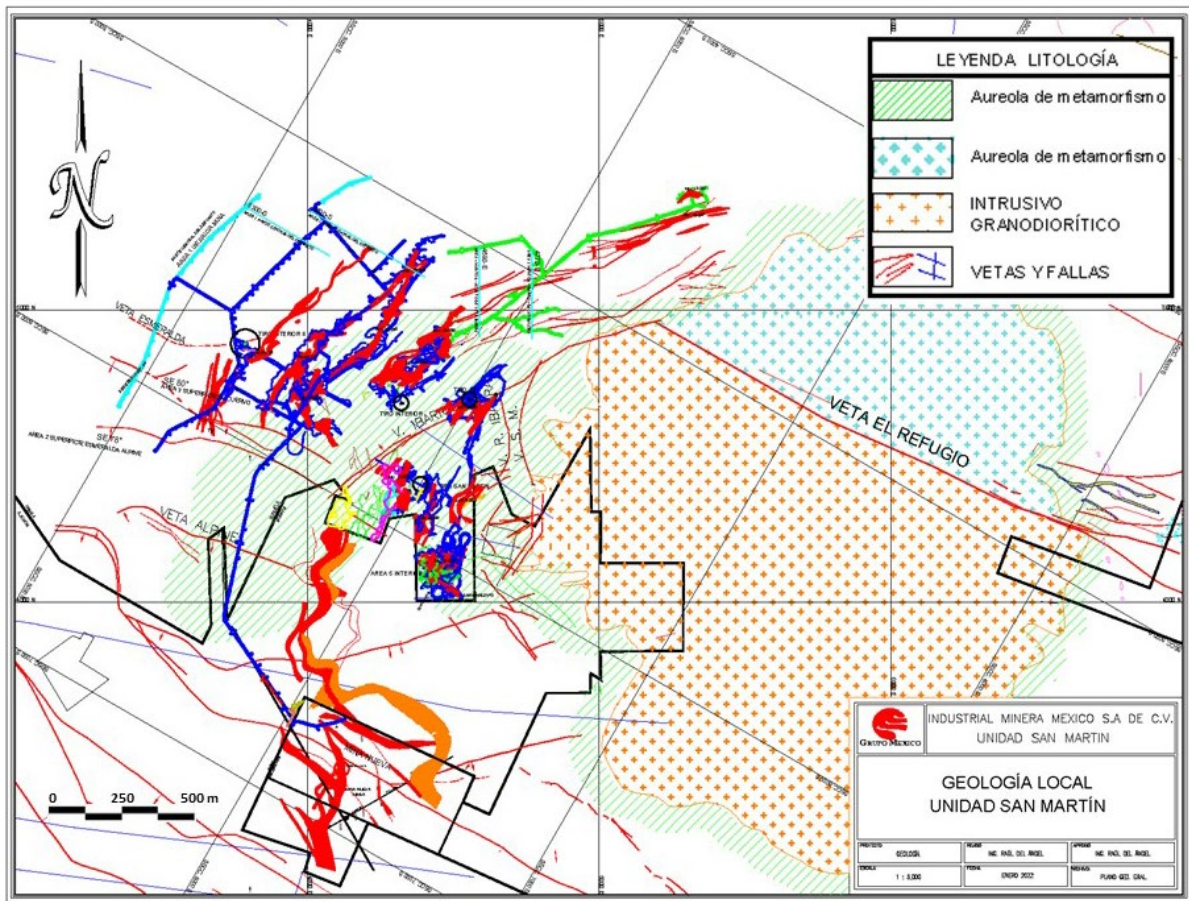
Coarse-grained Prophyritic Granite cuts the granite of Cerro de la Gloria, has a composition similar to the other two phases of granite, but has a fine-grained phaneritic matrix. Potassium feldspar phenocrystals, quartz and plagioclases, are more common and rarely biotite. It is altered and replaced by intense veins of quartz, being a possible genesis of saccharoidal quartz, which is located superficially in the SW projection of the large mass of Porphyritic Quartz.

#### **Medium Grain Porphyritic Granites**

These dikes commonly cut Porphyry Quartz, Porphyry Granite and Skarn. Its distribution suggests a volatile-rich volatile rich, late stage crystallization of Porphyritic Quartz. Veins cut intrusive phases, as



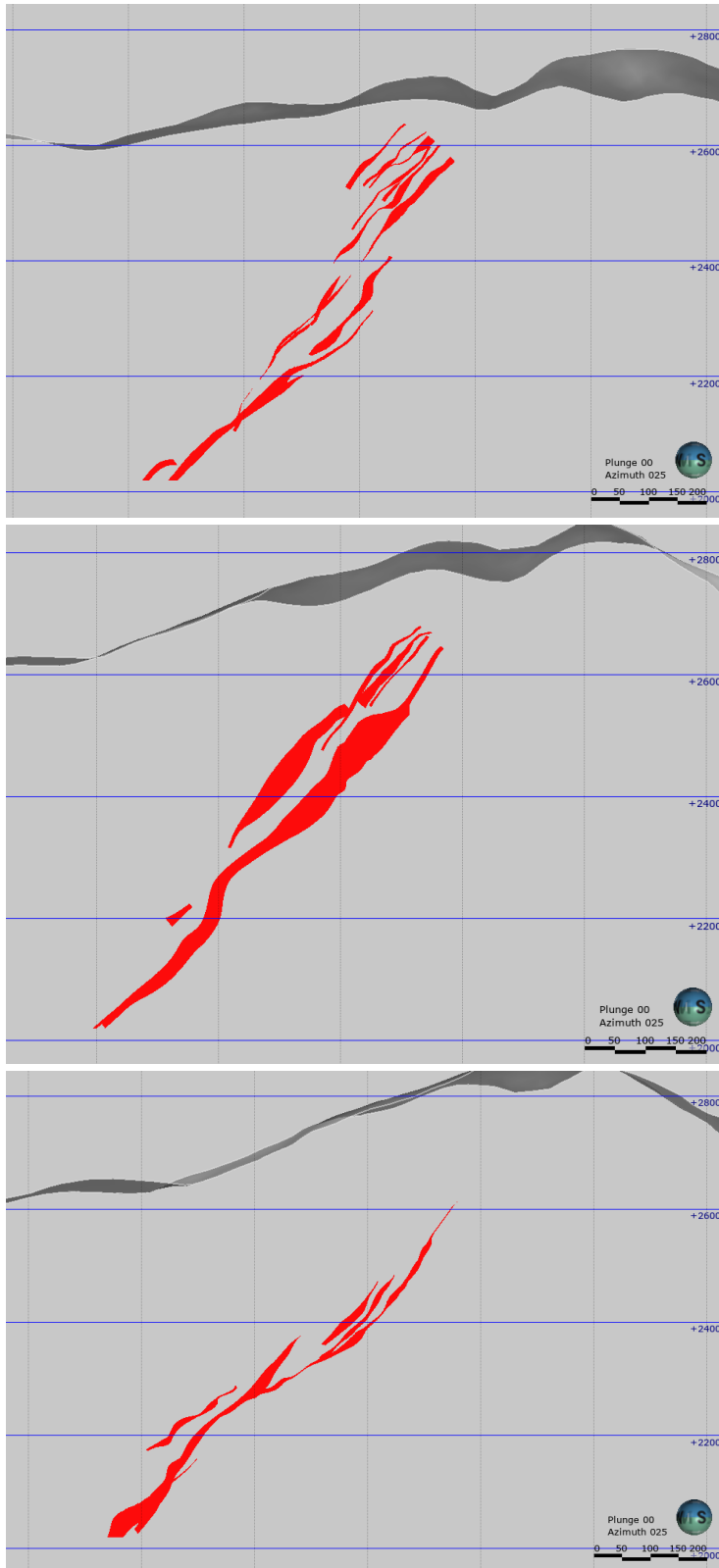
well as skarn and sulfide-rich veins and massive replacement. The fine-grained, intensely chloritized and sericitized dikes seen in core are examples of these dikes.



Source: IMMSA, 2021

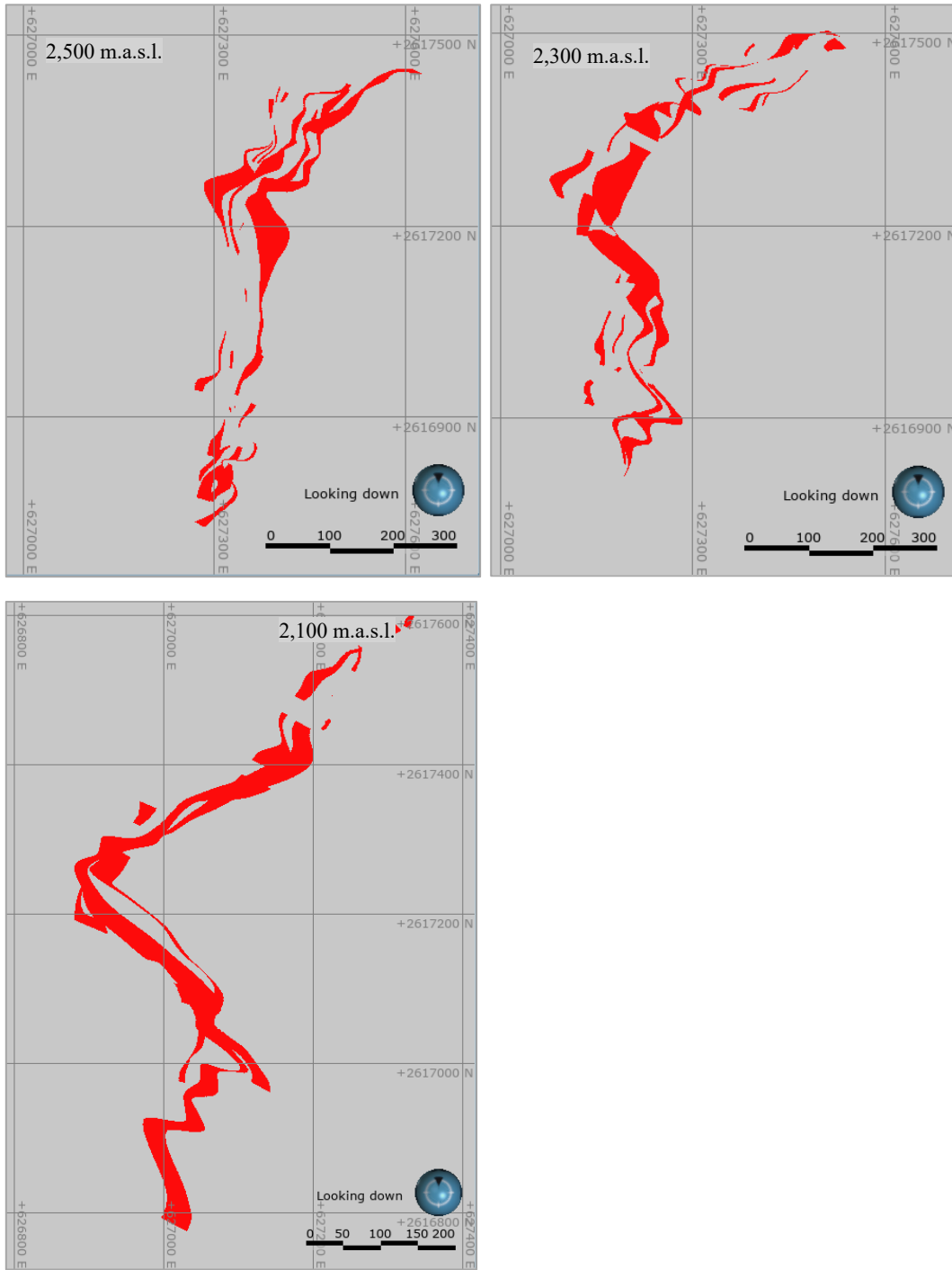
**Figure 6-5: Property Geology Map**

Figure 6-6 presents an example of the interpreted mineralization in San Martín in vertical sections (Azimuth 025°) from south (upper image) to north (bottom image) distanced 100 m, indicating the distribution and changes in width. The mineralization (replacements) inside the mantles/layers is variable and irregular. The length of the mineralization downdip reach 800-850 m and drilling has found that the mineralization is still open at depth, including areas where the mineralization extends for an additional 400 m. Figure 6-7 shows the plan views at different elevations (2500, 2300 and 2100 masl) indicating the distribution and irregularity of the mantles where the mineralization is contained. The width of the mantles varies from few meters up to 50-60 m or more locally.



Source: IMMSA, 2021

**Figure 6-6: Vertical Sections – Interpreted Mineralization**



Source: IMMSA, 2021

**Figure 6-7: Plan Views – Interpreted Mineralization**

## 6.2 Mineralization

### 6.2.1 Mineralization and alteration

Detailed studies of mineralogy, alteration, fluid structures and inclusions (Aranda-Gomez; 1978), (Rubin and Kyle;1988), (Starling;1997), (Graf;1997), indicate that the mineralization of St. Martín is subsequent to metasomatism in skarn (andradite-diopside) and prior to that of tremolite (actinolite, vesuvianite, wollastonite). Mineralization is related to the retrograde alteration event overprinting the skarns. This retrograde event is thought to have occurred during the cooling of the porphyry intrusions is related to the retrograde alteration that accompanied the porphyry feldspathic quartz. Fluid inclusions show that sulfide mineralization was associated with high and low salinity fluids (46 %wt Na Cl eq. and 3-8 %wt NaCl eq. Gonzalez Partida, 1997) and temperatures between 250°-300°C, suggesting magmatic and meteoric sources respectively.

Alteration veins associated with porphyries include: early quartz-chalcopyrite-molybdenite, quartz-chalcopyrite-arsenopyrite, fluorite-arsenopyrite with sphalerite and quartz, quartz-sericite-pyrite veins. In the central part of the deposit there is a horizontal zone with respect to the intrusive contact, presenting Ag, Cu and As enrichment close to the contact. Sphalerite tends to be deposited later and in greater quantity than Fe, Mo, As, Cu, but it is strongly associated with marmatite and chalcopyrite. At depth, there is an increase of pyrrhotite and marmatite, with a horizontal zonation similar to that described. In the NE portion of the deposit structures concentric to the intrusive “Ibarra, Gallo – Gallina”, there is an increase of Pb, Zn, Ag in the Skarn. At the far east of the deposit there is an elevated area of Cu and Ag mineralization, while towards the SE (Mina Nueva-Sabinas) Ag, Pb, Zn dominate in massive bodies in the Skarn. Anomalous Au-Ag values have been located within the intrusive vein of the NW-SE system at surface in the Refugio vein, with increasing Pb and Zn mineralization at depth. Figure 6-8 shows core of the Mina Nueva zone with massive sulfides (Sphalerite, Galena, Pyrite).



Source: IMMSA, 2021

**Figure 6-8: Photographs of Core in Zones of Massive Sulfides (Sphalerite, Galena, Pyrite), Drillhole DDHMN21-11**



Several mineralization stages and paragenetic phases have been suggested:

- Arsenic and fluorite appear early, but are cut by veins of quartz and chalcopyrite with feldspar
- Bornite and chalcopyrite occur together in the Skarn and are deposited at time similar to replacement textures, prior to most other sulfides.
- Sphalerite is usually deposited after chalcopyrite. Pyrite is observed at both early and late ages, as well as very distant from metamorphic halo. Pyrrhotite occurs close to the deep intrusion in the central part of the mineral body in the early stage of paragenesis.
- Mo and W occur in small portions in the Skarn close to contact with the intrusive and often associated with calcite.
- Sphalerite and galena postdate most of the Sulfides of Cu and Fe, but they are later cut by silver minerals, as well as stibnite in calcite.

The deposit of distal minerals of lower temperature such as gold, native silver, tennantite-tetrahedrite, realgar, orpiment and stibnite, has been suggested to a late collapse of the hydrothermal system.

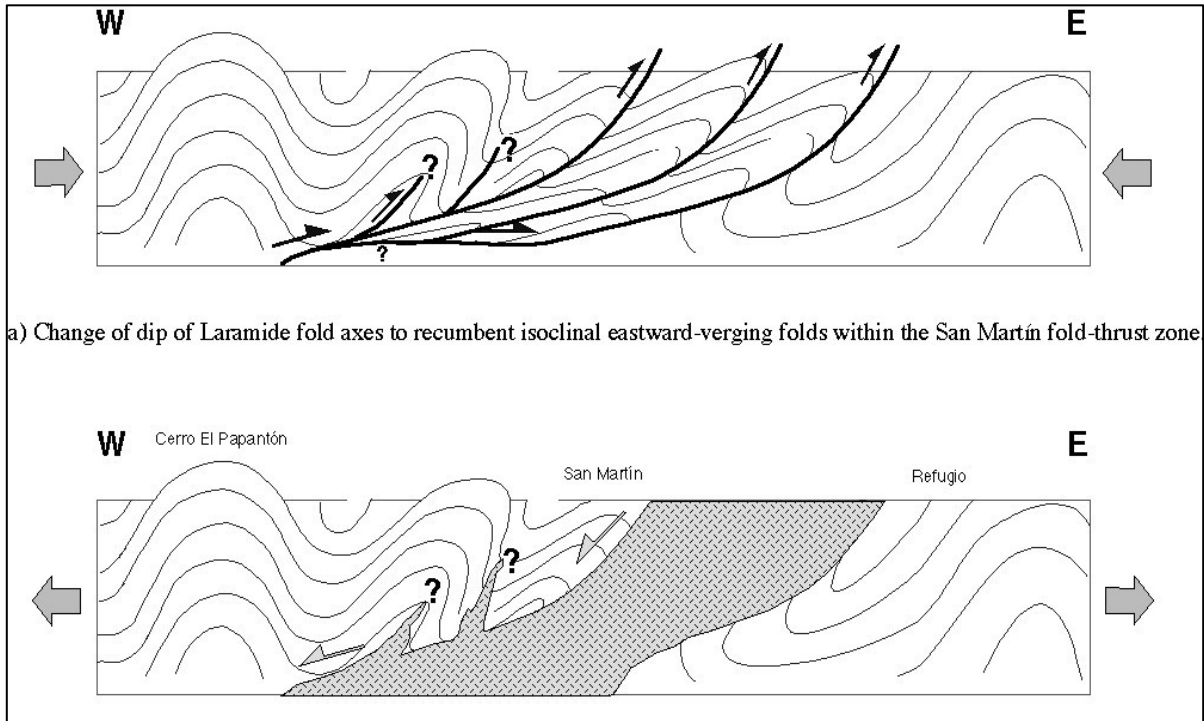
## 6.2.2 Structural Controls on Mineralization

The mineralization of the San Martín deposit is primarily controlled by a W-NW sinistral dilatational fault zone. Many of these fundamental structures are pre-mineral in origin, which have been reactivated during and after the Laramide event.

San Martín is located on the margin of the larger structural zone of discrete WNW regional fault zones, which extend from San Martín to the SE of Zacatecas and Real de Angeles (Figure 6-1)

The intrusive complex plunges shallowly to the southwest, focusing mineralization immediately above the contact. As the Indidura formation is located in the area of folding and contains a high content of shales, there is a good possibility of locating mineralization in the contact of the Formations Cuesta del Cura and Indidura.

Veta San Marcial are thin, but abundant, with subvertical orientations. Antithetical veins are also present to the through-going vertical veins. The NE and S margins of the intrusion/deposit are controlled by zones of sinistral faulting striking NW to W-NW. The intrusion of San Martín was pre and syn mineralization in age, acting in part as a solid body within the dilation zone. Field data indicate that mineralization is strongly associated with Porphyric Quartz dikes (Figure 6-9).



Source: Maldonado, 2004

**Figure 6-9: Scheme of Structural Evolution Model**

The structural model indicates that the Post-Laramide extension (N-NE) produced oblique faults with a large expansional component W-NW to NW, which control the emplacement of intrusions and resulting mineralization.

Structural control can be seen on multiple scales; the largest and most economically important are the concentric and antithetical structures that house the main mineral veins, when these structures are intercepted by the WNW-NW in the Skarn zone, the mass replacement bodies are of large dimensions. These bodies are also formed at the edges of the intersections of the main veins and the antithetical structures.

Thus, the main veins known as San Marcial, Ramal Ibarra, Ibarra, Gallo – Gallina strike NW, N NE, NE, which when combined with structures W NW – NW (faults 3 and 5) form the large bodies of replacement in Skarn known in San Martín, with longitudinal influence of 1.5km and depth of 1.1Km

Where the contact of the intrusion is low angle, the ore bodies are narrow or do not exist, but when these surfaces change pitch there is a large increase in grade and volume. Some of the deep exploration targets are located at the intersection of normal faults with the margin of the intrusive (Figure 6-4).

### 6.3 Mineral Deposit

The Zn-Pb-Cu (- Ag ± Au) San Martín deposit in northwestern Zacatecas is one of the most economically important and largest skarns in México. Mineral associations in this deposit belong to the sulfide skarn type (with rather "classical" prograde and retrograde zones) and contain peripheral sub-epithermal to epithermal veins. Detailed Mineralogy and geochemistry have been completed on the deposit historically which is summarized from Rubin and Kyle 1988, below:

The San Martín skarn deposit was formed by a hydrothermal system associated with intrusion of the 46-m.y.-old Cerro de la Gloria quartz monzonite stock into the middle Cretaceous Cuesta del Cura limestone. The deposit is exploited by two major mines. The San Martín mine extracts Cu-Zn-Ag ore from veins and replacement bodies hosted by skarn, and the Sabinas mine extracts Zn-Pb-Ag (+ or - Au) ore from veins hosted by skarn and recrystallized limestone.

Horizontal metal zonation is well developed in the San Martín district. Cu and Ag correlate positively and the general pattern is Cu + Ag --> Cu + Zn --> Zn + Pb, with increasing distance from the intrusive contact. The contents of Fe, Cu, Zn, and Pb increase with depth within the ore zone.

Au is farthest from the contact and occurs in veins within recrystallized limestone. Structural and stratigraphic controls were of major importance in localizing mineralization. Fractures in the Cuesta del Cura Formation associated with Laramide folding increased the permeability of the host rock; the metasomatic aureole, with accompanying sulfides, is most extensive in the most deformed portion of the limestone.

Chert and shale units of the Cuesta del Cura served as local impermeable barriers to hydrothermal fluids; these units are mineralized only along fractures.

The vein system represents a series of intrusion-related fractures that roughly parallel the intrusive contact and that served as major conduits for the ore-forming fluids. Formation of both the vein system and sulfide-hosting in skarn probably was aided by volume loss during metasomatism. Other retrograde phases include wollastonite, vesuvianite, epidote, and chlorite; fluorite and calcite are common, and minor quartz is also present.

