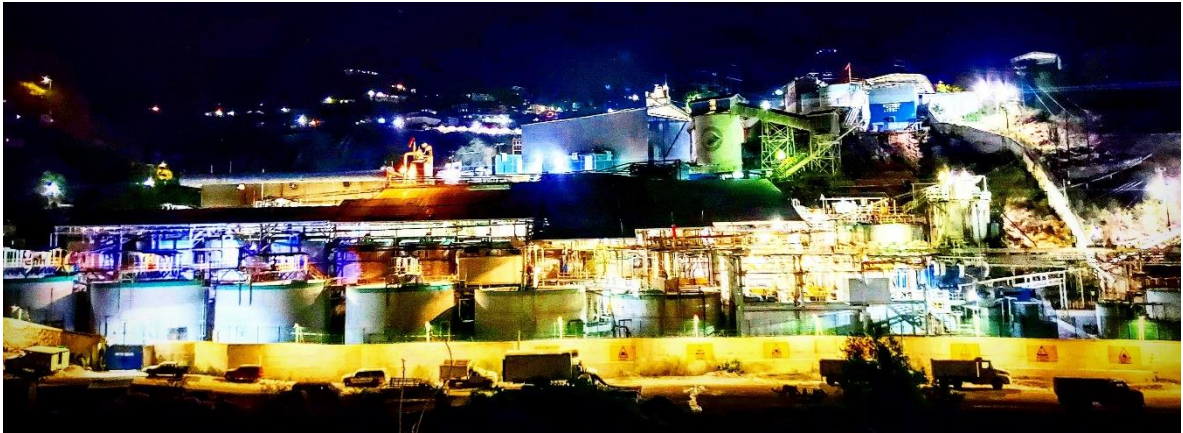




**First Majestic Silver Corp.  
San Dimas Silver/Gold Mine**

**Durango and Sinaloa States, Mexico**

**NI 43-101 Technical Report on  
Mineral Resource and Mineral Reserve Estimates**



**Qualified Persons:**

Ramón Mendoza Reyes, P.Eng.

Joaquín Merino, P.Geo.

María Elena Vázquez, P.Geo.

Persio P. Rosario, P.Eng.

**Report Prepared For:**

First Majestic Silver Corp.

**Report Effective Date**

December 31, 2020

## CERTIFICATE OF QUALIFIED PERSON

Ramón Mendoza Reyes, P.Eng.  
Vice President of Technical Services  
First Majestic Silver Corp.  
925 West Georgia Street, Suite 1800  
Vancouver, BC, Canada, V6C 3L2

I, Ramón Mendoza Reyes, P.Eng., am employed as Vice President of Technical Services with First Majestic Silver Corp. (First Majestic).

This certificate applies to the technical report entitled “San Dimas Silver/Gold Mine, Durango and Sinaloa States, Mexico, NI 43-101 Technical Report on Mineral Resource and Mineral Reserve Estimates” that has an effective date of December 31, 2020.

I graduated from the National Autonomous University of Mexico with a Bachelor of Science Degree in Mining Engineering in 1989, and also obtained a Master of Science Degree in Mining and Earth Systems Engineering from the Colorado School of Mines in Golden, Colorado, in 2003.

I am a member of the Engineers and Geoscientists British Columbia (P.Eng. #158547).

I have practiced my profession continuously since 1990, and have been involved in precious and base metal mine projects and operations in Mexico, Canada, the United States of America, Chile, Peru, and Argentina.

As a result of my experience and qualifications, I am a Qualified Person as defined in National Instrument 43–101 Standards of Disclosure for Mineral Projects (NI 43–101).

I visited the San Dimas Silver/Gold Mine on several occasions during 2018 and 2019. My most recent site inspection was on February 13 and 14, 2020.

I am responsible for Sections 1.1, 1.8.2, 1.9, 1.11 to 1.14, 1.15.8, 1.15.10, 2, 3, 4, 15, 16, 18 to 24, 25.1, 25.7 to 25.9, 25.11 to 25.16, 26.1.8, 26.2.2 and 27 of the Technical Report.

I am not independent of First Majestic as that term is described in Section 1.5 of NI 43–101.

I have been involved with the San Dimas Silver/Gold Mine overseeing technical and operational aspects including mine planning, mining operations and mineral reserves estimation, since the acquisition by First Majestic in May 2018.

I have read NI 43–101, and the sections of the Technical Report for which I am responsible have been prepared in compliance with that Instrument.

As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the sections of the technical report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

*“signed and sealed”*

Ramón Mendoza Reyes, P.Eng.

Dated: March 10, 2021

## CERTIFICATE OF QUALIFIED PERSON

Joaquín J. Merino-M., P. Geo.  
Senior Geologist Consultant  
First Majestic Silver Corp.  
925 West Georgia Street, Suite 1800  
Vancouver, BC, Canada, V6C 3L2

I, Joaquin J. Merino-M., am contracted as Senior Geologist Consultant with First Majestic Silver Corp. (First Majestic).

This certificate applies to the technical report entitled “San Dimas Silver/Gold Mine, Durango and Sinaloa States, Mexico, NI 43-101 Technical Report on Mineral Resource and Mineral Reserve Estimates” that has an effective date of December 31, 2020.

I graduated from the University of Seville, Spain, with a Bachelor in Geological Sciences degree in 1991, and obtained a Master of Science degree in Economic Geology from Queens University, ON, Canada, in 2000.

I am a member of the Association of Professional Geoscientists of Ontario (P.Ge. #1652).

I have practiced my profession continuously since 1993. I have held technical positions working with resource estimation, mineral exploration, project evaluation, geological modeling, mine production and reconciliation matters with projects and operations in Canada, Mexico, Peru, Ecuador, Chile, Bolivia, Brazil, Colombia, Venezuela, Argentina, Australia, Papua New Guinea, Spain, Portugal, and Finland.

As a result of my experience and qualifications, I am a Qualified Person as defined in National Instrument 43–101 Standards of Disclosure for Mineral Projects (NI 43–101).

I visited the San Dimas Silver/Gold Mine on a monthly regular basis from 2016 to 2019. My most recent rotation and site inspection was from November 21 to December 20, 2019.

I am responsible for Sections 1.2 to 1.5, 1.8.1, 1.15.1, 1.15.3, 1.15.4, 5 to 10, 14, 25.2, 25.3, 25.6, 26.1.1, 26.1.3 and 26.1.4 of the Technical Report.

I am not independent of First Majestic as that term is described in Section 1.5 of NI 43–101.

I have been involved with the San Dimas Silver-Gold Mine overseeing technical and operational aspects including exploration, target generation, mine reconciliation, and mineral resources estimation, since 2016.

I have read NI 43–101, and the sections of the Technical Report for which I am responsible have been prepared in compliance with that Instrument.

As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the sections of the technical report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

*“signed and sealed”*

Joaquin J. Merino-M., P.Ge.

Dated: March 10, 2021

**CERTIFICATE OF QUALIFIED PERSON**

María Elena Vázquez Jaimes, P. Geo.  
Geological Database Manager,  
First Majestic Silver Corp.  
925 West Georgia Street, Suite 1800  
Vancouver, BC, Canada, V6C 3L2

I, María Elena Vázquez Jaimes, P. Geo., am employed as Geological Database Manager with First Majestic Silver Corp. (First Majestic).

This certificate applies to the technical report entitled “San Dimas Silver/Gold Mine, Durango and Sinaloa States, Mexico, NI 43-101 Technical Report on Mineral Resource and Mineral Reserve Estimates” that has an effective date of December 31, 2020 (the Technical Report).

I graduated from the National Autonomous University of Mexico with a Bachelor in Geological Engineering degree in 1995 and obtained a Master of Science degree in Geology from the “Ensenada Center for Scientific Research and Higher Education”, Ensenada, BC, Mexico, in 2000.

I am a member of the Engineers and Geoscientists British Columbia (P. Geo. #35815).

I have practiced my profession continuously since 1995. I have held technical positions working with geological databases, conducting quality assurance and quality control programs, managing geological databases, performing data verification activities, and conducting and supervising logging and sampling procedures for mining companies with projects and operations in Canada, Mexico, Peru, Ecuador, Brazil, Colombia and Argentina. I have served as the Geologic Database Manager for First Majestic since 2013, and I direct the QAQC programs, sampling and assay procedures, and database verification for all their mines in Mexico.

As a result of my experience and qualifications, I am a Qualified Person as defined in National Instrument 43–101 Standards of Disclosure for Mineral Projects (NI 43–101).

I visited the San Dimas Silver-Gold Mine on several occasions in 2019 and 2020. My most recent site inspection was from February 24 to February 28, 2020.

I am responsible for Sections 1.6, 1.15.2, 11, 12, 25.4, and 26.1.2 of the Technical Report.

I am not independent of First Majestic as that term is described in Section 1.5 of NI 43–101.

I have been directly involved with the San Dimas Silver-Gold Mine in my role as the Geological Database Manager since 2019.

I have read NI 43–101, and the sections of the Technical Report for which I am responsible have been prepared in compliance with that Instrument.

As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the sections of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed in order to make the Technical Report not misleading.

*“signed and sealed”*

Maria Elena Vazquez Jaimes, P. Geo.

Dated: March 10, 2021

## CERTIFICATE OF QUALIFIED PERSON

Persio Pellegrini Rosario, P.Eng.  
Vice President of Processing, Metallurgy & Innovation  
First Majestic Silver Corp.  
925 West Georgia Street, Suite 1800  
Vancouver, BC, Canada, V6C 3L2

I, Persio Pellegrini Rosario, P.Eng., am employed as Vice President of Processing, Metallurgy & Innovation with First Majestic Silver Corp. (First Majestic).

This certificate applies to the technical report “San Dimas Silver/Gold Mine, Durango and Sinaloa States, Mexico, NI 43-101 Technical Report on Mineral Resource and Mineral Reserve Estimates” that has an effective date of December 31, 2020.

I am a graduate of the University of British Columbia, where, in 2003 and 2010, respectively, I obtained a Master in Applied Sciences (MAsc) and the Doctor in Philosophy (PhD) degrees in Mineral Processing through the Mining and Mineral Processing Department.

I am a member of the Engineers and Geoscientists British Columbia (P.Eng. # 32355).

I have practiced my profession continuously since 2003 and acquired extensive experience in the design and optimization of mineral processing flowsheets through the elaboration and management of metallurgical test programs and the interpretation of their results. I have been involved in precious and base metal mine projects and operations in Mexico, Canada, the United States of America, Brazil, Chile, Peru, Argentina, and Russia.

As a result of my experience and qualifications, I am a Qualified Person as defined in National Instrument 43–101 Standards of Disclosure for Mineral Projects (NI 43–101).

I carried out a site inspection of the San Dimas Silver/Gold Mine on August 20, 2019.

I am responsible for sections 1.7, 1.10, 1.15.5 to 1.15.7, 1.15.9, 13, 17, 25.5, 25.10, 26.1.5 to 26.1.7 and 26.2.1 of the Technical Report.

I am not independent of First Majestic as that term is described in Section 1.5 of NI 43–101.

I have been involved with the San Dimas Silver/Gold Mine overseeing technical and operational aspects including processing and metallurgy, since joining First Majestic in January 5, 2021. Prior to that, I was involved in modernization projects in 2019 as a technical consultant for First Majestic.

I have read NI 43–101, and the sections of the Technical Report for which I am responsible have been prepared in compliance with that Instrument.

As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the sections of the technical report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

*“signed and sealed”*

Persio Pellegrini Rosario, P.Eng.

Dated: March 10, 2021

## Table of Contents

1. SUMMARY .....	1
1.1. Project Description, Location and Access .....	1
1.1.1. Property Description, Ownership, and Location .....	1
1.1.2. Mineral Tenure, Royalties, and Surface Rights, and Permitting .....	1
1.1.3. Accessibility, Local Resources, Infrastructure and Physiography.....	2
1.2. History .....	3
1.2.1. Ownership History.....	3
1.2.2. Production History .....	3
1.3. Geological Setting, Mineralization and Deposit Types.....	3
1.3.1. Regional Geology.....	3
1.3.2. Local Geology and Volcanogenic Stratigraphy .....	4
1.3.3. Intrusive Rocks .....	4
1.3.4. Structural Geology.....	4
1.3.5. Mineralization .....	5
1.3.6. Mineral Deposits .....	5
1.3.7. Deposit Types .....	6
1.4. Exploration .....	6
1.5. Drilling .....	7
1.6. Sampling, Analysis and Data Verification.....	7
1.6.1. Sampling Methods .....	7
1.6.2. Density.....	8
1.6.3. Laboratories .....	8
1.6.4. Sample Preparation.....	8
1.6.5. Analysis.....	9
1.6.6. Quality Assurance and Quality Control .....	9
1.6.7. Data Verification.....	9
1.7. Mineral Processing and Metallurgical Testing .....	10
1.8. Mineral Resource and Mineral Reserve Estimates .....	11
1.8.1. Mineral Resource Estimates.....	11
1.8.2. Mineral Reserve Estimates.....	15
1.9. Mining Operations.....	18
1.10. Processing and Recovery Operations.....	19
1.11. Infrastructure, Permitting and Compliance Activities.....	19
1.11.1. Infrastructure .....	19
1.11.2. Permitting.....	20
1.11.3. Compliance.....	21
1.12. Capital and Operating Costs.....	21
1.13. Economic Analysis Supporting Mineral Reserve Declaration .....	22
1.14. Conclusions .....	22
1.15. Recommendations .....	22
1.15.1. Exploration .....	22
1.15.2. Production Channel Samples .....	23

1.15.3.	Resource Estimation using Polygonal Method.....	23
1.15.4.	Reconciliation .....	23
1.15.5.	Expansion of the Leaching Circuit .....	23
1.15.6.	Fine Grinding .....	24
1.15.7.	Tailings Filtering- Phase 1.....	24
1.15.8.	“Cuevecillas” Water Storage Dam.....	24
1.15.9.	Tailings Filtering – Phase 2 .....	24
1.15.10.	“Cuevecillas” Water Storage Dam – Phase 2 .....	24
2.	INTRODUCTION .....	25
2.1.	Terms of Reference .....	25
2.2.	Cut-off and Effective Dates .....	25
2.3.	Qualified Persons .....	25
2.4.	Site Visits .....	25
2.5.	Sources of Information.....	26
2.6.	Previously Filed Technical Reports.....	26
2.7.	Units, Currency and Abbreviations .....	27
3.	RELIANCE ON OTHER EXPERTS.....	28
4.	PROPERTY DESCRIPTION AND LOCATION .....	29
4.1.	Location.....	29
4.2.	Ownership .....	29
4.3.	Mineral Tenure.....	29
4.4.	Royalties .....	39
4.5.	Surface Rights.....	39
4.6.	Permitting Considerations.....	40
4.7.	Environmental Considerations.....	40
4.8.	Existing Environmental Liabilities.....	40
4.9.	Significant Factors and Risks .....	40
5.	ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE, AND PHYSIOGRAPHY...	41
5.1.	Accessibility .....	41
5.2.	Climate .....	43
5.3.	Local Resources and Infrastructure.....	44
5.4.	Physiography.....	44
5.5.	Comment on Section 5.....	45
6.	HISTORY.....	46
6.1.	Ownership History.....	46
6.2.	Exploration History.....	47
6.3.	Production History .....	49
7.	GEOLOGICAL SETTING AND MINERALIZATION.....	51
7.1.	Regional Geology.....	51
7.2.	Local Geology .....	53
7.2.1.	Stratigraphy.....	53
7.2.2.	Lower Volcanic Complex (LVC).....	54
7.2.3.	Upper Volcanic Group (UVG) .....	55
7.2.4.	Intrusive Rocks .....	55

7.2.5.	Structural Geology.....	55
7.3.	Mineralization .....	58
7.4.	Deposit Descriptions .....	61
7.4.1.	West Block.....	65
7.4.2.	Graben Block .....	66
7.4.3.	Central Block .....	67
7.4.4.	Tayoltita Block .....	68
7.4.5.	Santa Rita Area .....	69
7.4.6.	El Cristo Area .....	70
7.4.7.	Alto De Arana Area.....	71
7.4.8.	San Vicente Area .....	72
7.4.9.	Ventanas Prospect.....	73
7.5.	Comments on Section 7 .....	73
8.	MINERAL DEPOSIT TYPES .....	74
8.1.	Geological Setting.....	74
8.2.	Mineralization .....	74
8.3.	Alteration .....	75
8.4.	Applicability of the Low-Sulphidation Epithermal Model to San Dimas .....	75
8.5.	Comments on Section 8 .....	78
9.	EXPLORATION.....	79
9.1.	Introduction .....	79
9.2.	Grids and Surveys.....	80
9.3.	Geological Mapping.....	81
9.3.1.	Surface Geological Mapping.....	81
9.3.2.	Underground Geological Mapping.....	83
9.4.	Geochemical Sampling .....	84
9.5.	Geophysics .....	88
9.6.	Remote Sensing.....	89
9.7.	Tunnelling.....	91
9.8.	Petrology, Mineralogy, and Research studies.....	92
9.9.	Exploration Potential.....	93
10.	DRILLING.....	94
10.1.	Drill Methods.....	95
10.2.	Drill Hole Logging Procedure.....	100
10.3.	Core Recovery .....	100
10.4.	Collar Survey.....	100
10.5.	Downhole Survey .....	100
10.6.	Geotechnical Drilling .....	101
10.7.	Drill Core Interval Length/True Thickness.....	101
10.8.	Comments on Section 10 .....	102
11.	SAMPLE PREPARATION, ANALYSES AND SECURITY .....	103
11.1.	Sampling Methods .....	103
11.1.1.	Channel.....	103
11.1.2.	Core .....	103



11.2.	Density.....	104
11.3.	Laboratories .....	104
11.4.	Sample Preparation and Analysis.....	105
11.4.1.	Sample Preparation.....	105
11.4.2.	Analysis.....	105
11.5.	Quality Assurance and Quality Control .....	107
11.5.1.	Overview .....	107
11.5.2.	SRMs/CRMs .....	107
11.5.3.	Blanks .....	109
11.5.4.	Inter-Laboratory Bias Assessment (Check Assays).....	112
11.5.5.	Databases .....	114
11.6.	Sample Security.....	114
11.6.1.	Channel Samples .....	114
11.6.2.	Drill Core Samples .....	114
11.7.	Comment on Section 11.....	115
12.	DATA VERIFICATION .....	116
12.1.	Legacy Data .....	116
12.2.	First Majestic.....	116
12.3.	Site Visits .....	117
12.4.	Comment on Section 12.....	117
13.	METALLURGICAL TESTING.....	118
13.1.	Overview .....	118
13.2.	Metallurgical Testing.....	118
13.2.1.	Mineralogy .....	118
13.2.2.	Monthly Composite Samples .....	119
13.2.3.	Sample Preparation.....	119
13.3.	Comminution Evaluations .....	119
13.4.	Cyanidation, Reagent and Grind Size Evaluations.....	120
13.5.	Oxidant Studies .....	121
13.6.	Extra-Fine Grinding.....	123
13.7.	Recovery Estimates .....	124
13.8.	Metallurgical Variability .....	126
13.9.	Deleterious Elements .....	127
14.	MINERAL RESOURCE ESTIMATES .....	128
14.1.	Introduction .....	128
14.2.	Block Model-Based Mineral Resource Estimation .....	128
14.2.1.	Overview .....	128
14.2.2.	Sample Database .....	129
14.2.3.	Geological Interpretation and Modeling.....	129
14.2.4.	Exploratory Sample Data Analysis.....	133
14.2.5.	Composite Sample Preparation .....	134
14.2.6.	Evaluation of Composite Sample Outlier Values.....	137
14.2.7.	Variography .....	137
14.2.8.	Bulk Density.....	140

14.2.9.	Resource Estimation Process .....	140
14.2.10.	Block Model Validation .....	143
14.2.11.	Mineral Resource Classification .....	148
14.3	Polygonal Method for Resource Estimation .....	150
14.3.1	Polygonal Estimation of Tonnage and Grade .....	151
14.3.2	Mineral Resource Classification for the Polygonal Method Estimates .....	152
14.4	Reasonable Prospects for Eventual Economic Extraction .....	152
14.5	Mineral Resource Estimate Statement .....	153
14.6	Factors that May Affect the Mineral Resource Estimate .....	156
14.7	Comments on Section 14 .....	156
15.	MINERAL RESERVES ESTIMATES.....	157
15.1.	Methodology .....	157
15.2.	Net Smelter Revenue and Cut-off Grades.....	158
15.3.	Block Model Preparation.....	160
15.4.	Dilution.....	161
15.5.	Mining Loss.....	162
15.6.	Mineral Reserve Estimates.....	164
15.7.	Mineral Reserves Statement .....	165
15.8.	Factors that May Affect the Mineral Reserve Estimates .....	167
16.	MINING METHODS .....	168
16.1.	General Description.....	168
16.2.	Mining Methods and Mine Design .....	169
16.2.1.	Geotechnical and Hydrogeological Considerations .....	169
16.2.2.	Development and Access .....	171
16.2.3.	Mining Methods and Stope Design .....	173
16.2.4.	Ore and Waste Haulage .....	175
16.3.	Mine Services .....	175
16.3.1.	Ventilation .....	175
16.3.2.	Backfill .....	177
16.3.3.	Dewatering.....	177
16.3.4.	Water Supply .....	178
16.3.5.	Power Supply.....	179
16.3.6.	Compressed Air .....	179
16.3.7.	Explosives .....	179
16.4.	Production and Scheduling .....	179
16.4.1.	Development Schedule .....	179
16.4.2.	Production Schedule .....	180
16.4.1.	Equipment and Manpower .....	181
17.	RECOVERY METHODS .....	183
17.1.	Introduction .....	183
17.1.1.	Process Flowsheet.....	183
17.2.	Processing Plant Configuration .....	185
17.2.1.	Plant Feed.....	185
17.2.2.	Crushing.....	186

17.2.3.	Grinding .....	186
17.2.4.	Sampling .....	187
17.2.5.	Cyanide Leaching circuit.....	187
17.2.6.	Counter Current Decantation System .....	188
17.2.7.	Merrill Crowe and Precipitate Handling.....	189
17.2.8.	Tailings Management .....	189
18.	INFRASTRUCTURE.....	191
18.1.	Local Infrastructure .....	191
18.2.	Transportation and Logistics .....	191
18.3.	Waste Rock Storage Facilities.....	192
18.4.	Tailings Storage Facilities .....	192
18.5.	Camps and Accommodation .....	193
18.6.	Power and Electrical.....	193
18.7.	Communications .....	195
18.8.	Water Supply.....	196
19.	MARKET CONSIDERATION AND CONTRACTS .....	197
19.1.	Market Considerations.....	197
19.2.	Commodity Price Guidance.....	197
19.3.	Product and Sales Contracts .....	198
19.4.	Streaming Agreement .....	198
19.5.	Deleterious Elements .....	198
19.6.	Supply and Services Contracts .....	198
19.7.	Comments on Section 19 .....	199
20.	ENVIRONMENTAL STUDIES, PERMITTING, AND SOCIAL OR COMMUNITY IMPACT .....	200
20.1.	General.....	200
20.2.	Environmental Studies, Permits and Issues .....	200
20.2.1.	Surface Hydrology .....	201
20.2.2.	Surface Water Geochemistry .....	201
20.2.3.	Hydrogeology .....	201
20.2.4.	Soil.....	201
20.2.5.	Air Quality.....	202
20.2.6.	Noise.....	202
20.2.7.	Flora and Fauna .....	202
20.2.8.	Social and Cultural Baseline Studies.....	202
20.2.9.	Historical and Cultural Aspects .....	203
20.3.	Tailings Handling and Disposal .....	203
20.4.	Waste Material Handling and Disposal .....	204
20.5.	Mine Effluent Management .....	204
20.6.	Process Water Management.....	204
20.7.	Hazardous Waste Management.....	204
20.8.	Monitoring.....	205
20.9.	Permits .....	206
20.10.	Closure Plan.....	208
20.11.	Corporate Social Responsibility.....	210

20.11.1. Ejidors .....	210
21. CAPITAL AND OPERATING COST.....	212
21.1. Capital Costs .....	212
21.2. Operating Costs .....	212
22. ECONOMIC ANALYSIS.....	214
23. ADJACENT PROPERTIES .....	214
24. OTHER RELEVANT DATA AND INFORMATION.....	214
25. INTERPRETATION AND CONCLUSIONS.....	215
25.1. Mineral Tenure, Surface Rights and Agreements .....	215
25.2. Geology and Mineralization .....	215
25.3. Exploration and Drilling.....	215
25.4. Data Analysis .....	216
25.5. Metallurgical Testwork.....	216
25.6. Mineral Resource Estimates.....	217
25.7. Mineral Reserve Estimates.....	218
25.8. Mine Plan .....	218
25.9. Operations Continuity .....	219
25.10. Processing.....	219
25.11. Infrastructure .....	219
25.12. Markets and Contracts.....	220
25.13. Permitting, Environmental and Social Considerations.....	220
25.14. Capital and Operating Cost Estimates.....	220
25.15. Economic Analysis Supporting Mineral Reserve Declaration .....	221
25.16. Conclusions .....	221
26. RECOMMENDATIONS.....	222
26.1. Phase 1 .....	222
26.1.1. Exploration .....	222
26.1.2. Production Channel Samples .....	222
26.1.3. Resource Estimation using Polygonal Method.....	223
26.1.4. Reconciliation .....	223
26.1.5. Expansion of the CCD Circuit.....	223
26.1.6. Fine Grinding .....	223
26.1.7. Tailings Filtering.....	224
26.1.8. “Cuevecillas” Water Storage Dam.....	225
26.2. Phase 2 .....	225
26.2.1. Tailings Filtering.....	225
26.2.2. “Cuevecillas” Water Storage Dam.....	225
27. REFERENCES .....	226

## List of Tables

Table 1-1: Input Parameters for Evaluation of Reasonable Prospects of Eventual Economic Extraction. ....	13
Table 1-2: San Dimas Measured and Indicated Mineral Resource Estimate (effective date December 31, 2020) .....	14
Table 1-3: San Dimas Inferred Mineral Resource Estimate (effective date December 31, 2020) ....	14
Table 1-4: Economic Parameters assumed for calculation of NSR. ....	15
Table 1-5: San Dimas Mineral Reserves Statement (Effective Date December 31, 2020).....	17
Table 1-6 San Dimas Life-of-Mine Development Schedule.....	18
Table 1-7 San Dimas Life-of-Mine Production Schedule.....	19
Table 1-8: San Dimas Mining Capital Costs Summary (Sustaining Capital).....	21
Table 1-9: San Dimas Operating Costs .....	22
Table 1-10: San Dimas Annual Operating Costs.....	22
Table 2-1: Site Visit Dates and Scope of Personal Inspection .....	26
Table 2-2: List of Abbreviations and Units .....	27
Table 4-1: Summary of the Six Concessions Group, San Dimas Mine.....	35
Table 4-2: San Dimas Concessions Group List.....	36
Table 4-3: Candelerio Concessions Group List.....	37
Table 4-4: Ventanas Concession Group List.....	38
Table 4-5: Lechuguillas Concessions Group List.....	38
Table 4-6: Cebollas Concessions Group List.....	39
Table 4-7: Truchas Concessions Group List.....	39
Table 6-1: Summary History of San Dimas Property.....	46
Table 6-2: San Dimas Monthly Production After First Majestic’s Acquisition .....	50
Table 7-1: List of Veins by Mine Zone in the San Dimas and Ventanas Concessions Groups .....	62
Table 10-1: Distribution of Exploration Drilling in San Dimas by Mine Zone.....	94
Table 10-2: Representative Drill Hole Intercepts, Jael, Jessica, Regina, and Robertita Veins.....	99
Table 11-1: Laboratories .....	105
Table 11-2: Analytical Methods .....	106
Table 11-3: Summary of Inter-Laboratory Bias Check Results.....	112
Table 13-1: Grindability Test Results for Different Composite Samples (2020) .....	120
Table 13-2: Metallurgical Recoveries achieved in San Dimas 2018-2020.....	125
Table 14-1: Mineral Resource Estimation and Modelling Methods by Mine Zone .....	128
Table 14-2: Diamond Drill Hole and Production Channel Data by Mine Zone, San Dimas.....	129
Table 14-3: Percentage of Composite Samples Capped by Domain .....	137
Table 14-4: Remaining Metal content by Domain after Capping.....	137
Table 14-5: Summary of Ag-Au Estimation Parameters for the San Dimas Block Models .....	141
Table 14-6: Input Parameters for Evaluation of Reasonable Prospects of Eventual Economic Extraction. ....	153
Table 14-7: San Dimas Measured and Indicated Mineral Resource Estimate .....	155
Table 14-8: San Dimas Inferred Mineral Resource Estimate (effective date December 31, 2020) .....	155
Table 15-1: Economic Parameters Assumed for Calculation of NSR.....	159

Table 15-2: Initial Cut-Off Grade Applied to Longhole.....	159
Table 15-3: Initial Cut-Off Grade Applied to Cut-and-Fill.....	160
Table 15-4: Dilution and Mining Loss Parameters .....	164
Table 15-5: San Dimas Mineral Reserves Statement (effective date December 31, 2020) .....	166
Table 16-1: San Dimas Geotechnical Units .....	169
Table 16-2: Development Profiles.....	171
Table 16-3: San Dimas Development 2018 to 2020.....	172
Table 16-4: Fresh Air Requirement .....	177
Table 16-5: San Dimas Life-of-Mine Development Schedule.....	180
Table 16-6: San Dimas Life-of-Mine Production Schedule.....	181
Table 16-7: Breakdown of Personnel as of December 2020.....	181
Table 16-8: Equipment Summary as of December 2020 .....	182
Table 17-1: Leach Time Retention Time in the San Dimas Plant .....	188
Table 19-1: Metal Prices Used for the June 2020 Mineral Resource and Mineral Reserve Estimates .....	197
Table 20-1: Summary of Surface Hydrology Studies.....	201
Table 20-2: Summary of Surface Water Studies .....	201
Table 20-3: Summary of Soil Sampling Studies .....	201
Table 20-4: Air Quality Studies.....	202
Table 20-5: Noise Impact Studies.....	202
Table 20-6: Flora and Fauna Studies .....	202
Table 20-7: Summary of Social Studies .....	203
Table 20-8: Tailings and Waste Rock Studies.....	204
Table 20-9: Environmental Monitoring Activities .....	205
Table 20-10: Major Permits Issued .....	207
Table 20-11: Permits in Process.....	208
Table 20-12: Closure Cost Estimate 2020 .....	209
Table 21-1: San Dimas Mining Capital Costs Summary (Sustaining Capital).....	212
Table 21-2: San Dimas Operating Costs .....	213
Table 21-3: San Dimas Annual Operating Costs.....	213

## List of Figures

Figure 4-1: Location Map, San Dimas mine.....	29
Figure 4-2: Map of the Concession Outlines for the San Dimas Mine .....	30
Figure 4-3: Map of the San Dimas Concessions Group .....	31
Figure 4-4: Map of the Candelerito Concessions Group .....	32
Figure 4-5: Map of the Ventanas Concessions Group.....	33
Figure 4-6: Map of the Lechuguillas Concessions Group .....	33
Figure 4-7: Map of the Cebollas Concessions Group .....	34
Figure 4-8: Map of the Truchas Concessions Group .....	34
Figure 5-1: Road Access to San Dimas mine .....	42
Figure 5-2: Access Road from San Ignacio to Tayoltita .....	43
Figure 5-3: Processing Plant, Airstrip and Rugged Terrain, Aerial View looking East .....	44
Figure 6-1: Map showing Mining Tunnels at the Time the Property was Acquired by Wheaton River .....	48
Figure 6-2: San Dimas Production from 2003 to 2020.....	49
Figure 7-1: Physiographic Provinces around the San Dimas Mining District .....	51
Figure 7-2: Regional Geological Map of Central Sierra Madre Occidental .....	52
Figure 7-3: Stratigraphic Column, San Dimas District .....	53
Figure 7-4: Geological Map of San Dimas Mining District.....	54
Figure 7-5: Structural Map of San Dimas Concessions Group.....	56
Figure 7-6: Geological Section Across the San Dimas Concessions Group .....	57
Figure 7-7: The Jessica Vein Within the Favourable Zone, Vertical Section .....	59
Figure 7-8: Paragenetic Vein Sequence, San Dimas.....	60
Figure 7-9: Roberta Vein, Central Block, San Dimas .....	61
Figure 7-10: Deposit Geology Map .....	63
Figure 7-11: Vein Map, San Dimas .....	64
Figure 7-12: Longitudinal section, San Antonio Vein, West Block, San Dimas.....	65
Figure 7-13: Longitudinal Section, Victoria Vein, Graben Block, San Dimas.....	66
Figure 7-14: Longitudinal Section, Pozolera Vein, Central Block, San Dimas.....	67
Figure 7-15: Longitudinal Section, San Luis Vein, Tayoltita Block, San Dimas .....	68
Figure 7-16: Longitudinal Section, Magdalena Vein, Santa Rita Area, San Dimas .....	69
Figure 7-17: Longitudinal Section, Camichin Vein, El Cristo Area, San Dimas .....	70
Figure 7-18: Longitudinal Section, Alto de Arana Vein, Alto de Arana Area, San Dimas .....	71
Figure 7-19: Longitudinal section, San Vicente Vein, San Vicente Area, San Dimas.....	72
Figure 8-1: Genetic Model for Epithermal Deposits .....	75
Figure 8-2: Geochemical Zonation model San Dimas .....	77
Figure 8-3: Example Section of the Favourable Zone for Mineralization, San Dimas.....	78
Figure 9-1: San Dimas Concessions Group.....	79
Figure 9-2: Areas Explored in San Dimas Project in 2020 .....	80
Figure 9-3: Geological Map, San Dimas Project .....	82
Figure 9-4: Geological Map, Ventanas Area.....	83
Figure 9-5: Geological Map, Jessica Vein .....	84
Figure 9-6: Surface Gold Anomaly Map, San Dimas Area .....	85

Figure 9-7: Longitudinal Section for Luz-Reyes Vein showing Gold Isograds, San Dimas Area .....	86
Figure 9-8: Geological Map and Gold-Equivalent Anomalies, Ventanas Area .....	87
Figure 9-9: Magnetic Field Reduced to Pole, San Dimas Mining Area .....	89
Figure 9-10: Aster Image, San Dimas Mining Area.....	90
Figure 9-11: Satellite Image Magnetic Tilt Derivative Inversion and Alteration, San Dimas Area ....	91
Figure 9-12: Main Mining Tunnels, San Dimas Mining Area .....	92
Figure 10-1: Plan view of drilling at San Dimas by Mine Zones .....	96
Figure 10-2: Vertical Section, Jael Vein .....	97
Figure 10-3: Vertical Section, Jessica Vein .....	97
Figure 10-4: Vertical Section, Regina Vein .....	98
Figure 10-5: Vertical Section, Robertita Vein .....	99
Figure 10-6: Vertical Section and Plan View, Jessica Vein Drilling Setup .....	102
Figure 11-1: Example of 2019 High-Grade SRM Gold and Silver Standard Charts, San Dimas Laboratory .....	109
Figure 11-2: Example of 2019 Time Sequence Blank Performance Charts, San Dimas Laboratory	111
Figure 11-3: Inter-Laboratory Bias Check, San Dimas and Central Laboratories .....	113
Figure 13-1: Typical Distribution of Minerals.....	119
Figure 13-2: Comparison of Au & Ag Extractions Between Mill and Laboratory Performances ....	121
Figure 13-3: Comparative Results at Bench Scale: Plant Conditions Versus Oxidant Addition – 2018 .....	122
Figure 13-4: Comparative Results at Bench Scale: Plant Conditions Versus Oxidant Addition – 2019 .....	123
Figure 13-5: Comparative Results Using an Extra-Fine Particle Size.....	124
Figure 13-6: Histogram of Daily Metallurgical Recovery of Silver from Jan-2018 to Dec 2020 .....	125
Figure 13-7: Histogram of Daily Metallurgical Recovery of Gold from Jan-2018 to Dec 2020 .....	126
Figure 14-1: Plan-view Location of Estimation Domains by Mine Zone .....	130
Figure 14-2: Faulted Geological Model for the Jael Vein, Vertical and Plan Views .....	131
Figure 14-3: Faulted Geological Model for the Jessica Vein, Vertical and Plan Views.....	131
Figure 14-4: Faulted Geological Model for the Regina Vein, Vertical and Plan Views.....	132
Figure 14-5: Faulted Geological Model for the Robertita Vein, Vertical and Plan Views .....	133
Figure 14-6: Example of Hard Boundary Contact Analysis for Silver for the Jessica Vein. ....	134
Figure 14-7: Sample Interval Lengths, Composited vs. Uncomposited, Jessica Vein.....	135
Figure 14-8: Sample Interval Lengths, Composited vs. Uncomposited, Jael Vein .....	135
Figure 14-9: Sample Interval Lengths, Composited vs. Uncomposited, Regina Vein .....	136
Figure 14-10: Sample Interval Lengths, Composited vs. Uncomposited, Robertita Vein .....	136
Figure 14-11: Variogram Model for the Jessica Vein .....	138
Figure 14-12: Variogram Model for the Jael Vein .....	138
Figure 14-13: Variogram Model for the Regina Vein .....	139
Figure 14-14: Variogram Model for the Robertita Vein.....	139
Figure 14-15: Estimation Passes for the Jael Vein, Vertical Section .....	141
Figure 14-16: Estimation Passes for the Jessica Vein, Vertical Section.....	142
Figure 14-17: Estimation Passes for the Regina Vein, Vertical Section.....	142
Figure 14-18: Estimation Passes for the Robertita Vein, Vertical Section .....	143
Figure 14-19: Jael Ag Block Model and Composite Sample Values, Vertical Section .....	144



Figure 14-20: Jessica Ag Block Model and Composite Sample Values, Vertical Section.....	144
Figure 14-21: Regina Ag Block Model and Composite Sample Values, Vertical Section.....	145
Figure 14-22: Robertita Ag Block Model and Composite Sample Values, Vertical Section .....	145
Figure 14-23: Swath Plot in Y across the Jael Vein, Ag Values .....	146
Figure 14-24: Swath Plot in Y across the Jessica Vein, Ag Values .....	146
Figure 14-25: Swath Plot in Y across the Regina Vein, Ag Values .....	147
Figure 14-26: Swath Plot in Y across the Robertita Vein, Ag Values .....	147
Figure 14-27: Measured, Indicated, and Inferred Mineral Resource Confidence Assignments, Jael Vein .....	149
Figure 14-28: Measured, Indicated, and Inferred Mineral Resource Confidence Assignments, Jessica Vein .....	149
Figure 14-29: Measured, Indicated, and Inferred Mineral Resource Confidence Assignments, Regina Vein .....	150
Figure 14-30: Measured, Indicated, and Inferred Mineral Resource Confidence Assignments, Robertita Vein .....	150
Figure 14-31: Distribution of Polygonal Resources by Mine Zone.....	151
Figure 14-32: Example of 2D Polygons in a Schematic Long Section .....	152
Figure 15-1: Schematic Example of Dilution .....	162
Figure 15-2: Dilution and Mining Loss (longhole mining methods) .....	163
Figure 15-3: Dilution and Ore Loss (cut-and-fill mining method) .....	164
Figure 16-1: San Dimas Mining Areas .....	168
Figure 16-2: Typical Ground Support Patterns.....	170
Figure 16-3: Jessica Vein Access Development .....	172
Figure 16-4: Cut-and-Fill Long Section Schematic.....	173
Figure 16-5: Longhole Uphole Stope Section .....	174
Figure 16-6: Ventilation System .....	176
Figure 16-7: Pumps Station Typical Arrangement .....	178
Figure 17-1: San Dimas Schematic Crushing Plant Flowsheet .....	184
Figure 17-2: San Dimas Processing Plant Flowsheet.....	185
Figure 18-1: San Dimas Infrastructure Map.....	191
Figure 18-2: Tailings Storage Facility – Overall Plan Site.....	193
Figure 18-3: Las Truchas Dam - Aerial View .....	194
Figure 18-4: Las Truchas Hydroelectric Plant.....	194
Figure 18-5: San Dimas Energy Consumption .....	195
Figure 26-1: Dual Circuit with Stirred Mill for Partial Secondary Grinding .....	224

## **1. SUMMARY**

Mr. Ramón Mendoza Reyes, Mr. Joaquín Merino, Ms. María Elena Vázquez and Mr. Persio P. Rosario prepared this technical report (the Report) on the San Dimas Silver/Gold Mine (the San Dimas mine or the Project), located in the state of Durango, Mexico. The mine is owned and operated by Primero Empresa Minera, S.A. de C.V. (Primero Empresa), which is an indirectly wholly-owned subsidiary of First Majestic Silver Corp. (First Majestic). First Majestic acquired the San Dimas mine from Primero Mining Corp. in May 2018.

The Report provides information on Mineral Resource and Mineral Reserve estimates, and mine and process operations and planning for the San Dimas mine. The Mineral Resource and Mineral Reserve estimates are reported in accordance with the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Definition Standards for Mineral Resources and Mineral Reserves (May 2014; the 2014 CIM Definition Standards).

### **1.1. Project Description, Location and Access**

#### **1.1.1. Property Description, Ownership, and Location**

The San Dimas Silver/Gold mine (San Dimas mine) is an underground silver and gold mine which First Majestic acquired in 2018 from Primero Mining Corp. The mine is operated by Primero Empresa Minera, S.A. de C.V. (Primero Empresa) which is an indirectly wholly-owned subsidiary of First Majestic Silver Corp. (First Majestic).

The San Dimas mine is located near the town of Tayoltita on the borders of the States of Durango and Sinaloa, approximately 125 km northeast of Mazatlán, Sinaloa, and 150 km west of the city of Durango, in Durango State, Mexico. The San Dimas mine is centered on latitude 24°06'38"N and longitude 105°55'36"W.

Mining operations can be conducted year-round in the San Dimas mine.

#### **1.1.2. Mineral Tenure, Royalties, and Surface Rights, and Permitting**

The San Dimas mine consists of 119 individual concessions covering 71,839 ha in total that have been organized into six groups of concessions: the San Dimas, Candelero, Ventanas, Lechuguillas, Cebollas and Truchas concessions groups.

In 2013, the Mexican Federal government introduced a mining royalty, effective January 1, 2014, based on 7.5% of taxable earnings before interest and depreciation. In addition, precious metal mining companies must pay a 0.5% royalty on revenues from gold, silver, and platinum. There is no other royalty to be paid on the San Dimas mining concessions.

First Majestic has a purchase agreement with Wheaton Precious Metals. Wheaton Precious Metals invested \$220 million as an advance deposit in May 2018 which entitles Wheaton Precious Metals to receive 25% of the gold equivalent production from the San Dimas mine (based on a fixed exchange ratio of 70 silver ounces to 1 gold ounce) in exchange for ongoing payments equal to the lesser of \$606 (subject to a 1% annual inflation adjustment) and the prevailing market price, for each gold equivalent ounce delivered under the agreement. The exchange ratio includes a provision to adjust the gold to silver ratio if the average gold to silver ratio moves above or below 90:1 or 50:1, respectively, for a period of six months.

First Majestic (and its predecessor companies) secured surface rights by either acquisition of private and public land or by entering into temporary occupation agreements with surrounding Ejido communities. The surface right agreements in place with the communities provide for use of surface land for exploration activities and mine-related ventilation infrastructure. Current agreements cover the operation for the LOM plan presented in the Report.

San Dimas holds the necessary permits to operate, including the Environmental License, water rights concessions, federal land occupation concessions, among others.

### **1.1.3. Accessibility, Local Resources, Infrastructure and Physiography**

The San Dimas mine is located 1 km from the center of Tayoltita, a town with approximately 6,000 inhabitants. Access to the San Dimas area is by air or road from the city of Durango and Mazatlán. Flights from either Mazatlán or Durango to the town of Tayoltita require approximately 40 minutes. Road access from Durango is through a 112 km paved road plus 120 km service road to Tayoltita, this trip requires about six and a half hours.

Mining activities at the San Dimas mine are performed by a combination of First Majestic personnel and contract workers. Mining operations are conducted year-round.

Water for the mining operations is obtained from wells and from the Piaxtla River. First Majestic also supplies water to Tayoltita from an underground thermal spring at the historic Santa Rita mine.

The main infrastructure of the San Dimas district consists of roads, a townsite, an airport, the Tayoltita mill crushing and processing facilities, the Tayoltita/Cupias dry-stack tailings facilities, the Las Truchas hydroelectric generation facilities, a portable diesel power generation site, and the San Dimas mine. The main administrative offices and employee houses, the warehouses, assay laboratory, core shack and other facilities are located in Tayoltita.

The San Dimas mine is located in the central part of the Sierra Madre Occidental, a mountain range characterized by rugged topography with steep, often vertical, walled valleys and narrow canyons. Elevations vary from 2,400 metres above mean sea level (masl) on the high peaks to elevations of 400 masl in the valley floor of the Piaxtla River.

## **1.2. History**

### **1.2.1. Ownership History**

The San Dimas mine area contains a series of epithermal gold silver veins that have been mined intermittently since 1757. Modern mining began in the 1880s, when the American San Luis Mining Company acquired the Tayoltita mine and American Colonel Daniel Burns took control of the Candelaria mine and began working in the area. Work on the property has continued under numerous different owners to the present.

In 1961, Minas de San Luis, a company owned by Mexican interests, acquired 51% of the San Dimas group of properties and assumed operations of the mine. In 1978, the remaining 49% interest in the mine was obtained by Luismin S.A. de C.V (Luismin). In 2002, Wheaton River Minerals Ltd. (Wheaton River) acquired the property from Luismin and in 2005 Wheaton River merged with Goldcorp Inc. (Goldcorp). Under its prior name Mala Noche Inc., Primero Mining Corp. (Primero) acquired the San Dimas mine from subsidiaries of Goldcorp in August 2010. In May 2018, First Majestic acquired 100% interest in the San Dimas mine through acquisition of Primero.

### **1.2.2. Production History**

Historical production through December 2020 from the San Dimas district is estimated at more than 748 Moz of silver and more than 11 Moz of gold, placing the district third in Mexico for precious metal production after Pachuca and Guanajuato. The majority of this production is prior to First Majestic's acquisition of the property in 2018. The average production rate by First Majestic during 2019–2020 at the San Dimas Mine was 1,975 tpd.

## **1.3. Geological Setting, Mineralization and Deposit Types**

### **1.3.1. Regional Geology**

The San Dimas mining district is located in the central part of the Sierra Madre Occidental (SMO), near the Sinaloa-Durango state border.

The SMO consists of Late Cretaceous to early Miocene igneous rocks including two major volcanic successions totalling approximately 3,500 m in thickness and are separated by erosional and depositional unconformities: the Lower Volcanic Complex (LVC) and Upper Volcanic Group (UVG).

The LVC consists of predominantly intermediate volcanic and intrusive rocks formed between approximately 100 and 50 Ma. After a transition period, UVG volcanism consisted of primarily of silicic ignimbrites were deposited during two ignimbrite episodes at approximately 35–29 Ma along the entire province and at approximately 24–20 Ma in the southern SMO. Mafic lavas are found intercalated within the ignimbrite successions since 33 Ma.

### **1.3.2. Local Geology and Volcanogenic Stratigraphy**

The LVC has traditionally been divided into local geological units based on field observations. From base to top, these are the Socavón rhyolite, the Buelna andesite, and the Portal rhyolite, which are a sequence of interlayered tuffs and lesser lava flows of felsic to intermediate composition. The lower part of the sequence consists of the more than 700 m thick Socavón rhyolite, which is host to several productive veins in the district. This overlain by the Buelna andesite and the Portal Rhyolite which range from 50-250 m in thickness.

The lower sequence of rhyolitic rocks is unconformably overlain by a succession of andesitic lava flows and volcanogenic sedimentary rocks including the Productive Andesite (> 750 m thick), Las Palmas rhyo-andesite tuffs and flows (>300 m thick), and the volcanogenic sedimentary unit the Camichin Unit.

The UVG sits unconformably on the LVC and consists of the lower Guarisamey andesite and the Capping Rhyolite. The Capping Rhyolite consists of rhyolitic ash flows and air-fall tuffs and may reach as much as 1,500 m in thickness in the eastern part of the district.

### **1.3.3. Intrusive Rocks**

The LVC and UVG volcanic rocks are intruded by intermediate rocks, consisting of the Arana intrusive andesite and the Arana intrusive diorite, and a felsic suite comprising the Piaxtla granite and the Santa Lucia, Bolaños, and Santa Rita dikes. The basic dikes intrude both the LVC and the UVG.

### **1.3.4. Structural Geology**

The most prominent structures at San Dimas are major north–northwest-trending normal faults with opposite vergence that divide the district into five fault-bounded blocks that are tilted to the east–northeast or west–northwest. The major faults exhibit northeast–southwest extension, and dips vary from nearly vertical to approximately 55°. East–west to west–southwest–east–northeast striking fractures, perpendicular to the major normal faults, are often filled by quartz veins, dacite porphyry dikes, and pebble dikes.

Three deformational events are related to the development of the major faults, veins, and dikes. The late Eocene D1 event represents tension gashes with an east–west to northeast–southwest orientation and a slight right-lateral offset. D1 structures host the first hydrothermal vein systems. The early Oligocene D2 event produced north–south-trending right-lateral strike-slip to transtensional faults and is related to the development of a second set of hydrothermal veins. The O late Oligocene–Miocene D3 deformation produced the major fault blocks that affected the entire district along northwest–southeast-striking normal faults. The northwest–southeast D3 extensional faulting and erosion exposed the silver and gold mineralization and tilted all the succession prior to the deposition of a ~24 Ma ignimbrite package.

### **1.3.5. Mineralization**

Within the San Dimas district, the mineralization is typical of epithermal vein structures with banded and drusy textures. Epithermal-style veins occupy east–west-trending fractures, except in the southern part of the Tayoltita Block where they strike mainly northeast, and in the Santa Rita area where they strike north–northwest.

The “favourable zone” concept for San Dimas was developed in the mid-1970s in the Tayoltita Block based on the San Luis vein. Mine geologists observed that bonanza grades along the San Luis vein were spatially related to the Productive andesite unit and/or to the interface between the Productive andesite and the Portal rhyolite and/or the Buelna andesite. This spatial association of vein-hosted mineralization with a favorable host-rock zone within the volcanic sequence is now recognized in other fault blocks and constitutes a major exploration criterion for the district.

The silver- and gold-rich quartz veins formed in two different phases. The east–west striking veins developed first, followed by a second system of north–northeast-striking veins. Veins pinch and swell and commonly exhibit bifurcation, horse-tailing, and sigmoidal structures. The veins have been followed underground from a few metres in strike-length to more than 1,500 m. One of these veins, the Jessica Vein, extends for more than 1,000 m in the Central Block.

Three major stages of mineralization have been recognized in the district: (1) early stage; (2) ore forming stage; and (3) late-stage quartz. The minerals characteristic of the ore-forming stage consist of white, to light grey, medium to coarse grained crystalline quartz with intergrowths of base metal sulphides (sphalerite, chalcopyrite and galena) as well as pyrite, argentite, polybasite, stromeyerite, native silver and electrum. The veins are formed by filling previous fractures and typical textures observed include crustification, comb structure, colloform banding and brecciation.

### **1.3.6. Mineral Deposits**

A total of 118 silver and gold mineralized quartz veins have been recognized in the San Dimas Concessions Group, which represents 38% of the total property area. Another seven veins have been mapped to some extent in the Ventana Concessions Group. The known veins are grouped by mine zone in the San Dimas Concessions Group and in the Ventana Concessions Group. All Mineral Resources reported for San Dimas are hosted in the deposits that have been found in the San Dimas Concessions Group.

The local geology is characterized by north–northwest–south–southeast-oriented fault blocks that are bounded by major faults. The veins are generally west–southwest–east-northeast-oriented, within a corridor approximately 10 km wide. The veins are often truncated by the north–northwest–south–southeast-trending major faults, separating the original veins into segments. These segments are named as individual veins and grouped within the mine zones by fault block.

The mine zone groupings of veins are, from west to east: West Block, Graben Block, Central Block, Tayoltita Block, Alto de Arana Block (also know as Arana HW), San Vicente, El Cristo and Santa Rita.

### **1.3.7. Deposit Types**

The vein-hosted mineral deposits within the San Dimas Mine district are considered to be examples of silver- and gold-bearing epithermal quartz veins that formed in a low-sulphidation setting. Epithermal veins are typically localized along structures but may also form in permeable lithologies. Upward-flaring ore zones centred on structurally controlled hydrothermal conduits are typical. Large to small veins and stockworks are common. Vein systems can be laterally extensive, but the associated ore shoots have relatively restricted vertical extent. High-grade ores are commonly form within dilational faults zones near flexures and fault splays. Textures typical of low-sulphidation quartz vein deposits include open-space filling, symmetrical and other layering, crustification, comb structure, colloform banding and complex brecciation.

### **1.4. Exploration**

The San Dimas Mine district has been the subject of modern exploration and mine development activities since the early 1970s, and a considerable information database has been developed from both exploration and mining activities. Exploration uses information from surface and underground mapping, sampling, and drilling together with extensive underground mine tunneling to help identify targets. Other exploration activities include prospecting, geochemical surface sampling, geophysical and remote sensing surveys.

Most of the exploration activities carried out in the San Dimas mine area, centered around the Piaxtla River where exposures of silver–gold veins were found. Outside of this area, the Lechuguilla and Ventana Concessions Group areas were explored to some extent during 2008 and 2015–16. The remainder of the concessions have had limited or no exploration as they are covered by thick piles of post-mineral ignimbrites.

The most important exploration strategy at San Dimas has been underground mine tunnelling from south to north since the favorable horizon concept was first proposed in 1975 by Luismin. Tunnelling consists of advancing mine development to the north at the preferred elevation to intersect quartz veins mapped at surface. This method discovered veins with no surface exposure, such as the Jessica vein, which currently is a major contributor to silver and gold production. This exploration strategy has successfully been used by all companies after Luismin, resulting in more than 500 km of underground mine development.

The San Dimas exploration potential remains open in all the mine zones. As the mine was developed to the north, new veins were found. South of the Piaxtla River, the El Cristo area has potential for new quartz vein discoveries. The West Block is currently being explored by tunnelling. Opportunities to intercept the projection of fault-offset quartz veins from the Graben Block are considered good.

## **1.5. Drilling**

Drilling in the San Dimas district is focused on the identification and delineation of vein-hosted silver and gold resources by using structural and stratigraphic knowledge of the district, and preferred vein trends. Since the “favourable horizon” for mineral deposits concept emerged in 1975, the exploration drilling strategy has focused on core drilling perpendicular to the preferred vein orientation within the mine zones, which has proven to be the most effective method of exploration in the area. Core drilling is predominantly done from underground stations, as the rugged topography (i.e., access to surface drill stations) and the great drilling distance from surface locations to the target(s) makes surface drilling challenging and expensive. Over 1,059,000 m of core drilling has been completed since 2000, and from 2018 through December 2020, more than 230,600 m of drilling was completed.

## **1.6. Sampling, Analysis and Data Verification**

### **1.6.1. Sampling Methods**

#### **Core Samples**

Diamond drill core of BTW, BQ and NQ diameter is delivered to the core logging facility where San Dimas geologists select and mark sample intervals according to lithological contacts, mineralization, alteration, and structural features. Sample intervals range from 0.25–1.20 m in length within mineralized structures to 0.5–1.20 m in length when sampling waste rock.

Drill core intervals selected for sampling are cut in half using a diamond saw. Softer rocks are split using a hydraulic guillotine splitter. One half of the core is retained in the core box for further inspection and the other half is placed in a sample bag. For smaller diameter delineation drill core (TT-46) the entire core is sampled for analysis.

The sample number is printed with a marker on the core box beside the sampled interval, and a sample tag is inserted into the sample bag. Sample bags are tied with string and placed in rice bags for shipping.

#### **Channel Samples**

Since 2013, underground mine production channel samples for ore control and channel samples for resource estimation have been collected at San Dimas. Earlier channel samples were taken either across the roof of developments or across the roof in developments. From 2016 to present, production channel samples for ore control and channel samples for resource estimation are routinely taken across the mine development face and within stopes.

Channel sampling for resource estimation is supervised by San Dimas geologists and undertaken using a hammer and chisel with a tarpaulin laid below to collect the samples. Sample lengths range from 0.20–1.20 m. Sample intervals are first marked with a line across the face perpendicular to the vein dip, respecting vein/wall contacts and textural or mineralogical features. The samples are taken as a rough channel along the marked line, with an emphasis on representative volume sampling. The



sample is collected on the tarpaulin, broken with a hammer, and quartered and homogenized to obtain a 3 kg sample. The sample is bagged and labelled with sample number and location details. Sketches and photographs are recorded of the face sampled, showing the samples' physical location from surveying and the measured width of each sample. Since 2011, all channel samples are dispatched to the San Dimas Laboratory.

#### **1.6.2. Density**

Bulk density measurements were systematically taken on drill core since October 2012. Since 2016, specific gravity measurements were collected on 10 cm or longer whole core vein samples using the unsealed water immersion method. The samples are weighed in air, recorded, then placed in a basket suspended in the water and the weight is again recorded. The samples are not waxed or sealed. The formula used is:

Specific gravity (SG) = Weight in air / (Weight in air – Weight in water)

Based on this method, an average bulk density value of 2.6 t/m<sup>3</sup> was determined.

#### **1.6.3. Laboratories**

Since 2004, four different laboratories have been used for sample preparation and analysis. These include: (1) First Majestic's San Dimas Laboratory, not certified and not independent of First Majestic, used primarily for ore control and production related sampling such as process control and channel samples; (2) SGS Durango, certified under ISO 7025 and independent of First Majestic, used for drill core and channel samples; (3) ALS-Chemex Zacatecas, certified under ISO 7025 and independent of First Majestic, used for check assays; and (4) First Majestic's Central Laboratory located at the La Parrilla Mine, certified under ISO 9001 and not independent of First Majestic, used as the primary laboratory for drill core and checks on channel samples.

#### **1.6.4. Sample Preparation**

Prior to 2018 channel and drill core samples were dried, crushed and pulverized. Since 2018, samples are dried at 110°C, crushed to 80% passing 2 mm using a Marcy jaw and Hermo crushers, split into 250 g subsamples using a Jones splitter, and pulverized using an ESSA pulveriser to 80% passing 75 µm. At SGS Durango, drill core and channel check samples were dried at 105°C, split to 3.5 kg, crushed 75% passing 2 mm, and split into a 250 g subsample which was pulverized to 85% passing 75 µm. At the Central Laboratory, drill core and channel check samples are dried at 100°C for eight hours, crushed to 85% passing 2 mm, split into a 250 g subsample, and pulverized to 85% passing 75 µm.

#### **1.6.5. Analysis**

There is no detailed information describing sample analysis for drill core and channel samples submitted to the San Dimas Laboratory before 2018. In general, samples were analyzed for gold using a 10 g fire assay (FA) with a gravimetric finish. Between 2013 and 2018, drill core and channel check samples sent to SGS Durango were analyzed for gold by a 30 g FA atomic absorption spectroscopy (AAS) method. Samples returning >10 g/t Au were reanalyzed by a 30 g FA gravimetric method. Silver was analyzed by a 2 g, three-acid digestion AAS method. Silver values >300 g/t were analyzed by a 30 g FA gravimetric method. A multi-element suite was analyzed by a 0.25 g, aqua regia digestion inductively-coupled plasma (ICP) optical emission spectroscopy (OES) method.

Since 2018, channel samples submitted to the San Dimas Laboratory are analyzed for gold using a 30 g FA AAS method and by gravimetric finish if the doré bead is greater than 12 mg. Silver is determined using 30 g FA gravimetric finish. Drill core and channel check samples submitted to the Central Laboratory are analyzed for gold by a two-acid digestion AAS method. Samples with gold values >10 g/t are reanalyzed by a 30 g, FA gravimetric method. Silver values are determined using a 2 g, three-acid digestion, AAS method. Samples with silver values >300 g/t are analyzed by a 30 g, FA gravimetric method. All exploration samples are analysed by a two-acid multi-element ICP OES method.

#### **1.6.6. Quality Assurance and Quality Control**

There is limited information as to whether a formal quality assurance and quality control (QAQC) program was in place prior to 2013.

From 2013 to 2018, the QAQC program for the San Dimas Laboratory samples included insertion of a standard reference material (SRM) and a blank in every batch of 20 samples.

From 2013 to 2018, the QAQC program for the SGS Durango Laboratory channel and core samples included insertion of a SRM and a blank in every batch of 20 samples. In 2013, 5% of the coarse reject and pulp duplicates from core samples were randomly selected for analysis at SGS Durango and 5% of pulp checks from core samples were analyzed at ALS laboratory.

In 2019, First Majestic revised the QAQC program to include insertion of three certified reference material (CRM) samples and three blanks in every batch of 50 channel samples analyzed at the San Dimas Laboratory and one CRM and two blanks in every batch of 26 drill core and channel check samples submitted to the Central Laboratory.

#### **1.6.7. Data Verification**

Data verification conducted by First Majestic includes a review of drill hole and channel sample data collected for several veins (the verification dataset) and included data transcription error checks for assay results, drill hole collar and channel location checks, downhole survey deviation checks, visual

inspection of core, and an assessment of accuracy and contamination of primary and check channel samples for silver and gold.

A 1% selection of the gold and silver results recorded in the verification dataset were compared with electronic copies and final laboratory certificates from the Central, SGS Durango and San Dimas Laboratories. No significant errors were observed. In addition, a random selection of high-grade gold and silver results were verified against the original laboratory certificates. No significant transcription errors were observed.

All drill hole collar and channel locations in the verification dataset were inspected in three dimensions by comparing drill hole locations with their relationship to underground topography. No significant position errors were observed.

Numerous site visits were also completed by the Qualified Persons (QPs) responsible for this technical report. Site visits focused specifically on data verification reviewed current drill core and channel logging and sampling procedures and inspected drill core, core photos, core logs, and QAQC reports. Spot checks were completed by comparing lithology records in the database with archived core. No significant issues were observed.

### **1.7. Mineral Processing and Metallurgical Testing**

The San Dimas mine is operating, and the initial test data supporting plant design are superseded by decades of plant performance data. Metallurgical testing, along with mineralogical investigation, is periodically performed. Even when the results are within the expected processing performance, the plant is continually running tests to optimize metal recoveries and operating costs. Composite samples are analyzed monthly to determine the metallurgical behaviour of the mineralized material fed into the processing plant. This metallurgical testing is carried out by the Central Laboratory.

To investigate the effect a grinding size on metal liberation and recovery and to identify possible opportunities to improve plant performance, some tests using extra-fine grinding (P80 = 15 to 28  $\mu\text{m}$ ) were carried out on a July 2019 composite sample. Overall, the results indicate that particle size liberation is a relevant factor. The finer the grind, the greater recoveries were, as long as an excess of slimes was not generated. The slimes were reduced when the grinding process was carried out in two stages. The best results were achieved when leaching was split in two products: the primary mill fines and the regrind product. This investigation demonstrated that there is an opportunity to achieve higher metal recoveries with the implementation of a regrinding processing stage.

The metallurgical recovery projections assumed in the life-of-mine (LOM) plan are supported by the historical performance in the processing plant as well as on the results of recent testing performed at the SGS Lakefield Laboratory in 2019. The metal recovery estimates for the LOM plan and the financial analysis were projected as 94.0% for Ag and 96.5% for Au. The recovery assumptions were based on the plant performance from 2018 to 2020 and the results of testing carried out on a representative mineralization sample conducted in 2019. The 2019 sample consisted 46.4 t of material compiled from 26 different stopes and development faces of eight different veins of the Central Block and the Sinaloa

Graben. The Central Block veins sampled include Jessica, Gertrudis, Roberta, Robertita, Jael and Regina veins; and the veins sampled from the Sinaloa Graben were the Victoria and Alexa veins. The estimated metal of these eight veins represents 66% of the metal projected to be mined in the LOM plan.

Due to the purity of the San Dimas doré, which exceeds 97% silver and gold, no penalties are applied by the refineries for the presence of other heavy metals.

## **1.8. Mineral Resource and Mineral Reserve Estimates**

### **1.8.1. Mineral Resource Estimates**

The majority of the Mineral Resource estimates at San Dimas were completed using block modeling techniques. Some of the minor vein resource estimates are still based on two-dimensional polygonal estimation methods, and all polygonal resource estimates were classified as Inferred Mineral Resources.

The Mineral Resource estimates based on block models are constrained by the three-dimensional geological interpretation and modelled domains for vein-hosted mineral deposits. The modelled domains were constructed using information collected by mine geology staff and interpreted by geologists. Information used included underground geological mapping, drill hole logs and drill hole assays, production channel sampling and assays. The interpreted boundaries of the domain models strictly adhered to the contacts of quartz veins with the surrounding country rock to produce reasonable representations of the deposit locations and volumes.

Exploratory data analysis was completed for gold and silver sample assay values for each of the estimation domains to assess the statistical and spatial characteristics of the sample data. Contact analysis was completed for each of the mineral resource domains to review the change in metal grade across the domain contacts by the use of boundary plots. Hard boundaries were used during the creation of composite samples during mineral resource estimation.

The selected composite sample length varied by domain with the most common composite sample length being 1.0 m. The assay sample intervals were composited within the limits of the domain boundaries and then tagged with the appropriate domain code. Drill hole and channel composite samples were evaluated for high-grade outliers and those outliers were capped to values considered appropriate for each domain.

Mineral Resources were estimated into sub-block models rotated parallel to the resource domain trend. Parent block grades were estimated using inverse distance weighting to the second power ( $ID^2$ ) interpolation. The block estimates were made with multiple passes to limit the influence the channel production samples at longer ranges: Pass 1 was a restrictive short-range pass that used channel and drill hole composite samples, and subsequent less restrictive passes used drill hole samples only. An average bulk density value of 2.6 t/m<sup>3</sup> was used in estimation for all resource domains.

Validation of the silver and gold grade estimations in the block models was completed for each of the resource estimation domains, and included visual inspection comparing the composite sample silver and gold grades to the estimated block values; comparison of the global mean composite grades to the block model mean grade for each resource domain; and comparison of local block grade trends to composited sample grades along the three block model axes with swath grade trend plots.

The Mineral Resource estimates were classified into Measured, Indicated, or Inferred categories and considered confidence in the geological interpretation and models, confidence in the continuity of metal grades, and the sample support for the estimation and reliability of the sample data. Blocks were flagged to consider for the Measured category if the nominal drill hole spacing from the nearest 3 drill holes was <15 m or the blocks were within 15 m of a mined development with production channel samples and geological control. Blocks were flagged to consider for the Indicated category if the nominal drill hole spacing was <30 m or the blocks were within 30 m of a mined development with production channel samples and geological control. Blocks were flagged to consider for the Inferred category if the nominal drill hole spacing was <45 m.

Mineral Resources estimated using polygonal methods commenced with an orthogonal polygon being drawn on a vertical longitudinal section with the vein sample intersection centered in the polygon. The shape and size of the polygon depended on the geological interpretation and thickness of the veins. This ranged between 25 m x 25 m for veins <1.0 m in thickness to 50 m by 50 m for veins >1.5 m thick.

The polygon volume was estimated by length x height x vein thickness or was estimated using AutoCAD software for more complex shapes. The gold and silver grades for the vein sample interval were assigned to the polygon. In cases where there were multiple intercepts within a polygon, the silver and gold grades were estimated using a length-weighted average. To estimate the contained metal the silver and gold grades were multiplied by the true vein thickness for each of the intercepts within the polygon, and then the resulting numbers were totalled and divided by the sum of the total true thicknesses.

All polygonal estimates are currently assigned to the Inferred category. The remaining Inferred polygonal resource estimates are reduced every year as they are converted to block model estimates or depleted by mining.

The silver-equivalent (Ag-Eq) grade was calculated considering economic parameters, metal price assumptions, metallurgical recovery, and the metal payable terms. These economic parameters result in a silver equivalent (Ag-Eq) cut-off grade of 255 g/t. The Ag-Eq metal grades for the Mineral Resource estimates were calculated as follow:

$$\text{Ag-Eq g/t} = \text{Ag g/t} + (\text{Au g/t} * \text{Au Factor})$$

$$\text{Au Factor} = \text{Au Revenue} / \text{Ag Revenue}$$

$$\text{Au Revenue} = (\text{Au Metal Price} / 31.1035) * \text{Au Recovery} * \text{Au Payable}$$

$$\text{Ag Revenue} = (\text{Ag Metal Price} / 31.1035) * \text{Ag Recovery} * \text{Ag Payable}$$

The Mineral Resource estimates were evaluated for reasonable prospects for eventual economic extraction using the silver-equivalent (Ag-Eq) cut-off grade and by application of input parameters based on mining and processing information from actual operations performance during 2018 and 2019. Longhole and cut-and-fill mining methods are assumed with minimum mining widths of 1.6 and 1.2 m, respectively. The Vulcan underground stope analyser software was used to identify the blocks that represent potentially mineable shapes that exceeded the cut-off value while complying with the aggregate of economic parameters set out in Table 1-1.

*Table 1-1: Input Parameters for Evaluation of Reasonable Prospects of Eventual Economic Extraction.*

Concept	Units	Values
Direct Mining Cost	\$/t	94.4
Indirect and G&A Costs	\$/t	49.7
Sustaining Costs	\$/t	35.2
Metallurgical Recovery Ag	%	93.2
Metallurgical Recovery Au	%	96.4
Metal Payable Ag and Au	%	99.95
Metal Price Ag	\$/oz Ag	18.50
Metal price Au	\$/oz Au	1,750.00

The mineral resource estimates for San Dimas are summarized in Table 1-2 and Table 1-3 using a silver equivalent (Ag-Eq) cut-off grade of 255 g/t. Measured and Indicated Mineral Resources are reported inclusive of Mineral Reserves and have an effective date of December 31, 2020. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

Table 1-2: San Dimas Measured and Indicated Mineral Resource Estimate (effective date December 31, 2020)

Category / Area	Mineral Type	Tonnage ktonnes	Grades			Metal Content		
			Ag (g/t)	Au (g/t)	Ag-Eq (g/t)	Ag (k Oz)	Au (k Oz)	Ag-Eq (k Oz)
Measured Central Block	Sulphides	1,438	526	6.75	1,186	24,310	312	54,830
Measured Sinaloa Graben	Sulphides	449	441	7.51	1,176	6,370	108	16,990
Measured Tayoltita	Sulphides	57	324	3.46	663	590	6	1,210
Measured Other Areas	Sulphides	131	326	3.25	644	1,380	14	2,720
<b>Total Measured</b>	<b>Sulphides</b>	<b>2,075</b>	<b>489</b>	<b>6.60</b>	<b>1,135</b>	<b>32,650</b>	<b>440</b>	<b>75,750</b>
Indicated Central Block	Sulphides	1,266	393	4.23	807	15,980	172	32,820
Indicated Sinaloa Graben	Sulphides	439	383	3.92	766	5,400	55	10,800
Indicated Tayoltita	Sulphides	176	391	4.49	831	2,210	25	4,700
Indicated Other Areas	Sulphides	561	353	3.31	677	6,360	60	12,210
<b>Total Indicated</b>	<b>Sulphides</b>	<b>2,441</b>	<b>382</b>	<b>3.98</b>	<b>771</b>	<b>29,950</b>	<b>312</b>	<b>60,530</b>
M+I Central Block	Sulphides	2,703	463	5.57	1,008	40,290	484	87,650
M+I Sinaloa Graben	Sulphides	888	412	5.73	974	11,770	164	27,790
M+I Tayoltita	Sulphides	233	375	4.24	790	2,800	32	5,910
M+I Other Areas	Sulphides	692	348	3.30	671	7,740	73	14,930
<b>Total M+I</b>	<b>Sulphides</b>	<b>4,516</b>	<b>431</b>	<b>5.18</b>	<b>939</b>	<b>62,600</b>	<b>753</b>	<b>136,280</b>

Table 1-3: San Dimas Inferred Mineral Resource Estimate (effective date December 31, 2020)

Category	Mineral Type	Tonnage ktonnes	Grades			Metal Content		
			Ag (g/t)	Au (g/t)	Ag-Eq (g/t)	Ag (k Oz)	Au (k Oz)	Ag-Eq (k Oz)
Inferred Central Block	Sulphides	1,387	339	4.35	765	15,140	194	34,140
Inferred Sinaloa Graben	Sulphides	423	468	5.56	1,013	6,360	76	13,760
Inferred Tayoltita	Sulphides	2,016	311	3.08	612	20,140	199	39,670
Inferred Other Areas	Sulphides	1,675	346	3.21	660	18,620	173	35,550
<b>Total Inferred</b>	<b>Sulphides</b>	<b>5,501</b>	<b>341</b>	<b>3.63</b>	<b>696</b>	<b>60,260</b>	<b>642</b>	<b>123,120</b>

- 1) Mineral Resource estimates have been classified in accordance with the 2014 CIM Definition Standards.
- 2) The Mineral Resource estimates have an effective date of December 31, 2020.
- 3) Drill hole and production channel sample data collected through a cut-off date of June 30, 2020 were used to produce the estimates.
- 4) The Mineral Resource estimates account for mining depletion through December 31, 2020.
- 5) The information provided was prepared and reviewed by Mizrain Sumoza under the supervision of Joaquín Merino, P. Geo.
- 6) The silver-equivalent (Ag-Eq) grade was estimated considering metal price assumptions, metallurgical recovery, and the metal payable terms.
  - a. Metal prices considered for Mineral Resources estimates were \$18.50/oz Ag and \$1,750/oz Au.
  - b. Metallurgical recovery used was 93.2% for silver and 96.4% for gold.
  - c. Metal payable used was 99.95% for silver and gold.
- 7) The reasonable prospects for eventual economic extraction was tested using a silver-equivalent cut-off grade to constrain resources. The cut-off grade was prepared under the assumption of the operation of a mechanized underground mining method, the treatment of the material in a leaching plant and that silver Dore will be produced and sold to a refinery. Operating mining costs are assumed to be \$59/t at a nominal production rate of 1.0 Mt/a. Processing costs are assumed to be \$30/t, and indirect and general and administrative costs to be \$51/t. The resulting cut-off grade that equals estimated payables with the assumed costs was 255 g/t Ag-Eq.
- 8) Tonnage is expressed in thousands of tonnes; metal content is expressed in thousands of ounces.
- 9) Totals may not add up due to rounding.
- 10) Measured and Indicated Mineral Resources are reported inclusive of Mineral Reserves. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

Factors that may materially impact the Mineral Resource estimates include: Mineral Resources reported using polygonal assumptions may have the confidence classification reassigned when the polygons are converted into block models that use best practice estimation methods; changes to the assumptions used to generate the silver-equivalent grade cut-off grade including metal price and exchange rates; changes to interpretations of mineralization geometry and continuity; changes to geotechnical, mining, and metallurgical recovery assumptions; assumptions as to the continued ability to access the site, retain mineral and surface rights titles, maintain environment and other regulatory permits, and maintain the social license to operate.

### 1.8.2. Mineral Reserve Estimates

The mineral reserves estimation process consists of converting Mineral Resources into Mineral Reserves by identifying material that exceeds the mining cut-off grades while conforming to specified geometrical constraints determined by the applicable mining method and applying modifying factors such as mining dilution and mining recovery factors. If the Mineral Resources comply with the previous constraints, Measured Resources could be converted to Proven Reserves and Indicated Resources could be converted to Probable Reserves, in some instances Measured Resources could be converted to Probable Reserves if any or more of the modifying factors reduces the confidence of the estimates.

The silver equivalent (Ag-Eq) grade is the variable that was used as indicator to segregate if the revenue from the mineralized material in a block, that is part of the Measured and Indicated Mineral Resources, exceeds the operating and capital costs.

Net Smelting Return formulas were derived from the assumed economic parameters shown in Table 1-4.

Table 1-4: Economic Parameters assumed for calculation of NSR.

Concept	Units	Values
Metal Price Ag	\$/oz Ag	17.50
Metal Price Au	\$/oz Au	1,700
Metallurgical Recovery Ag	%	93.2%
Metallurgical Recovery Au	%	96.4%
Metal Payable Ag and Au	%	99.95%
Dore Transport Cost Cost	\$/ oz Dore	0.109
Insurance and Representation Cost	\$/ oz Dore	0.031
Refining Charge Ag	\$/ oz Ag	0.025
Refining Charge Au	\$/ oz Au	0.050

Three types of cut-off grades (COG) have been determined for the San Dimas mine: general COG, incremental COG, and marginal COG. The COGs are expressed in silver-equivalent diluted grades, reflecting the grade that the run-of-mine (ROM) material will carry before is fed to the processing plant.

The planned dilution assumes a minimum mining width, which will depend on the applied mining method. The minimum mining width for cut-and-fill using jackleg drills was 0.8 m, while when using



jumbo drills was 2.5 m. In the case of longhole mining, the minimum mining width assumed was 1.2 m. Table 15.3 shows a summary of dilution and mining loss factors.

The estimated overbreak in each side of the designed stope is 0.2 m for the two mining methods, longhole and cut-and-fill. An extra dilution from the backfill floor of 0.3 m for longhole and 0.2 m for cut-and-fill is also assumed. The unplanned dilution assumed was an additional 8% of the extracted material before becoming plant-feed.

Other than for sill mining, average mining loss throughout each mining block for both cut-and-fill and longhole mining has been assumed to be 5%. A factor of 25% has been used for sill pillars.

San Dimas Mineral Reserves are presented in Table 1-5.