The metallic mineral assemblage is diverse and the paragenetic sequence can be divided into early, intermediate, and late stages. The sequence consists of:

- early arsenopyrite, bornite, chalcopyrite, pyrrhotite, and molybdenite; intermediate sphalerite, with intergrowths of chalcopyrite, and galena; and late tetrahedrite-tennantite, pyrite, native silver, and stibnite.
- Supergene phases include marcasite, acantite, stromeyerite, and pyrargyrite. Deposition of grandite garnet probably was initiated by an increase in F (sub O<sub>2</sub>) (and possibly decrease in F (sub S<sub>2</sub>) and took place at temperatures estimated in the range of 500 degrees to 550 centigrade degrees.
- Garnet then became unstable relative to clinopyroxene and later calc-silicate alteration products. Fluid inclusion evidence suggests initially highly saline fluids (at least 24 wt % KCl and 36 wt % NaCl) with temperatures of major sulfide deposition starting at about 425 degrees C and declining thereafter such that metals were able to be transported as chloride complexes and sulfur was carried mainly as SO<sub>2</sub>. Sulfide precipitation was probably by a continuing decrease in temperature and an increase in pH brought about by dissolution of CaCO<sub>3</sub>.

- Local endoskarn formation and noneconomic mineralization of the intrusion preceded exoskarn formation. Relative metal solubilities were the major control on metal zonation. The Cu-Ag association is a product of thermal collapse of the mineralizing system, resulting in low-temperature mineral assemblages coexisting with high-temperature assemblages near the intrusive contact.

## 7 Exploration

### 7.1 Exploration Work (Other Than Drilling)

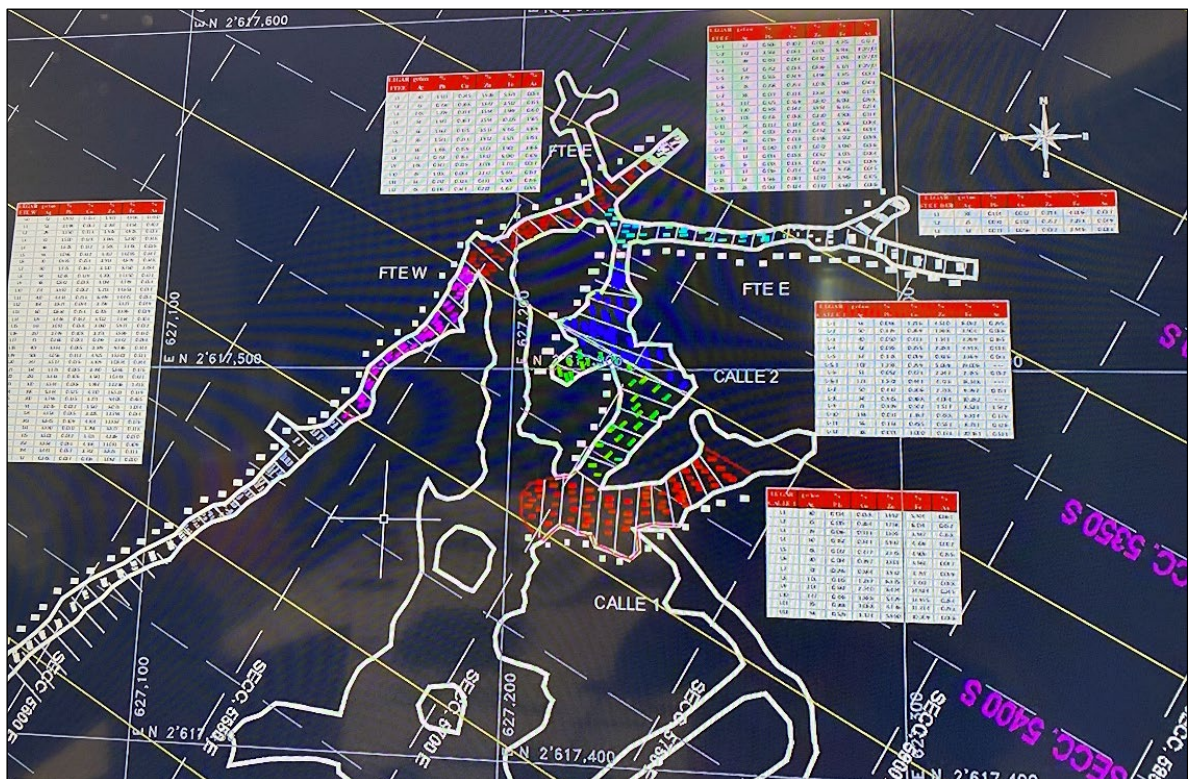
Since early last century the exploration activities have advanced in parallel to the exploitation operation, defining the continuity of the mineralization as the exploitation advanced.

At the beginning of 2019, the Zona Centro exploration team undertook the task of carrying out a structural geological mapping, geologically mapping in detail 80 hectares in the Zorra Plateada area, scale 1: 1,000. Likewise, for the Cuervo-Josefina area, 80 hectares were also mapped at a scale of 1: 1,000 and a total of 82 samples of splinters were collected from landfills and old mining works. These two areas are located to the west of the San Martín operation.

#### 7.1.1 Procedures and Parameters Relating to the Surveys and Investigations

The underground workings are surveyed with Total Station, and historically using Theodolite. The sampling, geology, structural, and mineralization information is registered in maps. The historical maps were completed in paper format and are maintained and stored in the mine geology office.

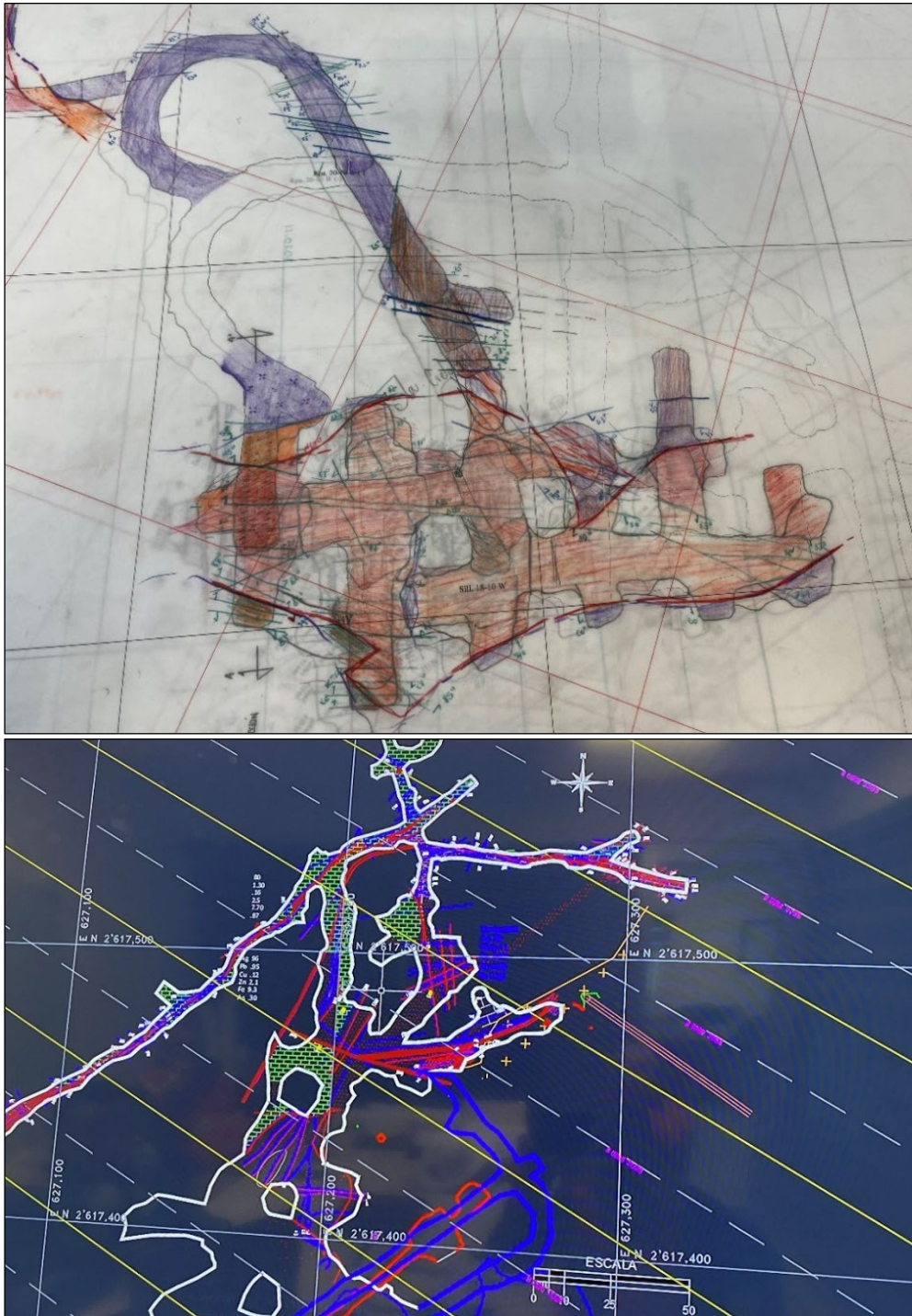
The sample channels are located using compass and tape from known points located along the underground workings. The mine topography maps provided by the mine topography department are used to draw the geology interpretation, structure, and the horizontal projection of rock sampling lines (Figure 7-1 and Figure 7-2).



Source: IMMSA, 2021

**Figure 7-1: Example of Channel Sampling Location Maps (AutoCAD Format)**





Source: IMMSA, 2021

**Figure 7-2: Example of Geological Underground Maps (Paper and Digital AutoCAD)**

The QP highlights that all the information to date has not been stored in a single central database which is considered best practice. The lack of a central database limits the ability to integrate multiple sources of data into a geological model. The QP highlights that there is a limited risk that not all

information is used when generating maps and cross sections, or that the process of updating the interpretations can result in a time-consuming process for the geological staff.

Modern technologies provide rapid methods to interpret and integrate data in three dimensions and SRK has recommended IMMSA integrate these into the mine systems. While these methods would provide improved productivity it is the QP's opinion that the mine have demonstrated sufficient quality in the survey process to accurately reflect the geology, which is supported by the long mining history of the deposit.

## 7.1.2 Sampling Methods and Sample Quality

### Mine Channel/Rock Chip Sampling

Sample limits are defined by the geologists according to changes in mineralization and lithology and are oriented perpendicular to the mineralization controls (stratigraphy and veins), Figure 7-3. The rock chips are collected by the geology technicians, simulating a channel of approximately 15 cm. The rock samples from the underground workings are collected from the roof of drifts using long steel bars and/or with hammer and chisel (Figure 7-5). Sample lengths vary from 1 to 2 m. The geologists try to use 5-m systematic distance between the sampling channels.

Each rock sample is collected in a piece of fabric disposed in the floor, and then the big pieces of rock are homogenized to a size of approximately 2.5 – 4.0 cm using a hammer. The sample is mixed inside the fabric, split by hand and then a sample of 2 – 5 kg is packed in plastic bags which are labelled and then closed with ties.



Source: SRK, 2021

**Figure 7-3: Marks Indicating Limits and Width of Samples**





Source: SRK, 2021

**Figure 7-4: Rock Sampling: Use of Textile to Collect Rock Chips**





Source: SRK, 2021

**Figure 7-5: Left: Rock Sampling using Hammer and Chisel. Right: Homogenization of Fragments Size**

The geologists complete the geological description of the channel. The samples are described including the following information:

- Lithology
- Alteration (type, intensity, and mineralogy)
- Mineralization (styles, intensity, mineralogy)
- Structures (description, aptitude, mineralogy)

The complex distribution of the mineralization is a distinctive feature of this deposit, and the integration of the interpretation sections and maps will be a challenge when constructing a 3D geological model, despite of the good quality and quantity of geological interpretation information.

SRK considers that the current procedures of rock sampling are not in-line with industry best practices and sampling errors can be introduced due to changes in rock hardness and noncontinuous channel sampling when using long bars to collect the rock chip samples. The lack of an adequate rock sampling protocol results in poor-quality rock sampling and uncertainty associated with the results.

The samples collected by the geology technicians and delivered to a company geologist, who reviews the samples and delivers the samples to the onsite laboratory to provide a chain of custody. Internal quality controls are not included in the sample stream by the geologists of San Martín.

All the chip channel samples (2 - 5 kg weight) collected by the operation are sent to the internal onsite laboratory for assaying, where Multi-element assays by ICP are completed.

The assay results received by the geology staff are registered in Excel spreadsheets. For the historical sampling, the assays results were received in paper tables and the geologists transcribed the results directly into the maps (Figure 7-1 and Figure 7-2) and the mining panels (stope) supporting documents. The sample information in Excel does not contain the sample length but does contain silver, copper, lead, zinc, iron and arsenic grades. Lithology, alteration, and mineralization description are not included in the Excel spreadsheets, which are part of the data capture process which will be required for the construction of a robust 3D geological modeling and mineral resource estimation.

The QP highlights that all the information has not to date been stored in a single central database which is considered best practice which limits the current ability to integrate multiple sources of data into a geological model. The QP highlights that there is a limited risk that not all information is used when generating maps and cross sections, or that the process of updating the interpretations can result in a time-consuming process for the geological staff. New technologies provide more rapid methods to interpret and integrate data in three dimensions and have been recommended to IMMESA for integration into the mine systems. While these methods would provide improved productivity it is the QP's opinion that the mine have demonstrated sufficient quality in the survey process to accurately reflect the geology, which is supported by the long mining history of the deposit.

### **7.1.3 Information About the Area Covered**

San Martín samples all the underground workings and stopes maintaining an approximate separation of 5 m between channels. Each stope is advanced vertically and a new set of samples are collected from the ceiling of the stopes, that are used for the mineral resource updates. The area covered by the operation and the exploration around it is approximately 9 km<sup>2</sup>.

### **7.1.4 Significant Results and Interpretation**

Although the sampling methods and sample quality do not follow best practices to minimize potential bias or contamination. It is the QP's opinion that the overall the results are representative of the geological units and mineralization controls. The results from channel sampling are accepted for the definition of the geological interpretations and Mineral Resources at San Martín.

The channel sampling is used for the mine planning (medium and short term). SRK relied upon reconciliation of the planned vs executed grades and tonnages system of San Martín to determine the performance of the channel sampling, which is considered reasonable considering the long history of mining at San Martín.

Table 7-1 shows the comparison between the planned and real tonnages and the mill feed grades. There are important differences which reflects the variability of grades associated with the deposit. There is not a protocol of reconciliation that provides robust numbers to evaluate appropriately these differences, but these differences is an aspect to investigate in each of the parts of the operation.

**Table 7-1: Comparison of Planned vs Real Tonnages and Grades for 2020 and 2021**

UNITS	Total Plan 2020	Total Real 20220	Difference 2020	Total Plan 2021	Total Real 2021	Difference 2020
CONCEPT						
Milled Tonnes	1,298,400	1,355,065	4%	1,371,150	1,217,334	-11%
Mill Feed Grade						
Au g/t	0.04	0.02	-55%	0.02	0.01	-34%
Ag g/t	92.03	107.80	17%	94.28	74.77	-21%
Pb %	0.25	0.34	38%	0.34	0.24	-29%
Cu %	0.60	0.50	-16%	0.52	0.47	-10%
Zn %	2.00	1.68	-16%	1.90	1.87	-2%

Source: IMMSA, 2021

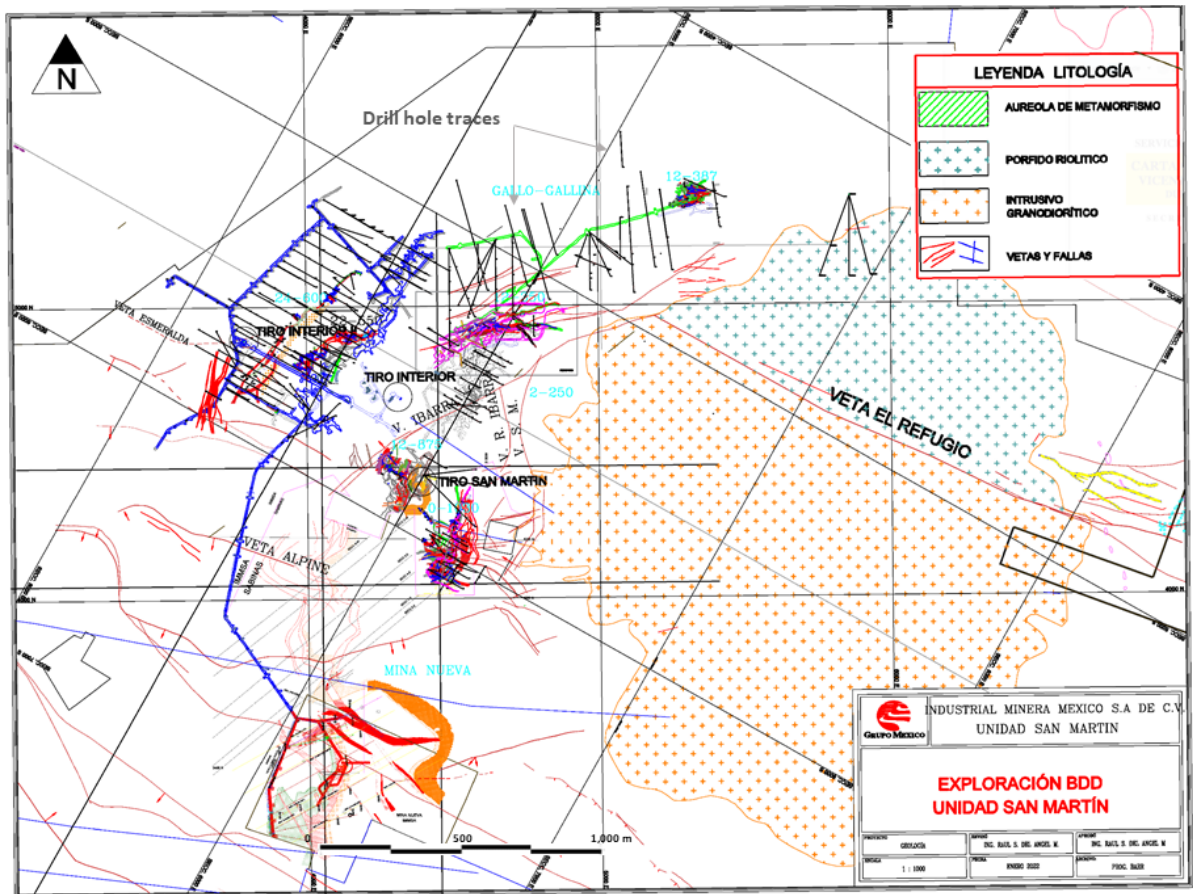
## 7.2 Exploration Drilling

The drilling in San Martín has been documented since the last century, but the total quantity of drillholes completed at San Martín cannot be established due to lack of an available historical drilling register and the loss of previous information.

At the beginning of the 1950s, the surface and interior exploration of the mine began in San Martín, from this period until 2005, approximately 100,000 m were drilled from surface and 220,000 m from underground chambers. During the years 1990-1997 approximately 67,000 meters with a total in 165 holes were completed. (Sánchez J.M, et al., 1998).

### 7.2.1 Drilling Type and Extent

San Martín has completed diamond core drilling from surface and underground, and the actual number is not known due to the lack of a historical drilling register or a central database. IMMSA is currently in the process of data capture of the drilling database which will provide further detail. Most of the drilling completed by the operation is BQ core and has not been downhole surveyed. The majority of the drillholes have lengths in excess of 100 m and depending on the zone of the project, but there are a considerable number of drillholes longer than 300 m. A lack of downhole surveys for the historical drilling can result in location errors of the drillhole intercepts and potential mining panels (stopes) defined with the drilling, representing a moderate risk level. It is the QP's opinion that this risk is limited as the drillholes defining the Indicated portion of the deposit are relatively close to the current underground workings and therefore will have limited deviation. Impact on Inferred Resource for longer holes will likely have slightly higher risk. The QP has considered this risk during the classification process the reflect the levels of confidence. Figure 7-6 presents the location of drillholes and the traces of the drilling completed by the exploration department of San Martín. The QP highlights to the reader that this is not an extensive plot showing all the collar locations as IMMSA is in the process of capturing the electronic data to achieve this which is scheduled for completion in 2022.



Source: IMMSA, 2021

**Figure 7-6: Recent Drillhole traces – San Martín**

Underground diamond drilling completed by the mine geology department includes drilling a fan of holes on sections spaced 25 - 30 m apart perpendicular to the main mineralization trend.

On completion of each drillhole, the collar location is surveyed and the following information is recorded on paper drill log sheets:

- Hole number, with collar location, length, planned dip and azimuth.
- Start and completion dates of drilling.
- Core lengths and recoveries.
- Geological and mineralogical descriptions
- Assay results.

The historic mine geology drillholes are used in conjunction with the drillholes in the mineral resource estimation.

The location of the collars and drilling traces are not registered in a unique location, paper map or digital format. The drillhole information can be found in individual paper plans and vertical sections.