Table 1-5: San Dimas Mineral Reserves Statement (Effective Date December 31, 2020)

Category / Area	Mineral Type	Tonnage	Grades			Metal Content		
			kt	Ag (g/t)	Au (g/t)	Ag-Eq (g/t)	Ag (k Oz)	Au (k Oz)
Proven Central Block	Sulphides	1,307	418	4.81	902	17,570	202.3	37,900
Proven Sinaloa Graben	Sulphides	386	263	4.50	715	3,260	55.8	8,870
Proven Tayoltita	Sulphides	54	265	3.13	579	460	5.4	1,000
Proven Other Areas	Sulphides	140	228	2.41	470	1,030	10.9	2,120
<b>Total Proven</b>	<b>Sulphides</b>	<b>1,887</b>	<b>368</b>	<b>4.52</b>	<b>822</b>	<b>22,320</b>	<b>274.4</b>	<b>49,890</b>
Probable Central Block	Sulphides	977	333	3.53	687	10,450	110.9	21,590
Probable Sinaloa Graben	Sulphides	421	256	2.55	512	3,460	34.4	6,930
Probable Tayoltita	Sulphides	196	269	3.19	589	1,690	20.1	3,710
Probable Other Areas	Sulphides	514	268	2.67	536	4,430	44.2	8,860
<b>Total Probable</b>	<b>Sulphides</b>	<b>2,108</b>	<b>296</b>	<b>3.09</b>	<b>606</b>	<b>20,030</b>	<b>209.6</b>	<b>41,090</b>
P+P Central Block	Sulphides	2,285	381	4.26	810	28,020	313.2	59,490
P+P Sinaloa Graben	Sulphides	806	260	3.48	609	6,720	90.2	15,800
P+P Tayoltita	Sulphides	250	268	3.17	587	2,150	25.5	4,710
P+P Other Areas	Sulphides	654	259	2.62	522	5,460	55.1	10,980
<b>Total P+P</b>	<b>Sulphides</b>	<b>3,995</b>	<b>330</b>	<b>3.77</b>	<b>708</b>	<b>42,350</b>	<b>484.0</b>	<b>90,980</b>

(1) Mineral Reserves have been classified in accordance with the Canadian Institute of Mining, Metallurgy and Petroleum ("CIM") Definition Standards on Mineral Resources and Mineral Reserves, whose definitions are incorporated by reference into NI 43-101.

(2) The Mineral Reserve statement provided in the table above have an effective date of December 31, 2020 and are based on resource models prepared with drill-hole and production channel sample data collected with a cut-off date of June 30, 2020.

(3) The Mineral Reserve estimates account for mining depletion through December 31, 2020.

The information provided was prepared and reviewed under the supervision of Ramón Mendoza Reyes, PEng, and a Qualified Person ("QP") for the purposes of NI 43-101.

(4) Silver-equivalent grade (Ag-Eq) is estimated considering metal price assumptions, metallurgical recovery for the corresponding mineral type/mineral process and the metal payable of the selling contract.

(a) The Ag-Eq grade formula used was:

$$\text{Ag-Eq Grade} = \text{Ag Grade} + \text{Au Grade} * (\text{Au Recovery} * \text{Au Payable} * \text{Au Price}) / (\text{Ag Recovery} * \text{Ag Payable} * \text{Ag Price}).$$

(b) Metal prices considered for Mineral Reserves estimates were \$17.50/oz Ag and \$1,700/oz Au.

(c) Other key assumptions and parameters include: Metallurgical recoveries of 93.2% for silver, 96.4% for gold; metal payable of 99.95% for silver and 99.95% for gold; direct mining costs of \$55.28/t for Longhole and \$63.09/t for Cut and Fill, processing costs of \$31.32/t mill feed, indirect and G&A costs of \$49.66/t and sustaining costs of \$42.28/t for Longhole and \$44.28/t for Cut and Fill.

(5) A two-step constraining approach has been implemented to estimate reserves for each mining method in use: A General Cut-Off Grade (GC) was used to delimit new mining areas that will require development of access, infrastructure and all sustaining costs. A second Incremental Cut-Off Grade (IC) was considered to include adjacent mineralized material which recoverable value pays for all associated costs, including but not limited to the variable cost of mining and processing, indirect costs, treatment, administration costs and plant sustaining costs but excludes the access development assumed to be covered by the block above the GC grade.

(6) Modifying factors for conversion of resources to reserves include consideration for planned dilution due to geometric aspects of the designed stopes and economic zones, and additional dilution consideration due to unplanned events, materials handling and other operating aspects. Mineable shapes were used as geometric constraints.

(7) Tonnage is expressed in thousands of tonnes; metal content is expressed in thousands of ounces. Metal prices and costs expressed in USD.

(8) Numbers have been rounded as required by reporting guidelines. Totals may not sum due to rounding.

The QP is not aware of any known mining, metallurgical, environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other relevant factors that could materially affect the mineral reserve estimates, other than discussed herein.

### 1.9. Mining Operations

The San Dimas mine includes five underground gold and silver mining areas: West Block (San Antonio mine), Sinaloa Graben Block (Graben Block), Central Block, Tayoltita Block, and the Arana Hanging-wall Block (Santa Rita mine).

Mining activities are conducted by both First Majestic and contractor personnel. Two mining methods are currently being used at San Dimas, cut-and-fill and Longhole mining. Cut-and-fill is carried out by either jumbo or jackleg drills, whereas Longhole is carried out with pneumatic and electro-hydraulic drills. Primary access is provided by adits and internal ramps. Vein thickness varies from 0.1 m up to 10 m, with the average between 1.5 - 2.0 m. Some veins have a strike length of more than 1,500 m. Vein dips vary from 35° to 85°, the latter being decidedly more prevalent.

Ground conditions throughout most of the San Dimas underground workings are considered good. Bolting is used systematically in the main haulage ramps, drifts, and underground infrastructure. For those sectors that present unfavorable rock quality, shotcrete, mesh and/or steel arches are used.

Groundwater inflow has not been a significant concern in the San Dimas mine area. Dewatering systems in San Dimas consist of main and auxiliary pumps in place at each of the mine areas.

The San Dimas ventilation system consists of an exhaust air extraction system through its main fans located on surface. These fans generate the necessary pressure change for fresh air to enter through the portals and ventilation raises.

The development schedule for the LOM plan is presented in *Table 1-6*.

*Table 1-6 San Dimas Life-of-Mine Development Schedule*

Type	Units	Size (m)	2021	2022	2023	2024	2025	Total
Main Access Ramp	m	4.5x4.5	4,818	3,603	3,095	2,887	-	14,403
Main Level Access	m	3.5x3.5	4,638	5,980	2,998	2,544	-	16,160
Ancillary	m	3.5x3.5	2,789	1,852	1,423	1,329	-	7,393
Drifting for Exploration	m	4.5x4.5	6,575	5,100	5,640	4,740	-	22,055
Ventilation Raises	m	2.5 diam.	2,429	893	300	1,042	-	4,664
<b>Total Waste Development</b>	<b>m</b>		<b>21,249</b>	<b>17,429</b>	<b>13,456</b>	<b>12,542</b>	-	<b>64,675</b>
Ore Development	m	3.5x3.5	6,593	4,462	4,341	2,707	-	18,104
<b>Total Development</b>	<b>m</b>		<b>27,842</b>	<b>21,891</b>	<b>17,797</b>	<b>15,249</b>	-	<b>82,779</b>

The production schedule for the LOM plan is presented in *Table 1-7*.

*Table 1-7 San Dimas Life-of-Mine Production Schedule*

Type	Units	2021	2022	2023	2024	2025	Total
ROM Production / Plant Feed	k t	846	943	1,005	1,031	171	<b>3,995</b>
Silver Grade	g/t Ag	320	290	376	366	109	<b>330</b>
Gold Grade	g/t Au	3.13	3.56	3.72	4.38	4.70	<b>3.77</b>
Silver-Equivalent Grade	g/t Ag-Eq	634	649	749	806	582	<b>708</b>
Contained Silver	M oz Ag	8.7	8.8	12.1	12.1	0.6	<b>42.4</b>
Contained Gold	k oz Au	85	108	120	145	26	<b>484</b>
Contained Silver-Equivalent	M oz Ag-Eq	17.2	19.7	24.2	26.7	3.2	<b>91.0</b>
Metallurgical Recovery Silver	%	94.0%	94.0%	94.0%	94.0%	94.0%	<b>94.0%</b>
Metallurgical Recovery Gold	%	96.5%	96.5%	96.5%	96.5%	96.5%	<b>96.5%</b>
Produced Silver	M oz Ag	8.2	8.3	11.4	11.4	0.6	<b>39.8</b>
Produced Gold	k oz Au	82	104	116	140	25	<b>467</b>
Produced Silver-Equivalent	M oz Ag-Eq	16.4	18.8	23.0	25.5	3.1	<b>86.7</b>

A total of 4.0 Mt of ore is considered to be mined and processed with grades of 330 g/t Ag and 3.77 g/t Au. Total metal produced is estimated at 42.4 Moz Ag and 484 koz Au.

#### **1.10. Processing and Recovery Operations**

The processing plant at San Dimas has been successfully operating for several years and continuously achieve high levels of recoveries for silver and gold. The process is based on cyanide tank leaching and Merrill-Crowe of ground plant-feed to produce silver/gold doré bars. The installed plant capacity is for 3,000 tonnes per day. However, the current throughput levels are around 2,000 tonnes per day. The average feed contains head grades in the order of 300 g/t Ag and 3.6 g/t Au.

The San Dimas processing plant is built as a single train with the crushing area split from the remaining areas and connected through a belt conveyor to transfer the crushed product from the screening underflow to the fine-ore bins. The remaining areas are the following: Grinding circuits, Leach tanks, CCD tanks, Merrill-Crowe, Smelting and Tailings Filtration and stacking.

The metallurgical recovery projections assumed in the LOM plan are supported by the historical performance in the processing plant as well as on the results of recent testing performed in SGS Lakefield Laboratory in 2019.

The metal recovery estimates for the LOM plan and the financial analysis were assumed as 94.0% for Ag and 96.5% for Au.

#### **1.11. Infrastructure, Permitting and Compliance Activities**

##### **1.11.1. Infrastructure**

The infrastructure in San Dimas is fully developed to support current mining and mineral processing activities, with part of its facilities located in the town of Tayoltita.

The main infrastructure of San Dimas consists of access roads, the San Dimas mines, which are divided into five mining areas, crushing and processing facilities known as the Tayoltita mill, the Tayoltita/Cupias tailings facilities, an assays laboratory, offices and staff camp, the Las Truchas hydroelectric generation facilities, a diesel-powered emergency generation plant, a local airport and infrastructure supporting the inhabitants of the Tayoltita townsite including a local clinic, schools and sport facilities.

Most of the personnel and light supplies for the San Dimas mine arrive on First Majestic's regular flights from Mazatlán and Durango. Heavy equipment and main supplies are brought by road from Durango and Mazatlán.

Electrical power is provided by a combination of First Majestic's own hydroelectric generation system (Las Truchas) and the Federal Power Commission supply system (CFE). First Majestic operates the hydroelectric generation plant, which is interconnected with the CFE power grid, and a series of back-up diesel generators for emergencies.

The source of water for industrial use comes mainly from mine dewatering stations but mainly from the recycled filtered-tailings water after it has been treated, the balance is sourced from the Santa Rita well which fills from the Piaxtla River. About 80% of the water required for processing activities is being treated and recycled.

Drinking water is supplied by First Majestic to the town of Tayoltita from an underground thermal spring located at the Santa Rita mine.

#### **1.11.2. Permitting**

Environmental and social studies are routinely performed in San Dimas to characterize existing conditions and to support the preparation of Risk Assessments and Accident Prevention Programs for the operation and are documented as part of the Environmental Management System implemented by First Majestic.

San Dimas is an operating mine, as such it holds all major environmental permits and licenses required by the Mexican authorities to carry out mineral extracting activities in the mining complex.

The main environmental permit is the environmental license "Licencia Ambiental Unica" (LAU) under which the mine operates its industrial facilities in accordance with the Mexican environmental protection laws administered by SEMARNAT as the agency in charge of environment and natural resources. The most recent update to the main environmental permit was approved in July 2019.

Table 20-10 contains a list of the major permits issued to San Dimas. Permits that are in process are listed in Table 20-11.

### 1.11.3. Compliance

The San Dimas mine has implemented the First Majestic Environmental Management System, which supports the implementation of environmental policy and is applied to standardize tasks and strengthen a culture focused on minimizing environmental impacts. The EMS is based on the requirements of the international standard ISO 14001:2015 and the requirements to obtain the Certificate of Clean Industry, issued by the Mexican environmental authorities, the Ministry of Environment and Natural Resources (SEMARNAT), through the Federal Attorney for Environmental Protection in Mexico (PROFEPA). The EMS includes an annual compliance program to review all environmental obligations.

In May 2018, the San Dimas mine received the Clean Industry Certification for improvements to its environmental management practices at the mine.

In February 2020, for the ninth consecutive year, the San Dimas mine was awarded the Socially Responsible Company (ESR) designation by the Mexican Center for Philanthropy (CEMEFI).

### 1.12. Capital and Operating Costs

The LOM plan includes estimates for sustaining capital expenditures for the planned mining and processing activities.

Sustaining capital expenditures will mostly be allocated for on-going development, infill drilling, mine equipment rebuilding, major overhauls or replacements, plant maintenance and on-going refurbishing, and for tailings management facilities expansion as needed. Table 1-8 shows the San Dimas Capital Costs for the major components.

A summary of the San Dimas operating costs resulting from the LOM plan and the cost model used for assessing economic viability is presented in Table 1-9. A summary of the annual operating expense is presented in Table 1-10.

*Table 1-8: San Dimas Mining Capital Costs Summary (Sustaining Capital)*

Type	Total	2021	2022	2023	2024	2025
Mine Development	\$ 85.6	\$ 26.6	\$ 23.7	\$ 18.7	\$ 16.6	\$ -
Exploration	\$ 27.1	\$ 6.0	\$ 6.7	\$ 7.1	\$ 7.3	\$ -
Property, Plant & Equipment	\$ 80.8	\$ 12.9	\$ 17.9	\$ 27.7	\$ 20.0	\$ 2.3
Other Sustaining Costs	\$ 4.2	\$ 1.0	\$ 1.0	\$ 1.0	\$ 1.0	\$ 0.1
<b>Total Sustaining Capital Costs</b>	<b>\$ 197.7</b>	<b>\$ 46.5</b>	<b>\$ 49.3</b>	<b>\$ 54.5</b>	<b>\$ 45.0</b>	<b>\$ 2.4</b>
Near Mine Exploration	\$ 22.8	\$ 4.9	\$ 5.4	\$ 5.7	\$ 5.8	\$ 0.9
<b>Total Capital Costs</b>	<b>\$ 220.6</b>	<b>\$ 51.5</b>	<b>\$ 54.7</b>	<b>\$ 60.2</b>	<b>\$ 50.8</b>	<b>\$ 3.3</b>

Table 1-9: San Dimas Operating Costs

Type	\$/tonne milled
Mining Cost	\$ 53.5
Processing Cost	\$ 27.0
Indirect Costs	\$ 43.4
<b>Total Production Cost</b>	<b>\$ 123.8</b>
Selling Costs	\$ 5.9
<b>Total Cash Cost</b>	<b>\$ 129.7</b>

Table 1-10: San Dimas Annual Operating Costs

Type	Total	2021	2022	2023	2024	2025
Mining Cost	\$ 211.6	\$ 48.1	\$ 49.3	\$ 53.5	\$ 52.6	\$ 8.1
Processing Cost	\$ 107.9	\$ 24.4	\$ 25.4	\$ 27.0	\$ 27.0	\$ 4.2
Indirect Costs	\$ 172.1	\$ 38.1	\$ 42.4	\$ 42.5	\$ 42.6	\$ 6.6
<b>Total Production Cost</b>	<b>\$ 491.6</b>	<b>\$ 110.5</b>	<b>\$ 117.1</b>	<b>\$ 123.0</b>	<b>\$ 122.2</b>	<b>\$ 18.9</b>
Selling Costs	\$ 23.6	\$ 4.6	\$ 5.2	\$ 6.2	\$ 6.7	\$ 1.0
<b>Total Cash Cost</b>	<b>\$ 515.1</b>	<b>\$ 115.1</b>	<b>\$ 122.2</b>	<b>\$ 129.1</b>	<b>\$ 128.8</b>	<b>\$ 19.9</b>

### 1.13. Economic Analysis Supporting Mineral Reserve Declaration

First Majestic is using the provision for producing issuers, whereby producing issuers may exclude the information required under Item 22 for technical reports on properties currently in production and where no material expansion of current production is planned.

An economic analysis to support presentation of Mineral Reserves was conducted. Under the assumptions presented in this Report, the operations show a positive cash flow, and can support Mineral Reserve estimation.

### 1.14. Conclusions

Under the assumptions used in this Report, the San Dimas mine has positive economics for the LOM plan, which supports the Mineral Reserve statement.

### 1.15. Recommendations

#### 1.15.1. Exploration

A 120,000 m annual exploration program is recommended to identify new areas to support mineral resource conversion to higher confidence categories and to look for new discoveries. This drill program is estimated to cost \$12.0M dollars per year excluding related underground access development costs.

An annual prospect generation program consisting of prospecting, soil and rock geochemical surveys, mapping, and geophysical surveys is recommended, with an estimated cost of \$250k per year.

The amounts and estimated cost of these recommended exploration programs should be reviewed annually.

#### **1.15.2. Production Channel Samples**

A study to assess channel sample quality is recommended and could consist of a comparison of channels samples with paired un-sawn channel samples. This study is estimated to cost \$7,500 and the estimate execution time is one month.

#### **1.15.3. Resource Estimation using Polygonal Method**

The polygonal resource estimation at San Dimas has been migrated to implicit modeling followed by block model estimation techniques for all Indicated and Measured Mineral Resources. It is recommended this process to be continued until all the domains are estimated using block modeling techniques. This study is estimated to cost \$150k and the estimate execution time is one year.

#### **1.15.4. Reconciliation**

A reconciliation system for the San Dimas mine operation, based on the mine value chain concept, is being implemented at the mine. It is recommended that reconciliation monitoring be used to continuously improve the comparison of estimates to measured results all along the mine value chain to highlight opportunities to improve the traceability, identification and control of temporary storage areas, transfers and materials handling practices.

The estimated time to complete the implementation of the integral reconciliation system at San Dimas is 12-18 months at a cost of \$200k.

#### **1.15.5. Expansion of the Leaching Circuit**

To increase the washing performance of the leaching circuit, an additional thickener can facilitate the reduction of the concentration of precious metals in the final tailings solution.

The installation of an additional thickener is estimated to cost \$17.0 M with an estimated project execution time of 12-18 months. It is recommended that the project be assessed for implementation.



#### **1.15.6. Fine Grinding**

First Majestic has found that fine grinding can improve both silver and gold recoveries. It is recommended that a dual circuit and a re-grinding high intensity grinding mill (HIG-mill) be installed. This project is estimated to cost \$20.0 M with an estimated project execution time of 12-18 months. It is recommended that the project be assessed for implementation.

#### **1.15.7. Tailings Filtering- Phase 1**

If the fine-grinding concept is applied, the current system may not be able to achieve the required moisture content for the dry stacking tailings deposition. It is recommended that a value engineering study be carried out to rationalize capital requirements, to analyze the possibility of installing one filter-press, and to use the current belt-filters as backup. The estimated cost of this study is \$0.5 M, with an estimated study time of 6 months.

#### **1.15.8. “Cuevecillas” Water Storage Dam**

Engineering studies have been conducted to assess the opportunity of building a storage and flow-regulator dam upstream from the existing Las Truchas dam at Cuevecillas. These studies suggest that the implementation of a regulator dam will result in less plant downtime from power blackouts, improvements in gas emissions, and potentially reduced operating costs.

A Phase 1 study is recommended for a feasibility analysis to be completed to confirm economic viability and estimate return of investment. The cost of this study is estimated at \$50k and will take 3 months to be completed.

#### **1.15.9. Tailings Filtering – Phase 2**

If Phase 1 of the Tailings Filtering study confirms viability, a second phase could follow for the installation of the filter-press, with an estimated cost of \$30.0M and an estimated project execution time of 12-18 months.

#### **1.15.10. “Cuevecillas” Water Storage Dam – Phase 2**

If Phase 1 of the Cuevecillas Water Storage Dam study confirms viability, a second phase could follow for the construction of the dam. The cost estimate from the preliminary engineering design is estimated at \$35 M with an estimated project execution time of 24-36 months.

## **2. INTRODUCTION**

Mr. Ramón Mendoza Reyes, Mr. Joaquín Merino, Ms. María Elena Vázquez and Mr. Persio P. Rosario prepared this technical report (the Report) on the San Dimas Silver/Gold Mine (the San Dimas mine or the Property), located in the state of Durango, Mexico. The mine is owned and operated by Primero Empresa Minera, S.A. de C.V. (Primero Empresa), which is an indirectly wholly-owned subsidiary of First Majestic Silver Corp. (First Majestic). First Majestic acquired the San Dimas mine from Primero Mining Corp. in May 2018.

### **2.1. Terms of Reference**

The Report provides information on Mineral Resource and Mineral Reserve estimates and mine and process operations and planning for the San Dimas mine.

The Mineral Resource and Mineral Reserve estimates are reported in accordance with the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Definition Standards for Mineral Resources and Mineral Reserves (May 2014; the 2014 CIM Definition Standards).

### **2.2. Cut-off and Effective Dates**

The cut-off date for drilling, production related sampling and economic parameters related to the Mineral Resource and Mineral Reserve estimates is June 30, 2020.

The cut-off date for information on mineral tenure and permitting, scientific and technical information, production, operating costs, and mining depletion is December 31, 2020.

The overall effective date of this Report is December 31, 2020.

### **2.3. Qualified Persons**

This Technical Report has been prepared by employees of First Majestic under the supervision of the following First Majestic Qualified Persons (QPs):

- Ramón Mendoza Reyes, P.Eng., Vice President of Technical Services;
- Joaquín Merino, P.Geo., Senior Advisor in Geology;
- María Elena Vázquez, P.Geo., Geological Data-base Manager.
- Persio P. Rosario, P.Eng., Vice President of Processing, Metallurgy and Innovation.

### **2.4. Site Visits**

The date of site visits performed by the QPs, and their scope of personal inspection is provided in Table 2-1.

*Table 2-1: Site Visit Dates and Scope of Personal Inspection*

QP	Dates	Scope of Personal Inspection
Ramón Mendoza Reyes	Multiple occasions since 2018, most recent site visit and inspection on February 13–14, 2020	Inspection of geotechnical and operative aspects at the underground mine to assess the performance of the mining methods, and the dilution and mining recovery conditions. Discussion with technical staff on reconciliation practices. Discussions with First Majestic staff on environmental, permitting, land access and community relations with different stakeholders.
Joaquín M. Merino	Multiple occasions since 2016, most recent 30-day rotation and inspection from November 21 to December 20, 2019.	Review the exploration process and data. Geological modeling and interpretation. Field site inspection of the operation. Inspection of the mine laboratory. Resource estimation protocols and procedures. Data quality reviews.
María Elena Vázquez	Two occasions in 2019. Most recent inspection from February 24–28, 2020	Inspection of drill cores with emphasis on mineralization, alteration and structure. Evaluation and validation of recent and historic drill hole data. Evaluation of recent and historic quality assurance/quality control (QAQC) data and protocols.
Persio P. Rosario	Site visit and personal inspection on Aug 20, 2019	Inspection of the processing plant and the site infrastructure to assess processing performance and general operating conditions.

## 2.5. Sources of Information

For the purposes of this Report, all information, data, and figures contained or used in its compilation have been provided by First Majestic unless otherwise stated. Reports and documents listed in Section 27 were used to support the preparation of the Report.

Specialist input was sought from First Majestic staff, where appropriate, to support the preparation of the Report.

The Qualified Persons for this report have reviewed the latest information available from the effective date of the report to the signature date of the report and there are no material changes to the information reported here.

## 2.6. Previously Filed Technical Reports

First Majestic has not previously filed a technical report on the San Dimas mine.

Prior to First Majestic’s acquisition of the Property, there were two technical reports filed on the San Dimas mine:

- Voicu G., Shannon M. and Webster R., 2014: Technical Report on the San Dimas Property, in the San Dimas District, Durango and Sinaloa States, Mexico: technical report prepared by

Primero Mining Corp. of Vancouver, Canada and AMC Mining Consultants (Canada) Ltd (AMC) of Vancouver, Canada, prepared for Primero Mining Corp.

- Spring V., and Watts G., 2010: Technical Report on the Tayoltita, Santa Rita and San Antonio Mines in the San Dimas District, Durango State, Mexico: technical report prepared by Watts, Griffis and MacOuat Ltd, Ontario, Canada, prepared for Goldcorp Inc. and Mala Noche Resources Corp.

## 2.7. Units, Currency and Abbreviations

Units of measurement are metric unless otherwise noted. All costs are expressed in United States dollars unless otherwise noted. Common and standard abbreviations are used wherever possible. Table 2-2 shows the list of abbreviations used:

*Table 2-2: List of Abbreviations and Units*

Distances:	mm – millimetre cm – centimetre m – metre km – kilometre ft - foot masl – metres above sea level	Other:	tpd – tonnes per day ktpd – 1,000 tonnes per day Mtpa - 1,000,000 tonnes per year kW – kilowatt CFE - Federal Commission of Electricity MW – megawatt kVA – kilovolt-ampere MVA – Megavolt-ampere kWh – kilowatt hour MWh – megawatt hour °C – degrees Celsius Ag – silver Au – gold Pb – lead Zn – zinc Cu – copper Mn - manganese Ag-Eq – silver equivalent SMO - Sierra Madre Occidental LVC – Lower Volcanic Complex UVG – Upper Volcanic Group asl – above sea level
Areas:	m <sup>2</sup> – square metre ha – hectare km <sup>2</sup> – square kilometre	Assay/Grade:	g/t – grams per tonne g/L – grams per litre ppm – parts per million ppb - parts per billion
Weights:	oz – troy ounces koz – 1,000 troy ounces Moz – million troy ounces lb - pound g – grams kg – kilograms t – tonne (1,000 kg) kt – 1,000 tonnes  Mt – 1,000,000 tonnes	Currency:	\$ - United States dollar
Time:	min – minute hr – hour op hr – operating hour d – day yr – year		
Volume/Flow:	m <sup>3</sup> – cubic metre m <sup>3</sup> /hr – cubic metres per hour gpm – gallons per minute (water) cfm – cubic feet per minute (air) cu yd – cubic yards		

### **3. RELIANCE ON OTHER EXPERTS**

This section is not relevant to this Report.

#### 4. PROPERTY DESCRIPTION AND LOCATION

##### 4.1. Location

The San Dimas mine is located near the town of Tayoltita on the borders of the States of Durango and Sinaloa, approximately 125 km northeast of Mazatlán, Sinaloa, and 150 km west of the city of Durango, in Durango State, Mexico. The San Dimas mine is centered on latitude 24°06'38" N and longitude 105°55'36" W (Figure 4-1).

*Figure 4-1: Location Map, San Dimas mine.*



*Note: Figure prepared by First Majestic, March 2020.*

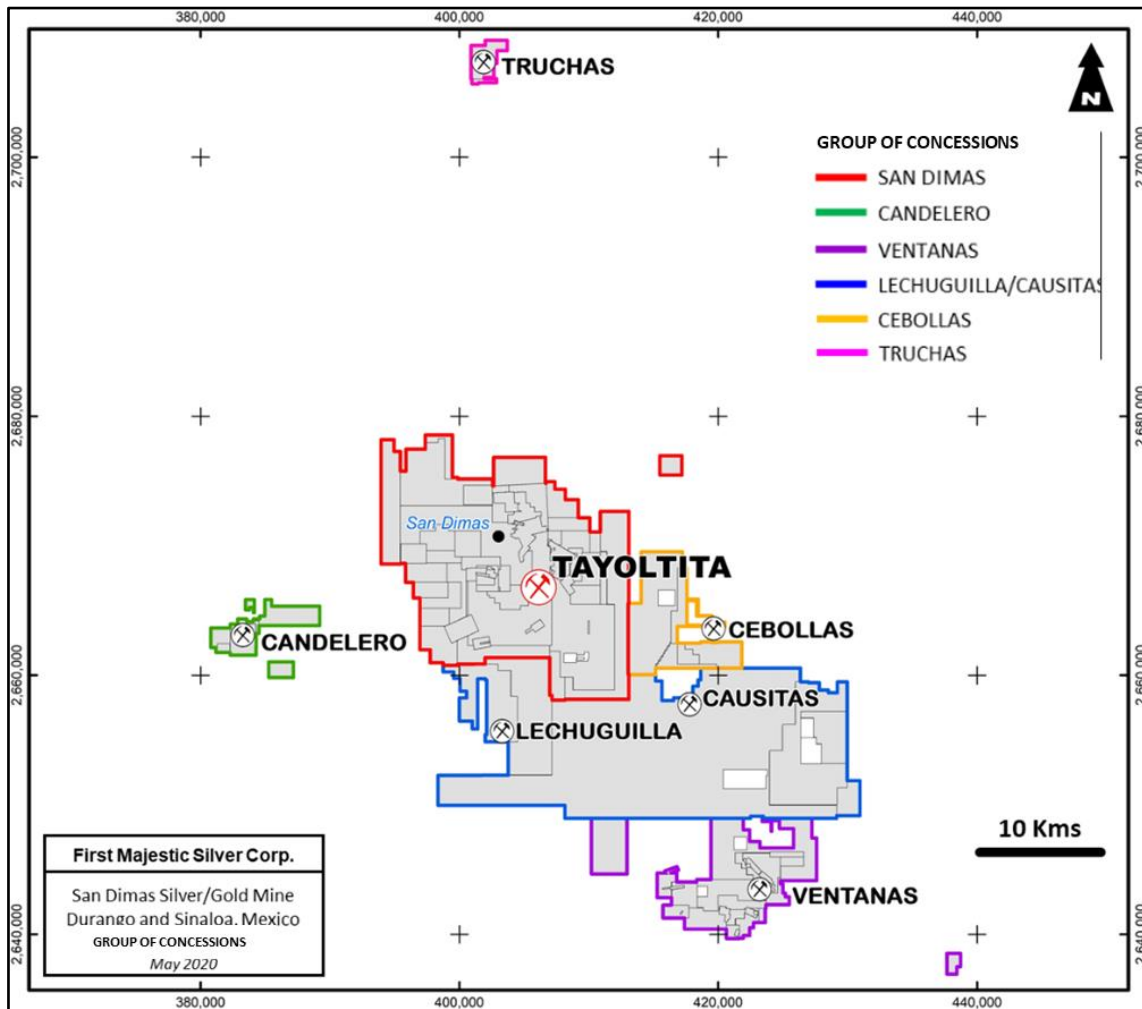
##### 4.2. Ownership

In May 2018, First Majestic acquired the San Dimas mine from Primero Mining Corp. Operations are conducted by First Majestic's indirectly wholly-owned subsidiary, Primero Empresa.

##### 4.3. Mineral Tenure

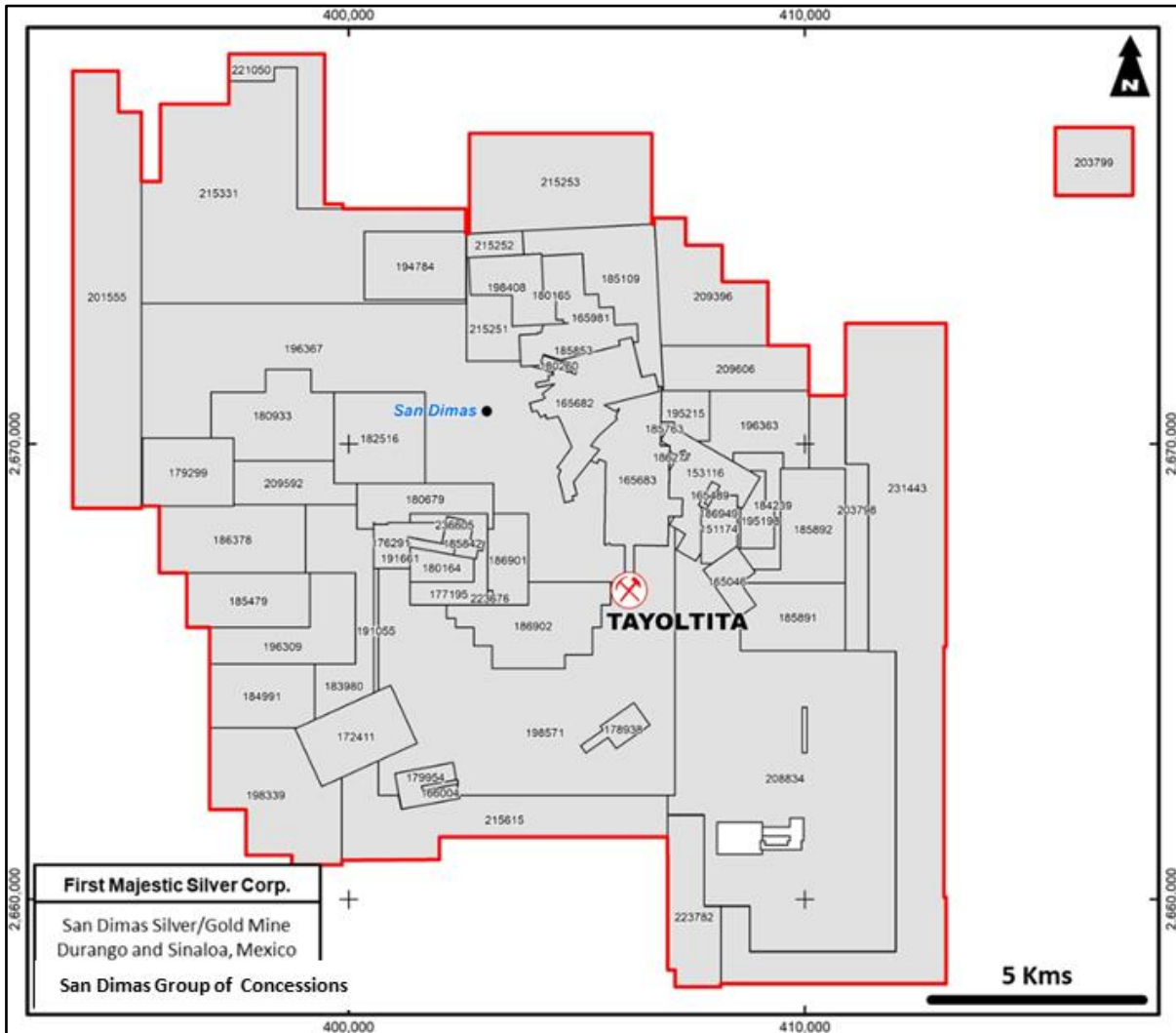
In Mexico, mineral rights can be held by private parties through mining concessions granted by the federal government via the Mines Directorate of the Ministry of Economy. The San Dimas property consists of 119 individual concessions covering 71,839 ha in total that have been organized into six concessions groups to facilitate land management. These concessions groups are: San Dimas, Candelero, Ventanas, Lechuguillas, Cebollas and Truchas. A concession location map is shown in Figure 4-2, and the individual concessions groups are shown in Figure 4-3 to Figure 4-8.

Figure 4-2: Map of the Concession Outlines for the San Dimas Mine



Note: Figure prepared by First Majestic, May 2020.

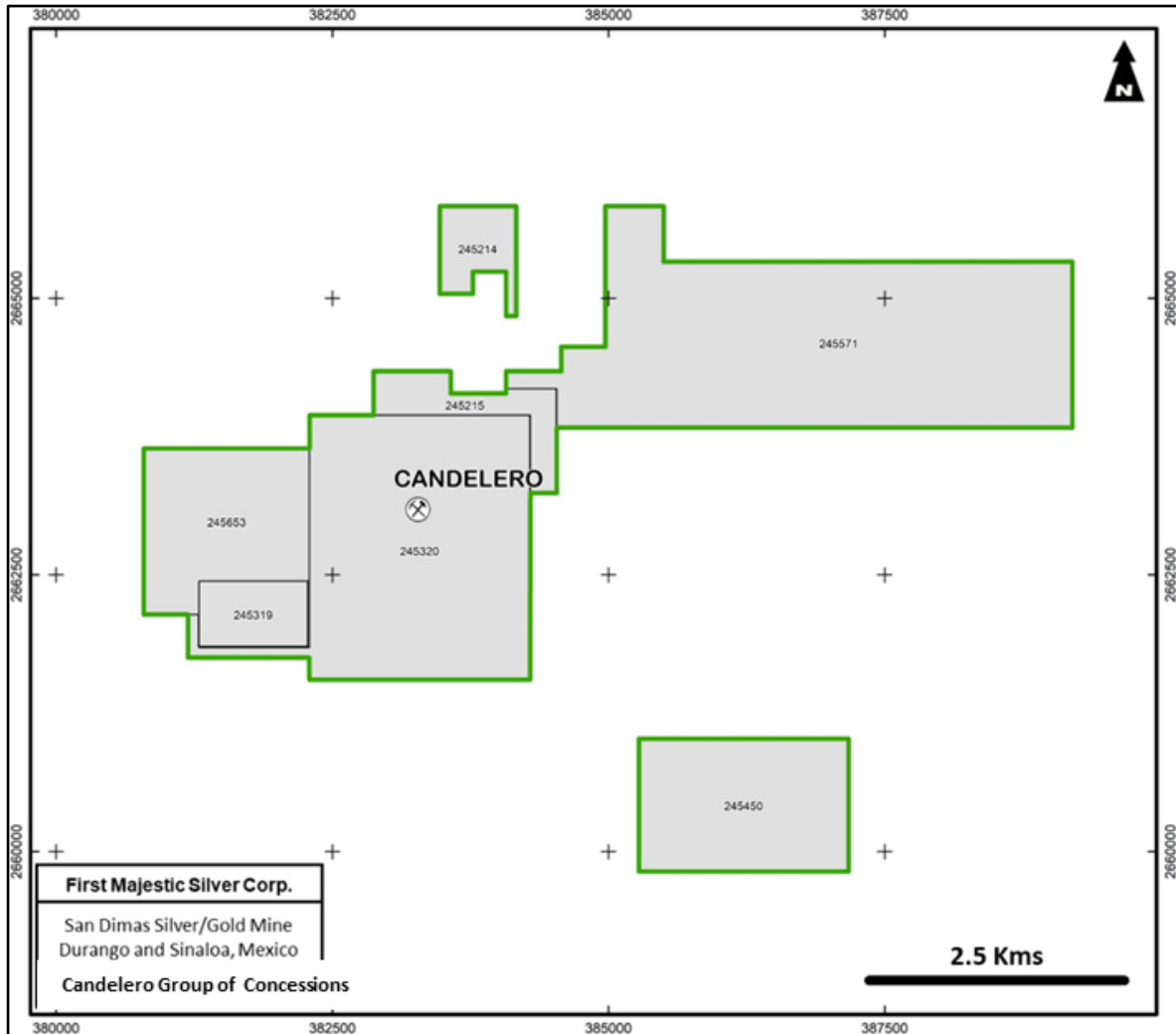
Figure 4-3: Map of the San Dimas Concessions Group



Note: Figure prepared by First Majestic, March 2020.