## 7.2.2 Drilling, Sampling, or Recovery Factors

### Mine Drilling Programs

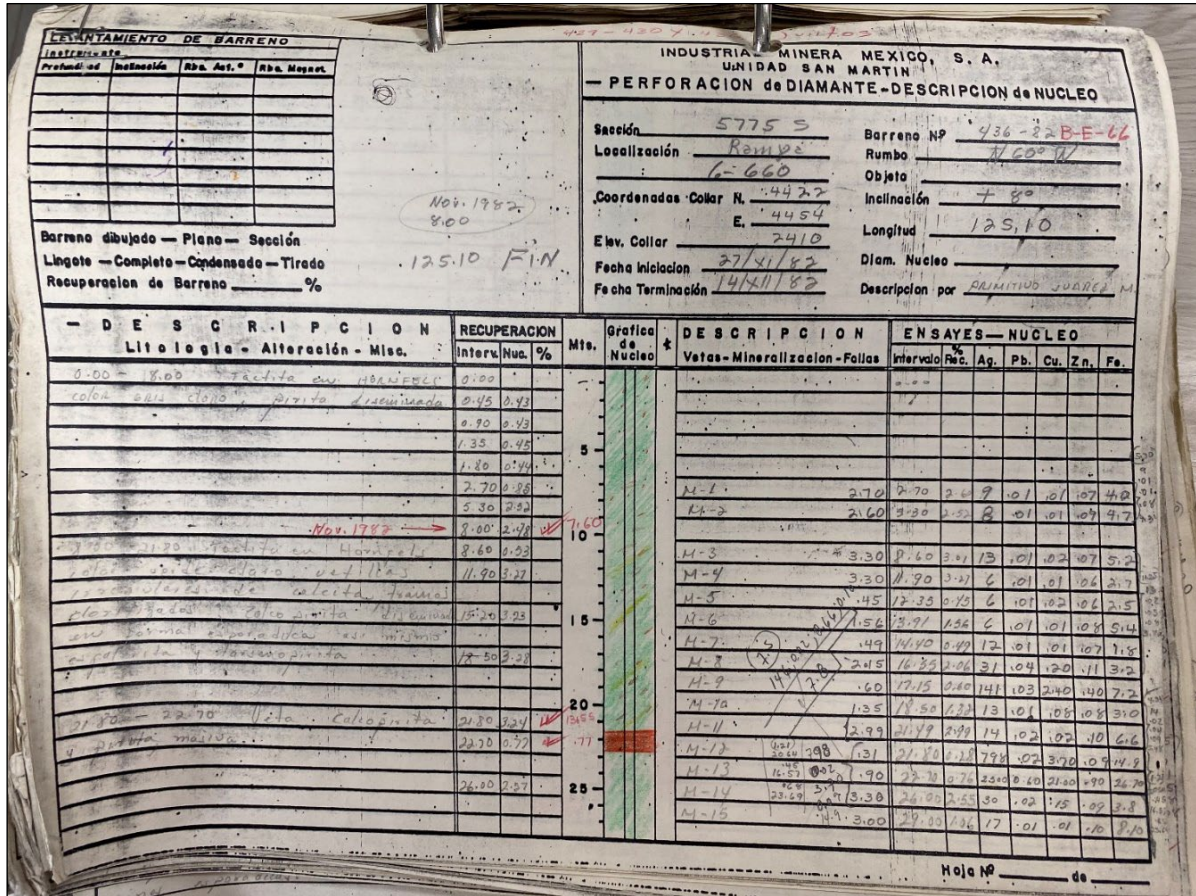
The historical drilling is completed by the mine geology department of San Martín. It was estimated that there are approximately 2,000 historical drillholes have not been digitized. The mine geologists complete the core logging in paper formats, which includes the lithological, structural, and mineralization characteristics. Although the general characteristics of mineralization is registered in the logging formats, the codes of mineralization and geology characteristics have changed over time. An example of the logging format is shown in Figure 7-6. The sample limits were defined according to changes in geology and mineralization and the logging formats included the zinc, lead, copper, silver, and iron grades (and recently, gold).

Only the areas of visible mineralization and its halo of 4 to 5 m around the mineralized zones (hangingwall and footwall) are sampled. A core splitter or an electrical saw have been used to cut the core, and a half of the core is collected in plastic bags and sent to the internal laboratory for chemical analysis. Small core pieces (10 to 20 cm) from the drillhole intervals that have been described as non-mineralized were stored, and the rest of this material was discarded after logging.

Part of the assay results received by the geology staff were registered in Excel spreadsheets and included in plan section drawings (AutoCAD format). The sample information in Excel does not contain presently the information of the sample length, which will be required for future geological modeling and mineral resource estimation, which will need to be captured from the original drilling logs.

Historically the onsite laboratory has reported the assays in paper and recently in excel files. There is no QA/QC protocol for the historical drilling completed by operations staff.





Source: IMMSA, 2021

**Figure 7-7: Core Drilling Logging Format Used at San Martín for Historical Information (1982)**

A core splitter or an electrical saw is used to cut the core, and half of the core were collected in plastic bags and sent to the internal laboratory for chemical analysis (34 elements). Historically, the remaining core of the sampled zones were stored at the operation complex for 5 to 10 years, but during the period of time due to a strike, all the stored core was discarded. The pulps of the processed historical samples in the internal laboratory were discarded.

The San Martín operation currently does not operate a commercial database or a geological data management protocol. The historical drilling information is physically stored in the San Martín Mine geology office with individual hole in individual folders. However, the mine geology staff informed SRK that portions of this documentation was lost in the last decade. To validate drill results from as part of the current estimate the QP has relied on review of the hard copies (paper format) of the historical drilling, and the excel files of a part of the historical drilling and the recent drilling (2019 – 2021).

**Exploration Drilling Programs**

After the restart of the activities in San Martín, IMMSA has used a contractor to be responsible for the exploration drilling. The drilling contractor (Tecmin) completed approximately 13,000 m of drilling during the last 3 years. The diamond core drilling is completed using diamond bits, using the standard core sizes HQ, NQ, BQ and AQ. Most drill rods are 10 feet long (3,048 m). This drilling includes downhole surveying at interval of every 20 and 50 m. All new drillhole collars are surveyed using Total

Station. The QP notes that multiple coordinate systems have been used historically, which will need to be translated to a single system during the current data capture process.

The drilling depth is estimated by keeping track of the number of drill rods that have been inserted while drilling, and the recorded drill core lengths. The obtained core is stored in plastic core boxes (Figure 7-7), which are labelled with the borehole identification, box number and from/to measurements.



Source: IMMSA, 2021

**Figure 7-8: Core Boxes of San Martín**

Once the diamond drilling has been carried out and the core has been recovered, the next step transport the core boxes to the logging facility where the core is logged and sampled. Figure 7-8 presents the core logging area of the exploration department in San Martín.





Source: SRK, 2021

**Figure 7-9: Core Logging Room of the Exploration Department in San Martín**

Once at the logging facility, the core boxes are placed in order on logging tables with the run blocks (from -to) clearly visible. The core is then washed, photographed and then logged with the following features recorded (structures, mineralization, alteration, rock type, contacts, and clasts), and sample intervals are marked.

Geotechnical information such as recovery and RQD are also recorded, as these data are needed to assess rock quality, determine mining widths, pillars, and mine support programs.

Within the activities carried out in the logging, zones with mineralization or altered are defined, where according to the criteria of the geologist, the samples not smaller than 20 centimeters and not larger than 2.0 m were selected and marked. Later they are labeled with a sample tag and half of the core is cut to be sent for assaying and the other half remains as a control in the box (Figure 7-9).

The QA/QC protocol includes the insertion of blanks, duplicates, and certified reference material checks. These samples are being sent to SGS Laboratory, Durango, México. The onsite internal laboratory is used as a secondary laboratory and no other commercial laboratory is used as an umpire.

Core samples were also collected in various types of lithology for the measurement of specific gravity, mainly in mineralized areas. After registering the core, samples. The samples are packed in plastic bags, labeled, and sent to the SGS laboratory facilities in Durango (Figure 7-10).

Specific gravity measurements are taken by the exploration team every 50 m according to changes of lithology and mineralization characteristics, using the Archimedes principle based methodology. The specific measurement results have not been used for the current resource estimation because these



measurements are collected in areas surrounding the main part of the deposit. It is the QP's opinion that the use of a single density value for the Project represents a moderate risk to the estimation of the total tonnage, and local fluctuations are likely expected. The risk is only considered moderate as the current assigned density of 3 t/m<sup>3</sup> is based on the mining production which has been established over a long period of time.



Source: SRK, 2021

**Figure 7-10: Core Boxes with Sample Marks and the Remaining Half of Core**



Source: SRK, 2021

**Figure 7-11: Labeled Core Samples**

GvMapper Software was used to capture data from the exploration drill campaigns. This software is a configurable digital tool for creating, editing, displaying maps and drillhole columns, designed to manage information in a centralized database.

The conditions of the storage facility of the exploration group are in the QP's opinion in good condition and the core is appropriately maintained. (Figure 7-11). The drill core completed by Exploration is being stored along with the sample rejects and pulps.



Source: IMMSA, 2021

**Figure 7-12: Core Logging and Core Storage Facility at San Martín**

### 7.2.3 Drilling Results and Interpretation

The historical drilling information, which supports most of the mineral resources of San Martín, have been completed without proper QA/QC protocol and downhole survey measurements. These aspects are not in line with the industry best practices which may results in errors related to the location of the mineralization intersection and quality of the samples and assay results.

The lack of downhole surveys in underground drillholes represents a moderate risk associated to location and extent of mineralization in areas unsupported by underground workings. Recent drilling completed by the exploration team have downhole surveys every 50 m.

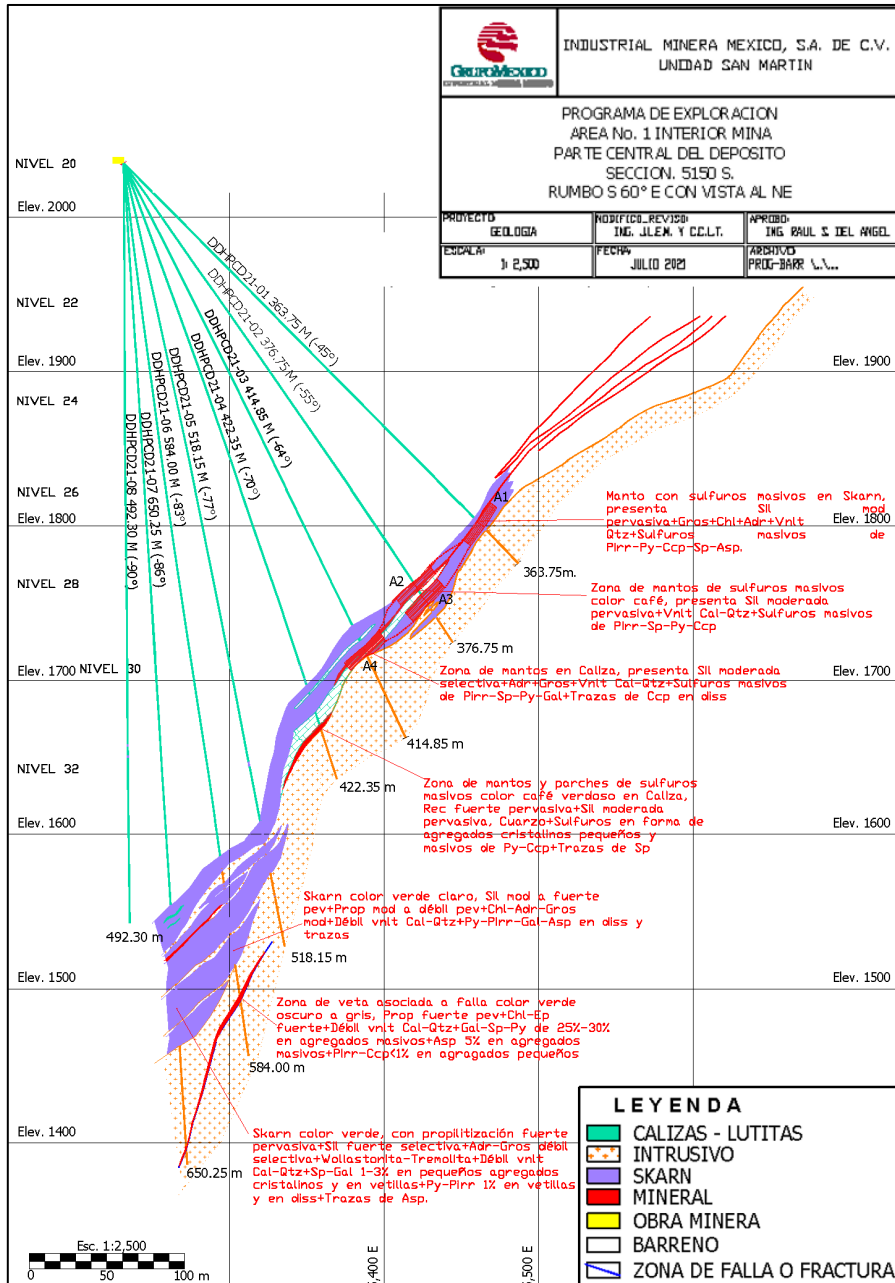
Core recovery is not an issue according to the information provided by San Martín. Recent drilling has shown core recovery average above 97% and locally low recoveries associated to weathering zone and faulting. Poor recoveries associated with historical drilling may be due to drilling practices and equipment from that time period.

Historical and recent drilling campaigns have been carried out by the operation with core recovery in diameters from NQ to BQ and TT46, which are considered reasonable for the operation, although it is recommended to implement the use of HQ to obtain a bigger core sample. HQ, NQ drilling diameters are more specifically related to exploration drillholes completed by Tecmin in the recent years.

The operation drillholes have been drilled from underground drilling chambers by both mine operations staff and contractors. This drilling is typically completed using fan drilling from the existing drives.



Drillholes are orientated as perpendicular to the mineralization controls (stratigraphy and veins) as possible. It is the QP's opinion based on the sections reviewed that overall the drilling intersects the mineralization at acceptable angles to model the geological contacts. In some cases, the angle of the intersection to the mineralization can be shallow, but San Martín tries to minimize the number of cases. Figure 7-12 shows the intersection angles relative to the interpreted geology in a vertical section, including the completed drilling. The geology of San Martín and distribution of mineralization is irregular, and the variable drilling inclination is acceptable considering the geology and mineralization of the deposit.



Source: IMMSA, 2021

**Figure 7-13: Example of a Geology Interpretation in a Vertical Section, Including Completed Fan Drilling**

The core is logged and transcribed in the hole books.

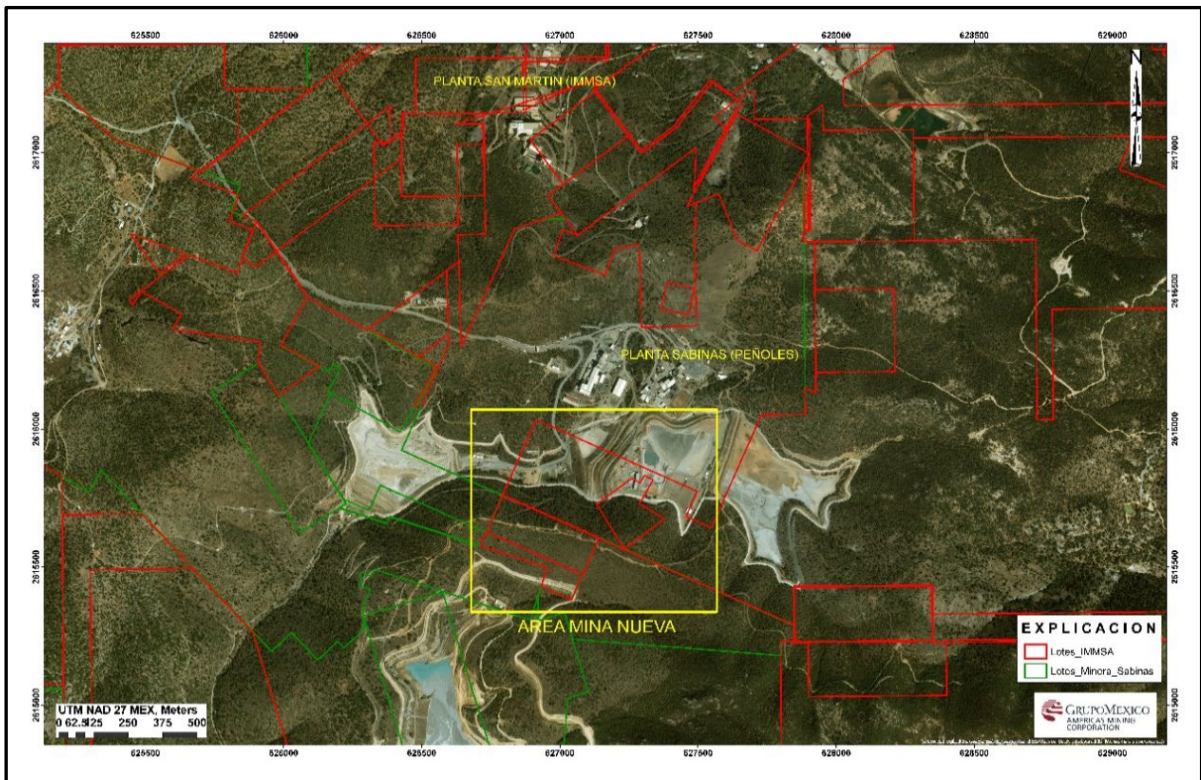
This data is combined with channel sampling and geological interpretations based on underground workings to update plans and vertical sections on either paper maps or in AutoCAD.

The variability of the mineralization that characterizes the skarn and veins deposit of San Martín is appropriately interpreted using the different sources of information. SRK relied upon reconciliation of the planned vs actual grades and tonnes mined at San Martín to evaluate the quality of drilling data. Based on the reconciliation and the long history of mining at San Martín, it is SRK's opinion that the drilling and sampling is acceptable.

### **Recent Drilling – Exploration**

Recent exploration within the San Martín mining district, in the vicinity of the San Martín Mining Unit, specifically towards the South - West portion is the Mina Nueva area (Figure 7-13).

Thirteen drillholes were drilled with a total of 3,930.60 m drilled from underground workings. The drilling carried out in the Mina Nueva area included the collection of 822 core samples totaling 824.70 m sampled (average of 1.00 m width in the sampling). As a result of this exploration program, two main mineralized bodies were intercepted.



Source: IMMSA, 2021

**Figure 7-14: Location of the Mina Nueva – San Martín Project**

The first mineralized body corresponds to a mantle of irregular and discontinuous shape, located from level 20 to 24 of the Mina Nueva zone, and is generally composed of massive sulfides with pyrite, sphalerite, galena, arsenopyrite, traces of chalcopyrite and pyrrhotite, which is encased by limestones

- gray shales with bands or thin skarn horizons containing andradite - grossularite and moderate pervasive silicification, quartz veinlets are also observed - calcite with sphalerite (3-5%), galena (3-5%), pyrite (3-5%) and traces of chalcopyrite associated with them. This body has an approximate length of 230 m in an irregular and intermittent shape, with thicknesses ranging from 4.25 to 6.40 m, which appears to be tapering towards the extension to the south of the area where it was drilled. The results include average grades ranging from 19 - 149 g/t of Ag, 0.03 - 1.85% Pb, 0.05 - 0.27% Cu and 1.08 - 9.93% of Zn.

The second mineralized body of tabular and irregular shape that is located in a skarn zone in contact with an intrusive body of granite-grandiorite composition, this same one was cut from level 24 to level 26, with the presence of small mantles of massive sulfides of 30 to 50 cm thick containing pyrrhotite, galena, sphalerite, pyrite and to a lesser extent arsenopyrite and chalcopyrite; in the intrusive veinlets and patches of pyrite, sphalerite is observed. It also has argillized areas with micro veinlets of pyrite and sphalerite with angles of 50 ° to 60 ° and 1-5 mm thick. This body has an approximate length of 205 m in an irregular and semi-continuous shape, with thicknesses ranging from 2.60 to 12.70 meters. The results include average grades ranging from 33 - 112 gr / t of Ag, 0.01 - 0.81% Pb, 0.06 - 0.33% Cu and 1.05 - 3.16% of Zn.

### 7.3 Hydrogeology

There are not hydrogeological studies and documented groundwater flow parameters available for San Martín.

The rocks that outcrop in the San Martín area are generally found to be impermeable preventing infiltration and promoting surface runoff. The granodioritic intrusive is impermeable due to its texture and composition, although some secondary porosity can be found. The Cuesta del Cura and Indidura formations (limestones and shales), do not have primary porosity, but have secondary porosity due to fracturing. The porosity in general decreases at depth where calcite cementing is found. The existence levels of shales and fine grain rock create natural barriers to the vertical groundwater flow which reduces importantly the water infiltration.

It is probable that the ground water is very deep and its circulation is through microfractures. The direction of flow is not known.

According to INEGI in the Geographical Synthesis of the state of Zacatecas, the area is classified as rock without water.

### 7.4 Geotechnical Data, Testing and Analysis

The following is the summary of the San Martín Geotechnical Study prepared by Wilson Blake and Stee McKinnon (Itasea Consulting Group, Inc), completed in July 1998.

The main purpose of the geotechnical study of the San Martín Unit was to determine the cause(s) of the collapses that have occurred in the upper levels and to assess whether they are part of the development of a mine-scale instability. Additional issues addressed included operational aspects of the mining method, ground support requirements, and geotechnical monitoring.

This summary presents an overview of the main findings of the study.

## **Mine Scale Stability**

### **Causes of Collapses in the Upper Levels of the Mine**

The collapses in the upper levels resulted from stress relief and loosening, which is primarily caused by the mining geometry. The collapses occurred due to fallout along existing geological structures in the loosened region of the rock mass. Undercutting of 6 level by 8 level mining was seen to be the main cause triggering the collapses, whose progression was made possible by this loosening mechanism.

### **Future Growth of the Collapse Zone**

The collapse zone has reached a quasi-equilibrium, in that the rate of caving has slowed considerably, but there are signs that additional fracturing is taking place. This fracturing is not thought to be related to current mining activities below 14 level as the sill pillar below 14 level is sufficiently large that it acts as a barrier to the stress effects of lower-level mining.

Both the nature of the collapse sequence and the numerical modeling results indicate that the collapses are not a result of an inevitable mine-scale instability process. They were triggered at specific locations due to a combination of local geological conditions, mining geometry, and the stress field resulting from the mining geometry. However, if nothing is done to halt the collapses, the collapse zone could expand into a mine-scale instability that would be difficult or impossible to halt.

### **Stabilization of Rite Collapses**

It should be possible to stabilize the collapse zone by tight backfilling of the upper-level stopes. Contact of backfill with the stope hangingwall and overlying sill pillar is essential in order that the Stabilizing effect of backfill is fully realized.

### **Future Mining**

Mining to 20 level should not have any adverse effect on stability of the upper-level stopes provided the upper levels are tightly backfilled. With completion of mining to 20 level, the zone of stress relief (loosening) currently surrounding the upper-level stopes will expand to include 20 level. This could lead to renewed caving in the upper levels if they are not tightly backfilled.

Seismic events and rockbursts are expected to increase in frequency as mining depth increases. Rockbursts are expected to be more pronounced in the granite than in the limestone.

Mining below 20 level will be associated with increased fracturing of rock due to high stress levels. Improved hangingwall and back support are considered necessary and continued use of post pillars is recommended.

### **Support Measures to Ensure Mine-Scale Stability**

Tight backfilling of stopes is essential to mine-scale stability. Contact of the backfill with the underside of sill pillars is required. Tight backfill has a number of functions: it prevents fallout of loose material from the hangingwall and the underside of sill pillars, it preserves the integrity of sill pillars, and it enables the sills to carry load even when they are in a "yielded" or fractured state. By itself, it does not provide much support pressure to the hangingwall, but by preserving the integrity of sill pillars it enables effective hangingwall support to be maintained.

Analyses indicated that sill pillars become fractured at a relatively early stage of mining. Accordingly, IMMSA concluded there was no reason to change their size from the current 12 m width. As noted, use of tight backfill to preserve their integrity is essential.

Post pillars are also a highly effective means of stiffening sill pillars and their continued use is strongly recommended. There is no strong reason to change their current spacing. Spot bolting of the sides of sill pillars should be carried out if they are cut by continuous geological structures. Backfill will also maintain the integrity of post pillars.