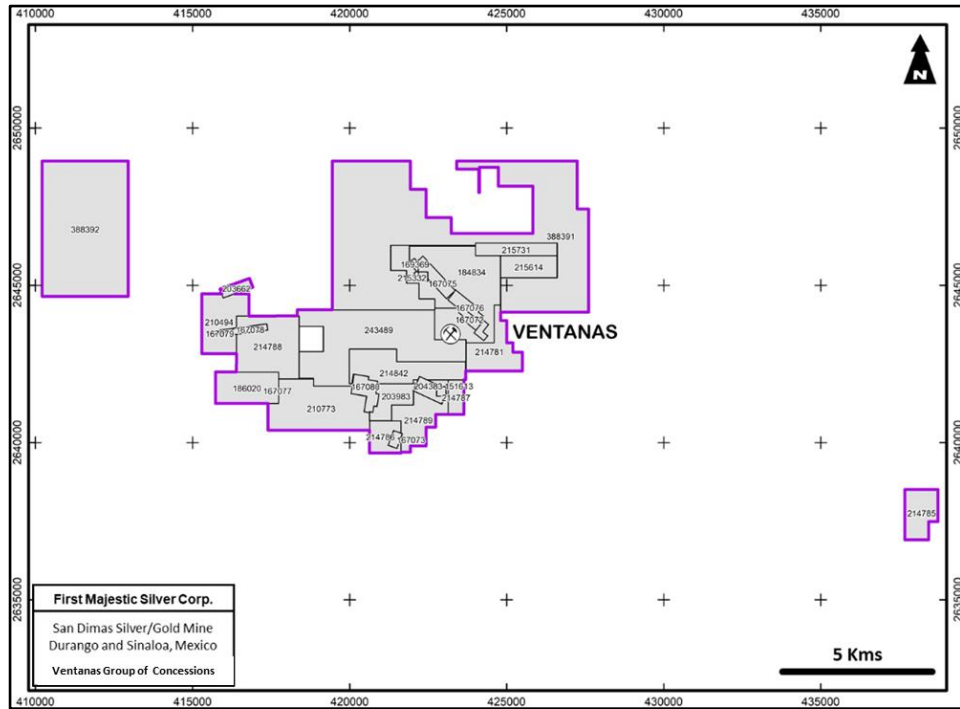


Figure 4-4: Map of the Candelerio Concessions Group



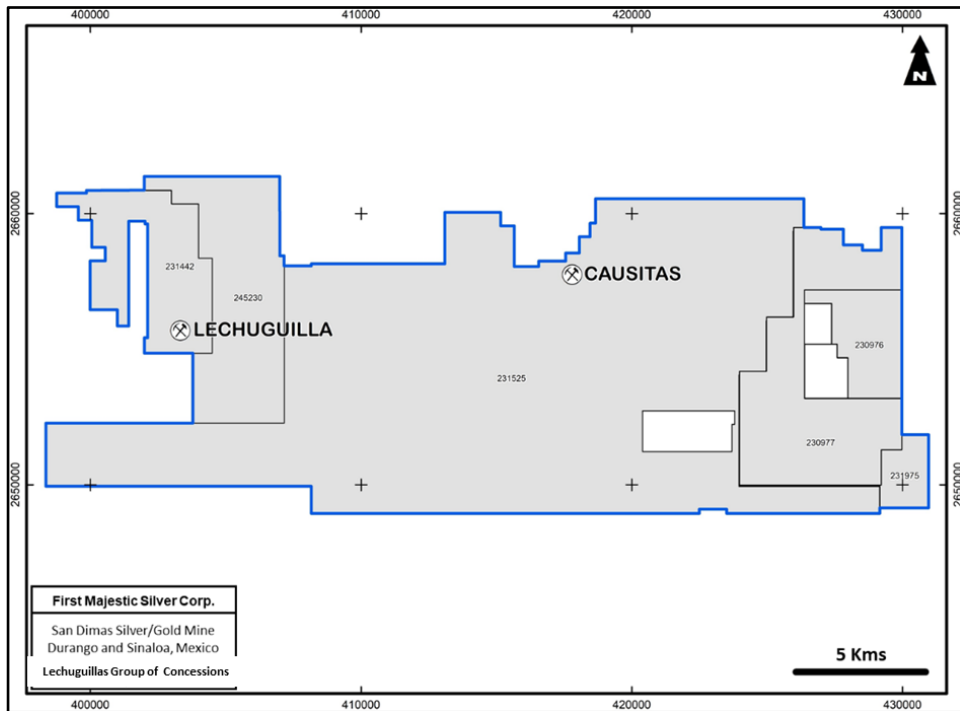
Note: Figure prepared by First Majestic, March 2020.

Figure 4-5: Map of the Ventanas Concessions Group



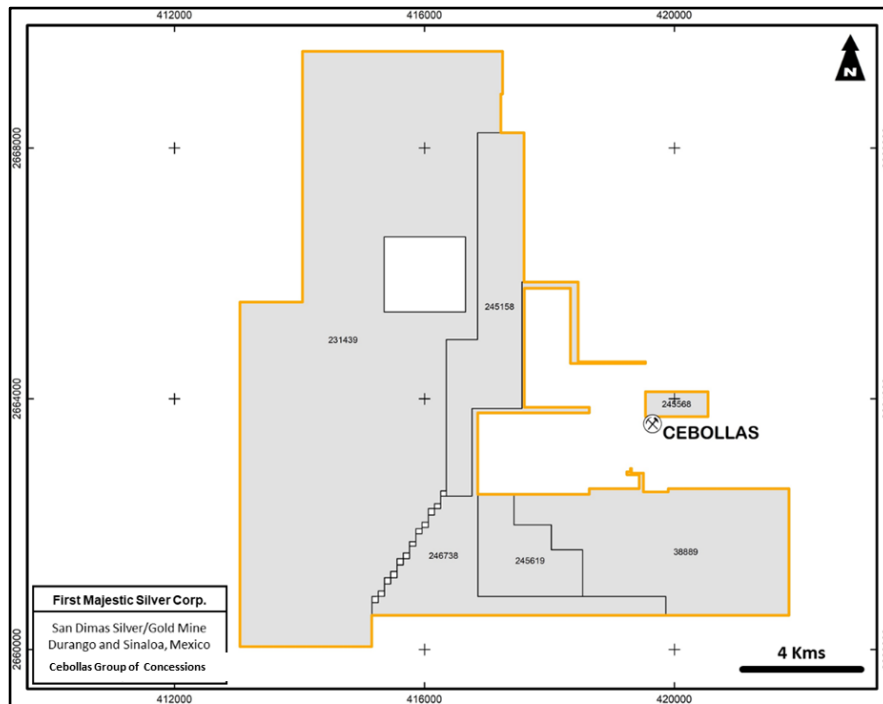
Note: Figure prepared by First Majestic, March 2020.

Figure 4-6: Map of the Lechuguillas Concessions Group



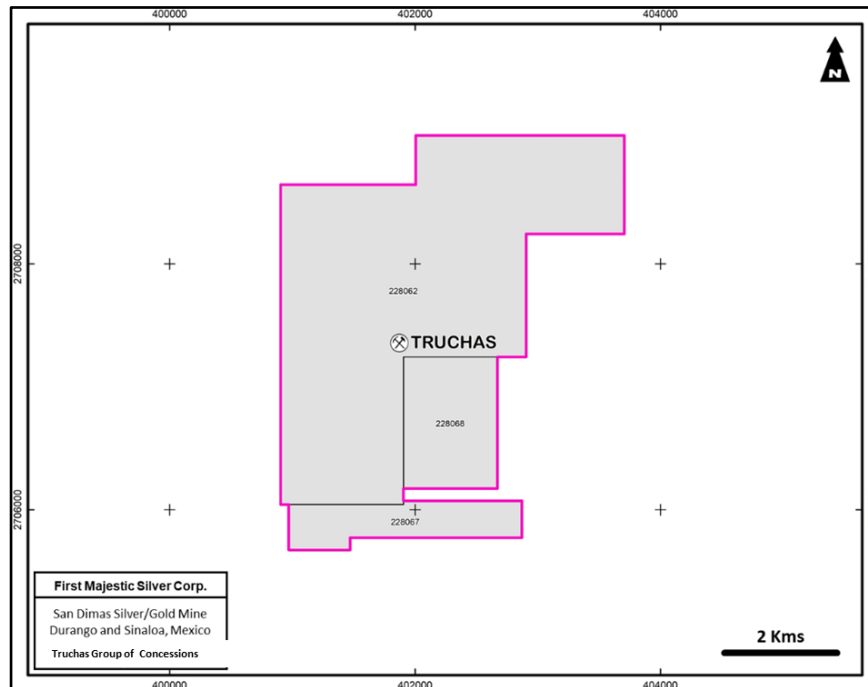
Note: Figure prepared by First Majestic, March 2020.

Figure 4-7: Map of the Cebollas Concessions Group



Note: Figure prepared by First Majestic, March 2020.

Figure 4-8: Map of the Truchas Concessions Group



Note: Figure prepared by First Majestic, March 2020.

Current mining operations and the Mineral Resource and Mineral Reserve estimates are located within the San Dimas concessions group.

Table 4-1 to Table 4-7 list the concessions by concession group. Concessions have expiry dates ranging from 2029 to 2070, of which 13 have renewal applications applied for, as shown in Table 4-1.

*Table 4-1: Summary of the Six Concessions Group, San Dimas Mine.*

Concession Group	# Concession	Active	Renewal Application Lodged	Size (ha)
San Dimas	66	57	9	27,454
<u>Candelero</u>	7	7	0	1,785
Ventanas	31	29	2	7,675
Lechuguillas	6	5	1	29,866
Cebollas	6	5	1	4,417
Truchas	3	3	0	642
Total	119	106	13	71,839

Table 4-2: San Dimas Concessions Group List

Concession	Title	Size (Ha)	Status	State	Area	Valid to
San Manuel	151174	104	Active	Durango	SAN DIMAS	2069-03-23
Chela	153116	254	Active	Durango	SAN DIMAS	2070-07-13
Resurgimiento	165046	93	Active	Durango	SAN DIMAS	2029-08-22
Yolanda	165489	10	Active	Durango	SAN DIMAS	2029-10-10
San Luis 1	165682	391	Active	Durango	SAN DIMAS	2029-11-27
San Luis 2	165683	474	Active	Durango	SAN DIMAS	2029-11-27
San Luis 3	165981	307	Active	Durango	SAN DIMAS	2030-02-03
El Reliz	166004	8	Active	Durango	SAN DIMAS	2030-02-19
Carrizo	166615	2	In Process	Durango	SAN DIMAS	In Process
San Daniel	172411	322	Active	Sinaloa	SAN DIMAS	2033-12-14
Castellana Uno	176291	108	Active	Durango	SAN DIMAS	2035-08-25
Libia Estela	177195	151	Active	Durango	SAN DIMAS	2036-03-03
Promontorio	177826	2	Active	Durango	SAN DIMAS	2036-03-28
San Miguel	178938	66	Active	Durango	SAN DIMAS	2036-10-27
San Vicente Fracc. Suroeste	179299	300	Active	Sinaloa	SAN DIMAS	2036-12-07
Ampliación de El Reliz	179954	96	Active	Durango	SAN DIMAS	2037-03-22
La Castellana	180164	90	Active	Durango	SAN DIMAS	2037-03-23
Hueco Dos	180165	0	In Process	Durango	SAN DIMAS	In Process
Juan Manuel	180260	16	In Process	Durango	SAN DIMAS	In Process
Ampl. Noche Buena en Frapopan	180679	234	Active	Durango	SAN DIMAS	2037-07-13
San Vicente Fracc. Norte	180933	430	Active	Sinaloa	SAN DIMAS	2037-08-13
Noche Buena en Frapopan	182516	400	In Process	Durango	SAN DIMAS	In Process
Ampl. Nuevo Contra Estaca Fracción B	183980	406	Active	Sinaloa	SAN DIMAS	2038-11-24
Guarisamey III	184239	115	Active	Durango	SAN DIMAS	2039-02-14
Ampl. Nuevo Contra Estaca Fracción A	184991	319	Active	Sinaloa	SAN DIMAS	2039-12-12
El Favorable	185109	452	In Process	Durango	SAN DIMAS	In Process
Nuevo Contra Estaca Fracc. W	185479	324	Active	Sinaloa	SAN DIMAS	2039-12-13
Armida Sur	185763	5	In Process	Durango	SAN DIMAS	In Process
La Fe	185842	39	Active	Durango	SAN DIMAS	2039-12-13
Juan Manuel Dos	185853	4	Active	Durango	SAN DIMAS	2039-12-13
Guarisamey Fracción B	185891	330	Active	Durango	SAN DIMAS	2039-12-13
Guarisamey Fracción A	185892	378	Active	Durango	SAN DIMAS	2039-12-13
Armida Sur Fracc. II	186277	3	In Process	Durango	SAN DIMAS	In Process
Ampl. Nuevo Contra Estaca Fracción C	186378	474	Active	Sinaloa	SAN DIMAS	2040-03-28
San Miguel I	186901	172	Active	Durango	SAN DIMAS	2040-05-16
San Miguel II	186902	452	Active	Durango	SAN DIMAS	2040-05-16
Hueco Guarisamey	186949	6	Active	Durango	SAN DIMAS	2040-05-16
Armida Sur Fracc. I	189878	1	In Process	Durango	SAN DIMAS	In Process
Hueco Tayoltita	191055	28	Active	Durango	SAN DIMAS	2041-05-28
La Soledad	191661	21	Active	Durango	SAN DIMAS	2041-12-18

Concession	Title	Size (Ha)	Status	State	Area	Valid to
Juan Manuel Tres	194784	335	Active	Durango	SAN DIMAS	2042-06-14
Guarisamey II	195198	89	Active	Durango	SAN DIMAS	2042-08-24
Armida	195215	98	Active	Durango	SAN DIMAS	2042-08-24
Nuevo Contra Estaca Fracc. E	196309	376	Active	Sinaloa	SAN DIMAS	2043-07-15
Guarisamey IV Fracción A	196363	320	Active	Durango	SAN DIMAS	2043-07-15
Tayoltita Norte	196367	2,650	Active	Durango	SAN DIMAS	2043-07-15
Ampliación SW Contra Estaca	198339	663	Active	Sinaloa	SAN DIMAS	2043-11-18
Alicia II	198408	204	Active	Durango	SAN DIMAS	2043-11-25
Tayoltita	198571	2,320	Active	Durango	SAN DIMAS	2043-11-29
Tayoltita Oeste	201555	1,395	Active	Sinaloa	SAN DIMAS	2045-10-19
Guarisamey V Fracc. 1	203798	333	Active	Durango	SAN DIMAS	2046-09-29
Guarisamey Sur	208834	3,026	Active	Durango	SAN DIMAS	2048-12-14
Guarisamey Norte	209396	489	In Process	Durango	SAN DIMAS	In Process
Contra Estaca Norte	209592	237	Active	Sinaloa	SAN DIMAS	2049-08-02
Guarisamey IV Fracción B	209606	321	Active	Durango	SAN DIMAS	2049-08-02
San Luis Norte 1	215251	175	Active	Durango	SAN DIMAS	2052-02-13
San Luis Norte 2	215252	66	Active	Durango	SAN DIMAS	2052-02-13
San Luis Norte 3	215253	839	Active	Durango	SAN DIMAS	2052-02-13
Tayoltita Sur	215615	784	Active	Durango	SAN DIMAS	2046-12-11
San Miguel 3	223676	3	Active	Durango	SAN DIMAS	2055-02-01
Guarisamey Sur Oeste	223782	359	Active	Durango	SAN DIMAS	2055-02-14
Frac. Ampl. Noche Buena en Frapopan	236605	11	Active	Durango	SAN DIMAS	2060-07-27
El Tecolote	231443	2,490	Active	Durango	SAN DIMAS	2046-09-29
Guarisamey V Fracc. NE	203799	253	Active	Durango	SAN DIMAS	2046-09-29
Ampl. Tayoltita Norte	215331	1,950	Active	Durango	CANDELERO	2044-04-18
Tahonitas	221050	283	Active	Durango	CANDELERO	2053-11-13

Table 4-3: Candelero Concessions Group List

Concession	Title	Size (Ha)	Status	State	Area	Valid to
Candelero Uno Fracc. Uno	245214	51	Active	Sinaloa	CANDELERO	2066-11-14
Candelero Dos	245571	699	Active	Sinaloa	CANDELERO	2067-08-30
Candelero Uno Fracc. Dos	245215	65	Active	Sinaloa	CANDELERO	2066-11-14
Santa Cruz Tres	245320	489	Active	Sinaloa	CANDELERO	2066-11-22
Candelero II	245653	195	Active	Sinaloa	CANDELERO	2067-10-14
Santa Cruz	245319	58	Active	Sinaloa	CANDELERO	2066-11-22
Candelero Dos Fracc. 1	245450	228	Active	Sinaloa	CANDELERO	2067-02-27

Table 4-4: Ventanas Concession Group List

Concession	Title	Size (Ha)	Status	State	Area	Valid to
La Prieta	151613	9	Active	Durango	VENTANAS	2069-07-10
María Elena	167072	22	Active	Durango	VENTANAS	2030-08-28
El Rosario	167073	15	Active	Durango	VENTANAS	2030-08-28
Mina Grande	167074	9	Active	Durango	VENTANAS	2030-08-28
Buen Día	167075	57	Active	Durango	VENTANAS	2030-08-28
Noche Buena	167076	55	Active	Durango	VENTANAS	2030-08-28
Josefina	167077	3	Active	Durango	VENTANAS	2030-08-28
San Cayetano	167078	22	Active	Durango	VENTANAS	2030-08-28
California	167079	6	Active	Durango	VENTANAS	2030-08-28
San Miguel	167080	64	Active	Durango	VENTANAS	2030-08-28
Concepción	169369	6	Active	Durango	VENTANAS	2031-11-11
Mala Noche	184834	499	Active	Durango	VENTANAS	2039-12-04
Los Chabelos	186020	197	Active	Durango	VENTANAS	2039-12-13
Los Muros	203662	30	Active	Durango	VENTANAS	2046-09-12
Ampl. La Prieta	203983	110	Active	Durango	VENTANAS	2046-11-25
Cuquita	204383	41	Active	Durango	VENTANAS	2047-02-12
Tayoltita I Fracc. A	210494	226	Active	Durango	VENTANAS	2049-10-07
Tayoltita I Fracc. B	210773	440	Active	Durango	VENTANAS	2049-11-25
Mala Noche Fracc. Sur	214781	191	Active	Durango	VENTANAS	2039-12-04
El Colorín Fracción Sur	214785	151	Active	Durango	VENTANAS	2038-12-04
Ampliación El Rosario	214786	88	Active	Durango	VENTANAS	2039-10-30
Nuevo Ventanas Fracc. E	214787	55	Active	Durango	VENTANAS	2040-12-04
San Cayetano	214788	351	Active	Durango	VENTANAS	2041-12-18
Nuevo Ventanas Fracc. W	214789	195	Active	Durango	VENTANAS	2039-10-09
Mala Noche Oeste	214842	280	Active	Durango	VENTANAS	2043-07-15
Ampliación Mina Grande	215332	117	Active	Durango	VENTANAS	2047-01-30
Mala Noche Norte Fracc. 1	215614	126	Active	Durango	VENTANAS	2044-04-18
Mala Noche Norte Fracc. 2	215731	104	Active	Durango	VENTANAS	2044-04-18
Nuevo Mala Noche	243489	775	Active	Durango	VENTANAS	2064-10-09
Ampl. Mala Noche Frac. 2	388392	1,180	In Process	Durango	VENTANAS	In Process
Ampl. Mala Noche Frac. 1	388391	2,250	In Process	Durango	VENTANAS	In Process

Table 4-5: Lechuguillas Concessions Group List

Concession	Title	Size (Ha)	Status	State	Area	Valid to
El Gavilán 2	230976	990	Active	Durango	CAUSITAS	2057-11-21
El Gavilán 3	230977	3,191	Active	Durango	CAUSITAS	2057-11-21
El Alacrán	231975	455	In Process	Durango	CAUSITAS	In Process
San José de Causas	231525	20,341	Active	Durango	CAUSITAS	2058-03-06
El Cuervo	231442	2,042	Active	Durango	LECHUGUILLA	2058-02-27
Tayoltita Sur Uno	245230	2,847	Active	Durango	LECHUGUILLA	2066-11-14

*Table 4-6: Cebollas Concessions Group List*

Concession	Title	Size (Ha)	Status	State	Area	Valid to
Temehuaya 2	231439	2,679	Active	Durango	CEBOLLAS	2058-02-27
Anexo Cebollas	245158	433	Active	Durango	CEBOLLAS	2066-11-07
Nuevo Cebollas Siete	246738	368	Active	Durango	CEBOLLAS	2068-11-08
Nuevo Cebollas Seis	245619	200	Active	Durango	CEBOLLAS	2067-09-07
Nuevo Cebollas Tres	245568	40	Active	Durango	CEBOLLAS	2067-08-17
Nuevo Cebollas Cuatro	38889	699	In Process	Durango	CEBOLLAS	In Process

*Table 4-7: Truchas Concessions Group List*

Concessions	Title	Size (Ha)	Status	State	Area	Valid to
Ejido Huahuapan	228062	500	Active	Durango	TRUCHAS	2056-09-28
Truchas Uno	228067	59	Active	Durango	TRUCHAS	2056-09-28
Truchas Dos	228068	82	Active	Durango	TRUCHAS	2056-09-28

As per Mexican requirements for grant of tenure, the concessions comprising the San Dimas mining district have been surveyed on the ground by a licensed surveyor.

All applicable payments and reports have been submitted to the relevant authorities, and the licenses are in good standing as at the Report effective date.

#### **4.4. Royalties**

In 2013, the Mexican Federal government introduced a mining royalty, effective January 1, 2014, based on 7.5% of taxable earnings before interest and depreciation. In addition, precious metal mining companies must pay a 0.5% royalty on revenues from gold, silver, and platinum. There is no other royalty to be paid on the San Dimas mine mining concessions.

Discussion on the streaming agreement with Wheaton Precious Metals International Ltd. (Wheaton Precious Metals) is provided in Section 19 of this Report.

#### **4.5. Surface Rights**

Surface rights in Mexico are separate from mineral rights. Under the mining law, mining rights holders have the right to use and access areas that are planned for exploration or exploitation. First Majestic (and its predecessor companies) secured surface rights by either acquisition of private and public land or by entering into temporary occupation agreements with surrounding communities.



The local communities are Ejidos, village lands communally held in the traditional system of surface land tenure that combine communal ownership with individual use. The most relevant Ejido in the area is the Ejido San Dimas as more than 70% of the production comes from mineralization located under this Ejido. Agreements with Ejido San Dimas are in place for the use of surface land for exploration activities and ventilation infrastructure. The second most relevant Ejido in terms of surface rights is the Rincon de Calabazas Ejido covering prospective ground in the San Dimas concessions group. An agreement dated October 2019 with the Rincon de Calabazas Ejido allows First Majestic to occupy surface land for exploration activities and ventilation infrastructure for a period of seven and a half years. It is expected that the agreement will be able to be renewed at the end of the current agreement period.

#### **4.6. Permitting Considerations**

The San Dimas mine holds the necessary permits to operate, including the Environmental License, water rights concessions, federal land occupation concessions, among others. Details of the permits held in support of operations are discussed in Section 20 of this report.

#### **4.7. Environmental Considerations**

Environmental considerations are discussed in Section 20 of this Report.

#### **4.8. Existing Environmental Liabilities**

Environmental liabilities for the operation are typical of those that would be expected to be associated with an operating underground precious metals mine, including the future closure and reclamation of mine portals and ventilation infrastructure, access roads, processing facilities, hydroelectric plant, power lines, dry-stacked tailings and all surface infrastructure that supports the operations.

Primero Empresa is currently mitigating two past environmental liabilities: reclamation of the old San Antonio milling facilities (Contraestaca) and closure/reclamation of the old San Antonio tailings facilities. Reclamation of the old San Antonio mill has started with the dismantling of mills, structures and tanks. The remaining work to reclaim the old San Antonio mill site and the tailings facility is ongoing with funds allocated in the asset retirement obligation (ARO).

Additional information on the environmental considerations for the San Dimas mine is provided in Section 20.

#### **4.9. Significant Factors and Risks**

To the extent known to the QPs, there are no other significant factors and risks that may affect access, title, or the legal right or ability to perform work on the San Dimas mine that are not discussed in this Report.

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

### 5.1. Accessibility

The San Dimas mine is located within the San Dimas district and approximately 1 km from the center of Tayoltita, a town with approximately 6,000 inhabitants.

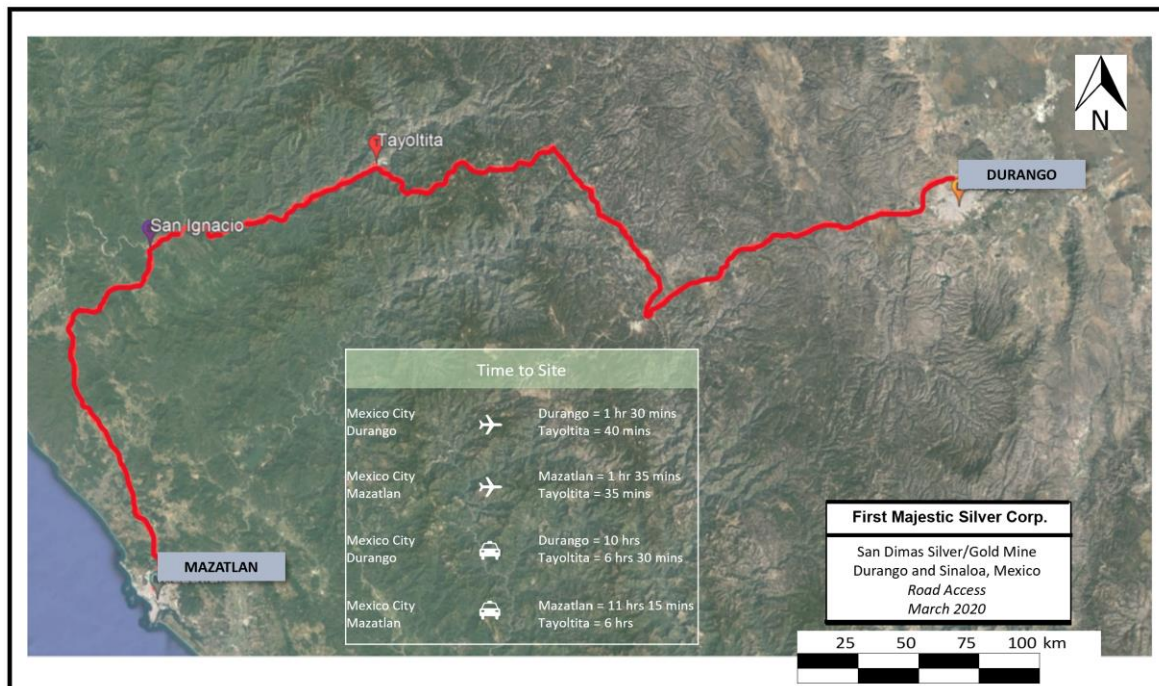
Access to the San Dimas area is by air or road from the cities of Durango and Mazatlán. The town of Tayoltita has an airstrip and a licensed airport, First Majestic owns and operates a fully licensed airline company, Primero Transportes Aereos, S.A. de C.V., which owns and maintains a Havilland Twin Otter aircraft and a helicopter, both of which are based at Tayoltita. Other commercial air-transportation companies schedule regular daily flights to Tayoltita. Flights from either Mazatlán or Durango to the town of Tayoltita require approximately 40 minutes. Most of the transportation of personnel and light supplies, as well as emergency transportation, is attended to by First Majestic's regular flights from Mazatlán and Durango to and from the site. Heavy equipment and supplies are brought in by road from Durango.

Originally, road access to the San Dimas district was from the town of San Ignacio, Sinaloa, along a 55 km-long narrow mule trail carved in the steep valley wall above the high-water level of the Piaxtla River. A rough road, paralleling the original mule trail, now follows the riverbed to San Ignacio, but the road is only accessible for approximately six months of the year during the dry season. San Ignacio is connected to Mazatlán by approximately 70 km of paved roads. The trip from Mazatlan to Tayoltita requires about six hours.

The access from Durango City is an all-year route via a 112 km-long paved road from Durango to the town of Santa Lucia and a 120 km service road from Santa Lucia to Tayoltita. This trip takes about six and a half hours.

Figure 5-1 shows the access by road to San Dimas and the property location with respect to Mazatlán and Durango.

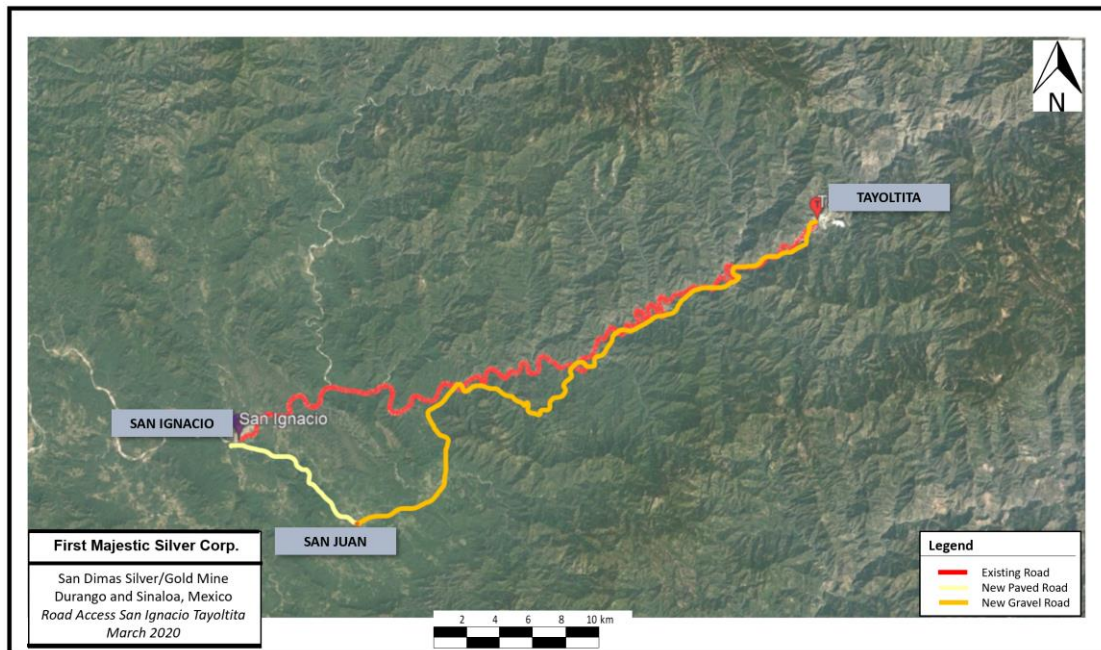
Figure 5-1: Road Access to San Dimas mine



Note: Figure prepared by First Majestic, March 2020.

In 2009 the Mexican Government approved a 90 km road improvement from the town of San Ignacio to the Town of Tayoltita. This road includes two main sections, a 10 km paved road from San Ignacio to San Juan and an 80 km gravel road from San Juan to Tayoltita, which was under construction at the Report effective date. A significant improvement is expected when transporting oversized goods and materials, once the project is completed in 2022, as it reduces the travel time from Mazatlán to Tayoltita from six hours to three and a half hours approximately. Figure 5-2 shows the access road from San Ignacio to Tayoltita.

Figure 5-2: Access Road from San Ignacio to Tayoltita



Note: Figure prepared by First Majestic, March 2020.

## 5.2. Climate

The climate of the San Dimas area is semi-tropical, characterized by relatively high temperatures and humidity, with hot summers (maximum around 39°C) and mild winters (minimum 11°C). At higher elevations in the Sierra, frosty nights occur in the winter (November through March). The majority of the precipitation occurs in the summer (June through September); however, tropical rainstorms between October and January can result in considerable additional rainfall. The average annual rainfall fluctuates between 66 and 108 mm. Exceptionally, in 2019 the annual rainfall was 488 mm.

The Las Truchas hydroelectric plant provides energy to the San Dimas operation. The water is collected from streams into a water dam located on the plateau. The power generated by the Las Truchas hydroelectric plant is relevant for the operation in terms of cost effectiveness and reliability as power from the grid provided by the Federal Commission of Electricity (CFE) is more expensive and has frequent short outages that can disrupt the operations.

As prolonged drought conditions could affect operations, First Majestic is assessing the economic merit of expanding the hydro dam capacity, discussed in Section 26.

Weather does not affect the mining and processing operations, and these activities are carried out on a year-round basis.

### 5.3. Local Resources and Infrastructure

Tayoltita is the largest population centre in the region. Including mining personnel, the town has approximately 6,000 inhabitants. Population outside of this center is sparse. Subsistence farming, ranching, timber cutting, and mining are the predominant activities in the region.

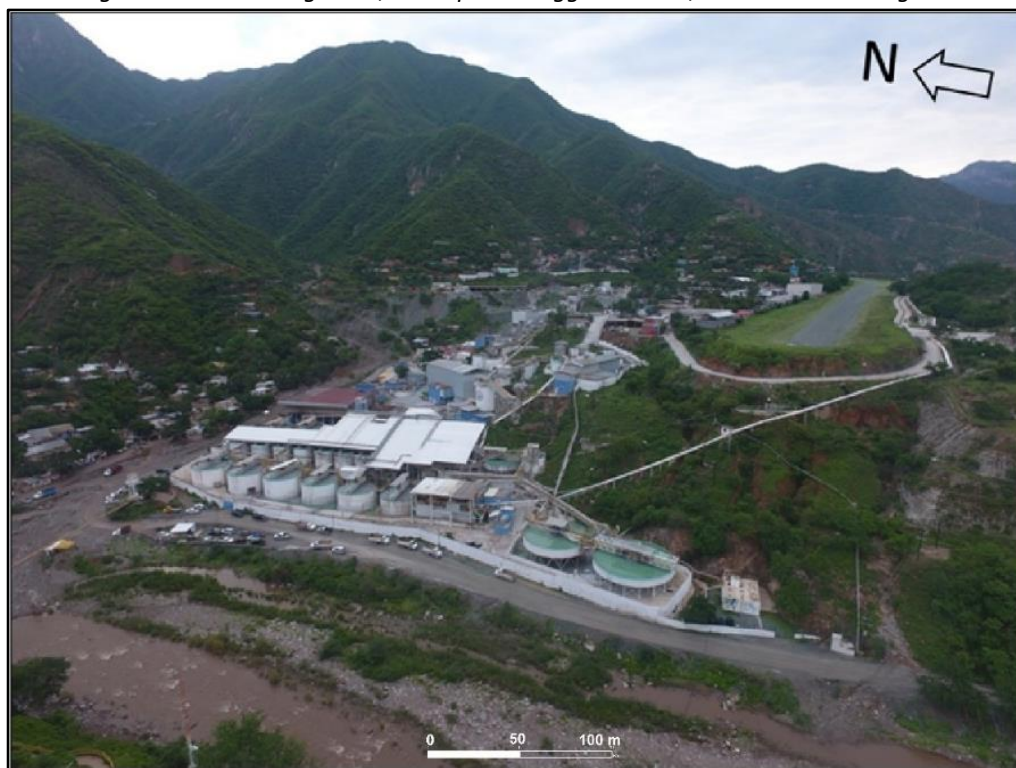
Mining activities at the San Dimas mine are performed by a combination of First Majestic personnel and contract workers.

Water for the mining operations is obtained from wells and from the Piaxtla River. First Majestic also supplies water to Tayoltita from an underground thermal spring at the historic Santa Rita mine.

Figure 5-3 shows an aerial view of the mill in the foreground, the airstrip in the center, and the rugged terrain within which San Dimas is situated.

Details of the infrastructure that supports the San Dimas mine are provided in Section 18 of this Report.

*Figure 5-3: Processing Plant, Airstrip and Rugged Terrain, Aerial View looking East*



*Note: Image taken by First Majestic, January 2019.*

### 5.4. Physiography

The San Dimas mine is located in the central part of the Sierra Madre Occidental, a mountain range characterized by rugged topography with steep, often vertical, walled valleys and narrow canyons.

Elevations vary from 2,400 metres above mean sea level (masl) on the high peaks to elevations of 400 masl in the valley floor of the Piaxtla River.

The main drainage in the San Dimas area is the Piaxtla River and its tributaries. The Piaxtla River is a short coastal river whose source is in the Sierra Madre, close to the Durango–Sinaloa state border, and which flows into the Pacific Ocean. The Piaxtla River has a length of 220 km and drains a basin of 11,473 km<sup>2</sup>.

Vegetation at the mid-to-higher elevations is dominated by pines, junipers, and to a lesser extent, oaks, while the lower slopes and valleys are covered with thick brush, cacti, and grass.

#### **5.5. Comment on Section 5**

In the opinion of the QPs, the existing local infrastructure, availability of staff, methods whereby goods are transported to the San Dimas mine area are well-established and well understood by First Majestic and can support the declaration of Mineral Resources and Mineral Reserves (see discussion in Section 18).

All necessary primary infrastructure for the current operations is operational, being maintained and is sufficient for the projected life-of-mine (LOM) plan (see discussion in Section 18).

Surface rights for infrastructure and mining are discussed in Section 4.5.

Operations are currently conducted year-round.

## 6. HISTORY

### 6.1. Ownership History

Table 6-1 summarizes the Project ownership history.

*Table 6-1: Summary History of San Dimas Property*

Time Period	Milestone
1757–1810	There is record of Hispanic mining production in the area during the 16 <sup>th</sup> and 17 <sup>th</sup> centuries. Spaniards exploited the high-grade areas of the Los Queleles and other gold and silver mines.
1810–1821	Mexican War of Independence. Mining activities ceased in the region.
1821–1880	The region remained isolated with minor mining activities.
1880–1882	Mining activities were reactivated by William Randolph Hearst, who purchased the old Tayoltita mine under the name of the San Luis Mining Company.
1883	Colonel Burns took control of the Candelaria mine.
1883–1904	The Contraestaca (San Antonio) mine was discovered, together with several large, high-grade deposits.
1904	A mill and a flotation plant/cyanide circuit were built for the first time in Mexico.
1940	Candelaria mined out. The mineral rights were purchased by the San Luis Mining Company.
1941	The San Dimas group of properties was consolidated under the ownership of the San Luis Mining Company.
1959	Mexican law governing natural resources requires that 51% of the ownership of a mining company must be held by Mexican nationals.
1961	Minas de San Luis S.A. de C.V., a company owned by Mexican interests, acquires 51% of the San Dimas group of properties.
1962–1977	The mine is operated by a partnership between the San Luis Mining Company and Minas de San Luis S.A. de C.V.
1978	A subsidiary of Minas de San Luis S.A. de C.V., Luismin, acquires the remaining 49% of the San Luis Mining Company.
1982	Luismin acquired the Ventanas Concessions Group.
1978–2001	Luismin, as sole operator, operates continuously with an average production rate of 700 tpd.
2002	Luismin sells the San Dimas operations to Wheaton River Minerals Ltd. (Wheaton River).
2003	Production rate is increased to 1,600 tpd.
2005	Wheaton River merges with Goldcorp. Inc.
2006	Production rate is increased to 2,100 tpd.
2010	Mala Noche Inc. acquires a 100% interest in the San Dimas mine, enters into a streaming contract with Wheaton Precious Metals, successor to Wheaton River.
2011	Mala Noche Inc. changes its name to Primero Mining Corp. (Primero).
2011–2018	Primero is mine operator, with a production peak of 2,800 tpd in 2016. Primero increased the land position by acquiring an interest in the Lechuguillas Concessions Group.
2018	In May 2018, First Majestic acquires a 100% interest in the San Dimas Project through acquisition of Primero. The streaming contract with Wheaton Precious Metals is renegotiated.

## 6.2. Exploration History

In the San Dimas mining district, there are historical records that mention workings as far back as 1757, but it would not be until 1890 that there would be formal operations by the American-owned San Luis Mining Company and the Mexican-owned Candelaria Company. Later, in the 1960s, higher-grade discoveries would lead to the first deep drilling campaigns and to excavation of the initial long mining tunnels.

In 1975, the first 4.5km-long tunnel, the longest in the district at the time, was completed at the Tayoltita mine, this being an area where mineralization discoveries such as the San Luis vein had taken place following the Favorable Zone (see Section 7.4) concept aided by field geology. In the 1980s, American and Mexican groups commenced operations that led to the first geophysical and geochemical exploration in the southeast of the area known as the Tayoltita Block. As a result of the exploration the Santa Rita vein was discovered in what became known as the Santa Rita Area.