### **Ground Support Recommendations, Stope-Scale**

#### **Support Practice (1998)**

Ground support procedures cannot keep up with mining and the resulting unsupported area is a source of many small falls of ground. Additionally, large wedge type failures cannot be prevented due to the relatively short height of reinforcement in the back. The present reinforcement system of the back does not adequately support the hangingwall.

#### **Recommendations for Support**

Due to the essentially random orientations of structures in the rock mass, a standard roof reinforcement pattern is suggested throughout the mine. This pattern should be maintained to within a few meters of the face.

Standard roof reinforcement should consist of 2.5 m long bolts installed on a 1.5 m x 1.5 m square pattern. The bolt holes should be drilled vertically, and the bolting should be kept within 3 m of the face.

When the advancing face is within 12 m of the hangingwall, cable bolts of 7.5 m and 5.0 m length should be installed on a 3 m square pattern. Holes for the first two rows of cable bolts should be drilled vertically, and the next two rows of cable bolt holes should be inclined at 80°. 7.5 m long cables should be installed in the first three rows, and a 5 m long cable bolt should be installed in the last row.

The installation of bolts must be mechanized in order to keep up with the rate of mining. The economics of automatic rock bolting machines versus improvements to the present bolting practice should be investigated in more detail.

### **Mining Method and Operational Considerations**

The post pillar cut and fill mining method currently in use is well suited to the orebody.

To achieve the production goal of 6800 tons per day, three working places on each of levels 16, 18 and 20 are required. The production schedule needs to be fine-tuned to ensure that the daily production is maximized.

It is recommended that delineation of the orebody below 20 level be given a high priority. Development of new reserves is essential in achieving and maintaining production goals.

In addition to the recommended hangingwall reinforcement, the direction of mining along the hangingwall needs to be evaluated. It is generally preferable to mine perpendicular to the hangingwall between post pillars, reinforce the back and hangingwall, then slash the pillars and complete the mining.



The potential hazard associated with working under and along the hangingwall can be reduced by utilizing a remote scoop to load trucks parked under stable ground. This is standard practice in most Canadian mines.

**Geotechnical Monitoring Program**

A geotechnical monitoring program is recommended in order to verify that rock mass behavior is reasonably in accordance with expected behavior and that no major instabilities are developing.

Critical targets for the monitoring program have been specified and suggestions for types of in-instruments to use in each case have been made. Details of instrument locations will depend on availability of access. Critical targets to monitor are:

- Cavities in the upper collapse zone.
- Sill pillars.
- Tiro Cero and hoist room.
- Hangingwall in upper and lower pans of the orebody.
- Microseismicity of the lower levels.

**Geotechnical Mapping and Laboratory Testing Results**

The Table 7-2 shows the RMR values obtained using the Bieniawski’s method for the areas mapped on levels 16, 18 and 20 at San Martín.

**Table 7-2: Summary of RMR Values Determined Using Bieniawski’s Method**

Level 16			
<i>Rock Type</i>	<i>Min</i>	<i>Max</i>	<i>Average</i>
Limestone	74	82	77
Mineralized Skarn	69	74	71
Skarn	74	82	77
Granite	71	87	78
Level 18			
<i>Rock Type</i>	<i>Min</i>	<i>Max</i>	<i>Average</i>
Limestone	69	79	74
Mineralized Skarn	-	-	-
Skarn	79	82	80
Granite	64	82	71
Level 20			
<i>Rock Type</i>	<i>Min</i>	<i>Max</i>	<i>Average</i>
Limestone	74	74	74
Mineralized Skarn	-	-	-
Skarn	79	82	80
Granite	69	79	74
Totals			
<i>Rock Type</i>	<i>Min</i>	<i>Max</i>	<i>Average</i>
Limestone	69	82	76
Mineralized Skarn	69	74	71
Skarn	66	82	77
Granite	64	87	75

Source: Blake et al, 1998

The rock mass parameters determined using the Hoek-Brown method are summarized in Table 7-3.

**Table 7-3: Summary of Hoek-Brown Parameters Determined from Mapping**

	$m_b/m_i$	$s$	$a$	$E/E_i$	$\nu$	$GSI$
Limestone	0.29	0.021	0.5	0.37	0.25	59 to 72
Mineralized Skarn	0.29	0.021	0.5	0.37	0.25	59 to 72
Skarn	0.22	0.012	0.5	0.30	0.25	51 to 62
Granite	0.40	0.062	0.5	0.46	0.20	68 to 79

Source: Blake et al, 1998

Table 7-4 shows the summary of the strength parameters for intact rock, and presents the uniaxial compressive strengths determined for the rock units of San Martín.

**Table 7-4: Summary of Point Load Strengths by Rock Type**

<i>Rock Type</i>	$I_s$ (MPa)	Uniaxial Compressive Strength (MPa)
Granite	8.60	173.67
Contact Zone	7.35	148.31
Limestone	4.55	91.94
Granite Skarn	5.59	113.06
Mineralized Skarn	5.75	116.25

Source: Blake et al, 1998

**Table 7-5: Summary of Intact Rock Strength Parameters from Laboratory Testing Program**

<i>Rock</i>	$\sigma_c$	$m_i$	$GSI$	$E_m$ (GPa)	$m_b$	$s$	$\nu$
Limestone	86.8	7.79	65	24	2.23	0.02047	0.25
Mineralized Skarn	171.3	19.99	65	24	5.44	0.02047	0.25
Skarn	222.8	15.95	56	16.5	3.31	0.00753	0.25
Granite	207.2	26.21	75	40	10.73	0.06218	0.20

Source: Blake et al, 1998

The uniaxial compressive strength values obtained from laboratory testing and point load testing are compared in Table 7-6.

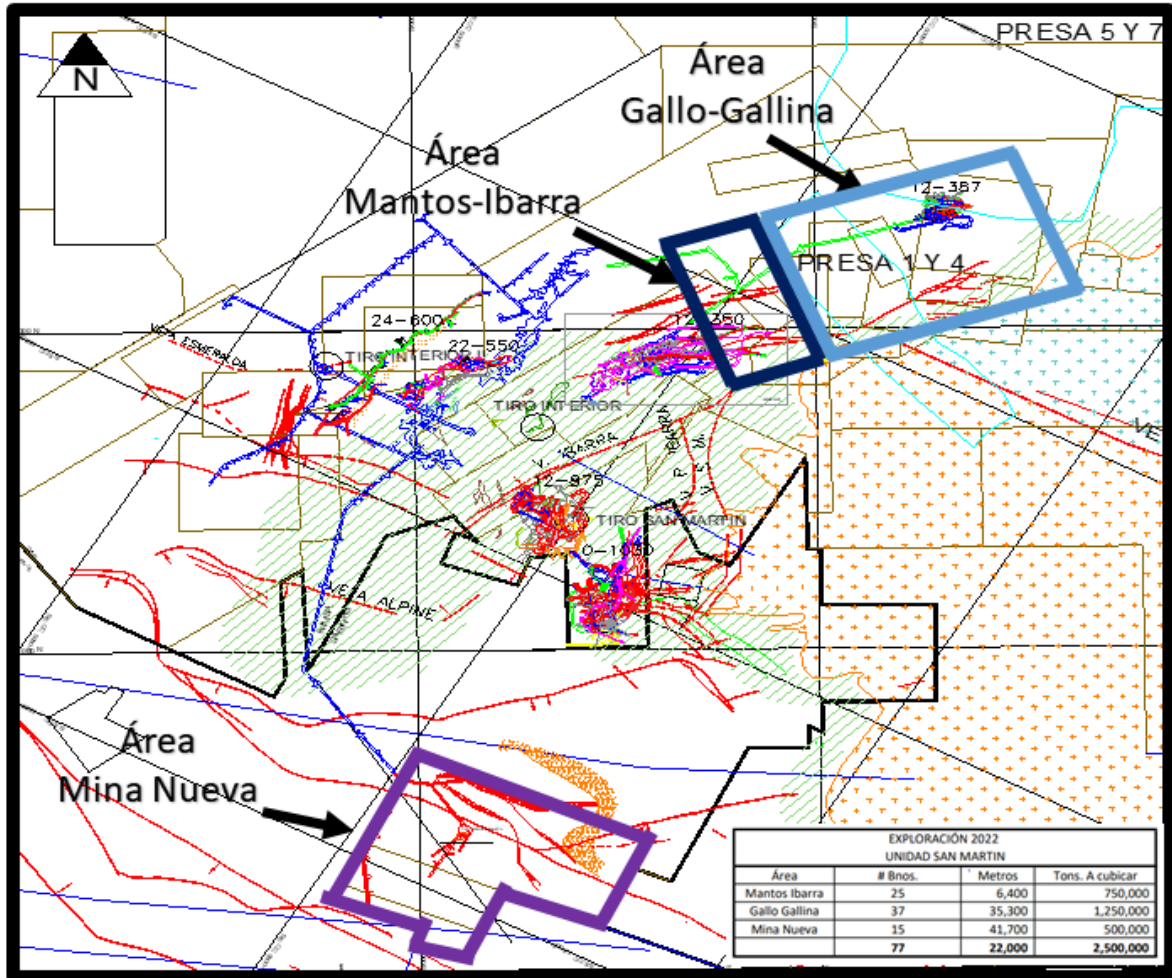
**Table 7-6: Comparison of Uniaxial Compressive Strength Test Results**

Rock Type	Uniaxial Compressive Strength (MPa)	
	Point Load Tests	Lab Tests
Granite	174	207
Contact Zone	148	-
Limestone	92	87
Granite Skarn	113	223
Mineralized Skarn	116	171

Source: Blake et al, 1998

### 7.5 Property Plan View

The Figure 7-15 presents the map with the main locations in the San Martín Operation including the projection of the underground workings from where the channel sampling is being collected in all levels. Figure 7-6 presents the location of the recent drilling completed in San Martín.



Source: IMMSA, 2021

Figure 7-15: Map of the Operation and The Areas for Exploration in 2022

### 7.6 Exploration Target

Based on the positive exploration results obtained in the Mina Nueva area, San Martín plans to continue the exploration of this area in a systematic way, including the drilling on sections to continue exploring laterally and at depth the mineralized bodies. Other zones for exploration include the areas of Gallo Gallina and Mantos-Ibarra (Figure 7-15).

## 8 Sample Preparation, Analysis and Security

### 8.1 Sample Preparation Methods and Quality Control Measures

Trained staff were involved at all stages of the sampling, sample packaging and sample transportation process. After geological logging and sample selection, the core is split in half longitudinally using an electric core cutter. Core pieces are placed in the cutter machine and cut following the cut line marked by the geologist. The core splitter was used historically. Half of the core will be assayed, and the other half will be stored in the core box to be available for future assaying or relogging of core.

The sample is placed in plastic bags with its corresponding sample tag and sent to the laboratory using defined laboratory submission sheets to track the number of samples and batch numbers.

### 8.2 Sample Preparation, Assaying and Analytical Procedures

#### 8.2.1 Density Analysis

San Martín doesn't have the historical density data and the supporting documentation for the density used in the mineral resource estimate. The plant and the mine have been using a unique density value of 3.3 t/m<sup>3</sup> for decades.

The exploration department have started the collection of density measurements and has the following process for the density analysis:

Specific gravity (SG) measurement method is based on the Archimedes principle and consist of measuring the weight of the rock sample P in air and subsequently the weight of the sample in water P (water). We can determine the specific weight using the formula:  $SG = P / (P - P_{water})$

The steps carried out to obtain the specific gravity of the samples collected from drill core are described below:

1. Sample location and cut:
  - Draw hole trajectory
  - Write down Nomenclature in the core
    - Hole ID
    - Depth
  - The size of the sample will be at the discretion of the personnel who select the sample and depending on the capacity of the scale used, the data of the sample collected should be noted down in the core box. Sample fragment sizes vary between 5 and 10 cm.
2. Washing the sample with water to remove residues.
3. Dry the sample in an electric oven or in sunlight if this is not available.
4. Level the balance until the bubble is centered using the help of the position adjustments of each leg of the balance, then calibrate the balance before starting to measure the samples and make sure that it reads zero (in case of a precision digital scale).
5. Weight the dry sample (P).
6. Waterproofing sealing of the sample with and appropriate the material (take into account the density of this material to consider it in the calculations of the sample density). Seal at least 3 times. Wait for a period of time for optimal drying of the samples.
7. Weight the sample in purified water preferably and take the data (P\_Agua).

8. Wash the sample and reincorporate it to the core bx from where it was collected.
9. determine the specific gravity with the data obtained and fill in the hole density format.

Photographs and brief descriptions were taken and the corrections to obtain the density data are applied. Then, the density data is recorded in the main database of Exploration.

Photographs and brief descriptions were taken and the corrections to obtain the density data are applied. Then, the density data is recorded in the Tecmin database. The QP considers these procedures to follow industry standards and recommends that the process be expanded to include all material (host rocks and mineralization) and be completed at regular intervals within the core. Increasing the size of the density database to confirm the current density values used should be considered a priority for 2022 by the Company. Table 8-1 presents the specific gravity test results completed by the exploration team in 2021. The tested samples were collected from core from Gallo-Gallina, Mina Nueva and the central part of the deposit. Additional tests are required to characterize all the rock types and locations of the deposit.

**Table 8-1: Specific Gravity Measurements (2021)**

# Of Tests	Average S.G. (g/cm3)	Rock Type
48	3.17	Limestone - Lutite
12	2.71	Breccia
33	3.84	Manto (Mineralized layer)
64	3.18	Skarn
11	3.54	Vein
<b>168</b>	<b>3.30</b>	<b>Total</b>

Source: IMMSA, 2021

## 8.2.2 Sample Preparation – Internal Laboratory

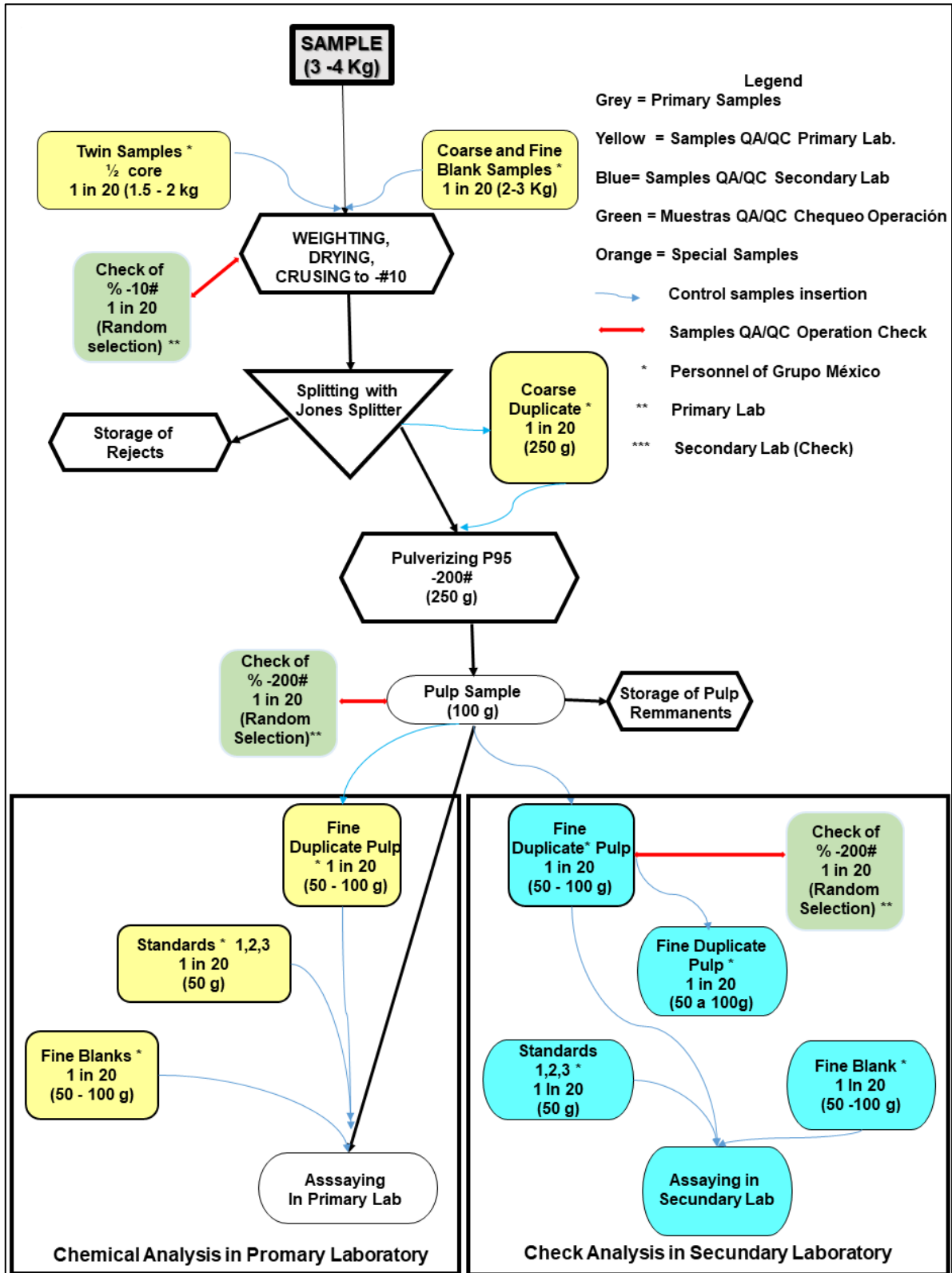
The internal laboratory prepares the core and the channel samples and performs the chemical analysis of all the samples collected by the mine geology department (drilling and rock sampling).

The laboratory follows internal QA/QC protocols which include continuous maintenance and calibration of equipment, monitors sample contamination, and uses certified standard reference materials, which in the opinion of SRK are considered in line with the industry standards.

Sample preparation in the internal laboratory includes:

- Sample drying
- Crushing, 75% passing 10 mesh.
- Subsampling (Riffle sample splitter), to obtain a sample of 250 g.
- Pulverizing, 85% passing 200 mesh.
- Subsampling to obtain pulp samples of 50 g.

Figure 8-1 shows the flow chart of the preparation process and QA/QC controls using during the process in the internal laboratory of San Martín. No certification has been completed on the current mine laboratory which in the QP’s opinion does not meet the required standards for reporting under international best practice. More detailed validation and external checks should be completed if the laboratory is not certified given the lack of independence presented. The QP recommends that IMMSA undertake a program to certify the laboratory as is completed at their other operation Charcas.



Source: IMMSA, 2021

**Figure 8-1: Flow Chart of Sample Preparation (Internal Laboratory)**

### 8.2.3 Chemical Analysis – Internal Laboratory

The following chemical analysis are used at the internal laboratory of San Martín, using 100 g pulp samples:

- **ICP:** Multielement (Ag, Au, Pb, Zn, Cu, Fe, Cd, As, Bi, Sb) Plasma analytic method (ICP AVIO 500). ICP-OES: Inductively Coupled Plasma Atomic Emission Spectrophotometer.  
*Detection Limits*  
Au 0.1 g/t – 10 g/t  
Ag 0.1 g/t – 50 g/t  
Zn 0.002% - 6%  
Cu 0.002% - 6%  
Pb 0.002% - 6%
- **Fire Assay (Gravimetric method):** Determination of Au and Ag by fire assay and gravimetric termination (*Detection Limits: Au: 10 g/t to NA; Ag: 50 g/t – NA*).
- **Volumetric determination of Zinc:** For high zinc concentrations, the volumetric analysis is performed (*Detection Limits: 5.1% - 60%*).
- **Volumetric determination of Copper:** For high copper concentrations, the volumetric analysis is performed (*Detection Limits: 5.1% - 30%*).
- **Volumetric determination of Lead:** For high lead concentrations, the volumetric analysis is performed (*Detection Limits: 5.1% - 60%*).

### 8.2.4 Sample Preparation – SGS Lab

The core samples collected by the exploration department of San Martín are sent to the SGS Laboratory in Durango where the following activities are completed:

The core samples collected by the exploration department of San Martín are sent to the SGS Laboratory in Durango (SGS). The SGS laboratory is independent of IMMISA and holds accreditation under ISO/IEC 17025:2017 under the Standards Council of Canada, which indicates the laboratory is accredited under the general requirements for the competence of testing and calibration laboratories

The sample preparation procedures at the SGS laboratory in Durango facility, comprised drying the sample, crushing the entire sample in two stages to - 6 mm and - 2 mm by jaw crusher (more than 95% passing), riffle splitting the sample to 250 to 500 g, and pulverizing the split to more than 95% passing -140 mesh in 800 cubic centimeters (cm<sup>3</sup>) chrome steel bowls in a Labtech LM2 pulverizing ring mill.

### 8.2.5 Chemical Analysis - SGS Lab

The following chemical analysis packages are used at SGS Lab by the exploration department of San Martín:

- **GE\_ICP14B:** Multielement (34 Elements) analysis by aqua regia digestions and Inductively Coupled Plasma Optical Emission Spectrometry [ICP-OES; Ag, Al, As, Ba, Be, Bi, Ca, Cd, Cr, Co, Cu, Fe, Hg, K, La, Li, Mg, Mn, Mo, Na, Ni, P, Pb, S, Sb, Sc, Sn, Sr, Ti, V, W, Y, Zn, Zr; HNO<sub>3</sub>; HCL]. Multielement assay (34 elements), using digestion with two acids (Combination of HNO<sub>3</sub> and HCL) in a ration 3:1 (HCL:HNO<sub>3</sub>). (Table 8.1).