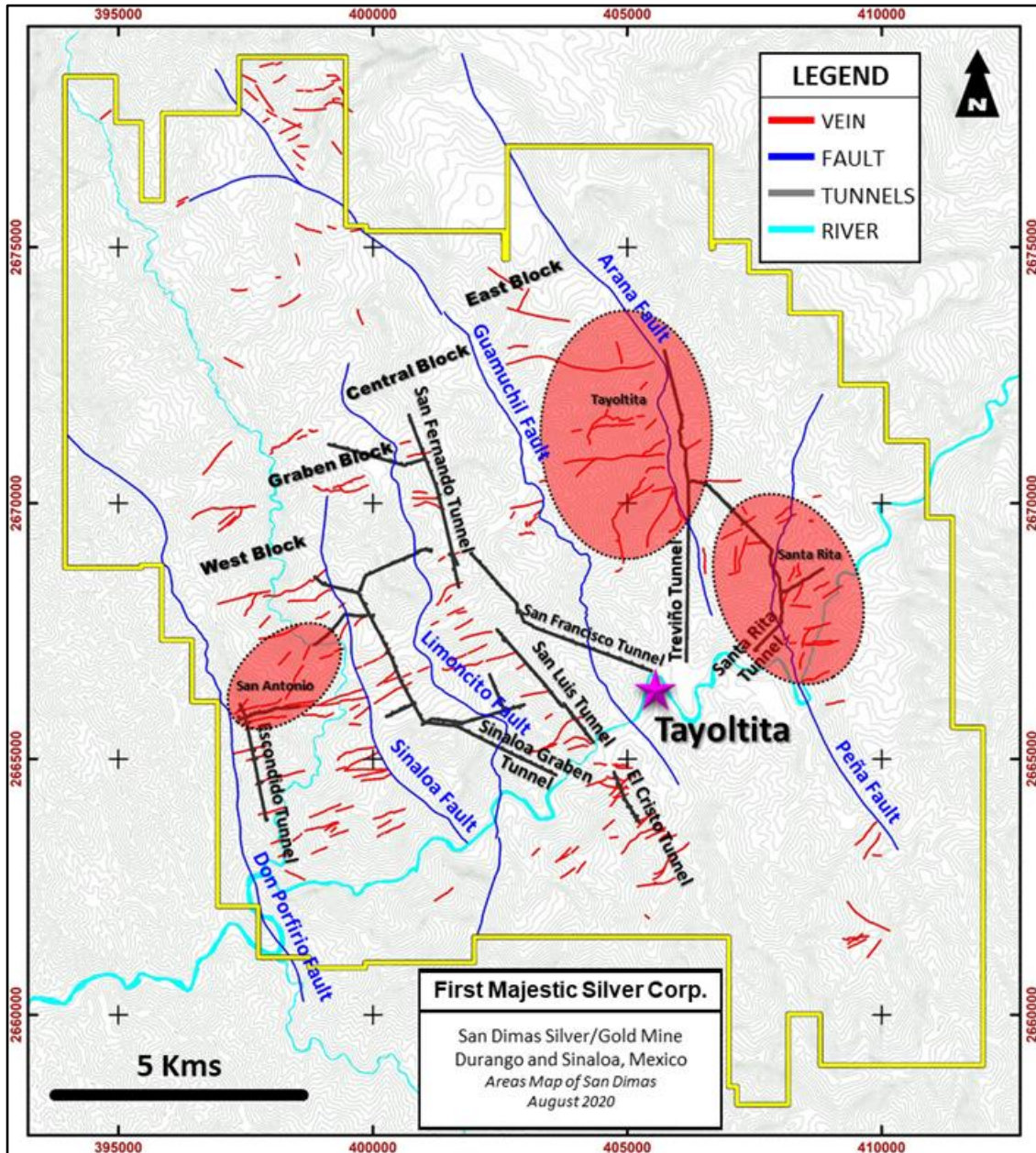
By the late 1980s and early 1990s, the Favorable Zone concept and Ag:Au ratios supported by fluid inclusion and thermal fusion studies led to discovery of the San Antonio area on the western side of the Tayoltita mine. After acquisition of the property by Luismin, there was a significant reduction in exploration activities throughout the whole mining district.

Wheaton River completed long drill holes together with excavation of long tunnels that were perpendicular to the general trend of veins. Examples of these tunnels include San Luis, Santa Anita, and Sinaloa Graben (Figure 6-1), where significant intersections and new high-grade veins were discovered. Exploration of these veins by drilling and the development of tunneling continued during the Primero ownership period. The Sinaloa Graben and San Fernando tunnels were extended to the north, intercepting more veins, which are currently in production.

Exploration and drilling activities conducted by First Majestic are summarized in Section 9 and Section 10 of this Report.



Figure 6-1: Map showing Mining Tunnels at the Time the Property was Acquired by Wheaton River



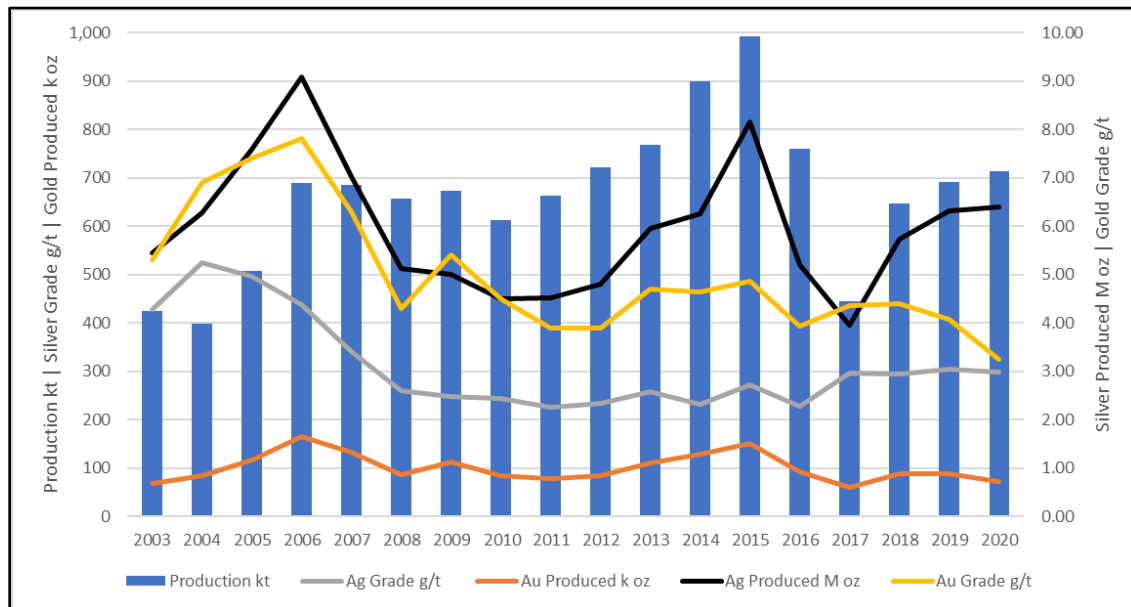
Note: Figure modified by First Majestic after Goldcorp., 2010, August 2020.

### 6.3. Production History

Historical production to date from the San Dimas district is estimated at more than 748 Moz of silver and more than 11 Moz of gold (Enriquez et al., 2018), placing the district third in Mexico for precious metal production after Pachuca and Guanajuato. Historical production from 2003 to 2020 for the San Dimas mine is shown in Figure 6-2, exceeding 100 Moz of silver and 1.8 Moz of gold. The majority of this production is prior to First Majestic’s acquisition of the property in May 2018.

The average throughput during 2019 and 2020 at the San Dimas mine was 1,975 and 2,037 tpd, respectively. Table 6-2 shows the monthly production of the San Dimas mine since First Majestic acquired the property.

Figure 6-2: San Dimas Production from 2003 to 2020



Note: Figure prepared by First Majestic, January 2021.

Table 6-2: San Dimas Monthly Production After First Majestic's Acquisition

Year	Month	Production (k t)	Ag (g/t)	Au (g/t)	Ag (k oz)	Au (k oz)
2018	May	34.7	404	5.40	433	5.88
	Jun	51.1	241	3.50	376	5.47
	Jul	57.7	287	3.50	501	6.29
	Aug	63.7	268	3.70	515	7.28
	Sep	55.5	252	4.80	431	8.34
	Oct	58.5	232	3.20	413	5.87
	Nov	57.9	266	4.30	467	7.76
	Dec	56.2	290	4.10	487	7.21
<b>Total 2018</b>		<b>435.3</b>	<b>274</b>	<b>3.99</b>	<b>3,622</b>	<b>54.10</b>
2019	Jan	56.3	288	4.01	482	7.03
	Feb	56.3	250	3.72	421	6.42
	Mar	50.7	326	4.88	501	7.65
	Apr	61.7	233	3.37	426	6.41
	May	50.2	353	4.76	531	7.41
	Jun	60.5	357	4.92	645	9.26
	Jul	55.1	275	3.59	455	6.14
	Aug	58.8	318	3.98	565	7.30
	Sep	59.8	348	4.38	620	8.10
	Oct	65.5	268	3.44	530	7.00
	Nov	55.5	402	4.49	657	7.73
	Dec	61.2	258	3.64	471	6.99
<b>Total 2019</b>		<b>691.6</b>	<b>305</b>	<b>4.07</b>	<b>6,306</b>	<b>87.42</b>
2020	Jan	63.6	337	4.44	643	8.74
	Feb	65.7	268	2.94	527	6.00
	Mar	70.8	240	2.99	507	6.57
	Apr	57.1	377	4.01	653	7.14
	May	20.5	251	2.80	155	1.78
	Jun	36.8	263	2.73	295	3.12
	Jul	66.7	270	2.93	549	6.06
	Aug	64.6	275	2.96	543	5.94
	Sep	58.6	331	3.47	586	6.27
	Oct	65.0	350	3.66	691	7.34
	Nov	71.1	292	2.77	629	6.10
	Dec	72.5	290	2.92	621	6.54
<b>Total 2020</b>		<b>713.1</b>	<b>297</b>	<b>3.24</b>	<b>6,400</b>	<b>71.60</b>

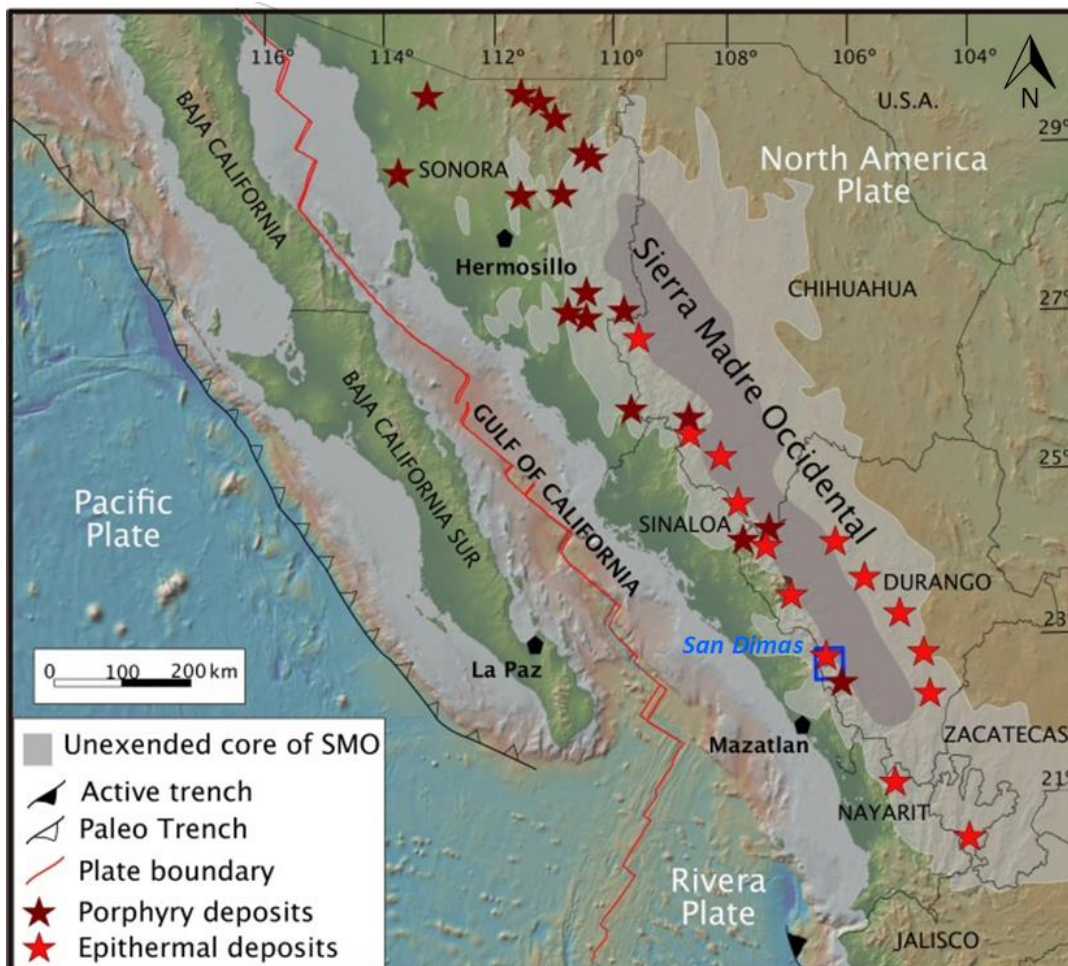
## 7. GEOLOGICAL SETTING AND MINERALIZATION

### 7.1. Regional Geology

Information on the regional setting for the Project has been summarized primarily from Montoya et al. (2019, 2020) and Enriquez et al. (2001).

The San Dimas mining district is located in the central part of the Sierra Madre Occidental (SMO), near the Sinaloa-Durango state border. As a physiographic province, the SMO comprises a high plateau with an average elevation exceeding 2000m above sea level, extending from the Mexico-US border to the Trans-Mexican Volcanic Belt. Numerous epithermal deposits have been found along the SMO (Figure 7-1).

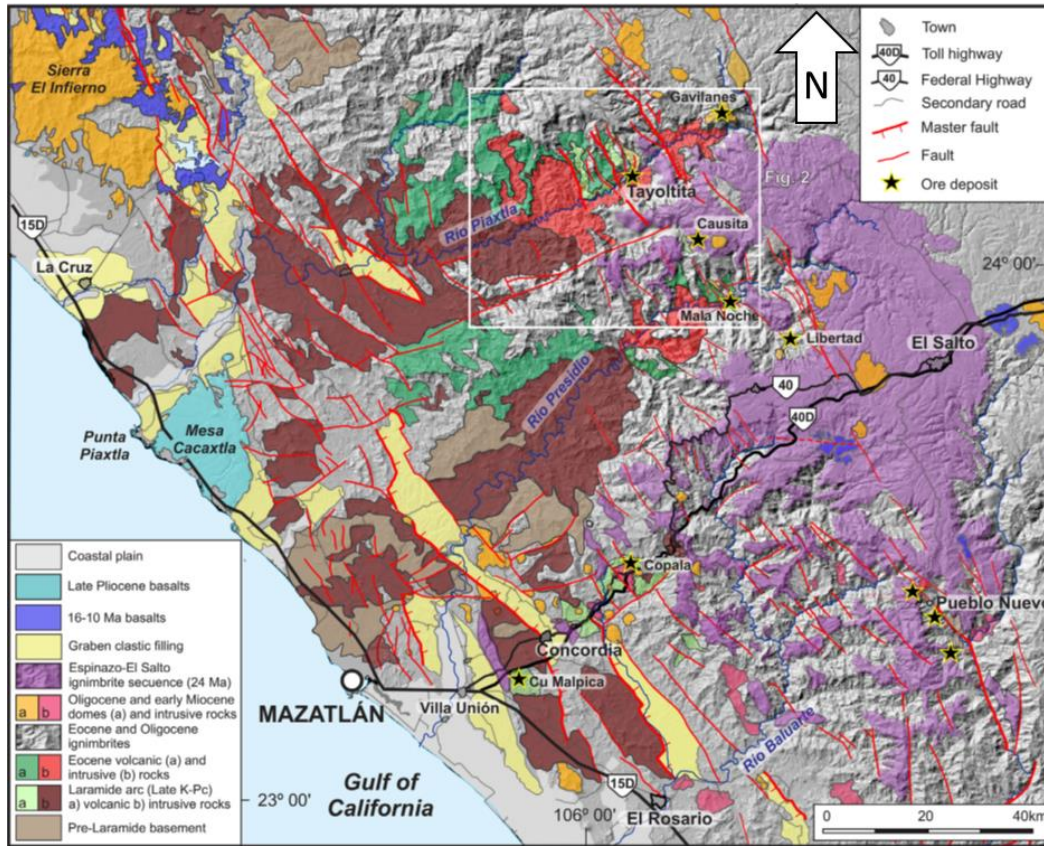
Figure 7-1: Physiographic Provinces around the San Dimas Mining District



Note: Figure from Montoya et al., 2019.

The SMO includes primarily Late Cretaceous to early Miocene igneous rocks formed during two main periods of continental magmatic activity (Ferrari et al., 2018a) (Figure 7-2).

Figure 7-2: Regional Geological Map of Central Sierra Madre Occidental



Note: from Montoya et al., 2019. Showing the Main Post-Eocene Extensional Structures and Principal Mining Districts. San Dimas enclosed within the white frame.

Two major volcanic successions from these periods represent approximately 3,500 m in thickness and are separated by erosional and depositional unconformities. They are known as Lower Volcanic Complex (LVC) and Upper Volcanic Group (UVG)

The LVC consists of predominantly intermediate volcanic and intrusive rocks, the so-called Laramide magmatic arc, which developed during east-verging subduction of the Farallon plate beneath the North America continent between approximately 100 and 50 Ma (Gastil, 1975; Henry et al., 2003; McDowell et al., 2001; Ortega-Gutiérrez et al., 2014; Valencia-Moreno et al., 2017).

After a transitional period that lasted until the late Eocene (Ferrari et al., 2018a), volcanism became markedly silicic and then bimodal, forming the UVG. Silicic ignimbrites represent the overwhelming component of this volcanism, which makes the Sierra Madre Occidental one of the largest silicic volcanic provinces on Earth (Bryan and Ferrari, 2013). Most of these rocks were deposited during

two ignimbrite episodes at approximately 35–29 Ma along the entire province and at approximately 24–20 Ma in the southern SMO (Ferrari et al., 2002, 2007; McDowell and McIntosh, 2012). Mafic lavas, often with an intraplate affinity, are found intercalated within the ignimbrite successions since 33 Ma (Ferrari et al., 2018a; 2018b).

## 7.2. Local Geology

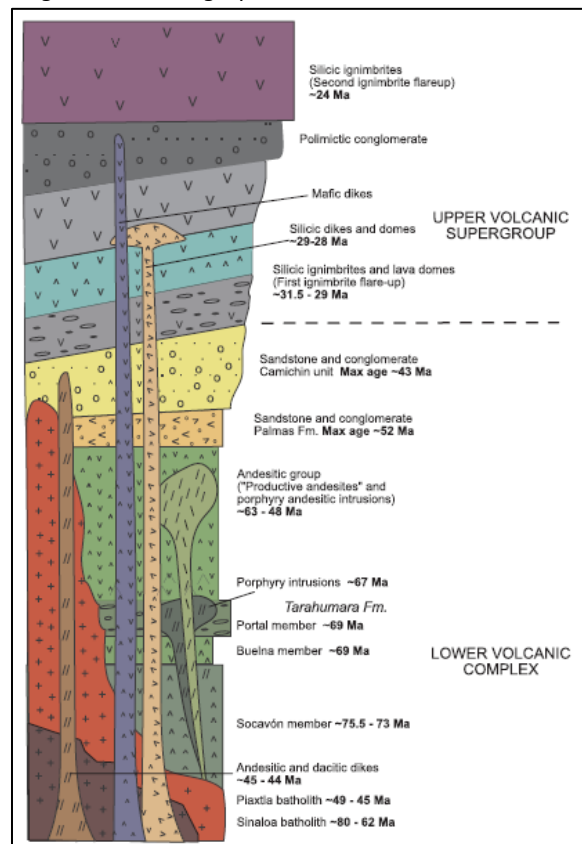
This section is primarily summarized from Montoya et al., 2019, and Enriquez and Rivera, 2001.

In the San Dimas district, the local geology is defined by the LVC and the UVG. These volcanic successions are separated by erosional and depositional unconformities and are intruded by intermediate and basic rocks.

### 7.2.1. Stratigraphy

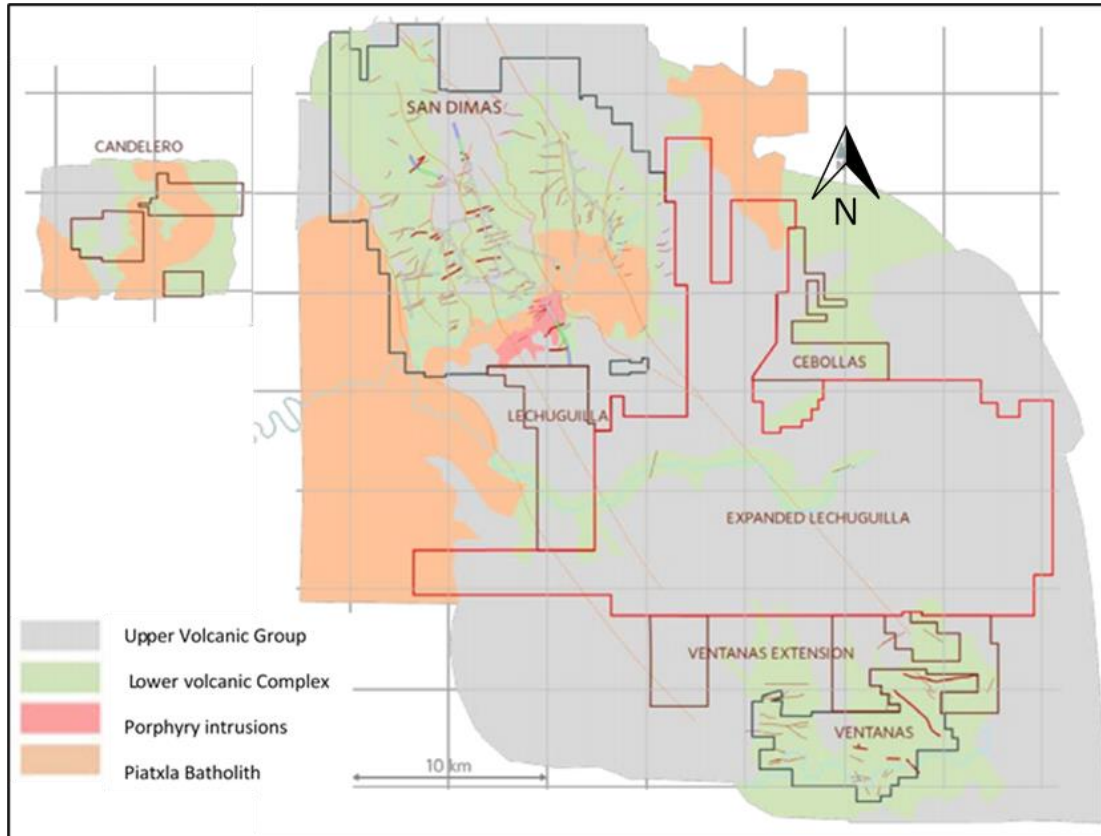
A general stratigraphic column for the San Dimas district is provided in Figure 7-3 and a general geology map of the area is included as Figure 7-4.

Figure 7-3: Stratigraphic Column, San Dimas District



Note: Figure from Montoya et al., 2019.

Figure 7-4: Geological Map of San Dimas Mining District



Note: Figure prepared by First Majestic, August 2020. Polylines in red represent mineralized veins.

### 7.2.2. Lower Volcanic Complex (LVC)

The LVC has traditionally been divided into informal geological units, primarily based on field observations. From base to top, these are the Socavón rhyolite, the Buelna andesite, and the Portal rhyolite, defined as a sequence of interlayered tuffs and lesser lava flows of felsic to intermediate composition (Locke, 1918; Davidson, 1932; Henshaw, 1953):

- The Socavón rhyolite is more than 700 m thick and is host to several productive veins in the district;
- The Buelna andesite, which is remarkably persistent throughout the area, is well-bedded, and ranges in thickness from 20–75 m;
- The Portal rhyolite is a grey, cream- to purple-coloured rock containing potassic feldspar and quartz that cement small (5–10 mm) volcanic rock fragments. It ranges in thickness from 50–250 m and is also prevalent throughout the district.

These rocks are unconformably overlain by a succession of informally named andesitic lavas and sedimentary rocks, from base to top, including:

- The Productive andesite, >750 m thick, divided into two varieties based on grain size, but which are of identical mineralogy. One variety is fragmental (varying from a lapilli tuff to coarse agglomerate), and the other has a porphyritic texture (1–2 mm plagioclase phenocrysts);
- The Las Palmas formation, composed of purple to red interbedded rhyolitic and andesite tuffs and flows, and >300 m thick;
- The Camichin unit, comprises green epiclastic conglomerates at the base and red arkoses and shales at the top, with a total thickness of approximately 300 m. This unit crops out extensively in the Tayoltita area.

### **7.2.3. Upper Volcanic Group (UVG)**

In the San Dimas district, the UVG is informally divided into a subordinate lower unit composed mainly of lavas of intermediate composition, the Guarisamey andesite, and an upper unit, the Capping rhyolite. The Capping rhyolite consists of rhyolitic ash flows and air-fall tuffs, may reach as much as 1,500 m in thickness in the eastern part of the district; however, within most of the district it averages about 1,000 m thick.

### **7.2.4. Intrusive Rocks**

The two volcano–volcaniclastic successions are intruded by intermediate rocks, consisting of the Arana intrusive andesite and the Arana intrusive diorite (Henshaw, 1953), and a felsic suite comprising the Piaxtla granite and Santa Lucia, Bolaños, and Santa Rita dikes. The basic dikes intrude both the LVC and the UVG.

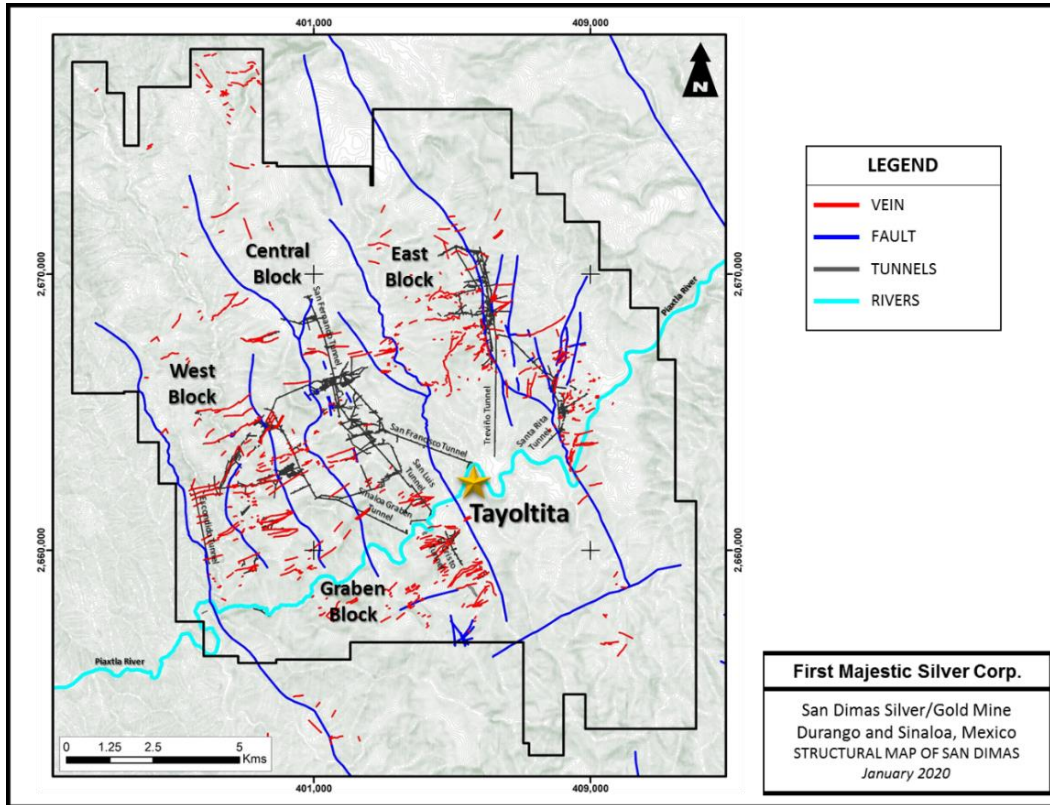
### **7.2.5. Structural Geology**

The structural context for the San Dimas district was investigated by Ballard (1980), who focused on the structural control of mineralization in the Tayoltita mine, and by Horner and Enriquez (1999), who studied the structural geology and tectonic controls for the district as a whole.

Figure 7-5 shows the structural geology in the San Dimas group of concessions where the mining operations take place. The geology within this group of concessions has been studied in more detail. The most prominent structures are major north–northwest-trending normal faults with opposite vergence that divide the district into five fault-bounded blocks that are tilted to the east–northeast or west–northwest (Enriquez and Rivera, 2001).



Figure 7-5: Structural Map of San Dimas Concessions Group



Note: Figure prepared by First Majestic, January 2020.

All the major faults exhibit northeast–southwest extension. Dips vary from nearly vertical to approximately 55° (Horner and Enriquez, 1999). East–west to west–southwest–east–northeast striking fractures, perpendicular to the major normal faults, are often filled by quartz veins, dacite porphyry dikes, and pebble dikes. These are later cut by rhyolite porphyry dikes that intruded north–south to north–northwest–south–southeast trending fissures (Smith et al., 1982). Horner and Enriquez (1999) grouped the development of major faults, veins, and dikes into three deformational events:

- D1: Represented by tension gashes with an east–west to northeast–southwest orientation and a slight right-lateral offset. Developed in the late Eocene. These structures host the first hydrothermal vein systems;
- D2: Produced north–south-trending right-lateral strike-slip to transtensional faults due to a rotation of the maximum horizontal principal stress to an approximate northeast–southwest position. In this stage, interpreted to have occurred in the early Oligocene, a second set of hydrothermal veins developed;

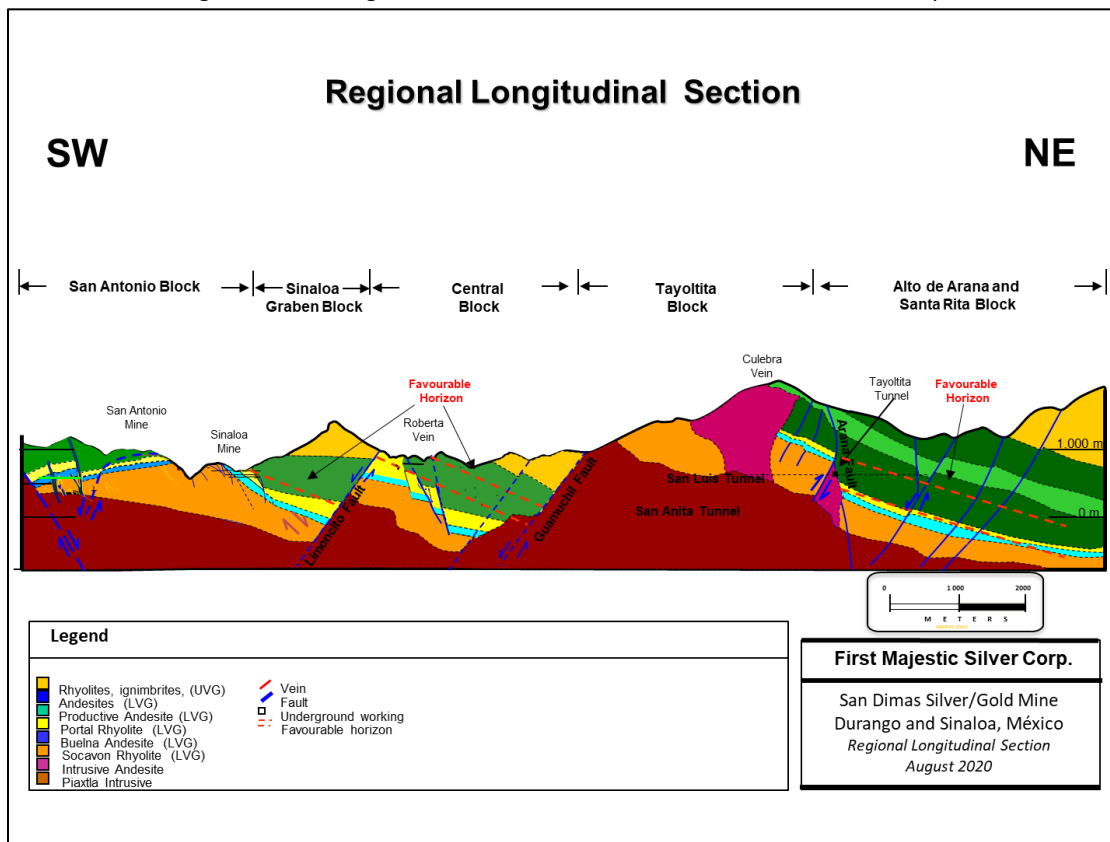
- D3: Produced the major block faulting that affected the entire district along northwest–southeast-striking normal faults, which in some cases reactivated the former strike-slip faults during the late Oligocene–Miocene period. These faults host bimodal dikes, which are part of the UVG.

The northwest–southeast (D3 event) extensional fault systems exposed the mineralization and tilted all the succession prior to the deposition of a ~24 Ma ignimbrite package.

Very recent studies indicate that an older west–southwest–east–northeast trending normal fault system with up to 1 km of displacement must exist between the San Dimas area and the Causita and Ventanas areas to the south. This fault system, currently buried beneath Oligocene–Miocene ignimbrites, may have controlled the intrusion of the Piaxtla batholith and played a crucial role in the preservation of the large vein systems in the San Dimas district in a tectonic depression setting.

Figure 7-6 is a geological section across the San Dimas district perpendicular to the main faults showing the five tilted fault blocks. In most cases, the faults post-date the mineralizing event in age and offset both the LVC and UVG.

Figure 7-6: Geological Section Across the San Dimas Concessions Group



Note: Figure prepared by First Majestic August 2020, after Goldcorp.

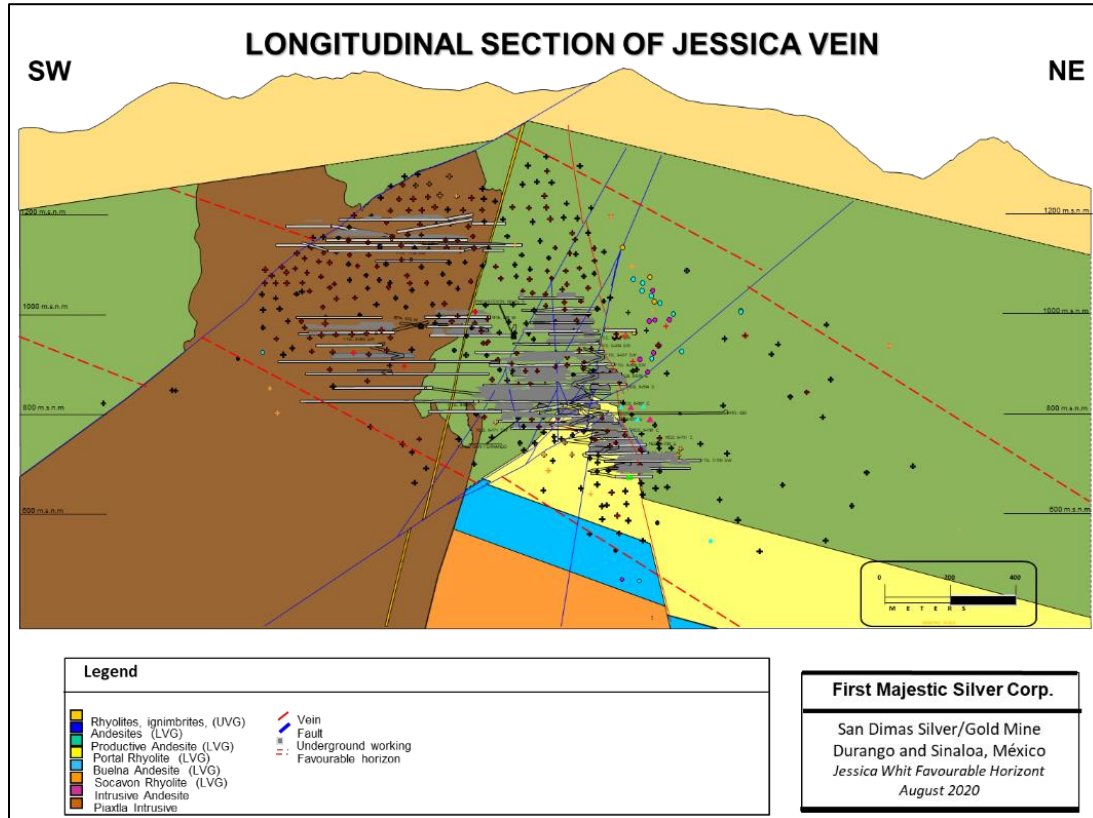
### **7.3. Mineralization**

Within the San Dimas district, the mineralization is typical of epithermal vein structures with banded and drusy textures. Epithermal-style veins occupy east–west-trending fractures, except in the southern part of the Tayoltita Block where they strike mainly northeast, and in the Santa Rita area where they strike north–northwest (see Section 7.4 for block and area descriptions).

The Favourable Zone concept for San Dimas was developed in the mid seventies in the Tayoltita Block, based on the San Luis vein, which was mined out in the late 1990s. The mine geologists observed that bonanza grades along the San Luis vein were spatially related to the Productive andesite unit and/or to the interphase between the Productive andesite and the Portal rhyolite and/or the Buelna andesite. This spatial association of vein-hosted mineralization to a favorable zone within the volcanic sequence is now recognized in other fault blocks and constitutes a major exploration criterion for the district.

The veins were formed in two different phases. The east–west striking veins developed first, followed by a second system of north–northeast-striking veins. Veins pinch and swell and commonly exhibit bifurcation, horse-tailing, and sigmoidal structures. They vary in width from a fraction of a centimeter to as much as 8 m wide, but average 1.5–2.0 m. The veins have been followed underground from a few meters in strike-length to more than 1,500 m. An example of these veins, the Jessica Vein, which extends for more than 1,000 m in the Central Block, is illustrated in Figure 7-7.

Figure 7-7: The Jessica Vein Within the Favourable Zone, Vertical Section



Note: Figure prepared by First Majestic August 2020. Black dots represent exploration and delineation drilling intercepts. The Favorable Zone, the interphase between Productive andesite and rhyolite, is positioned between the two red dotted lines.

Three major stages of mineralization have been recognized in the district:

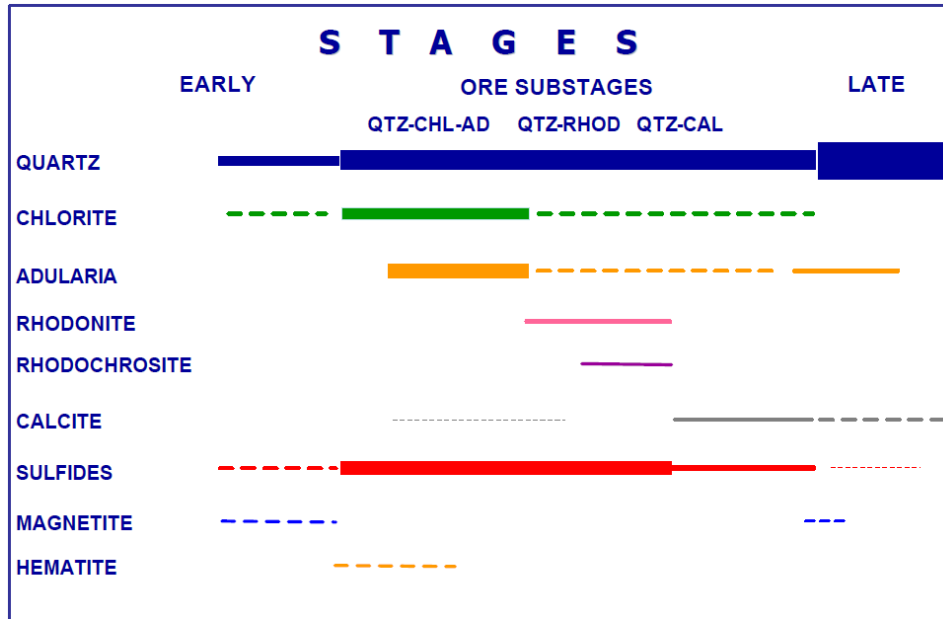
- Early stage;
- Ore-forming stage;
- Late-stage quartz.

These three distinct sub-stages of the ore-forming stage can be discriminated by distinctive mineral assemblages with ore-grade mineralization occurring in all three sub-stages:

- Quartz–chlorite–adularia;
- Quartz–rhodonite;
- Quartz–calcite.

The paragenetic sequence for vein formation is summarized in Figure 7-8.

Figure 7-8: Paragenetic Vein Sequence, San Dimas

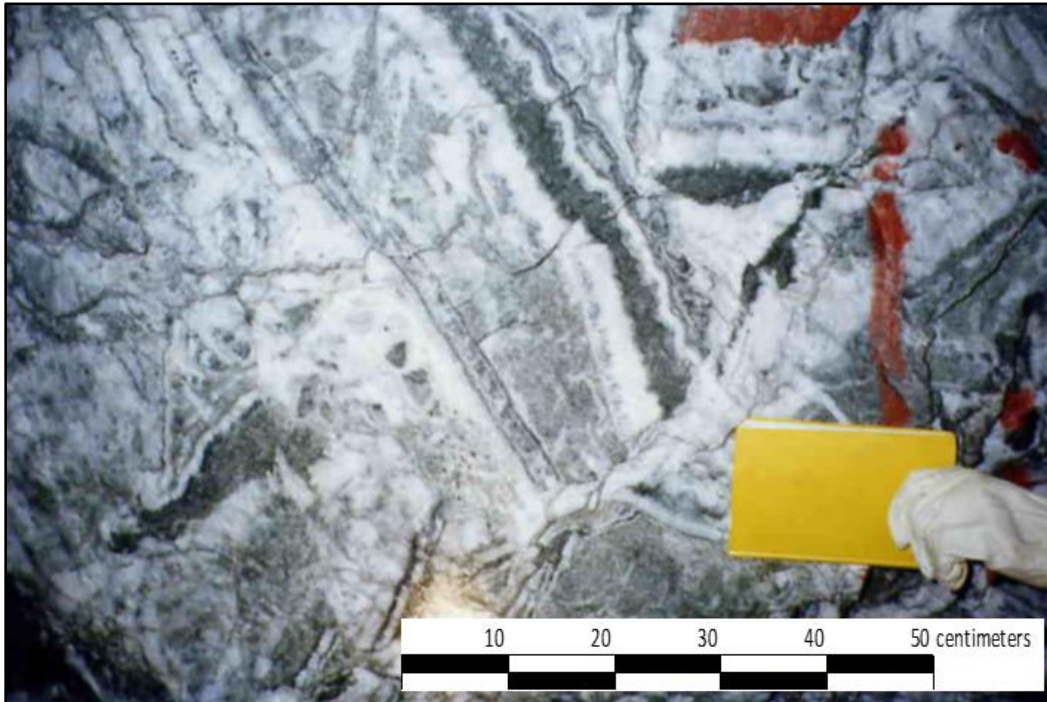


Note: Figure prepared by Silver Wheaton (now Wheaton Precious Metals), after Clarke, 1986; and Enriquez, 1995.

QTZ=quartz, CHL=chlorite, AD=adularia, RHOD=rhodochrosite, CAL= calcite

The ore-forming vein stage mineralogy consists primarily of white to light grey, medium-to-coarse-grained crystalline quartz. The quartz contains intergrowths of base metal sulphides (sphalerite, chalcopyrite, and galena) as well as pyrite, argentite, polybasite  $[(Ag,Cu)_6(Sb,As)_2S_7]$ , stromeyerite (AgCuS), native silver, and electrum. The veins are formed by filling previous fractures and typical textures observed include crustification, comb structure, colloform banding and brecciation. Figure 7-9 is a photograph of the Roberta vein in the San Dimas district.

Figure 7-9: Roberta Vein, Central Block, San Dimas



Note: Photo by First Majestic, May 2020.

Mineralized shoots within the veins have variable strike lengths (5–600 m); however, most average 150 m in strike-length. Down-dip extensions of mineralized shoots are up to 200 m in length and are generally less than the strike length.

#### 7.4. Deposit Descriptions

A total of 118 mineralized quartz veins were recognized in the San Dimas Concessions Group, which represents 38% of the total property area. Another seven veins have been mapped to some extent in the Ventana Concessions Group. Table 7-1 presents the list of known veins by mine zone in the San Dimas Concessions Group and in the Ventana Concessions Group.

San Dimas Silver/Gold Mine  
Durango and Sinaloa States, Mexico  
Technical Report on Mineral Resource and  
Mineral Reserve Estimates Update



Table 7-1: List of Veins by Mine Zone in the San Dimas and Ventanas Concessions Groups

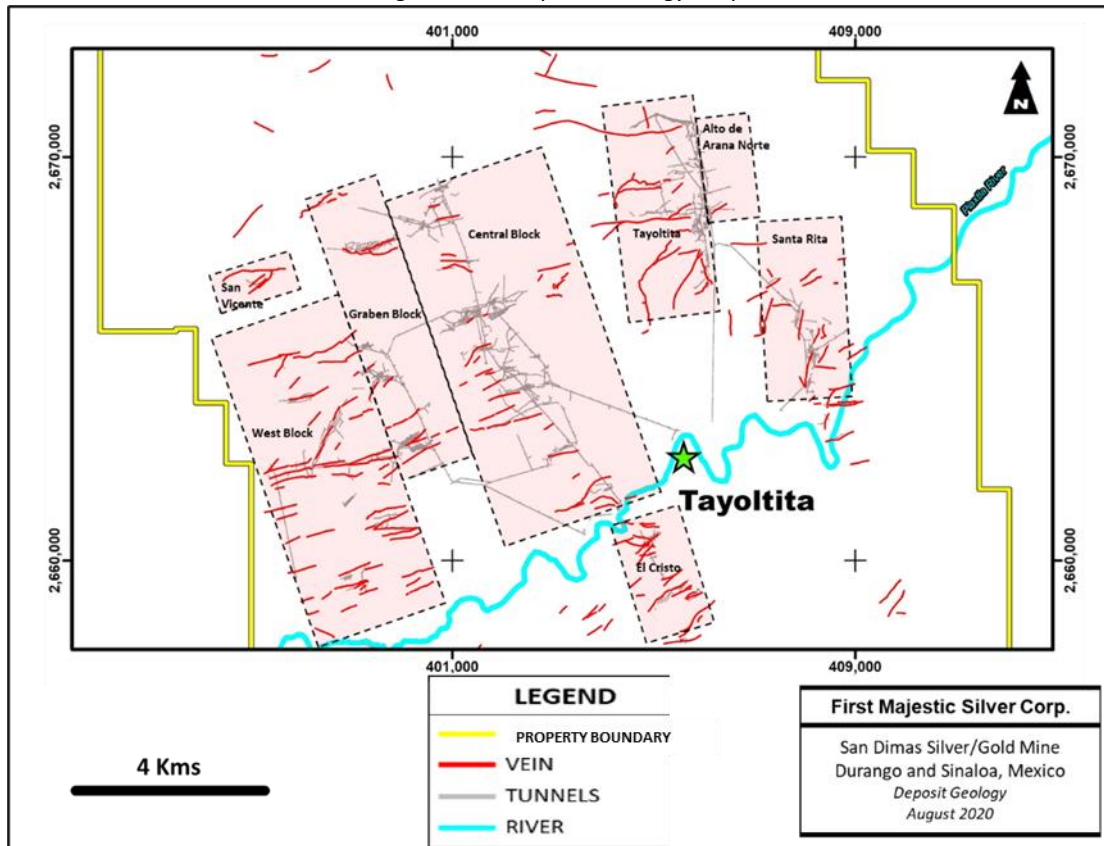
San Dimas Concession Group									Ventanas
West Block	Graben Block	Central Block	Tayoltita Block		Santa Rita Area	El Cristo Area	Alto Arana Area	San Vicente Area	Concession Group
Esperanza	Santa Regina	Santa Jessica	San Francisco	732 (Tay)	Promontorio	Guadalupe	Alto Arana	San Juan	Rivereña
San Rafael	Trinidad	Noche Buena	Cedral	710 (Tay)	Blendita	El Cristo		San Vicente	Eleonor
Tescalama	Alexa	Frapopan	930	Escondida	Liliana	Camichin			Guadalupe
Coronado	Victoria	Pozolera	300_8000 (Tay)	5 Señores	San Pablo	Veta Nueva			El Carmen
Escobosa	Lilith-Paula	Roberta	Culebra	Laura	Carrizo	Tejas			Valenciana
Sta. Teresa	Aranza	San Enrique	Candelaria	Guadalupe	San Jose	Verdosa			Mala Noche
San Antonio	Elia	Robertita	San Luis	Yadira	Carolina	El Reliz			La Prieta
Guadalupe	Franklin	Marina 1	Maria elena	300_8001 (Tay)	Nancy				
Carmen		Marina 2	Itzel	550 (Tay)	Cristina				
Rosario		Gloria	207 (Tay)	607 (Tay)	Marisa				
Peggy		Jael	Perlita	615 (Tay)	Patricia I				
Macho Bayo		Gabriela	326 (Tay)	623 (Tay)	Patricia II				
Enik		Soledad	Elisa_26	636 (Tay)	Magdalena				
Perez		Castellana	Aurora	638 (Tay)	Trinidad				
San Jose		Celia	Catalina (Tay)	640 (Tay)	San Rita				
Marshall		San Salvador	Don Eduardo	653 (Tay)	Tecolota				
Carmen		Santa Gertrudis	Clarisa (Tay)	714 (Tay)	El sol				
		Santa Lucia	Luz-Maria	900 (Tay)	La Luna				
		El Oro	Lidia Marcela	Marcela_314	America				
		Angelica	711 (Tay)	25_178 (Tay)					
		San Felipe	715 (Tay)	Frontera					
				Arana					
<b>17</b>	<b>8</b>	<b>21</b>	<b>43</b>		<b>19</b>	<b>7</b>	<b>1</b>	<b>2</b>	<b>7</b>

All the Mineral Resources estimated for San Dimas are hosted in the deposits that have been found in the San Dimas Concessions Group. There are no resource estimates outside of this area.

The local geology is characterized by north–northwest–south–southeast-oriented fault blocks that are bounded by major faults. The veins are generally west–southwest–east–northeast-oriented, forming a corridor about 10 km wide. This package was truncated by the north–northwest–south–southeast-trending major faults, separating the original veins into segments. These segments are named as individual veins and grouped by mine zones by fault block

These mine zones are, from west to east: West Block, Graben Block, Central Block, Tayoltita Block, Alto de Arana Block (also know as Arana HW), San Vicente, El Cristo and Santa Rita. Figure 7-10 shows the location of the mine zones in the San Dimas concessions area.

Figure 7-10: Deposit Geology Map

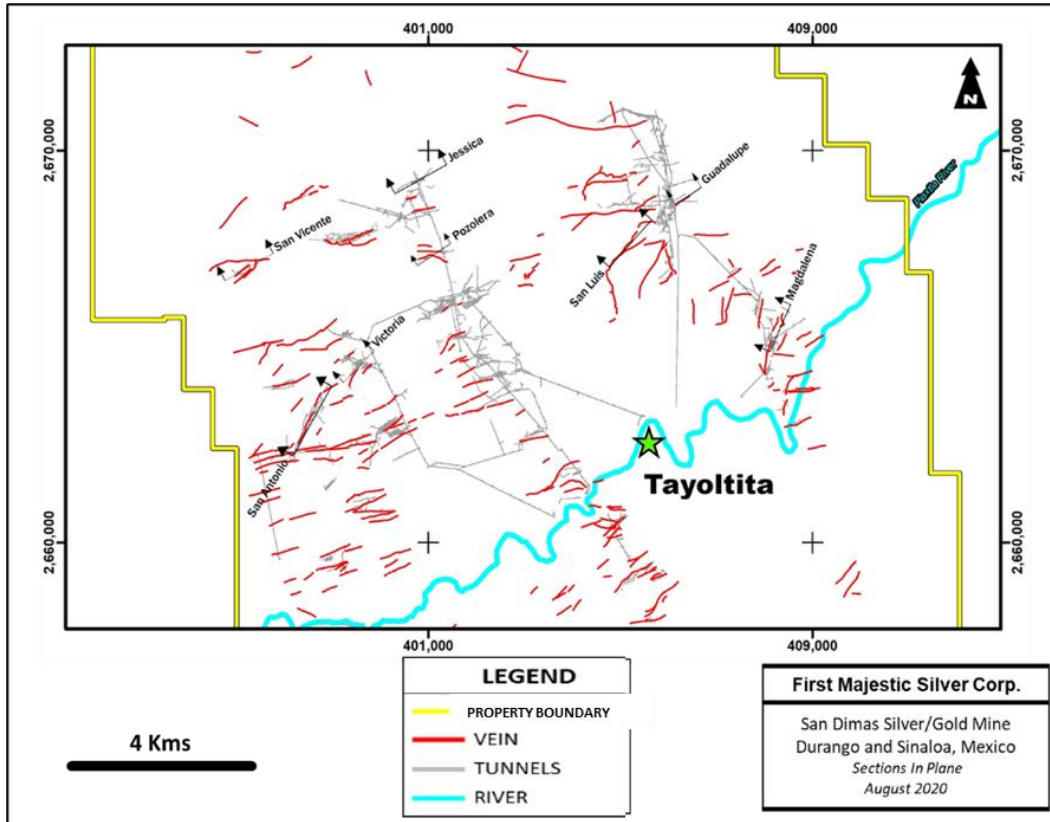


Note: Figure prepared by First Majestic, August 2020.

A description for each of the mine zones is presented in the following sub-sections. Figure 7-11 shows the location of the veins and the orientation of representative cross sections.



Figure 7-11: Vein Map, San Dimas



Note: Figure prepared by First Majestic August 2020. The representative sections for each mine zone are named in the map.

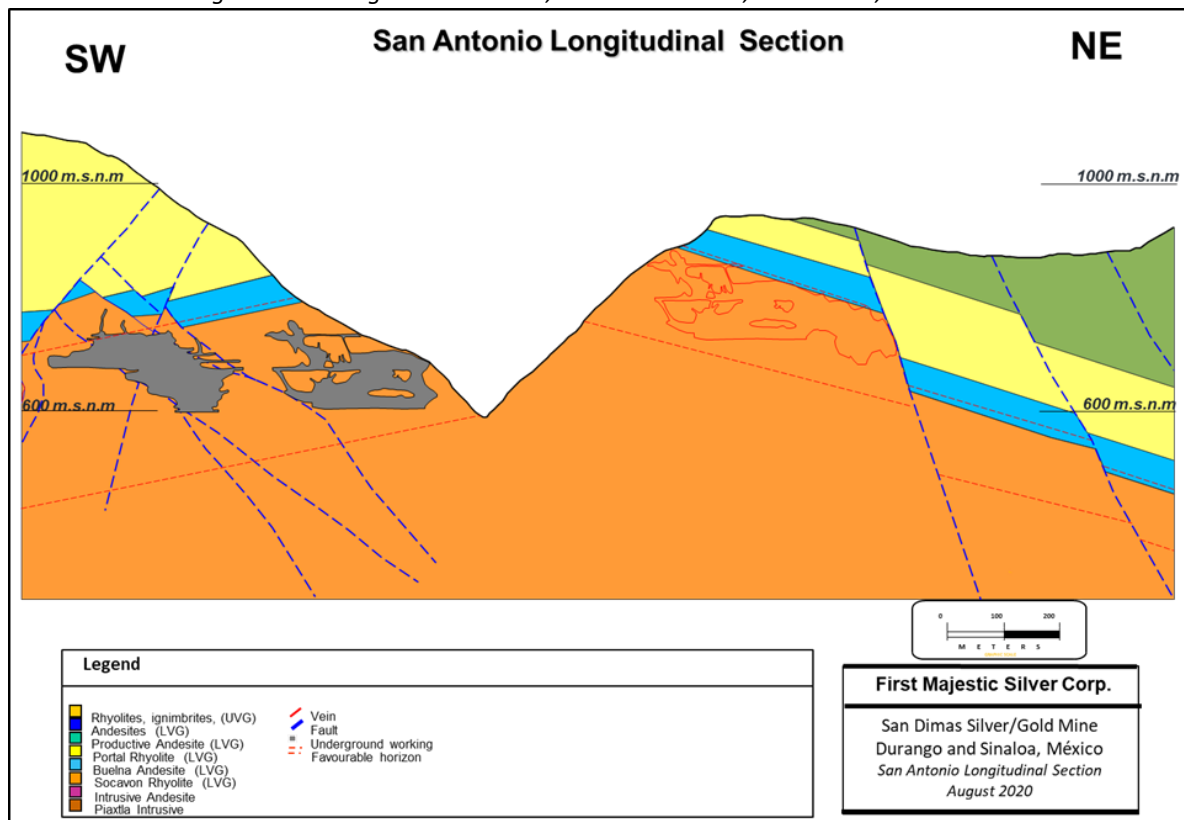
**7.4.1. West Block**

The West Block is limited to the west by the Don Porfirio Fault and to the east by the Sinaloa Fault. It covers an area of 2,700 m in the northeast–southwest direction and 7,700 m in the southeast–northwest direction. In this approximately 21 km<sup>2</sup> of surface, a total of 17 veins have been identified. The veins are hosted by the Portal rhyolite and Productive andesite stratigraphic units and andesitic intrusions.

The strike direction of the veins in this block is east–northeast–west–southwest, dipping at 30–60° to the northwest. The highest vein in elevation is San Rafael, located at 1,100 masl; and the lowest is Santa Rosa vein at 340 masl. The strike length varies from 100–500 m. The average thickness is 1.5 m, the distance between veins varies between <80 m to 300 m.

Figure 7-12 shows a longitudinal section for the San Antonio vein.

Figure 7-12: Longitudinal section, San Antonio Vein, West Block, San Dimas



Note: Figure prepared by First Majestic, August 2020.

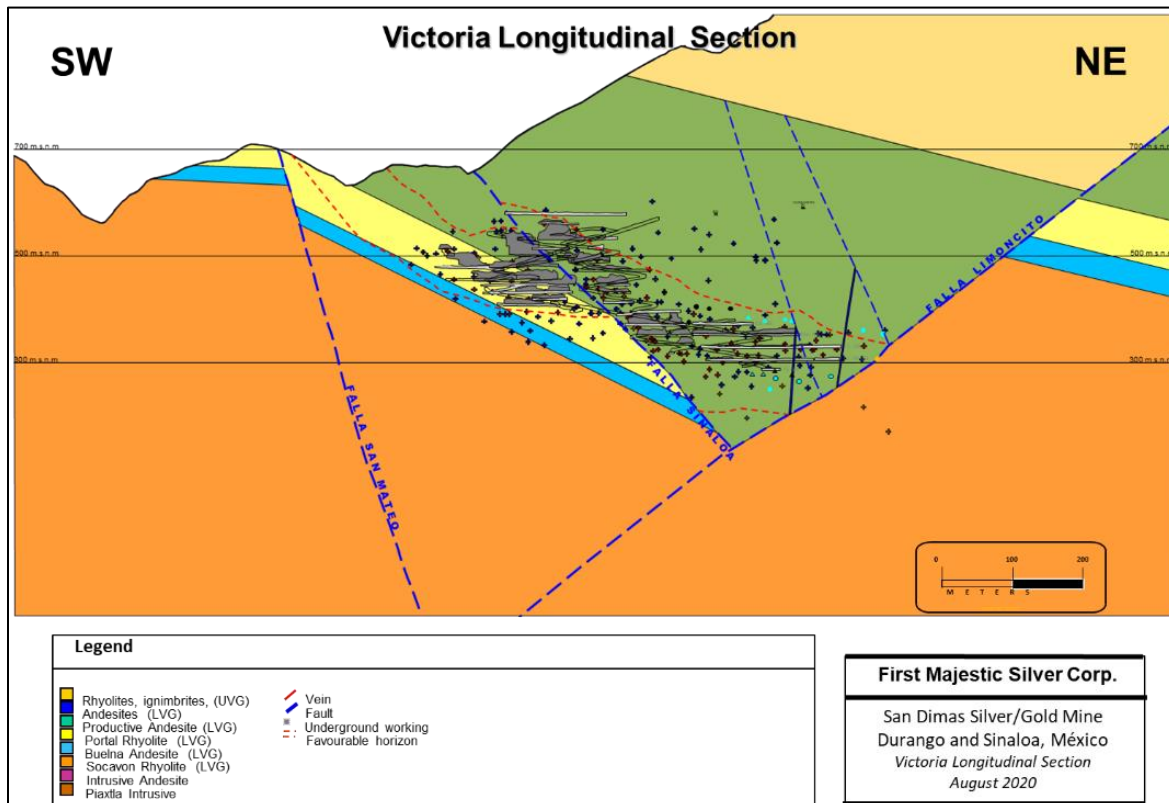
### 7.4.2. Graben Block

The Graben Block is limited to the west by the Sinaloa Fault and to the east by the Limoncito Fault. It covers an area of 1,200 m in the northeast–southwest direction and 6,000 m in the southeast–northwest direction. Within this approximately 7 km<sup>2</sup> area, a total of eight veins have been identified. The veins are hosted by the Portal rhyolite and Productive andesite stratigraphic units and dioritic rocks.

The strike for most of the veins is northeast–southwest dipping from 30–90° to the northwest. The highest vein in elevation is Santa Regina, located at 1,060 masl and the lowest is Victoria at 250 masl. The strike length varies from 100–1000 m. The average thickness is 2 m, and the distance between veins varies from <100 m to 300 m.

Figure 7-13 shows a longitudinal section for the Victoria vein.

Figure 7-13: Longitudinal Section, Victoria Vein, Graben Block, San Dimas



Note: Figure prepared by First Majestic, August 2020.

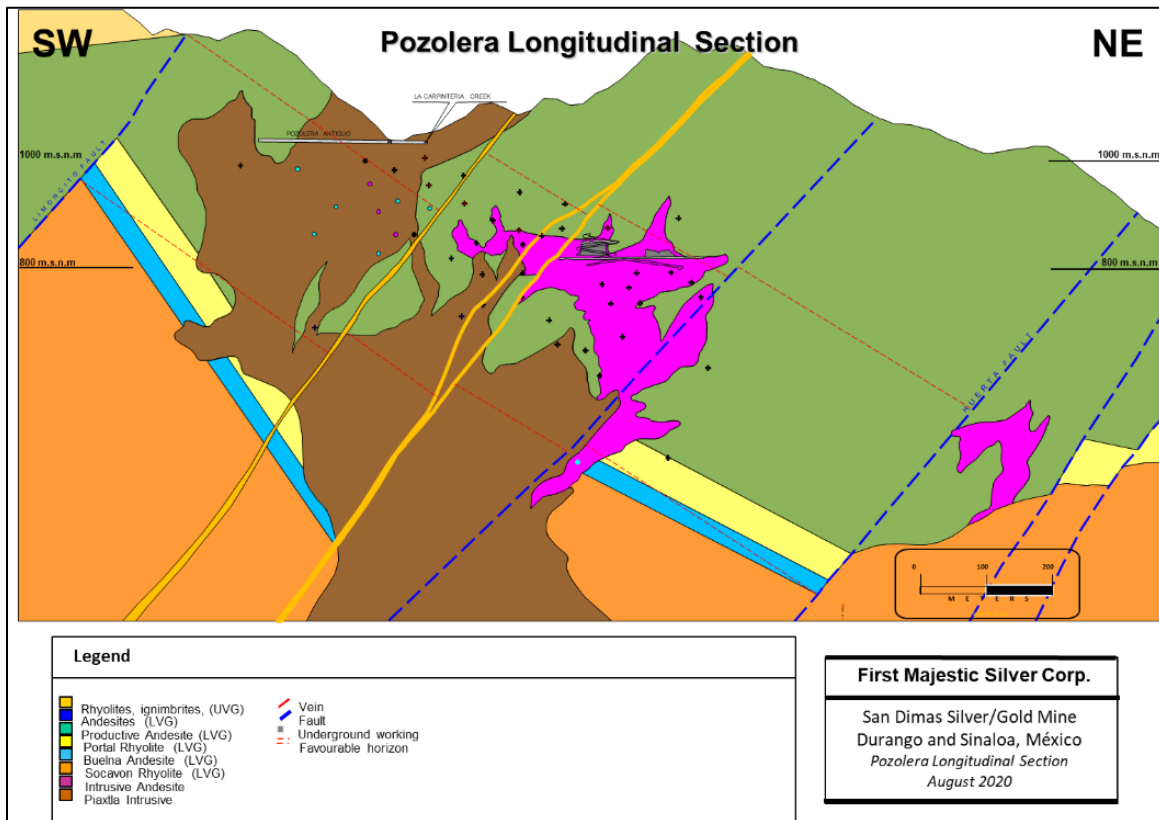
### 7.4.3. Central Block

The Central Block is limited to the west by the Limoncito Fault and to the east by the Guamuchil Fault. It covers an area of 3,200 m in the northeast–southwest direction by 8,500 m in the southeast–northwest direction. Within the block, a total of 21 veins have been identified in the last two decades. The veins are hosted by the Portal rhyolite and Productive andesite stratigraphic units and intrusive dioritic rocks.

Two significant veins in the Central Block are the Roberta and Robertita veins, which are 1,500 long by 500 m high by 2.5 m average thickness. These two veins are almost mined-out. The Santa Jessica vein, which is one of the main veins in the district, is also hosted in the Central Block. The veins in Central Block show northeast–southwest strike direction, dipping to the northwest. In terms of elevation the highest vein is Santa Jessica at 1,231 masl and the lowest is Robertita at 110 masl. Within the veins, the high-grade mineralized shoots generally plunge to the northeast. The distance between veins varies from <100 m to 500 m.

Figure 7-14 shows a longitudinal section for the Pozolera vein.

Figure 7-14: Longitudinal Section, Pozolera Vein, Central Block, San Dimas



Note: Figure prepared by First Majestic, August 2020.

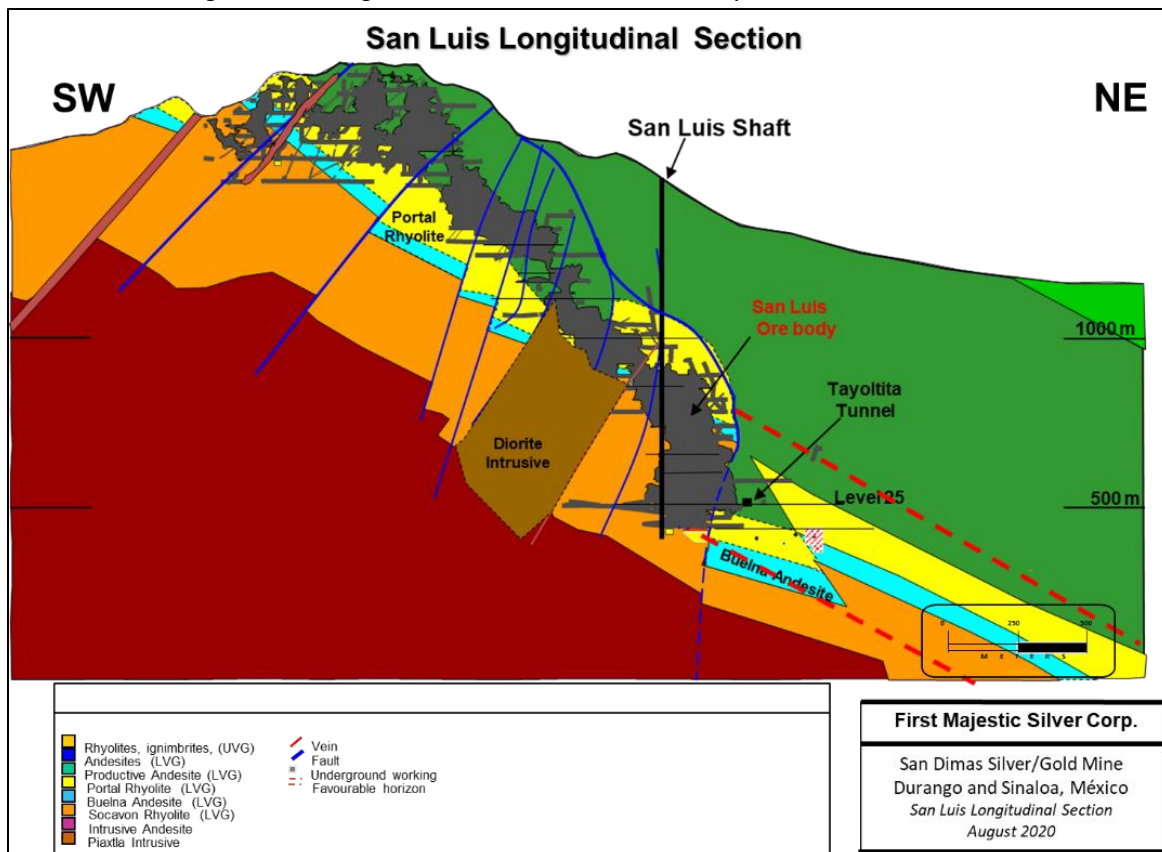
#### 7.4.4. Tayoltita Block

The Tayoltita Block, also known as the East Block, is limited to the west by the Guamuchil Fault and to the east by the Arana Fault. It covers an area of 1,800 m in the northeast–southwest direction and 3,500 m in the southeast–northwest direction. Within the block, a total of 43 veins have been identified. The veins are hosted by the Portal rhyolite and Productive andesite stratigraphic units and andesitic intrusions.

The largest vein in this block was San Luis vein, which was mined out in the past and was the only vein known to have a north–south orientation. The remaining known veins are northeast–southwest oriented. The highest vein in elevation is San Luis, located at 1,900 masl; and the lowest is Vein-36, which is at 470 masl. The strike length varies from 80–1,800 m and the average thickness is 1.5 m. The distance between veins varies from <100 m to 350 m.

Figure 7-15 shows a longitudinal section for the San Luis vein.

Figure 7-15: Longitudinal Section, San Luis Vein, Tayoltita Block, San Dimas



Note: Figure prepared by First Majestic, August 2020.

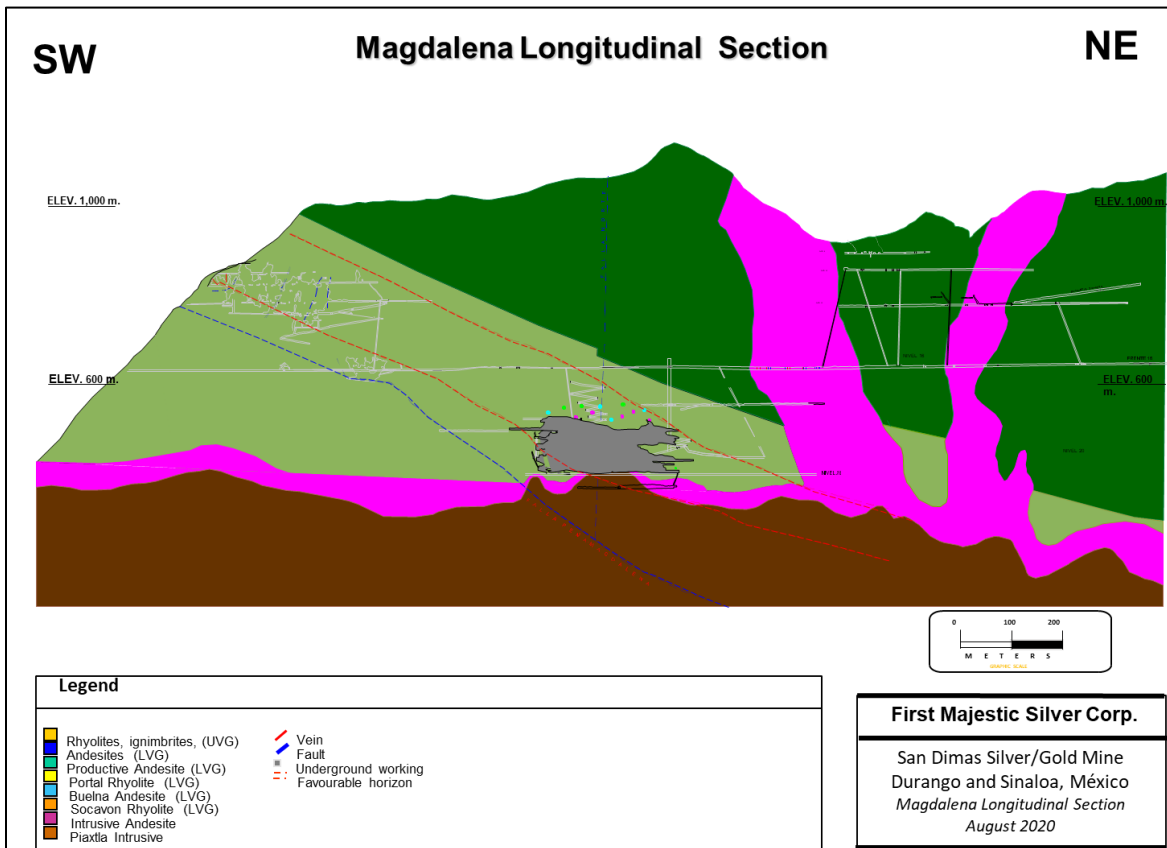
### 7.4.5. Santa Rita Area

The Santa Rita area is between the Peña Fault and the Piaxtla river, in the southeast of the Tayoltita Concessions Group. It covers an area of 1,700 m in the northeast–southwest direction and 3,500 m in the southeast–northwest direction. In this approximately 6 km<sup>2</sup> of surface area, a total of 19 veins have been identified. The veins are hosted by Portal rhyolite, Productive andesite and Camichin stratigraphic units.

The veins are northeast–southwest-oriented, dipping from 20–90°. The highest vein in elevation is Promontorio, located at 930 masl and the lowest is the Marisa vein at 300 masl. The strike length varies from 80–250 m. The vein thickness varies from 0.3–3.0 m, and the distance between veins varies from <100 m to 400 m.

Figure 7-16 shows a longitudinal section for the Magdalena vein.

Figure 7-16: Longitudinal Section, Magdalena Vein, Santa Rita Area, San Dimas



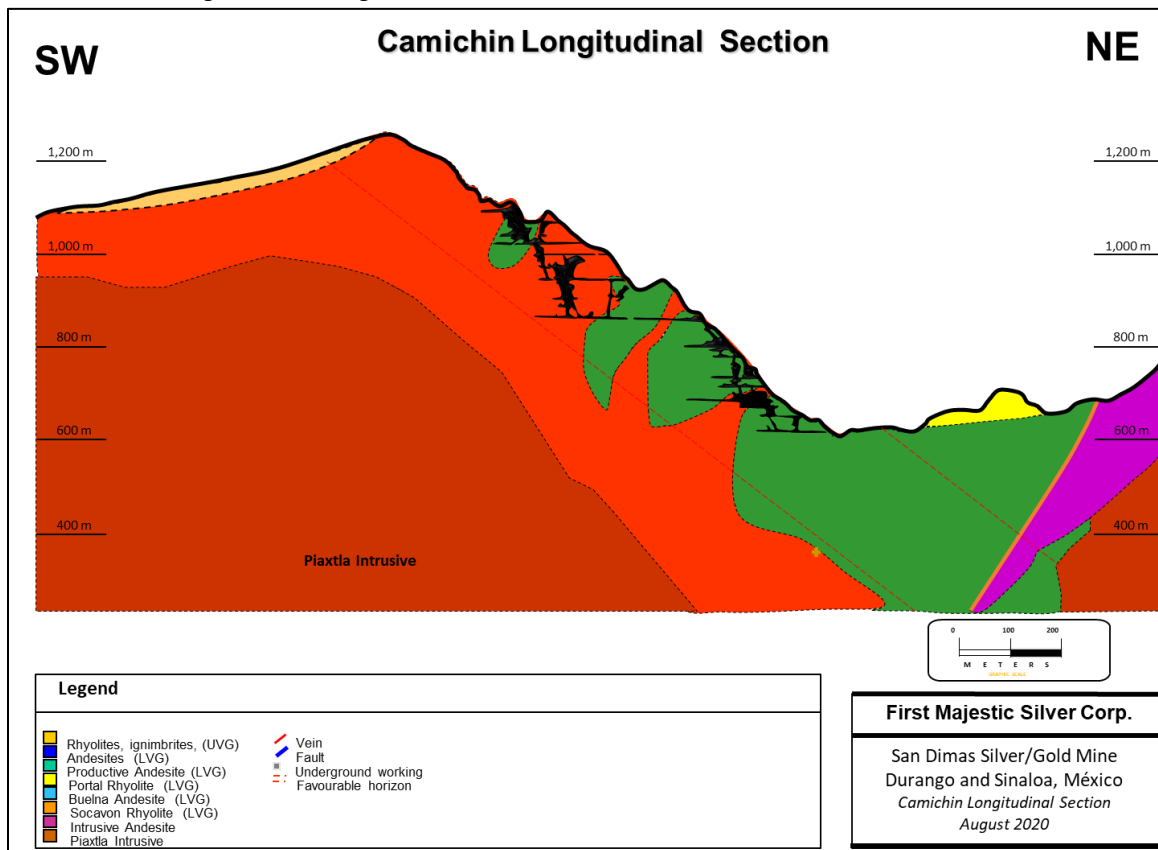
Note: Figure prepared by First Majestic, August 2020.

**7.4.6. El Cristo Area**

The El Cristo area is located south of the Piaxtla River. It covers an area of 1,300 m in the northeast–southwest direction and 2,600 m in the southeast–northwest direction. In this approximately 3.5 km<sup>2</sup> of surface area, seven veins have been identified. The veins are hosted in the northern half by the Piaxtla granodiorite intrusion and in the southern half by the Productive andesite. The vein strike is northeast–southwest, dipping at 68° NW. The highest vein in elevation is Camichin, located at 1,160 masl and the lowest is the Gertrudis vein at 480 masl. The strike length varies from 70-300 m, the vein thickness varies from 0.5–1.3 m, and the distance between veins varies from <100 m to 300 m.

Figure 7-17 shows a longitudinal section for the Camichin vein.