- **GE\_FAA515 Au:** : Au analysis by 50 g Fire Assay with Atomic Absorption Spectrometry AAS finish [AAS; Au; 30g; 50g; HNO<sub>3</sub>; HCl]. (Detection limits 5 – 10,000 ppb Au).
- **GO\_FAG515 Ag:** Used For the determination of over limits of Ag by fire and gravimetric termination using a sample of 50 g (Detection limits 10 – 100,000 ppm Ag).
- **GO\_ICP90Q:** Analysis of Ore Grade Samples (Pb, Cu, Zn, Fe and As) by Sodium Peroxide Fusion and Inductively Coupled Plasma Optical Emission Spectrometry [ ICP-OES, As, Fe, Cu, Ni, Pb, Sb, Zn; Na<sub>2</sub>O<sub>2</sub>]. (Detection limits 0.01% - 30% for each element).
- **GC\_CON12V Zn:** Used for the determination of zinc using a volumetric and gravimetric concentration for samples with zinc > 32% (Detection limits 5 – 65% Zn). Process involves preparation and determination of Zn in Ores, concentrates and metallurgical products by separation, precipitation and titration of acid solubles, fusion with inductively coupled plasma optical emission atomic absorption spectrometry of acid insolubles [Zn, AAS, ICP-OES]

**Table 8-2: Detection Limits – Methods GE-ICP14B**

TWO ACID / AQUA REGIA DIGESTION / ICP-AES PACKAGE (34 ELEMENTS)			
GE ICP12B or GE ICP14B			
ELEMENTS AND LIMIT(S)			
Ag	2 - 100 ppm*	Hg	1 - 10000 ppm
Al	0.01 - 15%	K	0.01 - 15%
As	3 - 10000 ppm	La	0.5 - 10000 ppm
Ba	5 - 10000 ppm	Li	1 - 10000 ppm
Be	0.5 - 2500 ppm	Mg	0.01 - 15%
Bi	5 - 10000 ppm	Mn	2 - 10000 ppm
Ca	0.01 - 15%	Mo	1 - 10000 ppm
Cd	1 - 10000 ppm	Na	0.01 - 15%
Co	1 - 10000 ppm	Ni	1 - 10000 ppm
Cr	1 - 10000 ppm	P	0.01 - 15%
Cu	0.5 - 10000 ppm	Pb	2 - 10000 ppm
Fe	0.01 - 15%	S	0.01 - 5%
		Sb	5 - 10000 ppm
		Sc	0.5 - 10000 ppm
		Sn	10 - 10000 ppm
		Sr	0.5 - 10000 ppm
		Ti	0.01 - 15%
		V	1 - 10000 ppm
		W	10 - 10000 ppm
		Y	0.5 - 10000 ppm
		Zn	1 - 10000 ppm
		Zr	0.5 - 10000 ppm

Source: SGS, 2018

## 8.3 Quality Control Procedures/Quality Assurance

### 8.3.1 Security Measures – Chain of Custody

The mine geology and exploration departments have control and supervision on all the process of collection of samples from drilling and channel sampling, maintaining the custody chain for the samples until the delivery of the samples to the laboratory.

At the drill rig, the contractor is responsible for removing the core from the core barrel (using manual methods) and placing the core in prepared core boxes. The core is initially cleaned in the boxes and once the box is full of core, it is closed and transported by the authorized personnel to the logging facility where the San Martín geologists take possession. On receipt at the core shed, geologists follow the logging and sampling procedures. The samples are transported to the laboratory (Internal and SGS Lab) by authorized personnel.

In the opinion of the QP there is sufficient protocols in place to ensure the quality and integrity of the samples from exploration to the laboratory are acceptable. Storage of data using a central repository system is recommended to ensure data security is maintained.

### 8.3.2 Mine Geology Department

Historically and recently the mine geology department has not implemented QA/QC protocols for its drilling and rock sampling activities, which is not in line with the best industry practices.

For the historical drilling the core was discarded after some years when the mine was closed due to labor unrest in late 2000's, with a significant portion the core of the historical drilling was lost. The most recent exploration work conducted by IMMSA, the internal laboratory conserves the pulps for one month after assaying and then discards the samples. There is not a core storage facility operation within the San Martín mine department, with all exploration drilling managed by Tecmin.

### 8.3.3 Exploration Department

The protocol designed for sampling includes the use of 8 types of control samples which are inserted into every 10 to 15 core samples to detect possible contamination problems of the samples and to determine the accuracy and precision of the laboratory in the analyzed samples. These controls are performed as a confidence measure of the preparation and analysis procedures in the external laboratory.

The QA/QC protocol of the exploration department in charge of the exploration of the surrounding areas of San Martín includes the following controls:

- Core duplicates, to control systematic errors of sampling
- Coarse and fine blank controls to detect possible contamination during crushing and pulverization. This material should be barren of the elements of economic interest. In this case, a silica sand was used for pulp blanks and volcanic gravel material - ¼" silica for the coarse blanks.
- Coarse and fine duplicate controls to evaluate precision of the procedure (subsampling)
- Certified Standard Reference Materials – CSRM - (low, medium and high grade) to measure accuracy

Control samples were inserted under the following criteria:

- Before and after each mineralized zone or with high mineralization in either Zn, Pb, Cu or Ag, control samples of the fine and coarse blanks type are inserted.
- Inside or outside mineralized zones and in areas with or without economic values, CSRM controls were inserted with high, medium and low values in Zn mainly, depending on the case.
- Fine and coarse duplicate samples in mineralized areas and in zones with or without economic values at the discretion of the geologist.
- Twin Samples (Core duplicates) in mineralized zones and in zones with or without economic values at the discretion of the geologist.

In total, 943 samples were collected and inserted in 13 drillholes, of which 822 were core samples, 50 control samples of the coarse or fine blank type, 31 reference samples (CDN-ME), 26 samples of fine or coarse duplicate and 14 twin samples in the QA / QC program applied to the core of those holes. 121 control samples were inserted representing 12.83% rate of insertion.

25 fine blanks (Silica sand) and 25 coarse blanks (gravel material and ¼” massive quartz). The CSRM controls include 11 CDN-ME-1410 type (high Zn), 11 CDN-ME-1414 (medium Zn) and 9 CDN-ME-1606 (low Zn). Figure 8-2 shows the recommended values of each CSRM.

25 fine and 25 coarse duplicates were inserted; In addition, 14 twin samples were collected, of which ½ portion of the core was sent as the original sample and the remaining half as the twin sample, later when the rejection of the twin sample was recovered, it was placed in the box and depth where it corresponds.

<b>REFERENCE MATERIAL: CDN-ME-1410 (ALTO Zn)</b>				
Recommended values and the “Between Lab” Two Standard Deviations				
<i>Gold</i>	<i>0.542 g/t</i>	<i>±</i>	<i>0.048 g/t</i>	<i>Certified value</i>
<i>Silver</i>	<i>69.0 g/t</i>	<i>±</i>	<i>3.8 g/t</i>	<i>Certified value</i>
<i>Copper</i>	<i>3.30 %</i>	<i>±</i>	<i>0.17 %</i>	<i>Certified value</i>
<i>Lead</i>	<i>0.248 %</i>	<i>±</i>	<i>0.012 %</i>	<i>Certified value</i>
<i>Zinc</i>	<i>3.682 %</i>	<i>±</i>	<i>0.084 %</i>	<i>Certified value</i>
<b>REFERENCE MATERIAL: CDN-ME-1414 (MEDIO Zn)</b>				
Recommended values and the “Between Lab” Two Standard Deviations				
<i>Gold</i>	<i>0.284 g/t</i>	<i>±</i>	<i>0.026 g/t</i>	<i>Certified value</i>
<i>Silver</i>	<i>18.2 g/t</i>	<i>±</i>	<i>1.2 g/t</i>	<i>Certified value</i>
<i>Copper</i>	<i>0.219 %</i>	<i>±</i>	<i>0.010 %</i>	<i>Certified value</i>
<i>Lead</i>	<i>0.105 %</i>	<i>±</i>	<i>0.006 %</i>	<i>Certified value</i>
<i>Zinc</i>	<i>0.732 %</i>	<i>±</i>	<i>0.024%</i>	<i>Certified value</i>
<b>REFERENCE MATERIAL: CDN-ME-1606 (BAJO Zn)</b>				
Recommended values and the “Between Lab” Two Standard Deviations				
<i>Gold</i>	<i>1.069 g/t</i>	<i>±</i>	<i>0.092 g/t</i>	<i>30 g FA, instrumental</i>
<i>Silver</i>	<i>114 ppm</i>	<i>±</i>	<i>7 ppm</i>	<i>30 g FA, gravimetric</i>
<i>Silver</i>	<i>116 ppm</i>	<i>±</i>	<i>5 ppm</i>	<i>4-Acid / ICP</i>
<i>Copper</i>	<i>0.197 %</i>	<i>±</i>	<i>0.008 %</i>	<i>4 Acid / ICP</i>
<i>Lead</i>	<i>1.76 %</i>	<i>±</i>	<i>0.06 %</i>	<i>4 Acid / ICP</i>
<i>Zinc</i>	<i>0.60 %</i>	<i>±</i>	<i>0.02 %</i>	<i>4 Acid / ICP</i>
				<i>Certified value</i>

Source: IMMSA, 2021

**Figure 8-2: Values of the Certified Standard Reference Materials used by Exploration in San Martín**

The results of the different controls are registered and tables and evaluated using scatter plots for the duplicates and second laboratory checks, and graphics to represent the results of the controls.

San Martín has established limits of acceptability for the different controls including:

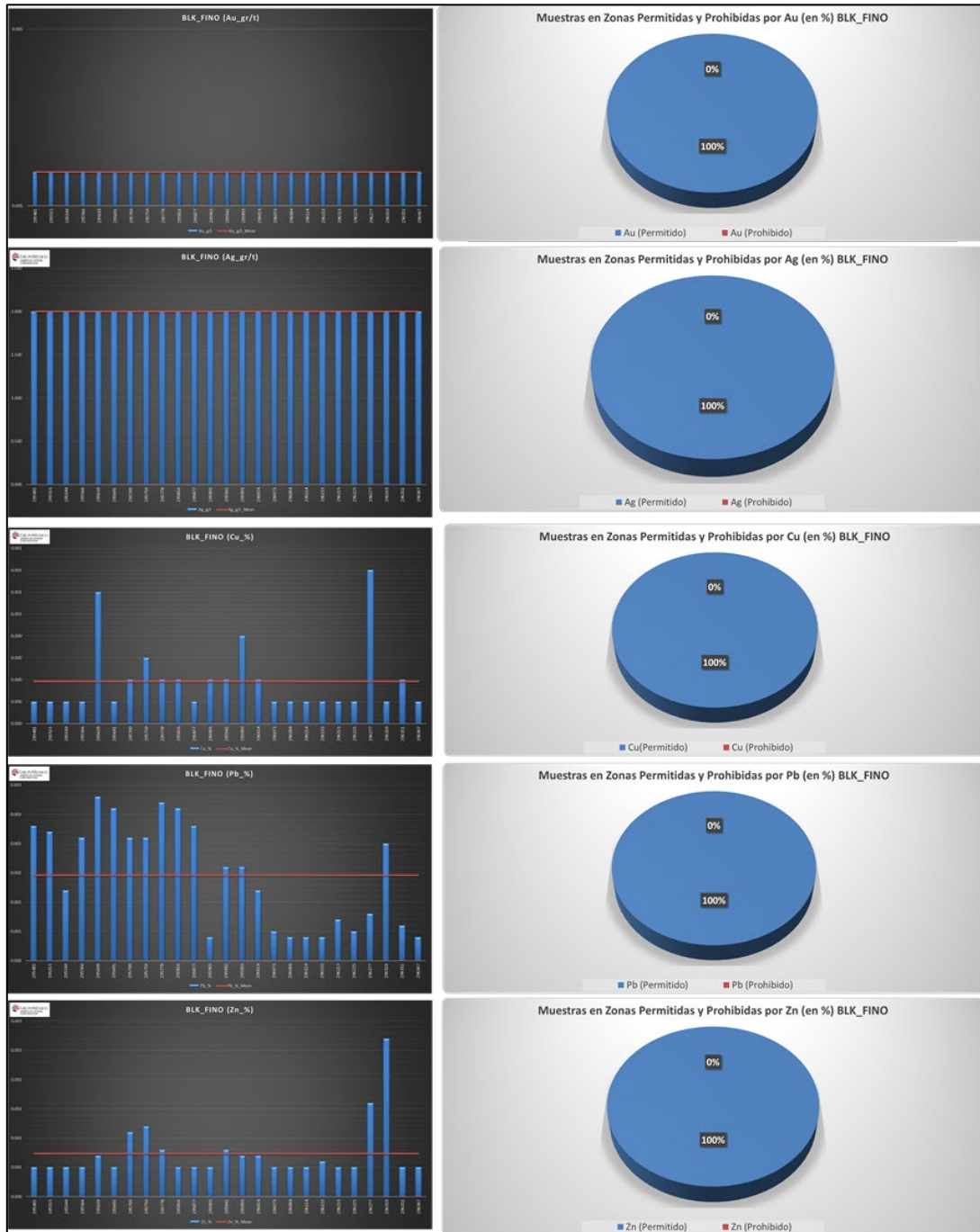
Blanks: There is contamination when the assay results are above 5 x detection limit for a specific element evaluated. When contamination occurs, San Martín informs to the laboratory to check the internal protocols and if necessary, repeat the assaying of a specific batch if the contamination is considered repetitive and continuous. Figure 8-3 shows the results of the fine blank. All the blanks are inside the acceptability limit.

Duplicates: San Martín uses an acceptability level of ±20 % relative error range from the 45 degrees line (scatter plot) for coarse and fine duplicates. Checks outside of these acceptability ranges are considered failures and if in a certain period of time, failures are more than 10% of the total control

samples, San Martín contacts the laboratory to review their procedures of preparation. SRK recommends using an acceptability range of  $\pm 10\%$  relative error for the fine duplicates. Figure 8-4

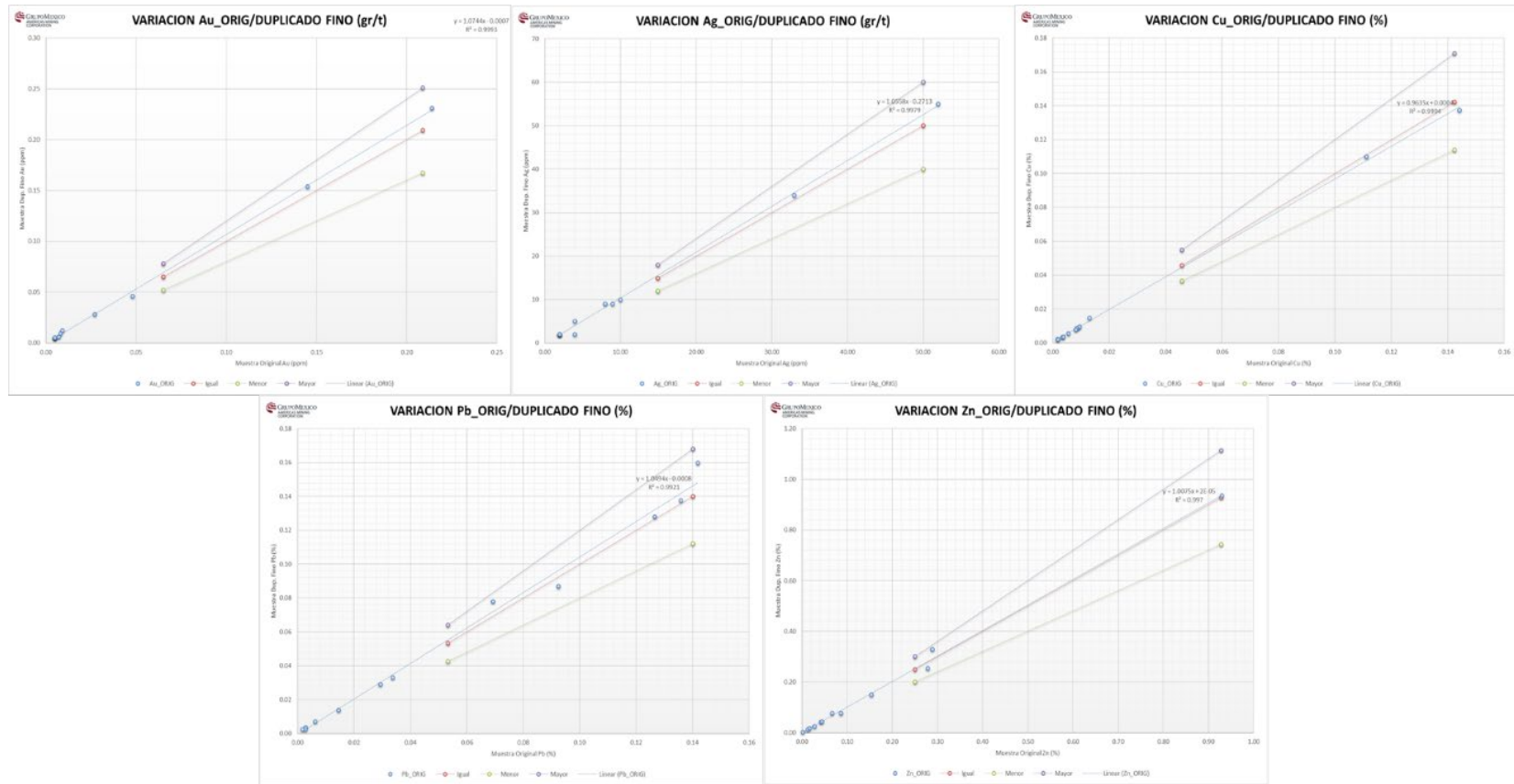
Second Laboratory Checks: San Martín is not using second laboratory checks (Tercerías), SRK recommends sending pulps of part of the assayed samples to a third commercial laboratory as part of the QA/QC protocol.

Certified Reference Standard Materials (CSRM): The CSRM are bought from commercial laboratories which are selected (grades and mineralization type) consistent with the mineralization and rock types of San Martín. The performance of this checks is evaluated using graphs where the two standard deviations and three standard deviation reference lines are drawn in conjunction with the assay results obtained. A failure is considered when a specific CRSM assay result is outside of the 3SD reference line, or when two contiguous CRSM are outside of the 2SD reference line. In these cases, San Martín request the re-analysis of the samples above and below of the failure in a specific batch of samples included in the laboratory assay certificate. Figure 85 shows the results of the CSRM (CDN-ME-1414) which shows one failure out of 12 controls sent.



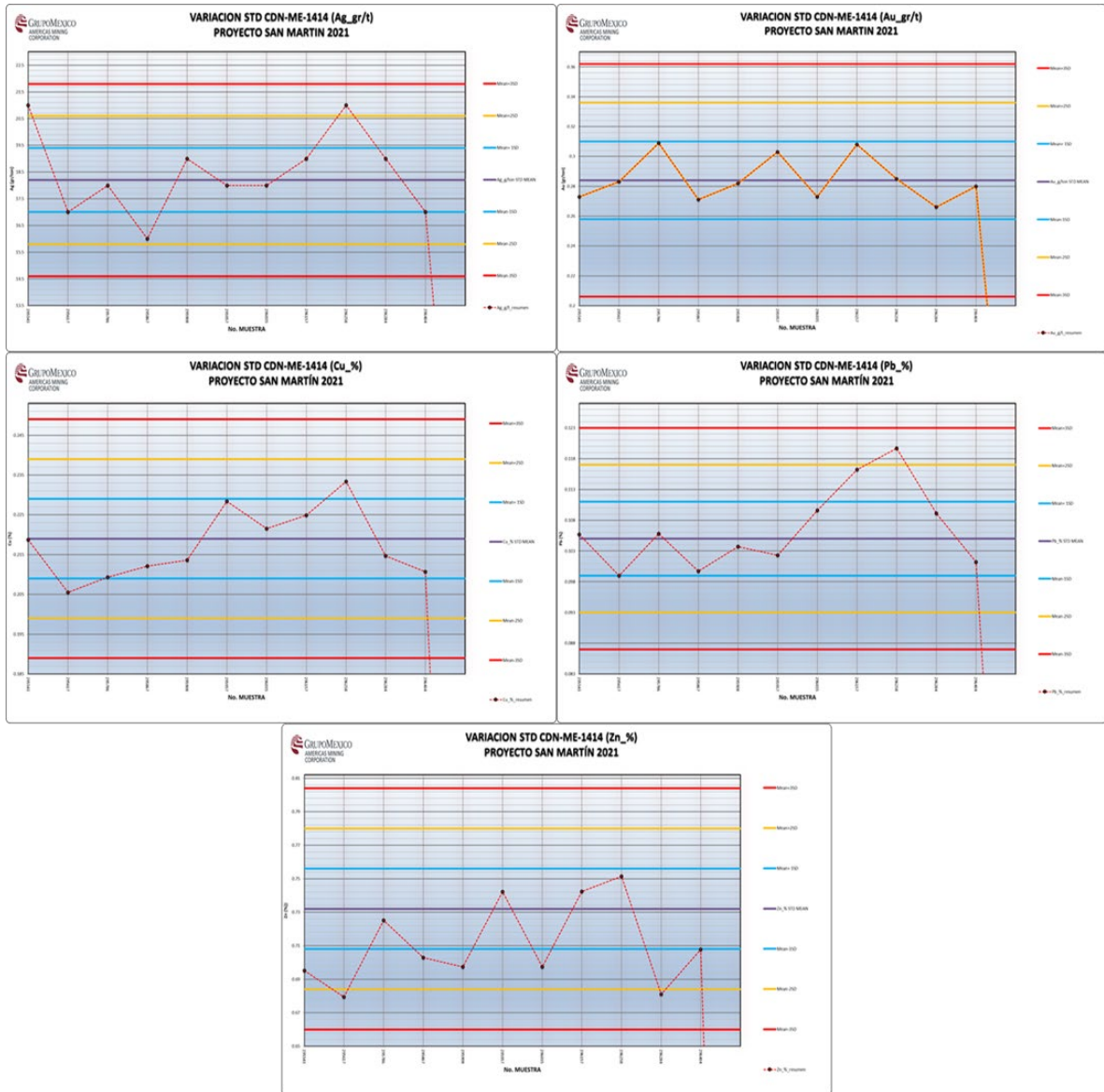
Source: IMMSA, 2021

**Figure 8-3: Results of Fine Blanks Controls**



Source: IMMSA, 2021

**Figure 8-4: Results of Fine Duplicates (Acceptability Range  $\pm 20\%$ )**



Source: IMMSA, 2021

**Figure 8-5: Results of CSR (CDN-ME-1414)**

## 8.4 Opinion on Adequacy

The security of the drilling and channel sampling is considered adequate for the mine geology and exploration departments of San Martín.

The mine geology department has not implemented quality controls for the samples collected from drilling and rock sampling from underground workings, which SRK considers that is not in line with the industry best practices and represents a source of uncertainty for the data collected by the mine geology department.

The exploration department have procedures for drilling and core sampling which SRK considers in line with the industry best practices. Review of the limited QA/QC information in Section 8.3.3 of this



report shows acceptable correlations in the duplicate samples (which is testing precision of the laboratory), and no clear bias in the CRSM data (which is testing accuracy). It is the QP's opinion that these figures are acceptable. SRK recommends the inclusion of second laboratory controls (Tercerías) periodically (every three months), and the review of the acceptability ranges for fine duplicates (10% relative error).

The procedures of chemical analysis and protocols of the internal laboratory of San Martín and the SGS laboratory are in line with the industry standards. At the internal laboratory no certification has been completed, which in the QP's opinion does not meet the required standards for reporting under international best practice. More detailed validation and external checks should be completed if the laboratory is not certified given the lack of independence presented. The QP recommends that IMMSA undertake a program to certify the laboratory as is completed at their other operation San Martín.