*Figure 7-17: Longitudinal Section, Camichin Vein, El Cristo Area, San Dimas*



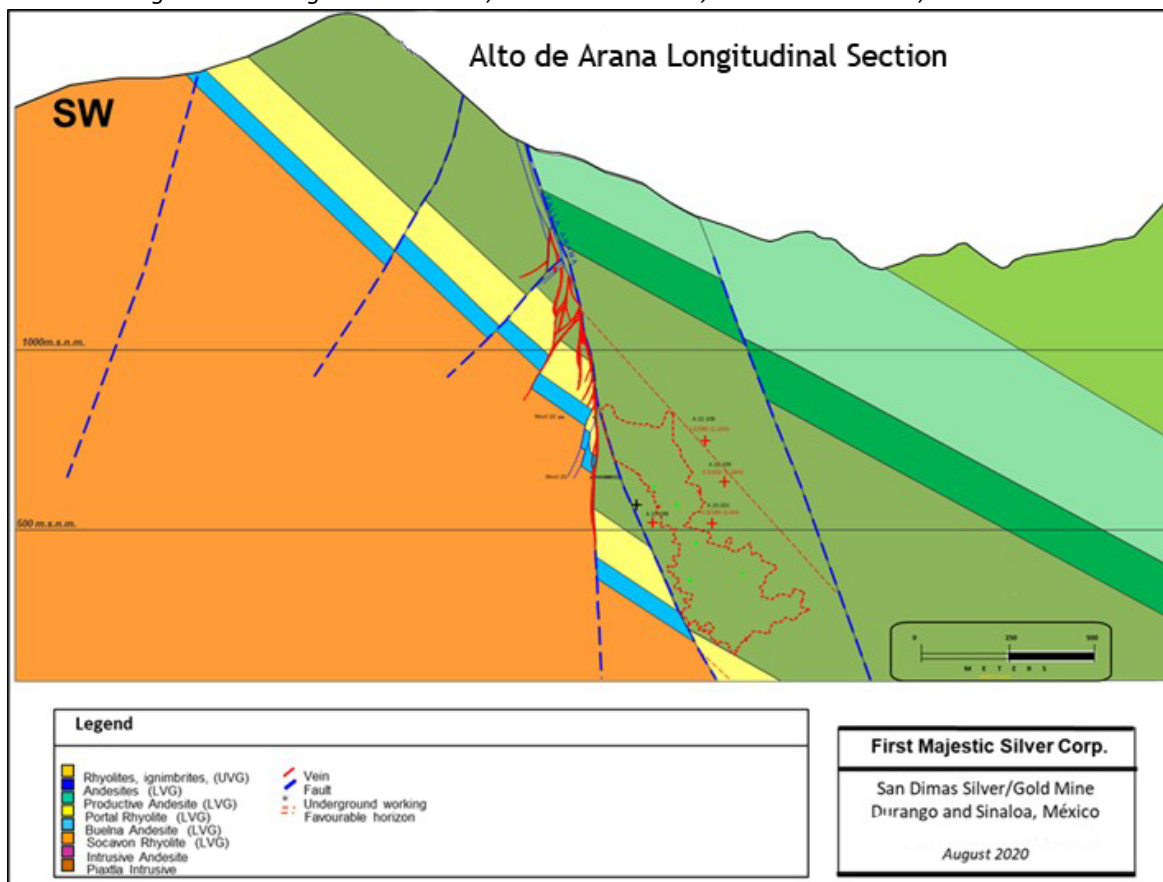
*Note: Figure prepared by First Majestic, August 2020.*

**7.4.7. Alto De Arana Area**

The Alto de Arana area is the eastern most area of the Toyoltita Concessions Group and is located in the uplifted Arana fault block. The area is 900 m in the northeast–southwest direction and 1,500 m in the southeast–northwest direction. In this approximately 5.5 km<sup>2</sup> surface area, a vein of the same name is the only vein system that has been identified so far. The Alto de Arana vein strikes north–south, dipping to the northeast. The vein was identified at 800 masl elevation and has an average thickness of 2.0 m.

Figure 7-18 shows a longitudinal section for the Alto de Arana vein.

*Figure 7-18: Longitudinal Section, Alto de Arana Vein, Alto de Arana Area, San Dimas*



*Note: Figure prepared by First Majestic, August 2020.*

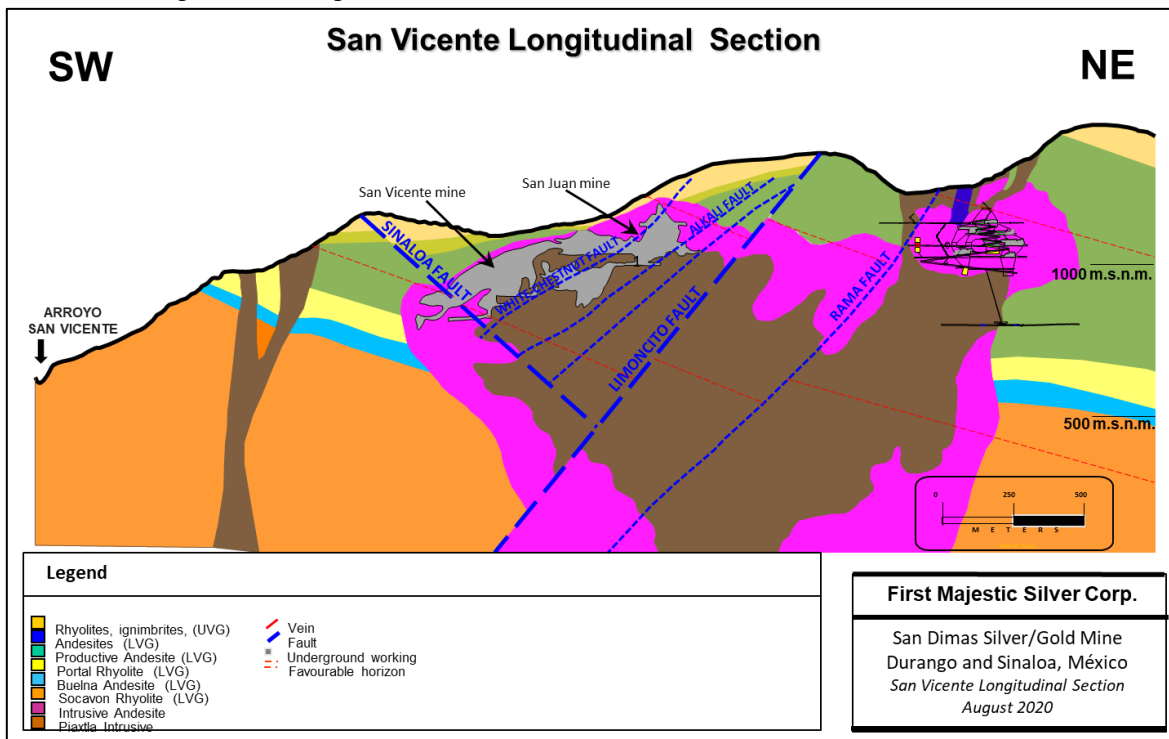


### 7.4.8. San Vicente Area

The San Vicente area is located north of the West Block mine zone. It is the continuation of the West fault block, but for mining purposes the San Vicente Area has been kept separate. It covers an area of 1,500 m in the northeast–southwest direction and 800 m in the southeast–northwest direction. In this approximately 1.2 km<sup>2</sup> of surface area, two veins have been identified. Both veins show a general northeast–southwest orientation dipping 65° NW and are hosted by Productive andesite. The highest vein in elevation is San Vicente vein at 1,275 masl and the lowest is San Juan vein at 810 masl. The strike length varies from 150–550 m, the vein thickness varies from 0.5–2.0 m, and the distance between the two veins is 80 m.

Figure 7-19 shows a longitudinal section for the San Vicente vein.

Figure 7-19: Longitudinal section, San Vicente Vein, San Vicente Area, San Dimas



Note: Figure prepared by First Majestic, August 2020.

#### **7.4.9. Ventanas Prospect**

This area has been explored intermittently over the years since the 1970s. The last major exploration campaign was in 2015–2016. The quartz veins in the Ventana area are oriented east–west, dipping at 70°S (e.g., Rivereña, Eleonor, Guadalupe, El Carmen and Valenciana veins) and northwest–southeast, dipping at 50°NE (e.g., Mala Noche and La Prieta veins). The largest vein is Mala Noche with a strike extent of more than 1,000 m and has been tested to 200 m depth by exploratory adits and drilling. The area retains exploration potential.

#### **7.5. Comments on Section 7**

In the opinion of the QPs, the knowledge of the deposit settings, lithologies, mineralization style and setting, geological controls, and structural and alteration controls on mineralization is sufficient to support Mineral Resource and Mineral Reserve estimation.

## 8. MINERAL DEPOSIT TYPES

The mineral deposits within the San Dimas mine district are considered to be examples of silver- and gold-bearing epithermal quartz veins that formed in a low-sulphidation setting.

The description for the low-sulphidation epithermal model is taken from Pantaleyev (1996).

### 8.1. Geological Setting

Low-sulphidation epithermal mineral deposits are formed in high-level hydrothermal systems from depths of ~1 km to surficial hot spring settings. Deposition is controlled by regional- and local-scale fracture systems related to grabens, (resurgent) calderas, intrusive dome complexes and rarely, maar diatremes. Extensional structures in volcanic fields (normal faults, fault splays, ladder veins and cymoid loops, etc.) are common; locally graben or caldera-fill volcanoclastic rocks are present. High-level (subvolcanic) stocks and/or dikes and pebble breccia diatremes occur in some areas. Locally resurgent or domal structures are related to underlying intrusive bodies.

Most volcanic rocks can host epithermal deposits; however, calc-alkaline andesitic compositions are the most common. Some deposits occur in areas with bimodal volcanism and extensive subaerial ash flow deposits. A less common association is with alkalic intrusive and shoshonitic volcanic rocks. Epiclastic sediments can be associated with mineralization that develops in intra-volcanic basins and structural depressions.

Epithermal veins are typically localized along structures but may also form in permeable lithologies. Upward-flaring mineralized zones centred on structurally controlled hydrothermal conduits are typical. Large to small veins and stockworks are common. Vein systems can be laterally extensive, but the associated mineralized shoots have relatively restricted vertical extent. High-grade mineralized shoots are commonly formed within dilational faults zones near flexures and fault splays.

Textures typical of low-sulphidation quartz vein deposits include open-space filling, symmetrical and other layering, crustification, comb structure, colloform banding and complex brecciation.

### 8.2. Mineralization

Epithermal vein deposits commonly possess metal zoning along strike and vertically. Deposits are commonly zoned vertically over a limited 250–350 m extent from a base metal poor, gold–silver-rich top to a relatively silver-rich base metal zone and an underlying base metal-rich zone grading at depth into a sparse base metal, pyritic zone. From surface to depth, metal zones can contain gold–silver–arsenic–antimony–mercury, gold–silver–lead–zinc–copper, or silver–lead–zinc.

Pyrite, electrum, gold, silver, argentite; chalcopyrite, sphalerite, galena, tetrahedrite, silver sulphosalt and/or selenide minerals are common mineral species. Quartz, amethyst, chalcedony,

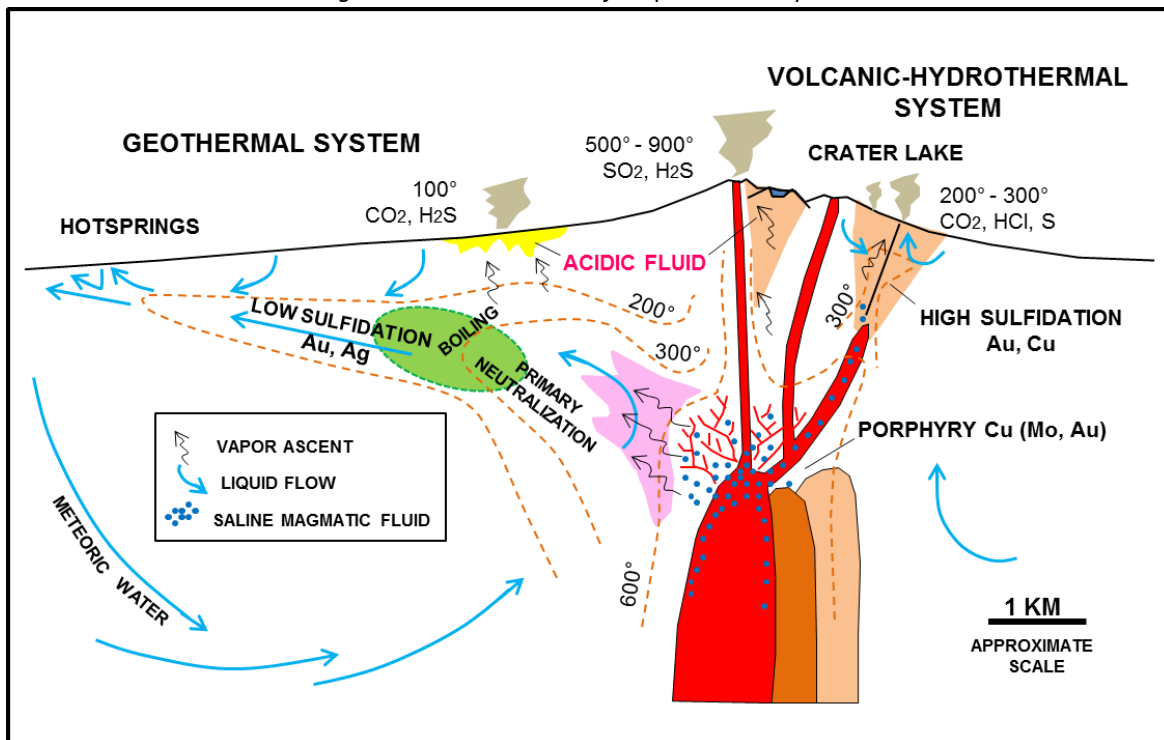
quartz pseudomorphs after calcite, calcite; adularia, sericite, barite, fluorite, calcium–magnesium–manganese–iron carbonate minerals such as rhodochrosite, hematite, and chlorite are the most common gangue minerals.

### 8.3. Alteration

Silicification is extensive in epithermal vein-hosted mineral deposits as multiple generations of quartz and chalcedony are commonly accompanied by adularia and calcite. Pervasive silicification in vein envelopes can be flanked by sericite–illite–kaolinite assemblages. Intermediate argillic alteration (kaolinite–illite–montmorillonite) can form adjacent to some veins and advanced argillic alteration (kaolinite–alunite–pyrophyllite) may form along the tops of mineralized zones. Propylitic alteration dominates peripherally and at depth.

Figure 8-1 shows the genetic model for epithermal deposits proposed by Hedenquist et al., (1998).

Figure 8-1: Genetic Model for Epithermal Deposits



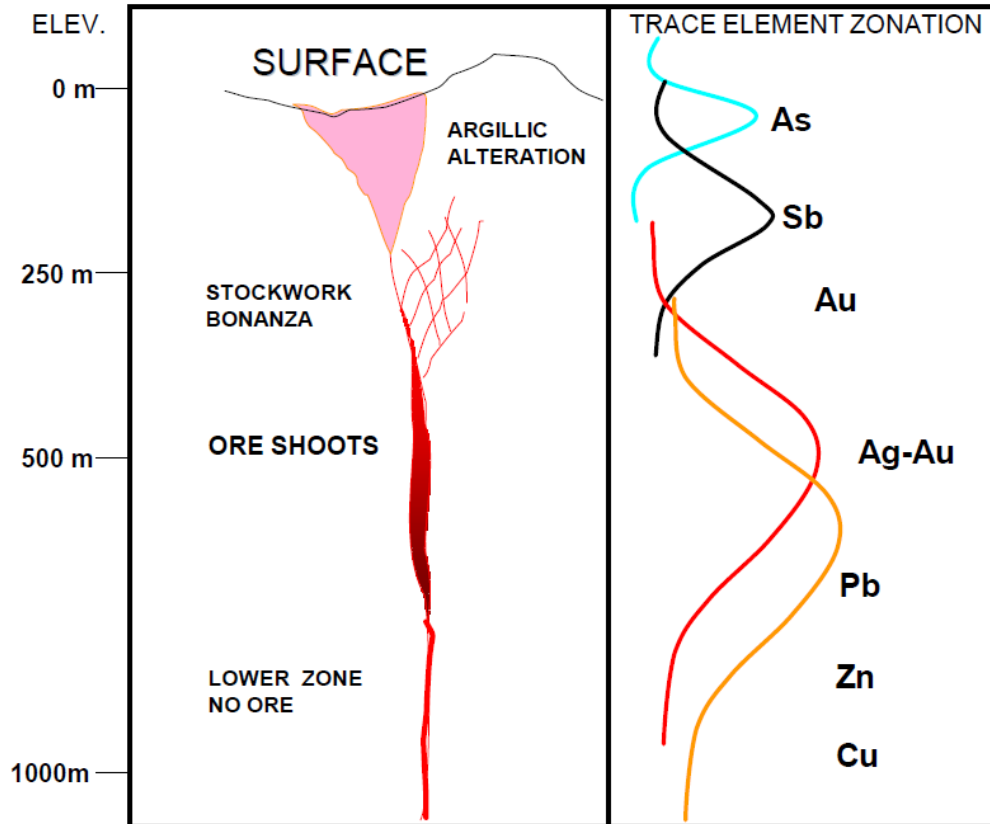
Note: Figure from Hedenquist et al., (1998).

### 8.4. Applicability of the Low-Sulphidation Epithermal Model to San Dimas

The vein-hosted silver and gold mineral deposits at San Dimas are considered to be low-sulphidation epithermal type deposits based on the following characteristics:

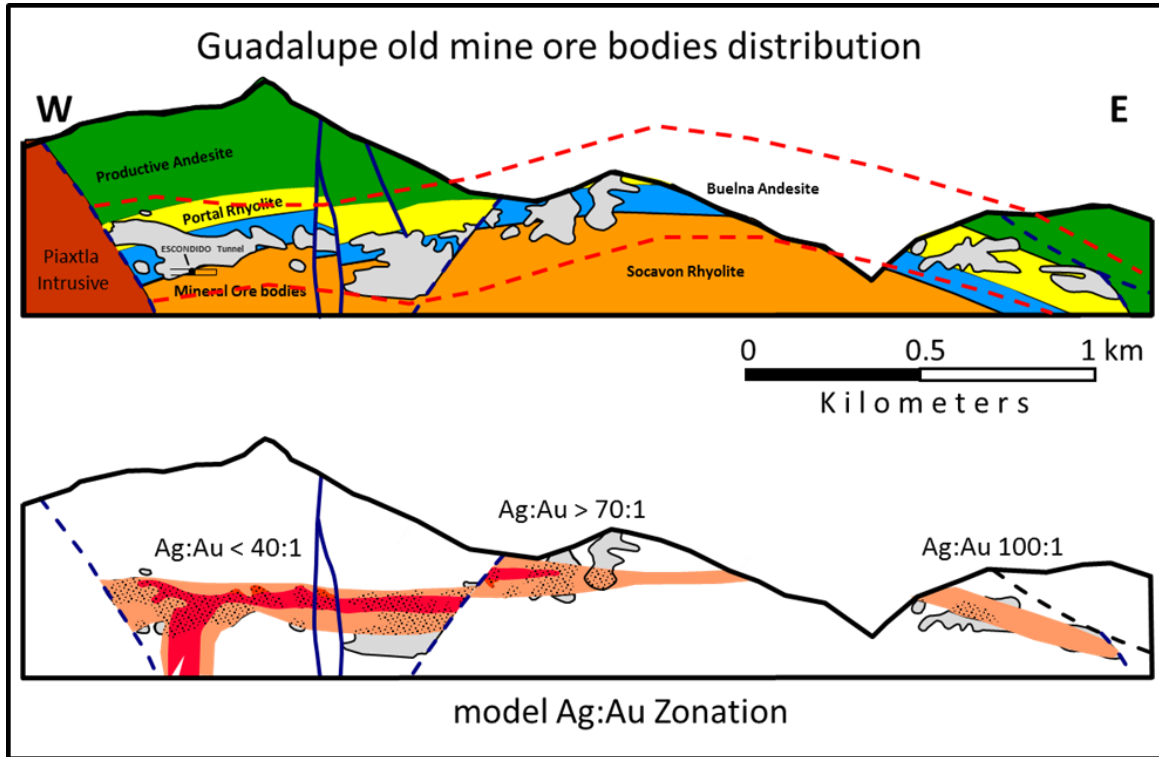
- Mineralization is deposited along a regional-scale extensional fault and fracture system; an environment typical of low sulfidation systems;
- The mineral deposits formed in the andesitic and rhyolitic volcanic rocks of the LVC; such rocks are typical host rocks for epithermal deposits;
- Silver and gold mineralization are hosted by quartz veins that possess colloform and banded textures, typical of epithermal low sulphidation deposits. Additional structural–textural features, such as hydrothermal breccias cemented by quartz–calcite, stockworks, and cymoid loops, are also common;
- The quartz veins possess a geochemical zonation in silver, gold, and base metals. Typically, the silver grades are higher closer to surface while base metals, particularly zinc, increase at lower levels in the system. Figure 8-2 shows the generalized geochemical model for the San Dimas deposits;
- The veins are continuous along strike for distances up to 1,500 m; the original veins may have been several kilometers long, but these veins were truncated by post-mineral faulting;
- Vertically, the vein-hosted mineralization is restricted within 75–650 m of the surface, which represents the high-level elevation where the second boiling zone occurs, and locally has been called the Favorable Zone. Figure 8-3 shows a schematic section of the Favourable Zone using the Guadalupe vein as an example;
- Dilatational zones serve as structural traps forming mineralized shoots, and the morphology of the veins in San Dimas is usually “pinch and swell”.

Figure 8-2: Geochemical Zonation model San Dimas



Note: Figure from Rivera, (2003).

Figure 8-3: Example Section of the Favourable Zone for Mineralization, San Dimas



Note: Figure prepared by First Majestic, June 2020.

### 8.5. Comments on Section 8

In the opinion of the QP, the deposits in the San Dimas mine area are considered to be examples of low sulfidation epithermal deposits. The QP believes that a low sulfidation epithermal model is appropriate as an exploration model for the San Dimas mine area and to inform the geological interpretation and the geological modelling for Mineral Resource estimation.

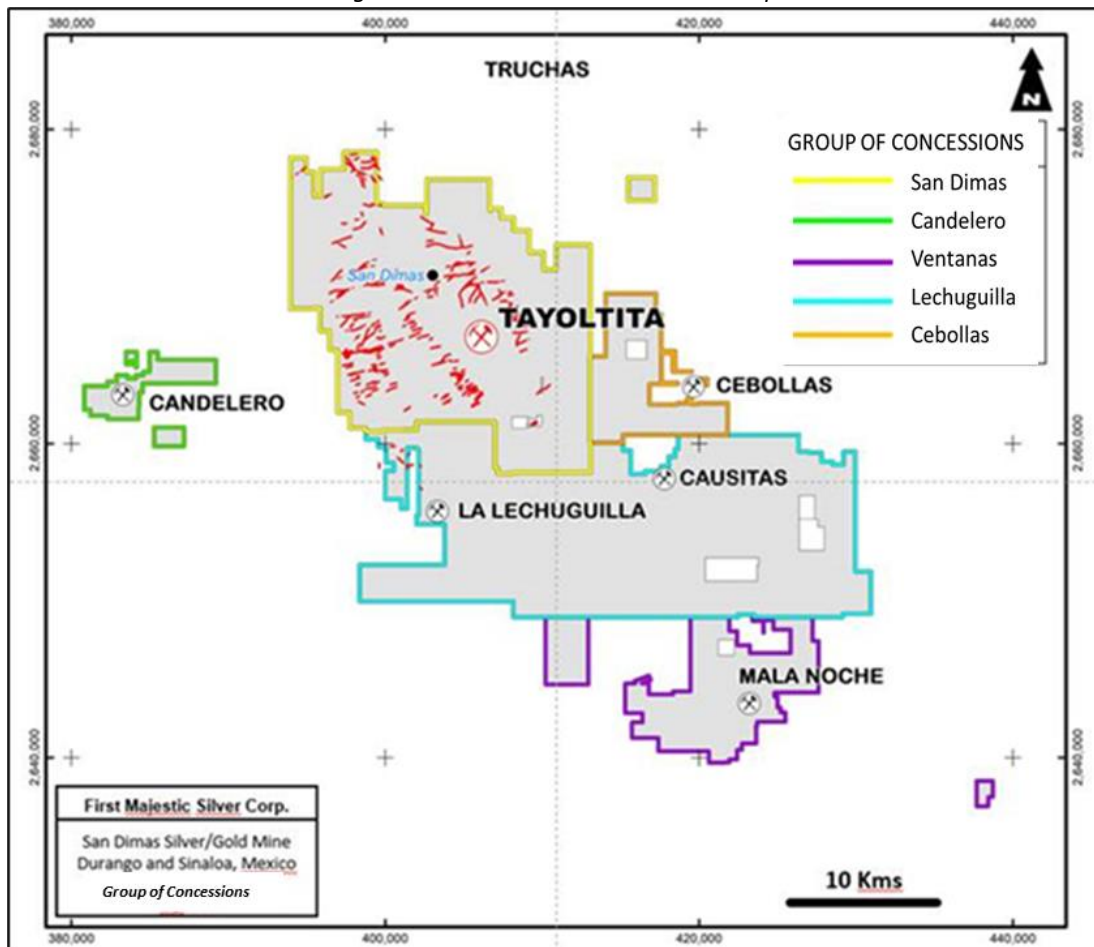
## 9. EXPLORATION

### 9.1. Introduction

The San Dimas district has been the subject of modern exploration and mine development activities since the early 1970s, and a considerable information database has been developed from both exploration and mining activities. Exploration uses information from surface and underground mapping, sampling, and drilling together with extensive underground mine tunneling to help determine targets. Other activities include prospecting, geochemical surface sampling, geophysical and remote sensing surveys.

Most of the exploration activities were carried out in the San Dimas mine areas, centered around the Piactla River where exposures of the silver–gold veins were found, many of which have been mined out (Figure 9-1).

Figure 9-1: San Dimas Concessions Group

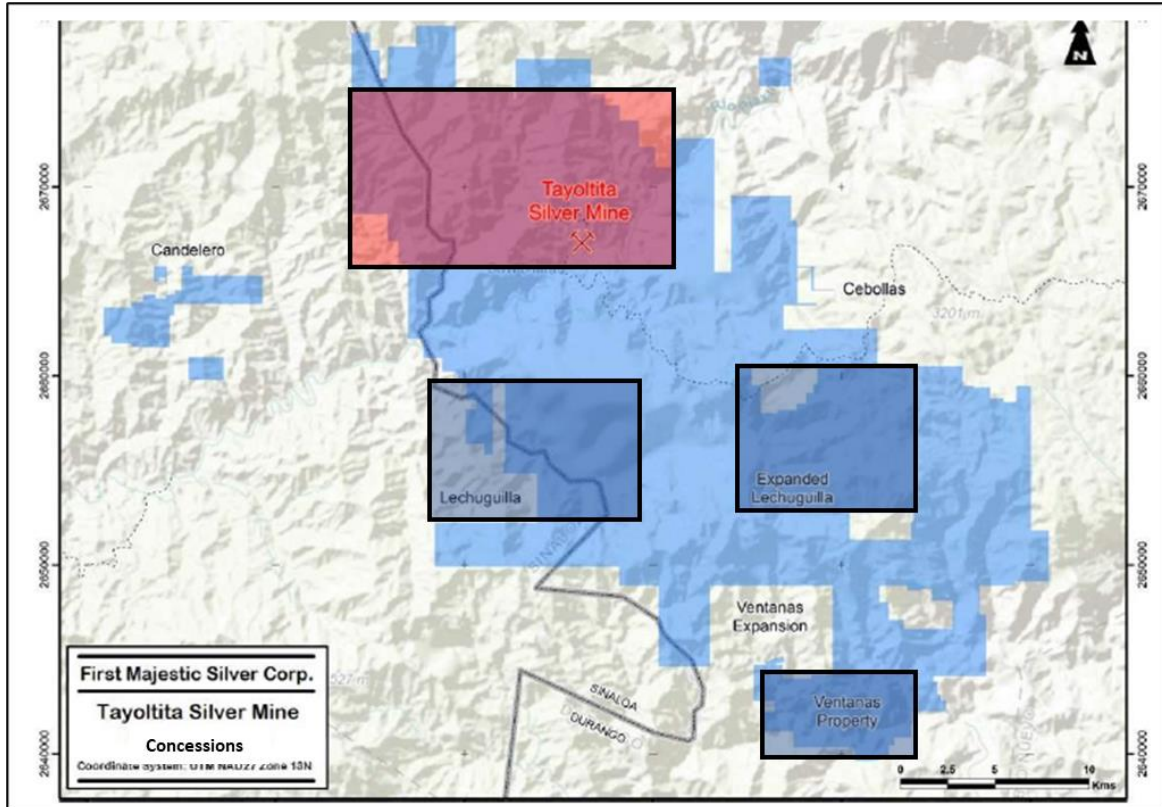


Note: Figure prepared by First Majestic, June 2020. Quartz veins highlighted in red.



Outside of this area, the Lechuguilla and Ventana Concessions Group areas were explored to some extent during 2008 and 2015–16. The remainder of the concessions have had limited or no exploration as they are covered by thick piles of post-mineral ignimbrites. Figure 9-2 shows the San Dimas Project and the areas subject to exploration in the last 50 years.

Figure 9-2: Areas Explored in San Dimas Project in 2020



Note: Figure prepared by First Majestic, June 2020. The mine zones located in the area in red, exploration areas in dark blue.

## 9.2. Grids and Surveys

Prior to 2019, the operations used UTM NAD27, Zone 13N, for locations within the mine zones, and for drill collar purposes, and all plans related to that grid. First Majestic transitioned to UTM WSG84 in 2019.

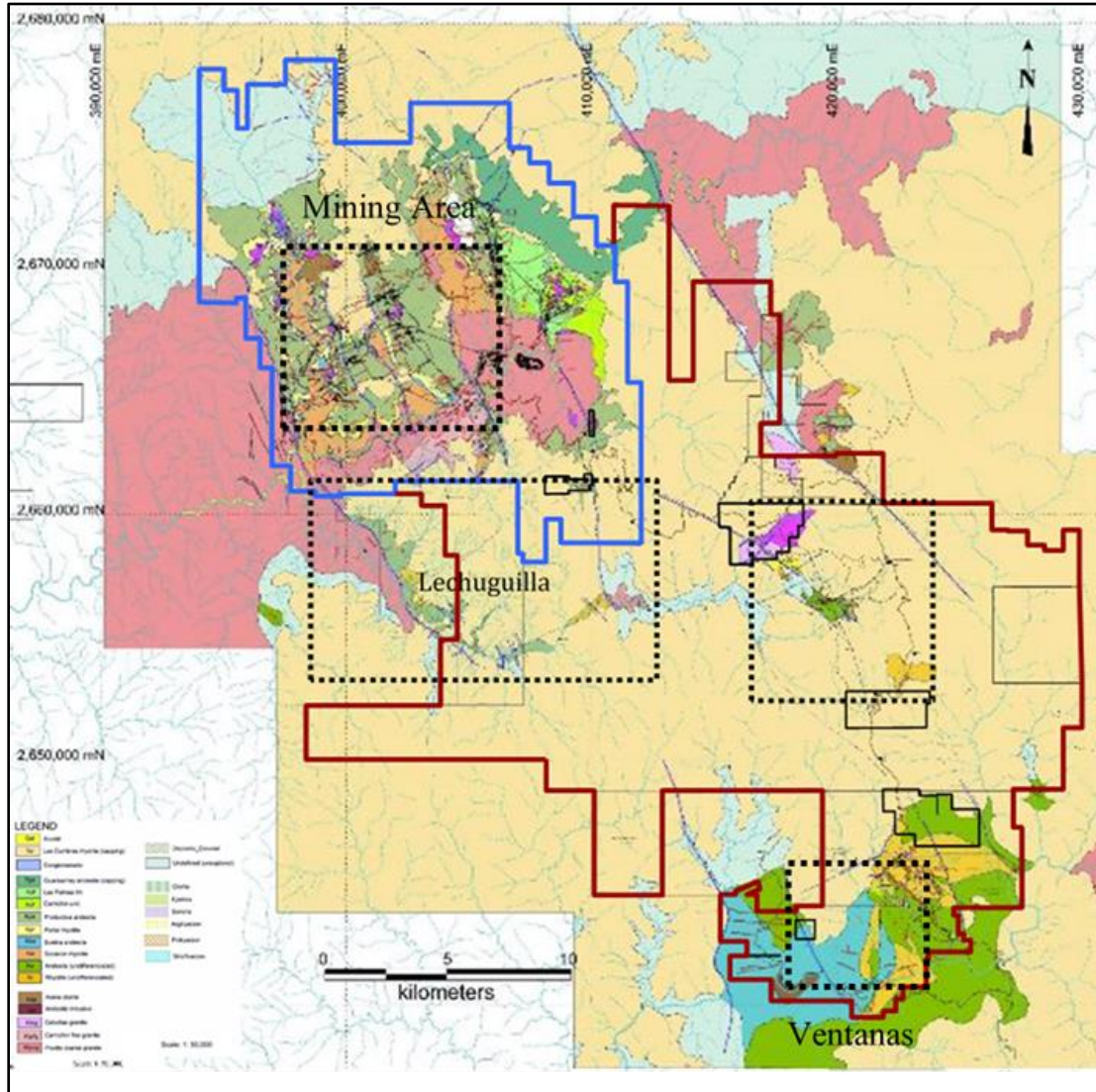
### **9.3. Geological Mapping**

#### **9.3.1. Surface Geological Mapping**

About 60% of the Project area is covered by post-mineral ignimbrites which overlie the andesitic units hosting silver and gold mineralization. Aerial photo interpretation was used in the mid-1970s to identify erosional windows through the ignimbrites that exposed the andesitic units of the LVC. The largest erosional window is centered on the Piaxtla River, which is enclosed by the San Dimas Concessions Group.

The andesite, rhyolite, and intrusive units exposed in the erosional window were of geological interest as they were associated with the favourable horizon and were mapped in detail. The geological mapping focused on identifying outcropping veins that were located on surface and projected at depth to be explored by tunneling and drilling. Regional-scale geological mapping was also conducted. Figure 9-3 shows a geological map of the San Dimas mining district.

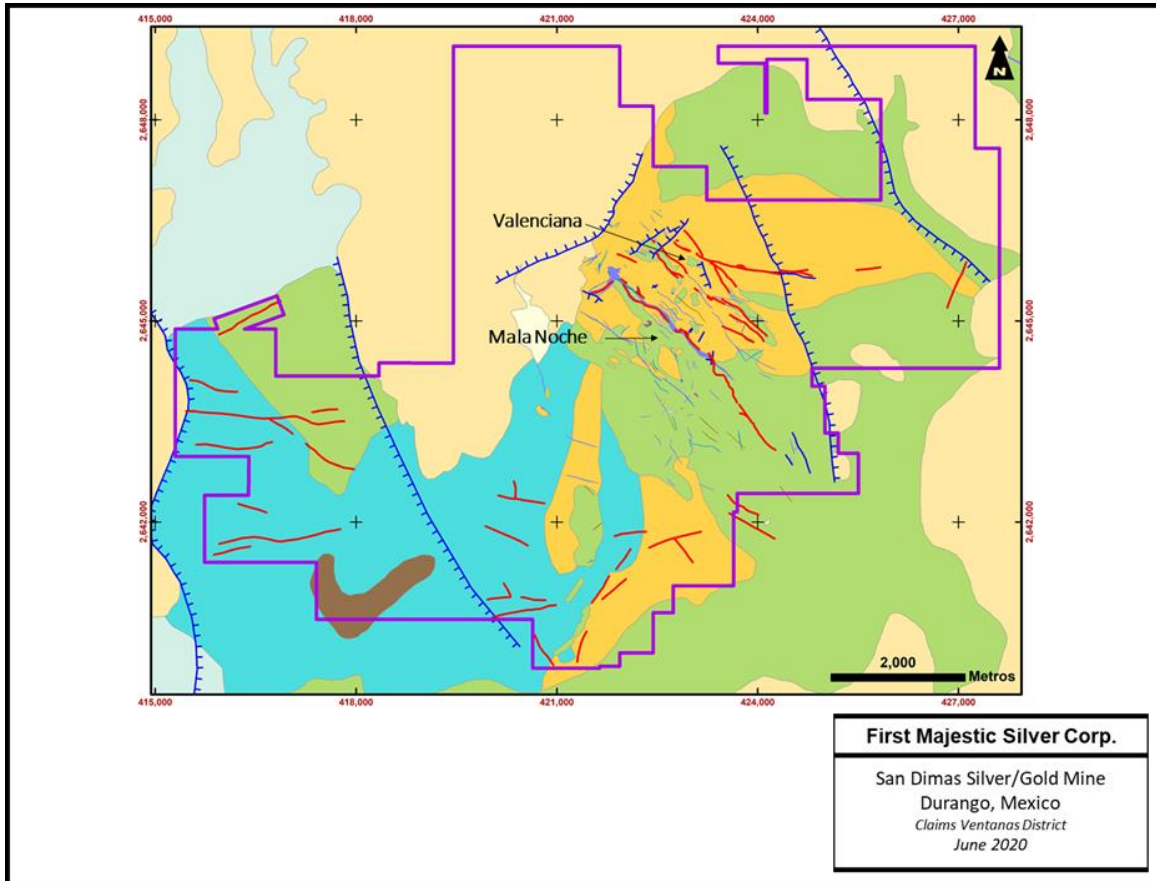
Figure 9-3: Geological Map, San Dimas Project



Note: Figure prepared by First Majestic, June 2020.

Very little detailed geological mapping existed outside the San Dimas mining area until 2005 when Capstone, through an option agreement with Goldcorp, carried out an exploration campaign in the Ventanas area, which had seen mining activity in the 1950s. Primero continued with the exploration work in this area and produced geological maps of the primary veins. Figure 9-4 shows the Ventanas geological map produced at 1:5,000.