## **8.5 Non-Conventional Industry Practice**

The procedures of sampling and QA/QC of the mine geology department of San Martín are not in line with the best practices. The quantity of data (Drilling and rock channel sampling) collected during the history of the operation supports most of the Mineral Resources of the project. The long history of the mining operations, which started almost 70 years ago, provides support to the historical data, based on the recognized performance of the San Martín operation for decades. The uncertainty sources for the Mineral Resources are considered and evaluated in the following sections.

## 9 Data Verification

### 9.1 Data Verification Procedures

The verification process included the following activities:

- Mr. Giovanni Ortiz of SRK visited the San Martín project three times between June and December 2021. The purpose of the site visits was to:
  - Complete an underground site inspection and to recognize the geology and the mineralization controls
  - Review the exploration procedures, including the sampling methods and sampling quality, drilling procedures, core sampling and management of data.
  - Review of the historical data supporting the reserve calculations.
- The core of historical drilling doesn't exist no samples could be collected. The validation sampling included 24 samples collected from recent drillholes and underground workings

#### 9.1.1 Results of the Validation Samples

San Martín lost all the core of historical drilling during the period of time that the company was absent from the project after the strike of 2007. The internal laboratory discarded the pulps and rejects of all the historical samples.

16 samples from underground workings were collected in areas of strong mineralization. Table 9-1 presents the names of the underground workings, the elevation and the assay results (SGS Laboratory). The results of the samples show the different levels of mineralization shown in the locations of the stopes distributed at different elevations of the deposit.

Eight mineralized intercepts from the exploration drilling were selected as part of the validation sampling. Table 9-2 presents the results of the core samples sent to the SGS Laboratory in Durango.

Coarse and fine blanks, coarse duplicates and a certified reference material were inserted in the samples sent to SGS for control. The results of the controls passed the acceptability criteria.

**Table 9-1: Validation Rock Samples from Underground Workings**

Folio	Sample #	Place (Underground)	Elevation (masl)	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)	Fe (%)
7004	297598	2-250 CORTE CALLE 4	2,578.30	0.01	11	0.082	0.021	0.28	7.5
6073	297597	0-1030 CORTE FTE # 2	2,697.28	0.01	160	0.636	0.003	2.91	7.5
6492	297596	12-385 XRO IZQUIERDA	,2287.07	0.01	48	0.016	0.980	0.82	11.7
6641	297595	8-800 ZONA NORTE CORTE LADO DERECHO	2,411.23	0.03	52	0.393	0.010	2.94	9.7
4957	297594	10-387 CORTE FRENTE	2,365.53	0.03	179	1.140	0.195	2.60	11.2
6617	297593	0-1030 CALLE 1 CORTE	2,691.63	0.01	157	1.010	0.062	2.06	5.7
6406	297591	8-800 ZONA SUR	2,409.42	0.01	91	0.879	0.053	0.13	10.2
4686	297590	2-550 CONTRA CALLE 1 POR LABRADO	2,570.18	0.05	33	0.141	0.009	3.22	9.0
6449	297589	14-350 CALLE 2 SEMIVERTI	2,237.78	0.15	309	0.124	0.927	1.12	10.9
6442	297588	14-350 SEMI VERTICAL CALLE 1	2,238.37	0.01	48	0.055	0.279	2.26	12.7
6476	297587	28-800 XO EXPLO TOPE	1,795.50	0.01	56	0.104	2.930	2.64	11.3
4971	297586	26-800 TOPE	1,853.96	0.01	91	0.765	0.102	0.50	10.8
6068	297585	26-800 LADO DERECHO	1,853.04	<0.005	53	0.661	0.041	1.19	9.8
6484	297584	18-350 RAMPA POSITIVA	2,137.28	0.01	38	0.049	1.990	1.59	5.1
6444	297583	22550 RAMPA (+) XRO 1	2,003.61	0.03	19	0.441	0.235	2.33	33.4
6490	297582	22-550 RAMPA NEGATIVA	1,955.86	0.01	34	0.096	1.360	1.37	5.3

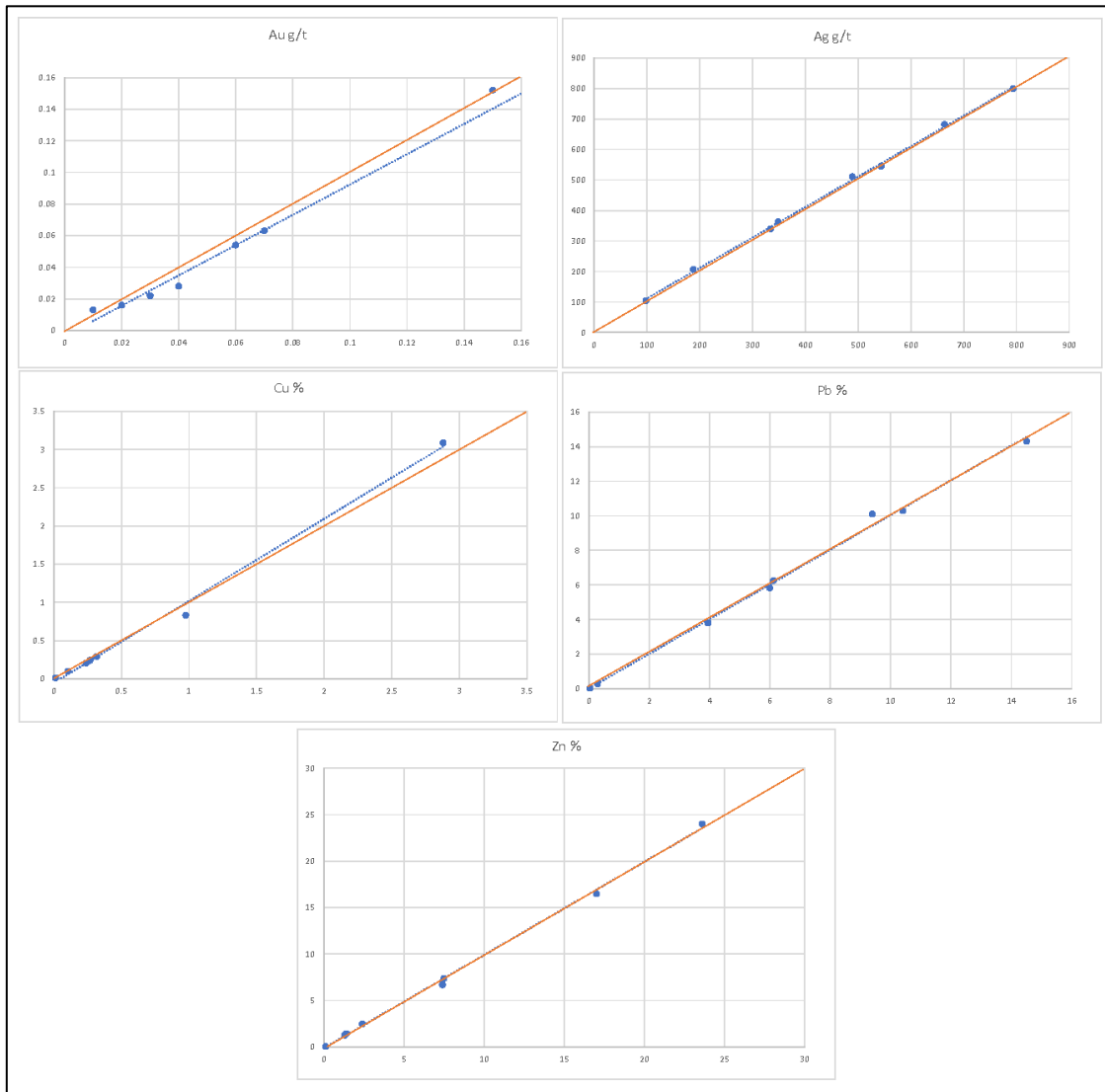
Source: SRK, 2021

**Table 9-2: Results of the Validation Core Samples (Pulps) and the Original Data - Exploration Drilling**

Drillhole #	Sample #	From	To	Length (m)	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)	Fe (%)	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)	Fe (%)
					Validation Samples (Pulps) – SGS Lab.						Original Assays – SGS Lab.					
DDHMN20-02	297547	183.45	184.05	0.6	0.06	334	0.317	10.40	17.00	4	0.05	340	0.293	10.30	16.50	4
DDHMN20-05	297548	271.05	272.3	1.25	0.04	664	0.266	3.95	7.40	24	0.03	682	0.241	3.81	6.71	24
DDHMN21-07	297550	177.35	177.8	0.45	0.03	489	0.105	6.12	2.40	7	0.02	511	0.098	6.26	2.48	6
DDHMN21-13	297549	278.55	279.1	0.55	0.17	794	0.240	5.99	1.40	23	0.15	799	0.207	5.83	1.43	25
DDHPCD21-01	297552	325.5	325.95	0.45	0.07	188	2.880	0.03	1.30	27	0.06	206	3.090	0.02	1.28	29
DDHPCD21-03	297551	352.6	353.2	0.6	0.02	544	0.268	14.50	7.50	27	0.02	545	0.246	14.30	7.40	28
DDHPCD21-07	297553	501.9	503.4	1.5	0.01	98	0.013	0.29	0.10	6	0.01	104	0.012	0.28	0.05	5
DDHPCD21-06	297554	546.9	547.55	0.65	0.15	349	0.976	9.39	23.60	12	0.15	363	0.831	10.10	24.00	11

Source: SRK, 2021

Figure 9-1 shows the results scatter plots of the SGS results of the pulps selected for validation and the original data of the exploration drillholes as shown in Table 9-2. Good comparison and correlation between the data is observed in the scatter plots



Source: SRK, 2021

**Figure 9-1: Scatter plots: X Axis: Validation Samples (Pulps); Y Axis: Original data**

## 9.2 Limitations

San Martín lost all the core of historical drilling after the strike of 2007. Before this event, the core completed by the mine geology department were stored for some years and then discarded. The internal laboratory of San Martín discards the rejects and pulps after the chemical analysis.

The historical data could not be independently verified due to the non-existence of the core, and lack of the original assay certificates. The QP considers there to be limited risk in the use of the historical data as this information has been supporting the exploitation of San Martín, but with the exception of the work completed the QP cannot confirm the level of uncertainty.

### **9.3 Opinion on Data Adequacy**

Based on the validation work completed, The QP is of the opinion that data supporting the resources is adequate to support the mineral resource estimate. The lack of QA/QC data remains a concern but in the opinion of the QP the historical mining and production for more than 60 years provides additional verification of the historical data supporting the resources. Given the uncertainty related to the lack of QA/QC the in the QP's opinion assigning the highest level of confidence (Measured) to the estimated stopes until procedures are improved to ensure no bias exists (positive or negative) for the level of accuracy considered within this category. Revised procedures should include a robust QA/QC program for both mine and external laboratories and third-party checks on a routine basis.



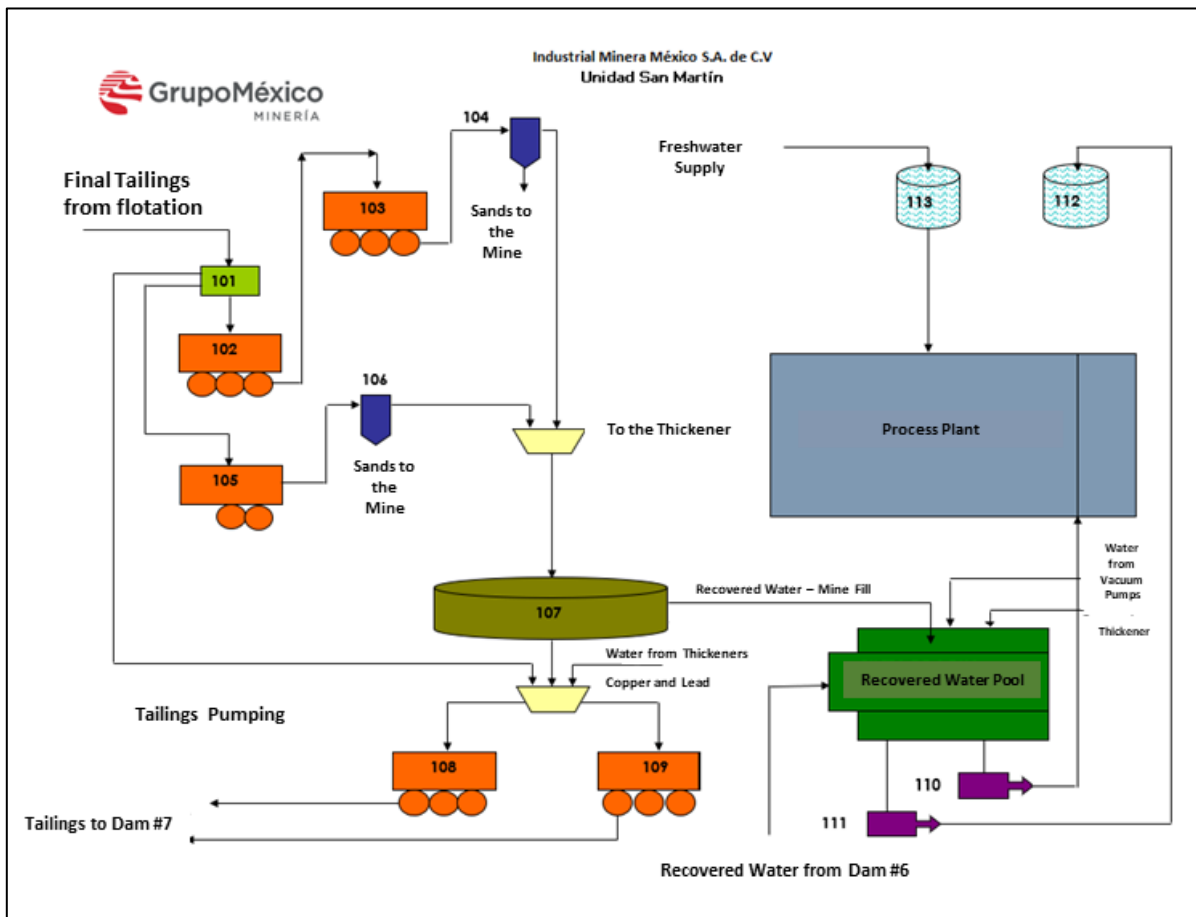
# 10 Mineral Processing and Metallurgical Testing

## 10.1 Testing and Procedures

Mineral Processing is completed via conventional flotation processes, including crushing, milling, flotation, filtration, thickening and conduction and disposal of tailings. The Minera San Martín unit has two processing plants or concentrators, one with an operating capacity of 2,400 tons/day (plant 2-400) and another with a capacity of 4,400 tons/day (plant 4-400). Three concentrates are produced:

- Zinc Concentrate
- Copper Concentrate
- Lead Concentrate

Figure 10-1 shows the general flow chart of the mineral processing at San Martín.



Source: IMMSA, 2021

**Figure 10-1: General Flow Chart of Process and Tailings**

## 10.2 Sample Representativeness

It is assumed by the QP that the current material is representative of the future mining areas with no known changes in the mineralization styles expected over the short term. Should the mine conduct

further exploration on potential exploration targets then additional metallurgical testwork will be required. At minimum this should include a sensitivity study for potential recoveries using the current operating setup to estimate potential recoveries.

### 10.3 Laboratories

Currently all sampling for the San Martín mill is conducted onsite at the mine laboratory. The mine laboratory is directly owned by IMMSA.

### 10.4 Relevant Results

(iv) The relevant results including the basis for any assumptions or predictions about recovery estimates. Discuss any processing factors or deleterious elements that could have a significant effect on potential economic extraction.

A summary of the metallurgical performance from the San Martín operation (2002-2020, excluding 2008-2018) is shown in Table 10-1. The results show the reduction of the recoveries in 2019, the first year after the operation resuming at San Martín, and then in 2020 and 2021 (Table 10-2) the recoveries increased. Additional optimizations in the plant are in process.

**Table 10-1: Metallurgical Performance 2002 - 2020**

C O N C E P T	2002	2003	2004	2005	2006	2007	2008 - 2018	2019
<b>Recoveries in Lead Concentrate</b>								
Au %								6.74
Ag %	2.30			6.12	7.16	4.97		12.54
Pb %	19.50			30.38	47.31	32.95		21.86
Cu %	1.17			1.72	2.22	1.74		8.56
Zn %	0.17			0.28	0.37	0.27		1.02
<b>Recoveries in Copper Concentrate</b>								
Au %								11.27
Ag %	65.35	74.65	83.13	68.99	67.97	72.53		42.92
Pb %	63.69	86.71	86.88	47.41	35.64	52.01		36.97
Cu %	80.52	82.46	88.76	79.17	78.00	80.21		43.57
Zn %	9.54	11.16	9.52	5.27	5.22	6.31		6.69
<b>Recoveries in Zinc Concentrate</b>								
Au %								8.84
Ag %	4.91	4.19	3.78	4.69	5.65	4.69		8.95
Pb %	4.65	4.22	3.69	4.69	5.65	4.69		6.04
Cu %	4.23	4.05	3.61	4.26	5.05	4.46		11.68
Zn %	62.34	65.02	76.03	75.13	76.23	75.16		56.19
<b>Total Recoveries</b>								
Au in Conc. of Pb,Cu,Zn %								<b>26.85</b>
Ag in Conc. of Pb,Cu,Zn %	<b>72.56</b>	<b>78.83</b>	<b>86.91</b>	<b>79.80</b>	<b>80.78</b>	<b>82.19</b>		<b>64.41</b>
Pb in Conc. of Pb,Cu %	<b>19.50</b>	<b>0.00</b>	<b>0.00</b>	<b>30.38</b>	<b>47.31</b>	<b>32.95</b>		<b>21.86</b>
Cu in Conc. of Cu,Pb %	<b>80.52</b>	<b>82.46</b>	<b>88.76</b>	<b>79.17</b>	<b>78.00</b>	<b>80.21</b>		<b>43.57</b>
Zn in Conc. of Zn %	<b>62.34</b>	<b>65.02</b>	<b>76.03</b>	<b>75.13</b>	<b>76.23</b>	<b>75.16</b>		<b>56.19</b>

Source: IMMSA, 2021

A summary of the metallurgical performance from the operation is shown in Table 10-2. It is the QP's opinion that using a three year trailing average for the recoveries would therefore not be appropriate and would likely result in over stating the recovery of Zinc and lower recoveries for Lead in the system.

The QP has therefore elected to use the 2021 production information and recoveries for the assessment of the cut-off grade as disclosed in Section 11.4 of this report.

**Table 10-2: Metallurgical Performance 2020 to 2021**

Component	Year	Tonnes (t)	Assay Grade						Recovery (%)					
			Au (g/t)	Ag (g/t)	Pb (%)	Cu (%)	Zn (%)	Fe (%)	Au	Ag	Pb	Cu	Zn	Fe
Head Grade	2019	0	0.00	0.00	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2020	1,355,065	0.01	107.65	0.34	0.50	1.68	5.38	100.00	100.00	100.00	100.00	100.00	100.00
	2021	899,995	0.02	79.39	0.24	0.48	1.88	5.86	100.00	100.00	100.00	100.00	100.00	100.00
		2,255,060	0.01	96.37	0.30	0.49	1.76	5.57	100.00	100.00	100.00	100.00	100.00	100.00
Concentrate	2019	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lead (Pb%)	2020	4,882	0.72	3679.33	29.19	10.61	6.38	3.18	10.42	12.31	30.79	7.66	1.37	0.21
	2021	2,699	0.52	3620.59	24.49	13.08	5.94	13.49	10.18	13.67	30.34	8.18	0.95	0.69
<b>Subtotal</b>		<b>7,581</b>	<b>0.65</b>	<b>3658.42</b>	<b>27.52</b>	<b>11.49</b>	<b>6.22</b>	<b>6.85</b>	<b>10.34</b>	<b>12.80</b>	<b>30.63</b>	<b>7.85</b>	<b>1.22</b>	<b>0.38</b>
Concentrate	2019	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Copper (Cu%)	2020	20,077	0.18	2958.95	6.64	17.94	12.95	18.88	19.30	40.72	28.80	53.29	11.42	5.20
	2021	11,322	0.27	2613.86	5.53	18.67	10.35	18.68	21.83	41.42	28.75	48.96	6.95	4.01
<b>Subtotal</b>		<b>31,399</b>	<b>0.21</b>	<b>2834.52</b>	<b>6.24</b>	<b>18.20</b>	<b>12.01</b>	<b>18.81</b>	<b>20.21</b>	<b>40.97</b>	<b>28.78</b>	<b>51.72</b>	<b>9.81</b>	<b>4.77</b>
Concentrate	2019	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zinc (Zn%)	2020	31,577	0.09	322.80	0.90	2.02	46.33	10.80	14.38	6.99	6.14	9.44	64.26	4.68
	2021	28,011	0.10	240.89	0.65	1.65	43.50	12.45	19.50	9.44	8.39	10.72	72.21	6.62
<b>Subtotal</b>		<b>59,589</b>	<b>0.09</b>	<b>284.29</b>	<b>0.78</b>	<b>1.85</b>	<b>45.00</b>	<b>11.58</b>	<b>16.79</b>	<b>8.14</b>	<b>7.20</b>	<b>10.04</b>	<b>67.99</b>	<b>5.59</b>
Tails	2019	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2020	1,298,529	0.01	44.91	0.12	0.15	0.40	5.05	55.90	39.98	34.28	29.61	22.96	89.92
	2021	857,964	0.01	29.53	0.08	0.16	0.39	5.45	48.48	35.46	32.52	32.14	19.90	88.68
		2,156,492	0.01	38.79	0.11	0.16	0.40	5.21	52.95	38.18	33.58	30.62	21.74	89.42

Source: IMMSA 2021

Using the information provided in Table 10-2 and by calculating the total recovery for the key elements the following cumulative recoveries have been used for the purpose of the cut-off grade analysis, and are based on the recovered metal payable in concentrate (Table 10-3):

**Table 10-3: Cumulative Recovery used for Cut-Off Grade Analysis**

<b>Element</b>	<b>Recovery</b>
Ag	64.5
Pb	30.3
Cu	57.1
Zn	72.2

Source: SRK, 2021

## **10.5 Adequacy of Data and Non-Conventional Industry Practice**

In SRK's opinion, the results to date are sufficient for the definition of a mineral resource with the potential for economic extraction of the three concentrate products produced. SRK is not aware of non-conventional industry practice utilized.

# 11 Mineral Resource Estimates

The Mineral Resource Estimate presented herein represents the more recent resource evaluation prepared for San Martín project in accordance with the disclosure standards for mineral resources under §§229.1300 through 229.1305 (subpart 229.1300 of Regulation S-K)

## 11.1 Key Assumptions, Parameters, and Methods Used

This section describes the key assumptions, parameters, and methods used to estimate the mineral resources. The technical report summary includes the mineral resource estimates, effective December 31st, 2021.

### 11.1.1 Mineral Titles and Surface Rights

The MRE stated herein is done so on 100% terms of the resources contained within mineral title and surface leases which are currently held by IMMSA as of the effective date of this report. All conceptual considerations to constrain statement of mineral resources have been limited to within these boundaries as well. Current and future status of the access, agreements, or ownership of these titles and rights is described in Section 3 of this report.

### 11.1.2 Database

IMMSA is currently in the process of digitizing the historical database for the San Martín project which is projected to be completed in 2022. The lack of a digital database has required more detailed and manual validation by SRK to validate the current Mineral Resources. SRK considers the procedures used by IMMSA to be reasonable and in line with Industry standards with the exception of the data storage.

All drilling and sampling completed by the Company are logged for a variety of geological parameters including rock types, mineralogy, and structure. Historical drilling featured cross sections and maps have locally been used for modeling purposes for the mineralization contacts. SRK considers movement to a digital database will result in improvements in the ability to develop robust 3D geological models and Mineral Resource Estimates.

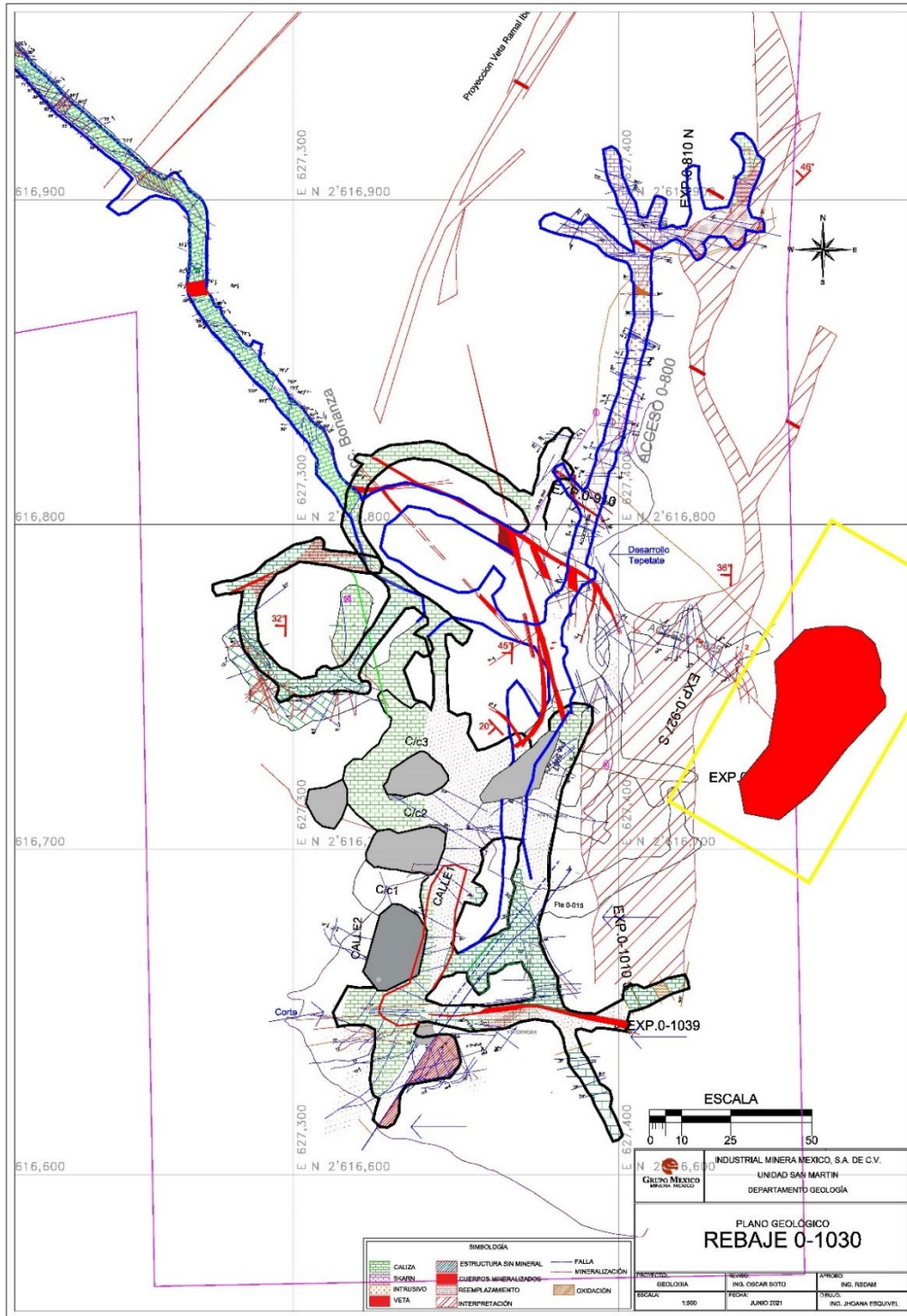
## 11.2 Geological Model

There is no unique geological model for San Martín. The current Mineral Resource estimate is based on the definition of potential mining blocks (stopes), which use tonnage and grade estimated from the integration of geological and assay information initially defined on two dimensional sections. The geology interpretations are in paper format and a few in AutoCAD vertical and plan sections (Figure 11-1). Geological interpretations of some new zones of the deposit have been constructed in Datamine Studio and Seequent Leapfrog Geo software. The mine maps, horizontal and section interpretations and the existing geological models will require integration into a single model that will represent some difficulties due to the quantity data and complexity of the deposit.

IMMSA operation geologists map the underground workings and define the channel sampling limits. The mapping includes a description of the rock type and the mineralization characteristics, which is then transcribed into the topographic maps and in conjunction with the assay results, the geologists delineate the mineralized zones and the geological interpretation in the plan views as shown in



Figure 7-2. This information is then used to define the areas that are required to calculate the mineralized volumes for the mineral resource estimation, using the projection of the areas according to interpretations in vertical sections (Figure 11-4) and the existence of the mined zones.



Source: IMMSA, 2021

**Figure 11-1: Example of Plan View of Underground Workings and Geological Interpretation**

The mine is currently in the process of creating a consolidated database of the historical and latest drilling information and geological mapping. Integrating the mine maps, horizontal and section interpretations and the existing geological models into a single model that will present some challenges due to the quantity data and the complexity of the deposit.

To generate a consolidated 3D geological model, the following activities are required:

- Conduct 3D digitizing of the underground chip channel samples. The exclusion of samples in already mined zones should be defined by the Qualified Person in charge of the geological modeling. A 3D modeling software (i.e., Leapfrog Geo) can be used for this activity.
- Conversion of all the information to a unique coordinates system if necessary.
- Consolidate the rock and drill core sampling database (collar, survey, assay, lithology, alteration, vein codes, etc.) that is in Excel and paper formats. This activity will require the generation and consolidation of the Excel files from the maps and drill logs in paper that have not been digitized.
- Digitize sections and maps with lithology information that is not in digital format. This consolidated information will be the base for the 3D geological interpretation.
- Digitize and construct depletion solids.

## 11.3 Mineral Resources Estimates

San Martín has not previously disclosed Mineral Resources Estimates. The Mineral Resource Statement presented herein represents the latest mineral resource evaluation prepared for this operation.

The mineral resource estimation for San Martín was completed using the available data based on manual documentation and calculations, including some information in AutoCAD and Excel formats. A 3D geological model, geostatistical analysis, block model construction and geostatistical estimation using specialized software are not included in this report.

This mineral resource estimation is based on the reserve blocks calculations completed by San Martín and include the following aspects:

- Data compilation and verification, channel, and core sampling
- Calculation of areas of blocks in vertical or horizontal sections
- Volume calculations from areas and influence distances
- Calculation of grade weighted averages
- Tonnage Calculations
- Classification

### 11.3.1 Data Compilation and Verification

The geological information and the sampling of the underground workings have been historically collected on paper and transferred to maps, including the geological interpretations, lithology, mineralization type and alteration among other characteristics (Figure 11-1).

The information that is registered in maps and formats is complemented with the assay results obtained from the internal laboratory and transferred to the maps and paper formats by hand. Recently, only a small part of the data was digitized in excel spreadsheets, but it is not a established procedure.

Part of the historical and the more recent information (geology, mineralization, structural, sampling, etc.) collected in maps have been transferred to a digital format using AutoCAD software, using the mine topography information provided by the surveyors. Figure 11-2 shows the AutoCAD map including the location of samples and results in tables. This information is then used to generate sections, complete the geological interpretations, and produce sections and plan views from where the mineralized zones areas are delimited using the lithology, mineralization and the samples results.

The QP has reviewed this process and following some initial feedback within the IMMSA geologist which resulted in some minor changes to the procedure but has deemed the final interpretations used in the current estimate as appropriate.



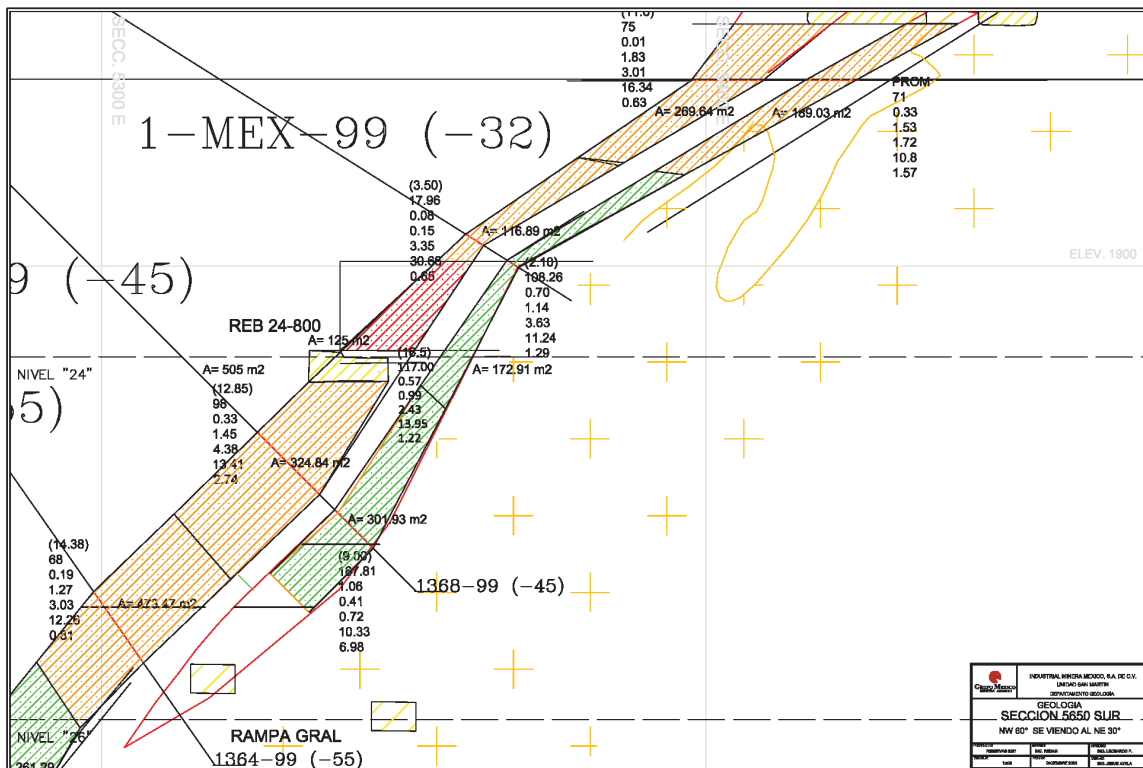
Based on the interpretations of the geology and mineralization the areas of each resources block have been calculated in by hand from paper maps or AutoCAD. The areas of the mineralized rock defined by the geologist based on sampling, lithology, mineralization and alteration are delineated in the plan views or in in vertical sections (approximately perpendicular to the mineralization direction), The vertical sections are used to calculate the areas when the drilling are the main source of information for interpretation. Figure 11-3 shows an example of the areas defined in plan view and the vertical section lines that limit the areas.





The areas calculated in the vertical sections are manually calculated or using the sections drawn in AutoCAD, when available. The sections are approximately perpendicular to the mineralized controls (structural and stratification). In the case of drillholes, the true width is calculated applying the required adjustments.

When using more than one drillhole or a combination of drillholes and channel sampling, the weights required to calculate the weighted averages are calculated using the areas of polygons that define the influence of each drillhole and the channel sampling. Distances between intercepts is as well used to calculate the weights. When there are sections with more than one drillhole, the area is calculated in section until half of the distance between the drillholes (Figure 11-4).



Source: SRK, 2021

**Figure 11-4: Example of Vertical Section Including the Drilling, Interpretation and Calculated Areas**

### 11.3.2 Calculation of Weighted Averages Grades and Volume Calculation

The way available samples are considered depends on the shapes of the mineralized bodies and the type of other information available. In tabular bodies there are usually fronts that follow the body longitudinally, as well as underground workings within the body, which are sampled throughout its length. There may also be stopes within or adjacent to the resource blocks, and holes intersecting the blocks.

When using more than one drillhole or a combination of drillholes and channel sampling, the weighted averages are calculated based on the areas of polygons constructed to define the area of influence of each sample or set of samples. When there are sections with more than one drillhole, the area is

based on halfway to the next drillhole. The average grades of a set of channel samples are weighted by the length of each sample and then by the influence area if necessary.

IMMSA have a defined series of protocols which are applied dependent on the influence of underground channel, boreholes, and if the volumetrics are defined by level plans, or long sections. These criteria are included in the IMMSA Manual de Reservas.doc, which the QP has reviewed and considers to be appropriate based on long established industry methods. It is the QP's opinion while these methodologies are reasonable to produce average grades for the various mining areas, this produces a relatively static estimate of the model and limits flexibility to future mine planning. The mining industry has moved away from these historical methods to more interaction three-dimensional modelling techniques, which IMMSA are currently in the process of trying to implement at the operation.

### 11.3.3 Capping

Before the final calculation of weighted average grades, the geologists review the assays and apply capping if required using the following values:

- Ag=200 g/t
- Pb= 2%
- Cu= 2%
- Zn=10%

San Martín doesn't have a statistical analysis or any specific documentation to support the values used for capping and historically has used different approaches. The current methodology and values are a result of the experience and knowledge of the operation, which is an aspect that the QP considers reasonable, but the lack of documentation is a concern. Review of the capping levels will be advised once the digitized database is established to understand the relative percentiles used in capping, and if the capping should be completed across the deposit or per structure.

Averages of widths and grades are obtained for each section or group of samples, including for each hole individually, and each section or hole is assigned its area of influence. The areas are added to obtain the total area and the "weighted" averages of width and grades are obtained. Volumes and tonnages are then calculated using the areas that are expanded perpendicular to the sections according to the influence distances established and the resource classification criteria.

The total area for the part of the section that corresponds to the resource block will then be the sum of the partial areas, and the averages for the width and grades will be weighed by their respective areas. In the longitudinal direction, the various areas along the block are combined.

### 11.3.4 Density

The density used by San Martín is 3.3 t/m<sup>3</sup>. This number was provided by the mine. The plant and the mine have been using this density value for decades which provides confidence. The determination method was, not clear and documentation related to this is not available.

Different rock types and the characteristics of the mineralization have variable densities which is an aspect to investigate to obtain a more robust density calculation.

The tonnages are calculated multiplying the obtained volumes by the density 3.3 t/ m<sup>3</sup>

A level of risk exists when using unsupported values in the estimation process, and as the density value is directly applied to the calculated volumes to determine the tonnage, the risk has a direct link to the total tonnage declared in the current mineral resource.

The density being used is consistent with the average density (which has been used by the mine through its operation), which provides a reasonable level of confidence that the value is not materially wrong; however, SRK recommends further testwork be completed to both confirm the current density values and to assess any potential variability. Different rock types and the characteristics of the mineralization have variable densities, which is an aspect to investigate to obtain a more-robust density calculation.

### **11.3.5 Documentation**

Plans and calculations for the resource estimates are made in a sufficiently detailed manner to be useful for other uses. The calculations for each block are carried out in the standard sheets (Figure 11-5). In the spreadsheets, the final data of the ore in situ should appear as a total in-situ, followed by the tonnage and grades of the ore. The calculations for each block must be accompanied by drawings and sections as necessary. All spreadsheets, drawings and other documents are stored in paper folders and maintained in a safe place.



introduces some level inaccuracy when establishing the volumes exploited and the extension of some blocks.

At the operation the responsibility the engineering department, with the purpose of this is to keep updated the topography of the mining works (digitally, and physically in plans). The current system involves capture of survey points directly into a digital copy of the underground workings, which is validated in the field by the survey. The survey data points are used to update the AutoCAD definition of the depleted areas.

The QP comments that the final depletion shapes have been surveyed at the end of November 2021 with the additional depletion based for December based on the planned depletions. It is the QP's opinion that this will not have a material impact on the final Mineral Resources.

## 11.4 Resource Classification and Criteria

SRK has classified the mineral resources in accordance with §229.1302(d)(1)(iii)(A) (Item 1302(d)(1)(iii)(A) of Regulation S-K), and in a manner consistent with industry guidelines and definitions as defined by the Committee for Mineral Reserves International Reporting Standards (CRIRSCO). The mineral resources are classified as Indicated and Inferred, according to the following definitions and criteria:

The mineral resources are classified as Indicated and Inferred, according to the following definitions and criteria:

### 11.4.1 Measured Resources

No Measured resources are stated, as insufficient overall confidence exists to *confirm* geological and grade continuity between points of observation, to the level needed to support detailed mine planning and final evaluation studies. Other limitations in the opinion of the QP are a lack of density measurements and insufficient QA/QC protocols in the mine samplings protocols.

### 11.4.2 Indicated Resources

It is the mineral that, based on good geological evidence, determines its continuity in terms of the size, shape and content of the mineralization, in the structures already known in exploitation, being able to be quantified at any depth of the deposit based on diamond drilling, whether it is superficial or underground, as long as it does not have a gap greater than 30 meters, both vertically and horizontally.

Where there are no vertical works connecting the levels, or diamond drilling, the mineral sampled may only be quantified up to 30 meters above or below the level, or above the head of the stope. It is established that below the last level in the different sections of the mine and regardless of their elevation in each section, only indicated resources can be quantified up to 15 meters below the last level without diamond drilling. To have the desired reliability, San Martín considers that there should be no indicated above the first level of the mine.

### 11.4.3 Inferred Resources

Inferred resources can be established in areas with sufficient geological confidence, and the following requirements are met:

1. The remaining mineral between two levels, with a maximum separation of 120 meters, when there is no diamond drilling.
2. The mineral determined by diamond drilling, either superficial or underground, at any depth of the deposit, when a systematic drilling is carried out, with a separation of no more than 60 meters between drillholes. When the above is not complied with, only a radius of influence of 15 meters is allowed

Due to the lack of QA/QC protocols for the historical drilling and channel sampling, deficiencies in the channel sampling procedures and the lack of measurements of downhole surveys, SRK established that there are not measured resources in San Martín.

Figure 11-6 shows an example of the resource blocks in Veta Ibarra (Long Section)





## 11.5 Uncertainty

Indicated Resources: Is the opinion of SRK that the indicated resources are estimated based on adequate geological evidence and sampling. The distances of influence from underground sampling and distances between drilling which are the controlling aspects on the uncertainty. San Martín uses maximum of 30 m from channel sampling and 30 m between drillholes. The criteria and uncertainty correspond to the Medium Degree of Uncertainty column in Table 11-1.

Inferred Resources. Inferred category is limited to the resources that are in areas where the quantity and grade are estimated based on limited sampling and moderated to limited geological evidence. This category is considered to have the highest levels of uncertainty, which correspond to the High Degree of Uncertainty column in Table 11-1. These areas of the project represent the areas with lowest drilling density and influence distances to channel sampling of up to 60 m. SRK considers these areas of the Mineral Resource will need additional drilling and underground workings prior to mining.

**Table 11-1: Sources and Degree of Uncertainty**

Source	Degree of Uncertainty		
	Low	Medium	High
Drilling	Recent drilling completed by the exploration team is fulfilling the industry standards. This drilling is focused in new areas discovered as extensions of the main deposit.	Protocols of historical drilling supporting the mineral resources don't fulfill the industry standards. Including the lack of down hole deviation measurements.	
Sampling		Protocols of sampling don't fully fulfill the industry standards. Density of samples supporting the Mineral Resources is adequate.	
Geological Knowledge	There is an extensive knowledge of the geology and mineralization of the San Martín deposit. This aspect and the experience of the management team provides confidence to the geological assumptions during the geological interpretations.		
QA/QC	Sample preparation, chemical analysis and the QA/QC procedures implemented by the exploration team in the recent years meet the current industry standards. These works are focused in new areas in exploration.	Lower precision of historical data recognized. Drilling and channel sampling completed by the Mine Geology Department supporting the mineral resources have not been fully supported by a QA/QC protocol.	
Data Verification	The extensive historical production information and knowledge of the geology and mineralization. provides support to the historical data collected since the last century.	The lack of the core of historical drilling supporting the mineral resources limited the verification activities.	
Database	Original geology, structural and mineralization maps, drill core logging formats (including the	Most of the data supporting the mineral resources is stored in	

Source	Degree of Uncertainty		
	Low	Medium	High
	assay results), interpretation plan and vertical sections supporting the Mineral Resources are stored in the operation in paper format and a small portion in digital format.	paper. Local errors related to handwritten supporting data are expected.	
Bulk Density		A unique value is used for all the rock types and doesn't consider the mineralization changes. This introduces local inaccuracies. Plant and mine have been using this value for decades which provides confidence to the density value used but don't consider the changes in lithology and mineralization.	
Variography		All the data of the project is not in digital format for an adequate continuity analysis. Continuity assumptions of mineralization have been based on the extensive geological knowledge of the deposit.	
Grade Estimation		Grades and volume calculations are based on historical data which provides some level of inaccuracy. Part of the calculations were completed using handmade drawings which introduces inaccuracies.	
Prices*, NSR values	Prices and costs based on Sa Martín mining and production information (not exceeding 12-month averages) with 15% as premium applied for resources.		
Drill and sample Spacing		Distances to underground workings and channel sampling < 30 m. Minimum 2 drillholes within a drill spacing of 30 m.	Minimum of 1 hole at distance < 15 m
Depletion		The resource blocks are defined considering the updated topography of the mine. The adequacy and precision of the historical surveying information of the underground workings and exploited areas introduces some level of inaccuracy to the limits of the resource blocks.	

Source	Degree of Uncertainty		
	Low	Medium	High
Criteria of Classification	Distances of influence of samples supported on the good knowledge of the geology and mineralization. These distances are considered conservative which mitigates in some extent the risk associated to over-estimation of the continuity of mineralization.		

Source: SRK, 2021

\* Changes in Metal Prices will likely result in significant changes in the values derived from the NSR equation. Currently the stopes defined only limited stopes fall below the operating costs of US\$ 54.6/t.

## 11.6 Cut-Off Grades Estimates

Definitions for Mineral Resource categories used in this Technical Report Summary are those defined by SEC in S-K 1300. Mineral Resources are classified into Indicated, and Inferred categories. Mineral Resources are reported in total as currently no Mineral Reserves are reported in accordance with S-K 1300 requirements.

Geologists uses diamond drilling information, channel sampling and development information to identify mineralized areas. The mineralized areas are then divided into smaller blocks based on the vein. Information on each block, such as classification, dimensions, thickness, sampled grades are entered into an Excel spreadsheet to compile the final Mineral Resources.

The Mineral Resources for the San Martín are considered to be amenable to underground mining methodologies as has been established at the mine to date. Mining is completed using a mechanized Cut and Fill mining method with rockfill and with tailings (hydraulic) and dry tailings. Ramps and levels are developed to provide access to the ore. Attack ramps are then driven to access each cut. The ramps and level development are performed using jumbos. San Martín has been testing the long hole stopping mining methodology after the operation resuming. Processing is completed at the current operating plant using a floatation flow sheet into three separate concentrates (Zn Concentrate, Cu concentrate, and Pb Concentrate).

Given that process recoveries and costs in the resource model are grade and/or domain dependent, the resources are reported with respect to a block Net Smelter Return (NSR) value which is calculated on a stope block (panel) basis. The cut-off value used for the Resource estimate is based on an NSR value, in units of US\$/t, which can be directly compared to operating unit costs. The NSR formula is:

$$NSR = \frac{\text{Gross Revenue} - \text{Offsite Charges}}{\text{Tonnes Processed}}$$

The calculation of the NSR is effectively a calculation of unit values for the individual metals, which results in a value for a block based on the contained metal.

IMMSA reviewed supply and demand projections for zinc, lead, silver, gold and copper, as well as consensus long term (ten year) metal price forecasts. The QP has been supplied with IMMSA’s internal selected metal prices for mine planning for the Project. The prices are considered in line with independent forecasts from banks and other lenders. The IMMSA selected metal have been adjusted

by the QP to the selected Mineral Resource estimation prices using a factor of 15% higher, which is in line with typical industry practice.

NSR cut-off values for the Mineral Resources were established using a zinc price of US\$1.32/lb Zn, a lead price of US\$1.04/lb Pb, a silver price of US\$23.0/oz Ag, and a copper price of US\$3.80/lb Cu. While minor amounts of gold exist at the project (0.1 g/t head grade) gold has not been used as a revenue driver within the NSR calculation.

**Table 11-2: Price Assumptions**

<b>Factors</b>	<b>Value</b>	<b>Unit</b>
Ag	23.00	USD/oz
Pb	1.04	USD/lb
Cu	3.80	USD/lb
Zn	1.32	USD/lb
Exchange Rate (MXN:USD)	20.1418	

Source: SRK, 2021

It is the QP's opinion that the Metal prices used for Mineral Resources are reasonable based on independent checks using consensus, long term forecasts from banks, financial institutions, and other sources.

The metallurgical recovery factors assumed for San Martín are based on historic performance of the processing plants and are shown in Table 11-3. The recoveries used in the calculation are based on the recoveries for payable material within the concentrates, for example the combined recovery for Cu, within the Pb Concentrate + Cu Concentrate. The basis for these factors is discussed in Section 10.4 of this report. The QP has elected to use the 2021 recoveries for the basis for the year end Mineral Resources.

**Table 11-3: Metallurgical Recovery Assumptions (Recovery in Payable concentrates)**

<b>Element</b>	<b>Value</b>	<b>Unit</b>
Ag	64.5	%
Pb	30.3	%
Cu	57.1	%
Zn	72.2	%

Source: SRK, 2021

In addition to the price and metallurgical recovery, IMMSA has applied additional NSR factors in the metal equivalency calculation to account for other aspects of the mineralization. These additional factors include but are not limited to:

- Smelter recoveries
- Smelter penalties (Arsenic and Bismuth)
- Fleet/transport costs

The NSR factors can there be expressed as a further percentage and are averaged out over the annual production. The Additional percentages applied to the recoverable metal (in situ metal x recovery), using the recovery metal (payable), are shown in Table 11-4.

**Table 11-4: NSR Adjustment Factors**

Element	Value	Unit
Ag	87.4	%
Pb	87.8	%
Cu	90.8	%
Zn	81.6	%

Source: SRK, 2021

In summary using the above prices, recovery and NSR adjustments for the smelter terms the QP has applied the following equation to define the stope values on a stope-by-stope basis. The following criteria should be considered inclusive of the average metallurgical recovery.

$$NSR = Ag (g/t)*0.417+Pb(\%)*6.074+Cu(\%)*43.418+Zn(\%)*17.181$$

The operating unit cost used to determine the potential for economic extraction has been taken by reviewing the costs over the past three years. Based on current market conditions the QP has elected to use the 2021 costs as the basis for the assessment, which in their opinion is a reasonable basis for the declaration of Mineral Resources (Table 11-5). The economic value of each stope is then calculated in an Excel spreadsheet using the NSR equation above, and the QP has assigned a flag for all stopes based on an assessment of their economic value where the NSR values is “above/below” a cut-off grade the operating unit cost of US\$57.59/t.

**Table 11-5: Operating Unit Cost**

Factor	Value	Unit
Mine	17.64	USD/t
Mill	10.16	USD/t
Indirect (Mine)	13.77	USD/t
<b>Subtotal</b>	<b>41.57</b>	<b>USD/t</b>
Smelting, Refining and Transportation	11.88	USD/t
Administrative	1.16	USD/t
<b>Total Operating</b>	<b>54.61</b>	<b>USD/t</b>

Source: IMMSA, 2021

## 11.7 Summary Mineral Resources

San Martín Mineral Resources are in compliance with the S-K 1300 resource definition requirement of “reasonable prospects for economic extraction”. Using the panels defined by the geologist the QP has reviewed each panel relative to the defined cut-off grades. Depletions have been accounted for within each panel using the latest survey information for most of the panels and only few panels that were exploited in the last two months of 2021 were adjusted according to the planned exploitation. It is the opinion of SRK that the differences with the real exploited material are not material.

In the QP’s opinion, the assumptions, parameters, and methodology used for the San Martín underground Mineral Resource estimates while not optimized to provide flexibility in the planning processes the methods are appropriate for the style of mineralization and mining methods.

The Mineral Resources for the San Martín underground operation as of December 31, 2021, are summarized in Table 11-6 and are reported on an in-situ basis. Mineral Resources have been reported in total as currently no Mineral Reserves (which in effect are exclusive of Reserves) are declared for the Project in compliance with the new S-K 1300 standards.

**Table 11-6: San Martín Summary Mineral Resources at End of Fiscal Year Ended December 31, 2021 – SRK Consulting (U.S.), Inc.<sup>(1)</sup>**

Category	IMMSA Underground – San Martín					Cut-Off <sup>(2)</sup>	NSR <sup>(3)</sup> \$54.6			
	Tonnage Quantity (kt)	Grade					Metal			
		Ag (g/t)	Zn (%)	Pb (%)	Cu (%)	NSR <sup>(3)</sup> (US\$)	Ag (koz)	Zn (kt)	Pb (kt)	Cu (kt)
Measured										
Indicated	11,728	97	2.65	0.55	0.62	117	36,647	310.9	64.2	73.2
M+I	11,728	97	2.65	0.55	0.62	117	36,647	310.9	64.2	73.2
Inferred	8,369	107	2.18	0.61	0.53	109	28,716	182.7	51.2	44.3

(1) Mineral resources are reported Exclusive of Mineral reserves. Mineral resources are not ore reserves and do not have demonstrated economic viability. All figures rounded to reflect the relative accuracy of the estimates. Silver, lead, zinc and copper assays were capped where appropriate. Given historical production, it is the company's opinion that all the elements included in the metal equivalents calculation have a reasonable potential to be recovered and sold.

(2) Mineral resources are reported at metal equivalent cut-off grades based on metal price assumptions\*, variable metallurgical recovery assumptions\*\*, mining costs, processing costs, general and administrative (G&A) costs, and variable NSR factors\*\*\*. Mining, processing, and G&A costs total US\$54.6/t.

\* Metal price assumptions considered for the calculation of metal equivalent grades are: Gold (US\$/oz 1,725.00), Silver (US\$/oz 23.0), Lead (US\$/lb1.04), Zinc (US\$/lb 1.32) and Copper (US\$/lb 3.80)

\*\*Cut-off grade calculations and metal equivalencies assume variable metallurgical recoveries as a function of grade and relative metal distribution. Average metallurgical recoveries are: Silver (65%), Lead (30%) and Zinc (72%) and Copper (57%), assuming recovery of payable metal in concentrate.

\*\*\*Cut-off grade calculations and metal equivalencies assume variable NSR factors as a function of smelting and transportation costs. The NSR Values (inclusive of recovery) are calculated using the following calculation  $NSR = Ag*0.417+Pb*6.074+Cu*43.418+Zn*17.181$

The mineral resources were estimated SRK Consulting US Inc, a third Party QP under the definitions defined by S-K 1300.

## **11.8 Opinion on Influence for Economic Extraction**

It is the SRK's opinion that the geology and mineralization controls of the San Martín Deposit are very well understood based on the extensive knowledge of the deposit from decades of exploitation.

The mineral resources stated herein are appropriate for public disclosure and meet the definitions of indicated, and inferred resources established by SEC guidelines and industry standards. Based on the analysis described in this report, the SRK's understanding of resources that production has occurred at the mine since the project's status of operating since 1950, in the QP's opinion, there is reasonable potential for economic extraction of the resource.

The SRK QP is of the opinion that with consideration of the recommendations summarized in Section 1 and Section 23, any issues relating to all relevant technical and economic factors likely to influence the prospect of economic extraction can be resolved with further work.



## **12 Mineral Reserve Estimates**

Section 12 Mineral Reserve Estimates is not applicable for the current level of study and has not been included in this report.

## 13 Mining Methods

Section 13 Mining Methods is not applicable for the current level of study and has not been included in this report.

Mining is completed using a mechanized Cut and Fill mining method with rockfill and with tailings (hydraulic) and dry tailings. Ramps and levels are developed to provide access to the ore. Attack ramps are then driven to access each cut. The ramps and level development are performed using jumbos. San Martín has been testing the long hole stopping mining methodology after the operation resuming

## 14 Processing and Recovery Methods

Section 14 Processing and Recovery Methods is not applicable for the current level of study and has not been included in this report.

Mineral Processing is completed via conventional flotation processes, including crushing, milling, flotation, filtration, thickening and conduction and disposal of tailings. The Minera San Martín unit has two processing plants or concentrators, one with an operating capacity of 2,400 tons/day (plant 2-400) and another with a capacity of 4,400 tons/day (plant 4-400). Three concentrates are produced:

- Zinc Concentrate
- Copper Concentrate
- Lead Concentrate

Figure 10-1 shows the general flow chart of the mineral processing at San Martín.

## **15 Infrastructure**

The project does have some existing infrastructure which support the current operation. However, the QP has not inspected the infrastructure to sufficient levels to support the declaration of Mineral Reserves at this stage.

## **16 Market Studies**

Section 16 Market Studies is not applicable for the current level of study and has not been included in this report. SRK has used costs, pricing and criteria as supplied by the operation which were reviewed and considered to be reasonable to support the current level of studies. To support the declaration of Mineral Resources at minimum a pre-market study of the various concentrates will need to be completed.

## **17 Environmental Studies, Permitting, and Plans, Negotiations, or Agreements with Local Individuals or Groups**

Section 17 Environmental Studies, Permitting and Plans, Negotiations, or Agreements with Local Individuals or Groups is not applicable for the current level of study and has not been included in this report.

## **18 Capital and Operating Costs**

Section 18 Capital and Operating Costs is not applicable for the current level of study and has not been included in this report.



## **19 Economic Analysis**

Section 19 Economic Analysis is not applicable for the current level of study (Mineral Resource) and has not been included in this report.

## 20 Adjacent Properties

The most important operation located 1 km to the south of Sabinas, which is an old mine that Peñoles acquired in 1994. The following is the public information of Sabinas:

(<https://www.penoles.com.mx/nuestras-operaciones/unidades-mineras/sabinas.html>):

In 2006, the installation of a lead-copper separation circuit was completed. Likewise, important investments in exploration have confirmed additional reserves and justified subsequent increases in its milling capacity, from 150,000 tons per year to 1.3 million in 2020.

- Relevant information
  - Location: Sombrerete, Zacatecas
  - Ownership: 100% Peñoles
  - In operation (under Peñoles control): 1995-present
  - Facilities: Underground mine and two beneficiation plants
  - Production: Polymetallic (silver, zinc, lead, copper) in three types of concentrates: lead, zinc and copper
  - Deposit type: Underground with massive bodies and veins
  - Installed capacity: 1.3 million tons / year of ground ore
  - Reserves: 22.7 million tons of mineral (2020)
  - Years of life: 17 (2020)
  - Employees: 659 (2020)

The QP has done insufficient work to confirm the basis for these numbers and has been unable to verify the information and that the information is not necessarily indicative of the mineralization on the property that is the subject of the technical report summary.

## 21 Other Relevant Data and Information

The San Martín Mine is currently in production and has previously disclosed Mineral Resources under Guide-7. During the initial review of the underlying technical studies it was determined that not all studies are at sufficient level of detail to comply with the new S-K 1300 levels. The Company is currently in a process of updating the required technical work which will be based on a revised three dimensional block model of the Mineral Resources in 2022.

## 22 Interpretation and Conclusions

SRK is of the opinion that the data and analysis presented herein is of sufficient quality and completeness to support the estimation of mineral resources. The skarn and vein deposits at San Martín have been mine historically and are currently in production, processing three concentrates (Zinc, Copper and Lead) via underground mining operations.

The drilling and analytical work is supported by surveys and limited quality control measures to support confidence in the accuracy and precision of the data. The mine geology department has not implemented quality controls for the samples collected from drilling and rock sampling from underground workings, which SRK considers that is not in line with the industry best practices and represents a source of uncertainty for the data collected by the mine geology department.

The exploration department have procedures for drilling and core sampling which the QP considers in line with the industry best practices. The QP notes the following key conclusions:

### 22.1 Geology and Mineralization

- The geology and mineralization controls of the San Martín project are very well known, supported by the more than 60 years of the mining operation. geology information supporting mineral resources is available in paper documents and partially in digital format.
- No certification has been completed on the current mine laboratory which in the QP's opinion does not meet the required standards for reporting under international best practice. More detailed validation and external checks should be completed if the laboratory is not certified given the lack of independence presented. The QP recommends that IMMSA undertake a program to certify the laboratory
- There is not a QA/QC protocol implemented for drilling and sampling (core and channel sampling) completed by the mine geology department for the historical and recent information and those activities are not in line with the industry standards.
- The estimate was categorized in a manner consistent with industry standards. Mineral resources have been categorized based on relative confidence in the modeling, estimation or reporting of the tonnage and grades from the model. There are no Measured mineral resources, primarily due to a lack of density measurements and insufficient QA/QC protocols in the mine samplings protocols. The Indicated mineral resources disclosed herein have significant evidence in the QP's opinion to support the interpolation of both the geological and grade continuity in these areas.
- The latest drilling and core sampling completed by the exploration department are in line with the industry standards.

### 22.2 Mineral Resource and Mineral Reserve Estimates

- The estimate was categorized in a manner consistent with industry standards. Mineral resources have been reported using economic and mining assumptions to support the reasonable potential for eventual economic extraction of the resource. A cut-off grade has been derived from these economic parameters, and the resource has been reported above this cut-off. The mineral resource are reported in effect exclusive of mineral reserves, as no reserves have been declared in line with the S-K 1300 guidelines at this stage.

- In SRK's is of the opinion, that the mineral resources stated herein are appropriate for public disclosure and meet the definitions of Indicated and Inferred resources established by SEC guidelines and industry standards.

## 23 Recommendations

It is the QP's opinion the following measures should be taken to mitigate the uncertainty include but are not limited to:

- Continual infill drilling in the most critical areas of the deposit, locally to spacing of less than 50 x 50 m.
- SRK recommends reviewing the procedures of drilling and sampling and design and implement a complete QA/QC protocol for the drilling and rock sampling activities performed by the mine geology department of San Martín.
- QA/QC protocol of the Exploration Department: Implement the use of an umpire laboratory (commercial laboratory) to send the second laboratory check samples periodically (quarterly), and the review of the acceptability ranges for fine duplicates (10% relative error).
- Obtain certification for the internal mine laboratory to international standards.
- Digitization of all geological information and storage of data into a commercial secure database.
- Detailed geological modeling methods using the new digital database which integrates all relevant geological data into defining the model and achieving the most accurate model possible at the current level of study.
- Extensive QA/QC analysis and monitoring to understand relative impacts to local inherent variability within resource domains.
- Introduction of more routine density sampling within the mineralization to confirm level of fluctuation from the current uniform assignment of a single 3.3 t/m<sup>3</sup> value.

### 23.1 Mineral Resource and Mineral Reserve Estimates

- SRK recommends digitizing all the existing information in paper related to geological interpretations and the results of drilling and rock sampling.
- The use of implicit modeling will allow the conjugation of different types of information (maps, sections, etc.) to obtain a well-supported 3D geological model that will serve as a basis for future Mineral Resource Estimations.

### 23.2 Recommended Work Programs

The recommended work program includes the following activities:

- Database capture of historical all data including drilling, historical mapping, channel sampling and geological interpretations to support the construction of a 3D geological model and future mineral resource estimates using a block model.
- Construction of a 3D geological model and update mineral resource and reserve estimates

### 23.3 Recommended Work Program Costs

The following is the approximate budget of the work program for 2022 (Table 23-1).

**Table 23-1: Recommended Work Program Costs**

<b>Discipline</b>	<b>Program Description</b>	<b>Cost (US\$)</b>
Geology and Exploration	Ongoing Exploration and Grade-control Drilling	\$1.9M
Data Capture of Geological Database	Digitization and capture of key historical database information and geological data (mapping)	\$0.8M
Updated MREs	Generation of Geological Model and Mineral Resource estimates	\$0.2M
Mining Methods/Mineral Reserve Estimates	Development of mine plan and optimization of mining methodology	\$0.4M
<b>Total US\$</b>		<b>\$ 3.4M</b>

Source: SRK, 2021

## 24 References

- Aranda Gómez, J.J., 1978, Metamorphism, mineral zoning, and paragenesis in the San Martín mine, Zacatecas, México: Unpublished M.S. thesis, Colorado School Mines, 90 p.
- Blake, W., McKinnon, S., 1998, San Martín Geotechnical Study, Itasca Consulting Group, Inc, Minneapolis, Minnesota, USA, p. 11 – 22.
- Conagua , 2015, Actualización de la disponibilidad media anual de agua en el acuífero Hidalgo (3202), Estado de Zacatecas, Comisión Nacional del Agua, p. 1-21.
- Damon, P.E., Shafiqullah, M., and Clarck, K.F., 1983, Geochronology of the porphyry copper deposits and related mineralization of México: Canadian Journal Earth Science, v. 20, p. 1052-1071.
- Gonzalez-Partida, 1997, Fluid inclusion of the San Martín Deposit: Unpublished International Company report for Industrial Minera México, S.A. de C.V., v. 25, p. 1-25.
- Graf, A., 1997, Geology and Porphyry-style mineralization of the Cerro de la Gloria stock associated with high-T carbonate-hosted Zn-Cu-Ag (-Pb) mineralization, San Martín District, Zacatecas, México. Unpublished extended thesis abstract presented as internal company report for Industrial Minera México, S. a. de C. V., v. 30, p. 1-30.
- Industrial Minera México S.A. - IMMESA, 2021, Informe de Barrenación Área Mina Nueva, Unidad San Martín, Zacatecas. Industrial Minera México S.A. de C.V., José Luis Escalante Martínez, Carlos Cesar Leura Torres, Luis Alberto Bustos Gutierrez, April 2021, pp. 111.
- Maldonado, D., 2004, Mineralización de Ag, Pb, Cu, Zn, en skarn, asociada a diferentes fases de intrusivos y estructuras en el distrito San Martín. Sombrerete, Zacatecas; México: Industrial Minera México, S. a. de C. V., 2004.
- McDowell, F.W., and Clabaugh, S.E., 1979, Ignimbrites of the Sierra Madre Occidental and their relation to the tectonic history of western México: Geol. Soc. America Spec. Paper 180, p. 113-123.
- McDowell, F.W., and Keizer, R.P., 1977, Timing of mid-Tertiary volcanism in the Sierra Madre Occidental between Durango City and Mazatlan, México: Geol. Soc. America Bull., v. 88, p 1479 – 1487.
- Robin, J.N., and Kyle, J.R., 1988, Mineralogy and Geochemistry of the San Martín Skarn Deposit, Zacatecas, México: Economic Geology, v.83, 1988, p. 1782 – 1801.
- Sanches, J.M., et al., 1997, Internal Document of Grupo México, Unidad San Martín.
- Sanches, J.M., et al., 1998, Internal Document of Grupo México, Unidad San Martín.
- Starling T., 1996, The application of remote sensing and structural analysis to mineral exploration-introduction and case study of the Taxco deposit: (Abstract), II Foro Minero de Jalisco, Guadalajara, (24-25 October).



## 25 Reliance on Information Provided by the Registrant

SRK was provided legal documentation by IMMSA and has relied on that information for the purposes of this section. SRK has relied on this information and disclaims responsibility for its accuracy or any errors or omissions in that information.

The Consultant’s opinion contained herein is based on information provided to the Consultants by IMMSA throughout the course of the investigations. Table 25 1 of this section of the Technical Report Summary will:

- (i) Identify the categories of information provided by the registrant;
- (ii) Identify the particular portions of the Technical Report Summary that were prepared in reliance on information provided by the registrant pursuant to Subpart 1302 (f)(1), and the extent of that reliance; and
- (iii) Disclose why the qualified person considers it reasonable to rely upon the registrant for any of the information specified in Subpart 1302 (f)(1).

**Table 25-1: Reliance on Information Provided by the Registrant**

Category	Report Item/ Portion	Portion of Technical Report Summary	Disclose Why the QP Considers it Reasonable to Rely Upon the Registrant
Legal Opinion	Sub-sections 3.3, 3.4, 3.5, 3.6, and 3.7	Section 3	IMMSA has provided a document summarizing the legal access and rights associated with leased surface and mineral rights. This documentation was reviewed by IMMSA’s legal representatives. The QP is not qualified to offer a legal perspective on IMMSA’s surface and title rights but has summarized this document and had IMMSA personnel review and confirm statements contained therein.