Figure 9-4: Geological Map, Ventanas Area

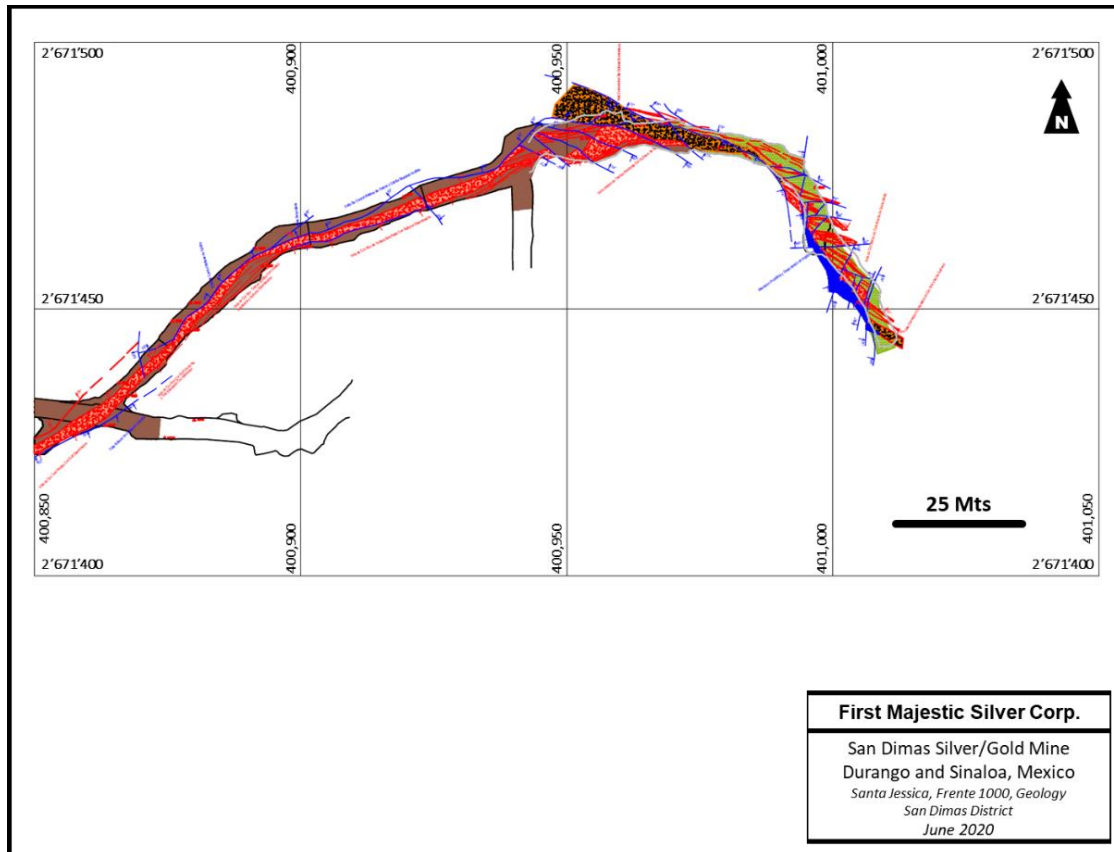


Note: Figure prepared by First Majestic June 2020.

### 9.3.2. Underground Geological Mapping

Underground geological mapping is completed daily by mine geologists. It is a critical for exploration, geological interpretation, modeling, resource estimation, and the grade control process for the mine. Figure 9-5 shows an example of an underground geological map at 1:1,000 scale for the Jessica vein.

Figure 9-5: Geological Map, Jessica Vein



Note: Figure prepared by First Majestic, June 2020. Jessica vein in red, faults in blue.

#### 9.4. Geochemical Sampling

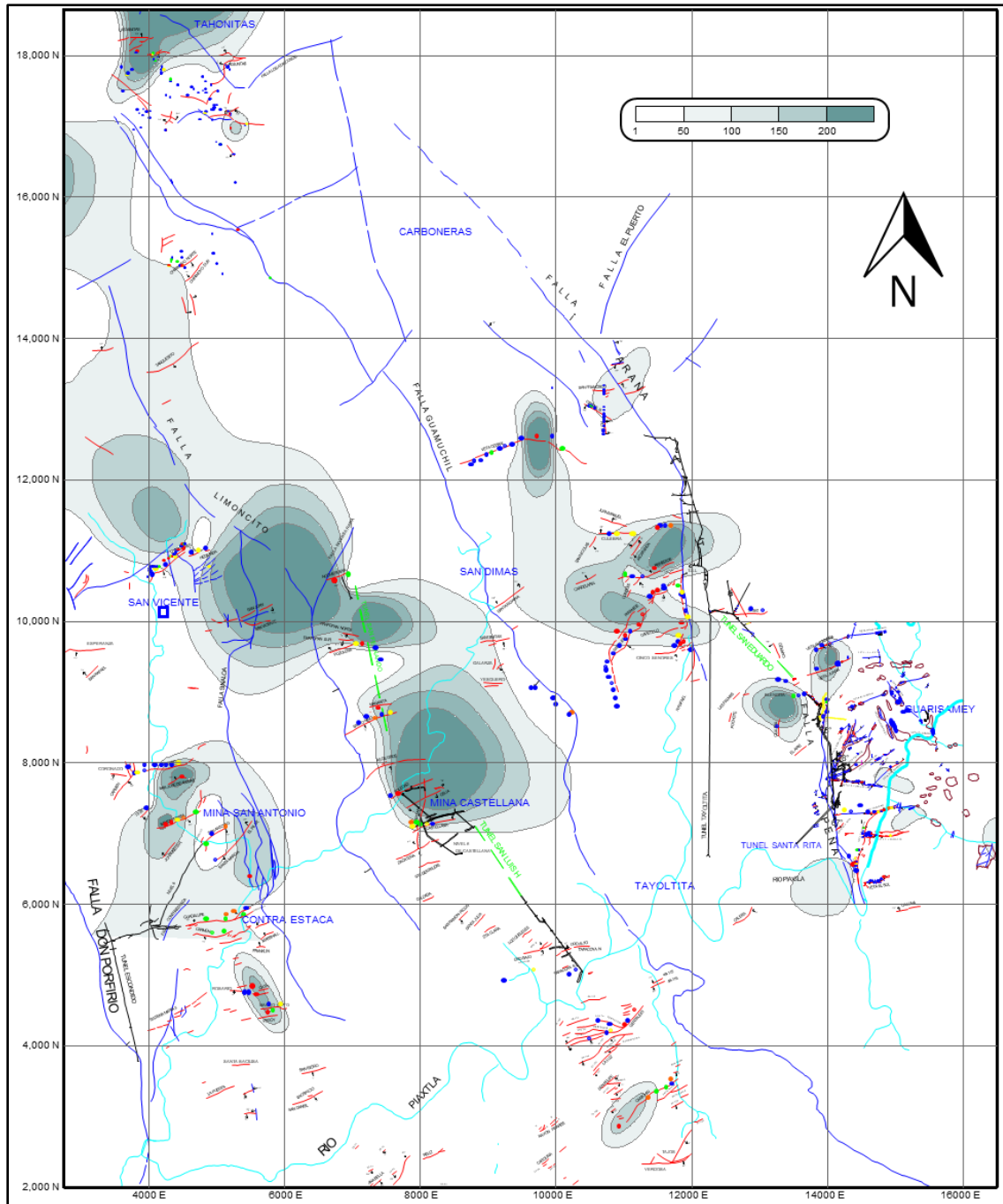
Multiple geochemical surveys were completed at San Dimas, particularly in the 1970s and in the 1980s over the Tayoltita Block and Central Block zones.

The most common geochemical survey method was systematic rock chip channel sampling every 10–20 m along strike and perpendicular to outcropping veins. The sample intervals were variable, usually 1.0 m or less. The areas between outcrops were covered by 20 by 20 m soil sampling grids.

The samples were assayed, and the data plotted on geological maps. Where possible, trenching across soil silver and gold anomalies exposed the quartz veins for additional rock chip sampling. The geochemical anomalies were projected to depth to generate targets that were explored by drilling from surface and/or tunneling. Figure 9-6 shows the surface gold anomaly map in the San Dimas

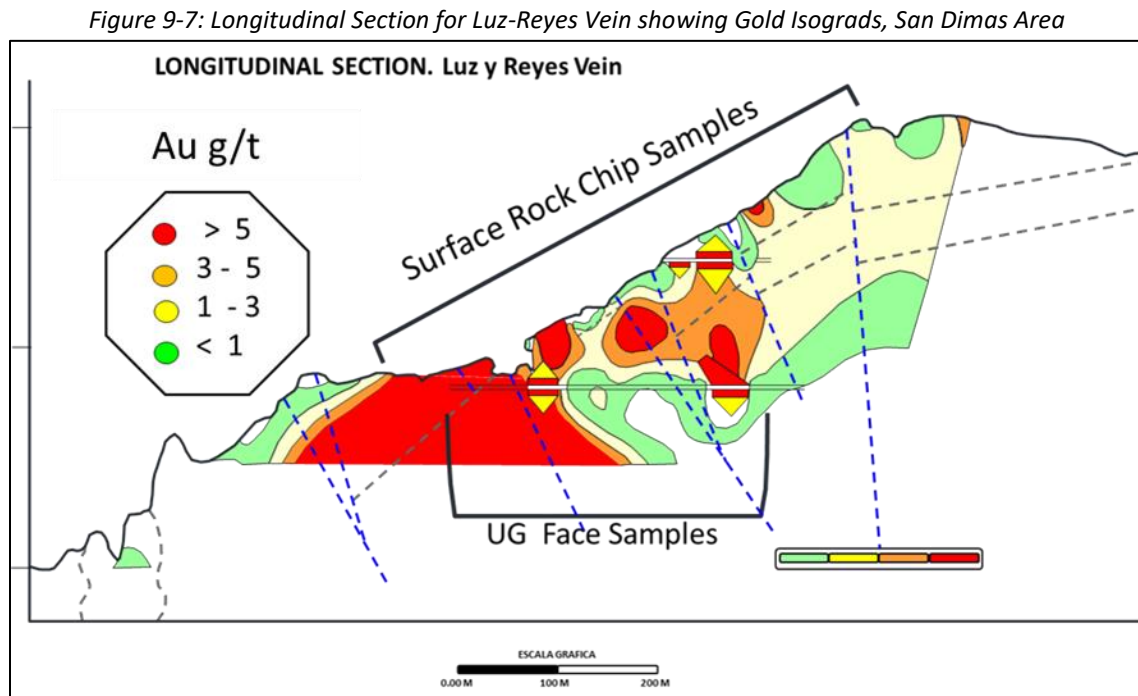
mining zone produced by a sampling campaign carried out in 2000 by Luismin. A total of 1,126 rock chip samples were collected and assayed for Au, Ag, Pb, Cu, Zn, Mo, Mn, As, Fe, Sb and Ca.

Figure 9-6: Surface Gold Anomaly Map, San Dimas Area



Note: Figure prepared by Luismin, March 2000. – Isograds in g/t Au.

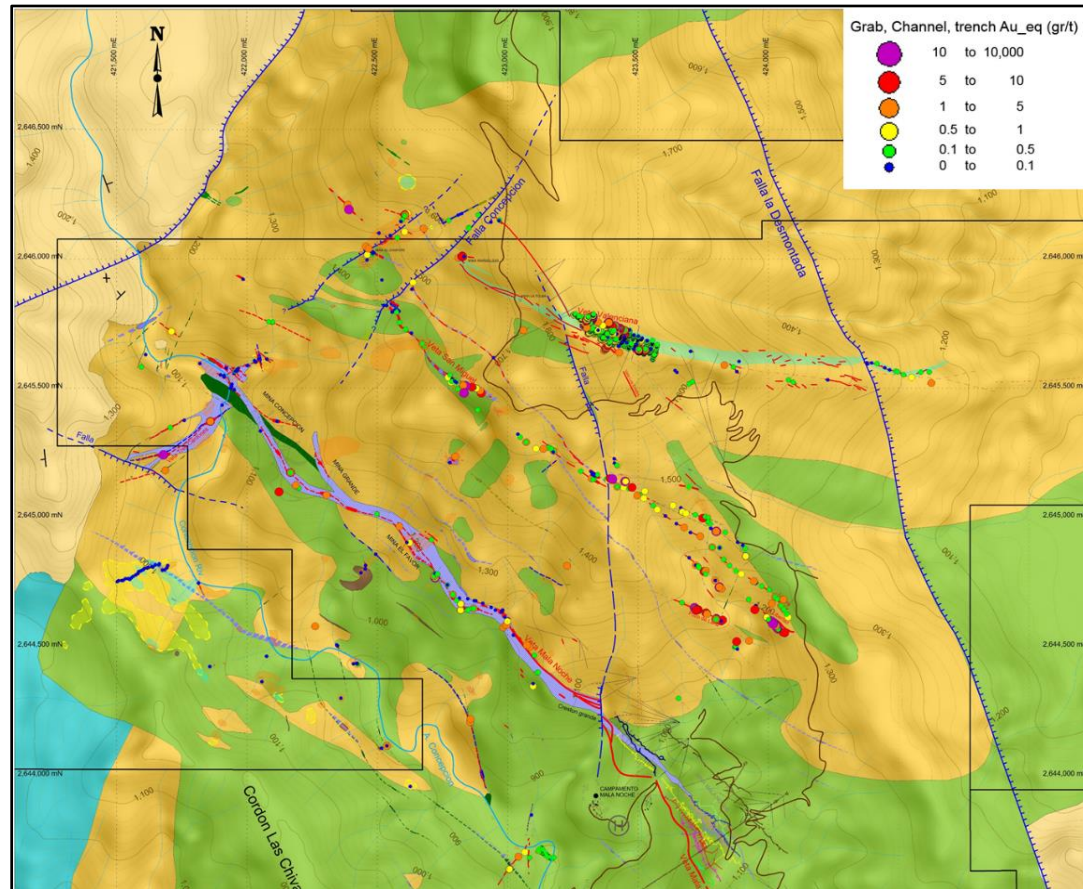
Figure 9-7 shows a longitudinal section of the Luz-Reyes vein, located in the West Block. The surface isograde gold anomaly was modeled to depth.



Note: Figure prepared by First Majestic, after Luismin, March 2000. Contours shown are in g/t Au. Green is <1 g/t Au, yellow is 1–3 g/t Au, orange is 3–5 g/t Au, and red is >5 g/t Au.

Additional geochemical surface sampling was also completed in more recent exploration campaigns. Figure 9-8 shows the geology map and gold-equivalent anomalies in the Ventanas area produced by Primero during 2015–2016. Based on results from trenching at surface and underground sampling from the historic accessible mine levels, three veins were selected to be followed up with drilling: San Pedro, Mala Noche, and Macho Bayo. A total of 48 drill holes (15,600 m) were completed. The results were not conclusive and no additional exploration activities were conducted.

Figure 9-8: Geological Map and Gold-Equivalent Anomalies, Ventanas Area



Note: Figure prepared by Primero Mining Corp. 2016.



## 9.5. Geophysics

Limited geophysical surveys were completed due to a combination of the rugged terrain and the proven efficiency of the geochemical sampling methods to localize the favourable horizon.

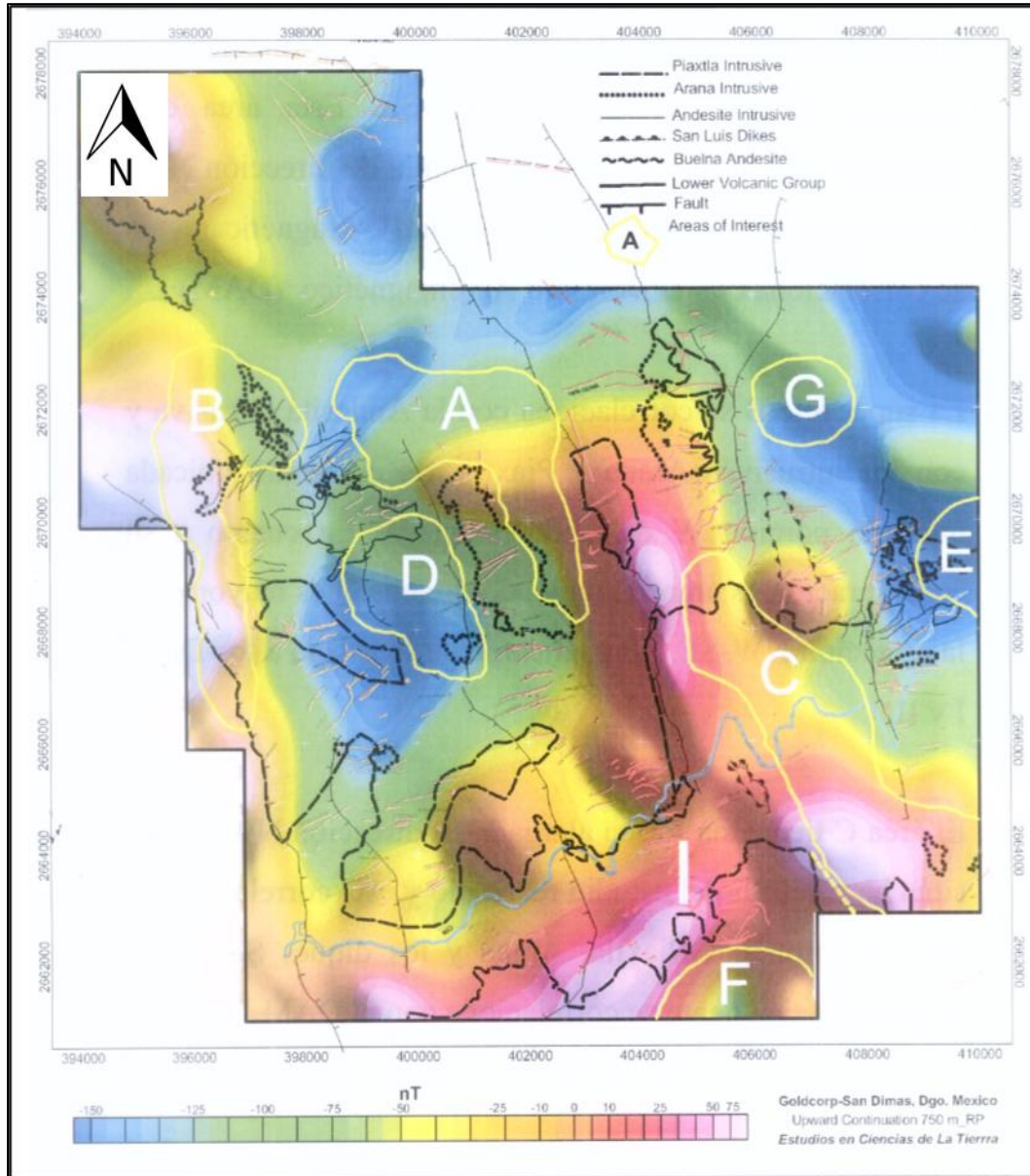
In 2005, McPhar Geosurveys Ltd (McPhar) was engaged by Goldcorp to conduct a high-resolution airborne radiometric and magnetic survey over the San Dimas mining area to enhance the general understanding of the regional geology of the area. The flights were carried out by Heliservicios Internacionales, S. A. de C. V. using a Bell 206 Long Ranger helicopter.

The survey flight lines covered 2,261 km over an area of 203 km<sup>2</sup>. Spacing between points measured at ground level was 30 m for magnetic and 45 m for radiometric readings. The orientation of the flight was from north to south and the lines were flown with a 100 m spacing. Perpendicular flights, east to west, were done every kilometer.

The radiometric and magnetic collected data was processed by McPhar. Electromagnetic data were filtered and levelled using both automated and manual levelling procedures. Apparent resistivity was calculated from in-phase and quadrature data. The apparent resistivity dataset was also levelled and filtered. Radiometric data were processed using standard procedures recommended by International Atomic Energy Association.

All data were gridded with the cell size of 30 m. Figure 9-9 shows the magnetic field reduced to pole. The interpretation identified intrusive bodies such as Arna, Piaxtla, the Intrusive andesite, and seven areas of prospective interest tagged as A, B, C, D, E, F and G.

Figure 9-9: Magnetic Field Reduced to Pole, San Dimas Mining Area

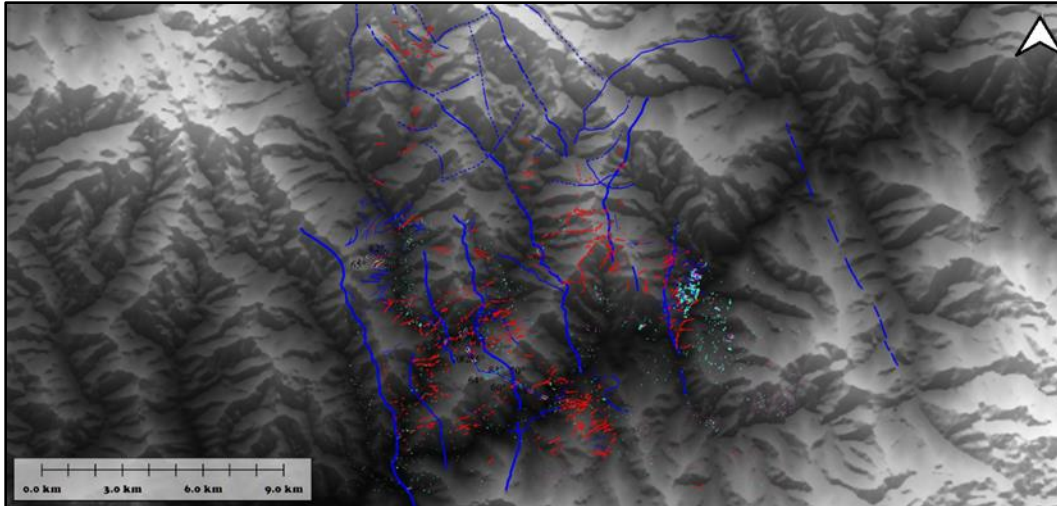


Note: Figure prepared by Goldcorp Mexico, 2005.

## 9.6. Remote Sensing

ASTER imagery covering the San Dimas mining area was acquired in 2002 by Wheaton River. The image was crosstalk corrected, processed to surface reflectance, and analyzed. The objective was to outline structural and alteration features that could be related to mineralization in the district. Figure 9-10 shows the interpreted zones of clay alteration in light blue and vein swarms in red.

Figure 9-10: Aster Image, San Dimas Mining Area



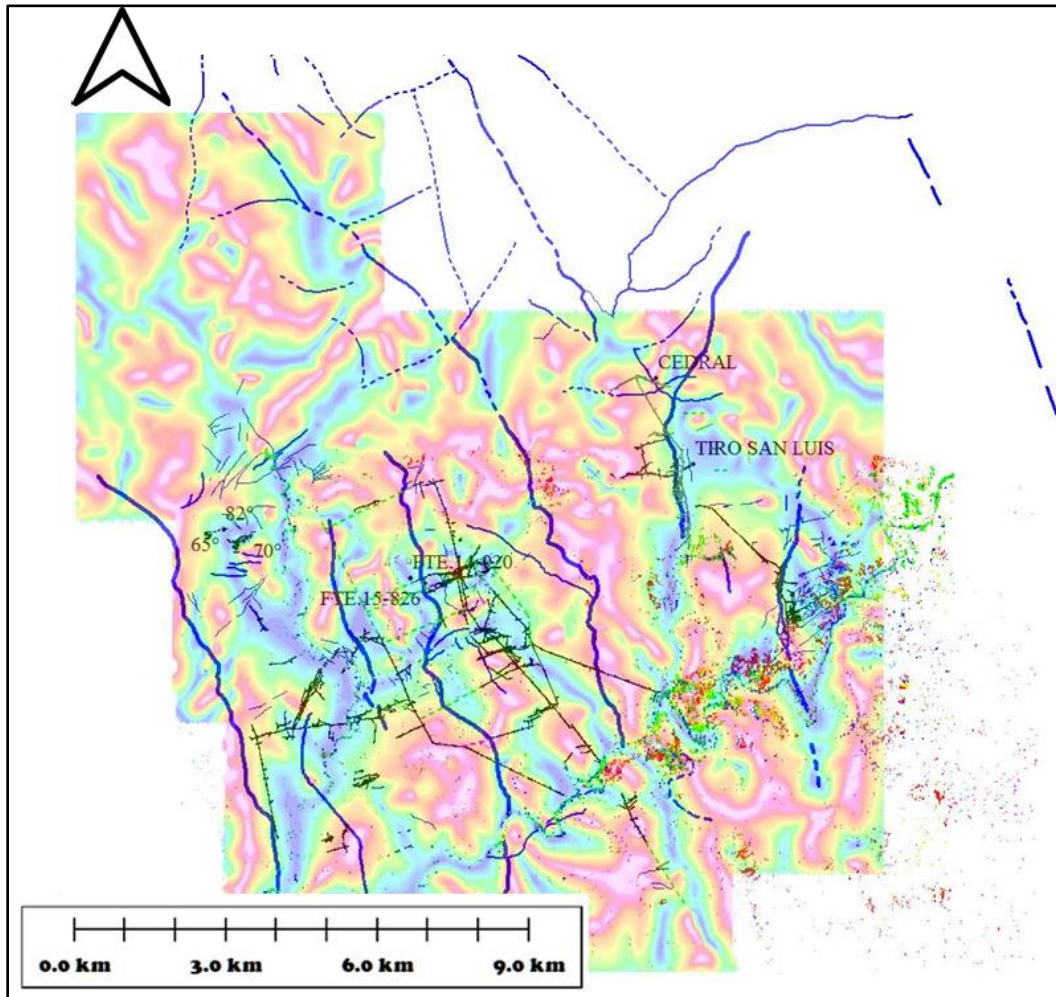
Note: Figure prepared by Wheaton River, 2002.

In 2013, Primero compiled historical remote sensing data, which included previous airborne magnetic and radiometric data acquired in 2005 at 100 m line-spacing and the ASTER imagery acquired in 2002.

The objectives were to correlate the geophysical responses with observable structures and mineralization identified from field mapping in the district and identify interesting structural and alteration features that may be related to mineralization in the district.

Figure 9-11 shows the combination of the alteration map obtained from the ASTER image and the magnetic data. The inferred alteration zones tend to follow northeast-trending magnetic discontinuities.

Figure 9-11: Satellite Image Magnetic Tilt Derivative Inversion and Alteration, San Dimas Area

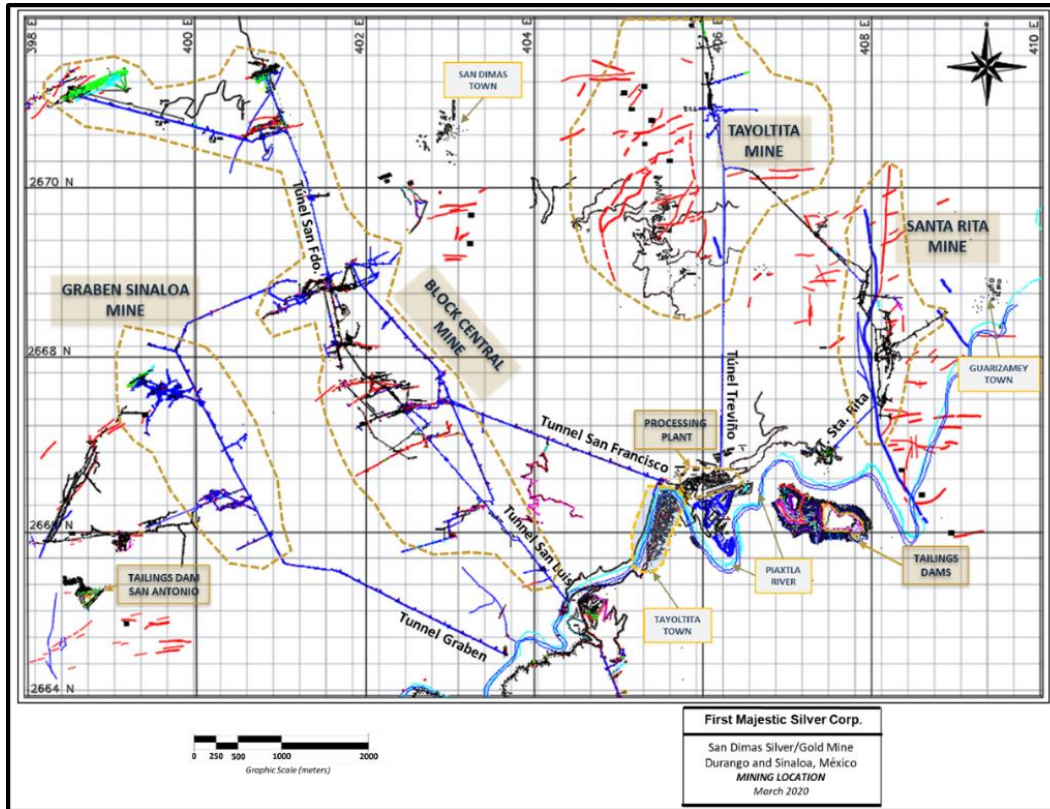


Note: Figure prepared by McPhar Geosurveys Ltd., December 2005.

## 9.7. Tunnelling

The most important exploration strategy at San Dimas has been underground mine tunnelling from south to north since the favorable horizon concept was first proposed in 1975 by Luismin. Tunnelling consists of advancing mine development to the north at the preferred elevation to intersect quartz veins mapped at surface. This method discovered veins with no surface exposure, such as the Jessica vein, which currently is a major contributor to silver and gold production. The tunnels were used to establish underground exploration drilling platforms, and to extract the ore. This exploration strategy has successfully been used by all companies after Luismin, resulting in more than 500 km of underground mine development.

Figure 9-12: Main Mining Tunnels, San Dimas Mining Area



Note: Figure prepared by First Majestic, March 2020.

### 9.8. Petrology, Mineralogy, and Research studies

Numerous petrographic studies have been conducted over the years by the different companies (e.g., Clarke et al., 1988; Petersen, 1997; Conrad et al., 1995; Enriquez et al., 2001; Montoya et al., 2020)

Between 2017 and 2020, Universidad Nacional Autónoma de Mexico, conducted a complete petrographic and fluid inclusions study as part of a Ph.D. thesis (Montoya, 2020). Samples were collected from the San Dimas mining areas as well as from the Ventanas area. Conclusions of this study are:

“San Dimas exhibits multiple mineralization events during different magmatic and tectonic episodes from Late Cretaceous to early Oligocene. Mineralogical, fluid inclusions (FI), stable and noble gases isotope analyses suggest that the San Dimas deposit consist of two different mineralization styles: 1) Ag-dominant epithermal Eocene veins that occurred at temperatures up to ~350 °C developed at ca. 2–3 km depth, associated to the final stages of intrusion of the Piaxtla batholith, with FI dominated by a crustal component, and 2) epithermal low sulfidation Au-dominant Oligocene veins which were developed at 250 °C, at shallower depths (< 1 km), associated to the feeding fractures

of rhyolitic domes developed at the end of the main ignimbrite flare up of the Sierra Madre Occidental, with FI showing crustal fluids variably mixed with a magmatic component”.

#### **9.9. Exploration Potential**

The San Dimas exploration potential remains open in all the mine zones. As the mine was developed to the north, new veins were found. South of the Piaxtla River, the El Cristo area has potential for new quartz vein discoveries. The West Block is currently being explored by tunnelling. Opportunities to intercept the projection of fault-offset quartz veins from the Graben Block are considered good.

The exploration carried out in the Ventanas area is not yet conclusive. Further exploration campaigns could result in more vein discoveries.

## 10. DRILLING

Since the Favourable Zone for mineral deposits concept emerged in 1975, the exploration strategy has focused on underground mining development and core drilling perpendicular to the preferred vein orientation within the mine zones, which has proven to be the most effective method of exploration in the area. Core drilling is predominantly done from underground stations, as the rugged topography (i.e., access to surface drill stations) and the great drilling distance from surface locations to the target(s) makes surface drilling challenging and expensive.

Over 1,026,000 m of core drilling has been carried out since 2000.

Drilling in San Dimas took place over five different periods:

- Prior to 2000, most of the exploration was carried out in the Tayoltita mine zone through tunnelling with very little underground drilling, with the objective of verifying the extent of the veins in that zone along strike and at depth. No written details on the logging procedures in place prior to the 2000 campaign are available;
- Drilling between 2000–2004 was carried out by Luismin in the Tayoltita mine zone, mostly in the Aurora and Elisa Mantos veins;
- Core drilling increased substantially during the period 2004–2010. The Central Block was explored from surface until access was gained by underground development;
- Core drilling was again increased during the Primero operations period, from 2010–2018. Several veins such as the Elian, Arantxa, and Victoria veins were discovered in the Graben Block. The Jessica vein in the Central Block was first discovered by tunnelling and then explored by drilling. The Ventanas and Lechugillas areas were also drilled during this period.
- From May 2018 First Majestic has continued drilling in Central Block (the extension along strike of the Jessica vein), the Graben Block, and the Tayoltita Block.

Table 10-1 shows the metres of drilling completed by zone since the year 2000.

*Table 10-1: Distribution of Exploration Drilling in San Dimas by Mine Zone*

AREA	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Jan-Jun-20	Jul-Dec-20	2020	TOTAL	
<b>Near-Mine Exploration</b>																									
West Block	2,843		2,968													10,244	8,169	7,195							
Graben Block				714	615	411	1,940	2,325	9,877	12,183	18,242	37,803	30,004	45,486	22,553	13,489	9,368	14,166	33,694	13,271	26,592	39,863	292,733		
Central Block	1,716	8,917	1,829	9,192	17,628	13,987	21,413	33,264	16,258	16,260	13,547	25,572	44,339	40,616	33,971	26,186	26,372	25,666	52,194	42,456	13,596	16,558	30,154	501,536	
Tayoltita Block	3,571	7,767	5,418	5,450	8,637	11,716	12,324	20,250	551	10,226	941				2,085	495	1,127	399		454	2,903	5,781	8,684	100,093	
Santa Rita Area	3,131	7,992	7,160	5,684	7,563	11,193	6,225	3,291	5,919	5,709	3,365					351								67,583	
El Cristo Area									697							1,539									2,236
Alto Arana Area									4,936		12,239	12,238			2,115										31,518
<b>Subtotal Near-Mine</b>	<b>11,261</b>	<b>24,676</b>	<b>17,374</b>	<b>21,039</b>	<b>33,828</b>	<b>37,511</b>	<b>40,373</b>	<b>58,745</b>	<b>30,686</b>	<b>42,072</b>	<b>42,265</b>	<b>56,052</b>	<b>82,142</b>	<b>72,735</b>	<b>83,081</b>	<b>59,829</b>	<b>49,157</b>	<b>42,627</b>	<b>66,359</b>	<b>76,605</b>	<b>31,119</b>	<b>49,219</b>	<b>80,338</b>	<b>1,028,756</b>	
<b>Greenfields Exploration</b>																									
Ventanas													1,406	10,783	4,390	3,528							7,322	7,322	27,428
Lechugillas-Causitas															462	2127	666								3,255
<b>Subtotal Greenfields</b>													<b>1,406</b>	<b>10,783</b>	<b>4,852</b>	<b>5,653</b>	<b>666</b>						<b>7,322</b>	<b>7,322</b>	<b>30,683</b>
<b>TOTAL</b>	<b>11,261</b>	<b>24,676</b>	<b>17,374</b>	<b>21,039</b>	<b>33,828</b>	<b>37,511</b>	<b>40,373</b>	<b>58,745</b>	<b>30,686</b>	<b>42,072</b>	<b>42,265</b>	<b>56,052</b>	<b>82,142</b>	<b>74,141</b>	<b>93,864</b>	<b>64,681</b>	<b>54,812</b>	<b>43,293</b>	<b>66,359</b>	<b>76,605</b>	<b>31,119</b>	<b>56,541</b>	<b>87,659</b>	<b>1,059,439</b>	

### 10.1. Drill Methods

All drill holes at San Dimas are completed using core drilling. No reverse circulation (RC) drilling has ever been conducted.

Prior to 2011, all drilling was classified as exploration drilling. From 2011 to 2020, drilling was classified as either delineation drilling, which was designed to potentially define the orebody with target points located generally 25–40 m from development and in a 30 x 30 m pattern; or exploration drilling, which was designed to explore the extension of known veins and test new targets in a 60 x 60 m pattern.

Since January 2020, under First Majestic management, core drilling has been classified as:

- Resource sustaining delineation drilling, designed to guide mine development;
- Resource sustaining infill drilling, designed to provide support to upgrade resource classifications from Inferred to Indicated category. Infill drilling is often setup in a 30 x 30 m spaced pattern;
- Near mine exploration drilling, designed to identify extensions of mineralization surrounding known mineral resources. This often consists of drilling along the extension of the known orebodies. The setup is often 50 x 50 m or more;
- Brownfield exploration drilling, designed to identify mineralization outside of the existing mine plan that can use existing mine infrastructure;
- Greenfield exploration drilling, designed to identify new discoveries that could require new mineral processing infrastructure.

Underground drilling is carried out with both company equipment and contractor equipment, while surface drilling is mostly carried out by contractors. The most common type of drilling equipment is Sandvik DE-130, DE-140 and DE-142 rigs, with a depth capacity from 500–850 m. The drill rigs for surface drilling have diesel engines while the underground rigs operate with an electric system. A total of nine rigs, including contractors, are currently operating 12 hours per shift.

Core drilling included HQ (63.5 mm core diameter), NQ (47.6 mm), BQ (36.4 mm) and AQTT (27 mm). Since 2013, NQ diameter is most commonly used for surface and underground drilling. For drill holes longer than 700 m, HQ diameter is reduced to BTW (42.01 mm).

Termite drill rigs owned by First Majestic have been used since 2009, are capable of drilling up to 150 m, and are mostly used for underground delineation or infill drill holes. The drilling barrel type used for delineation drilling is TT46 producing core of 35 mm in diameter.

Figure 10-1 is a plan view map of all drilling in the mine zones and shows that more than 95% of all the drilling is within the San Dimas mine area.



Figure 10-1: Plan view of drilling at San Dimas by Mine Zones

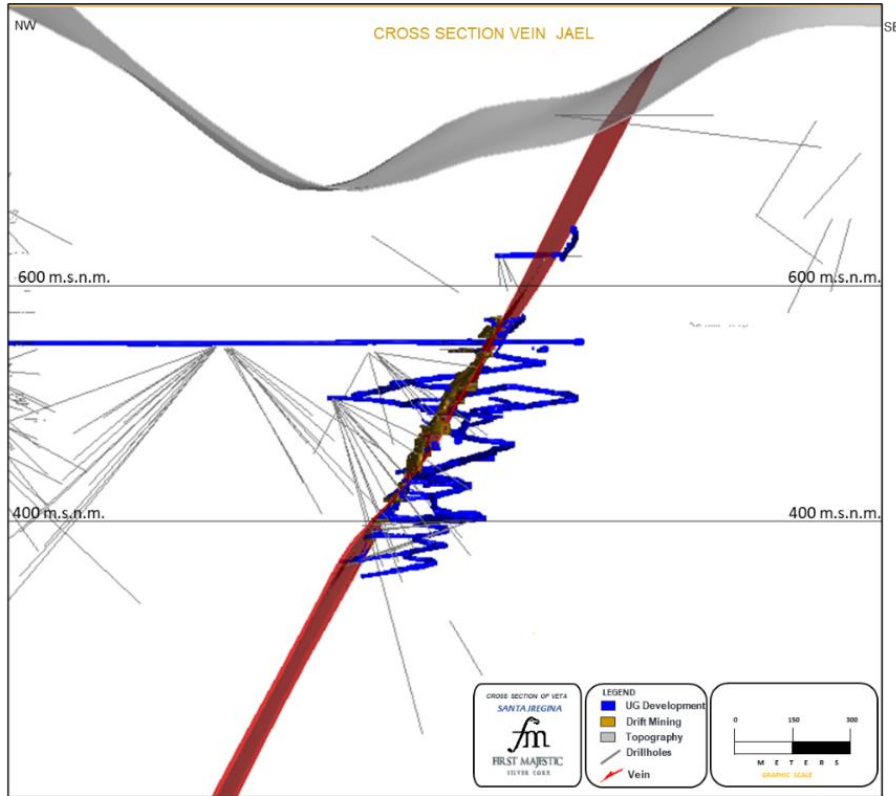


Note: Figure prepared by First Majestic, June 2020.

Drilling in the San Dimas district is focused on the identification and delineation of vein-hosted silver and gold mineralization by using structural and stratigraphic knowledge of the district, preferred vein trends, and Au:Ag ratios. These criteria have been successfully applied in the discoveries made since the early 1970s. Figure 10-2 to Figure 10-5 are vertical section examples of drilling associated with four representative veins shown, Jael, Jessica, Regina and Robertita. In these figures, m.s.n.m stands for metres above sea level.

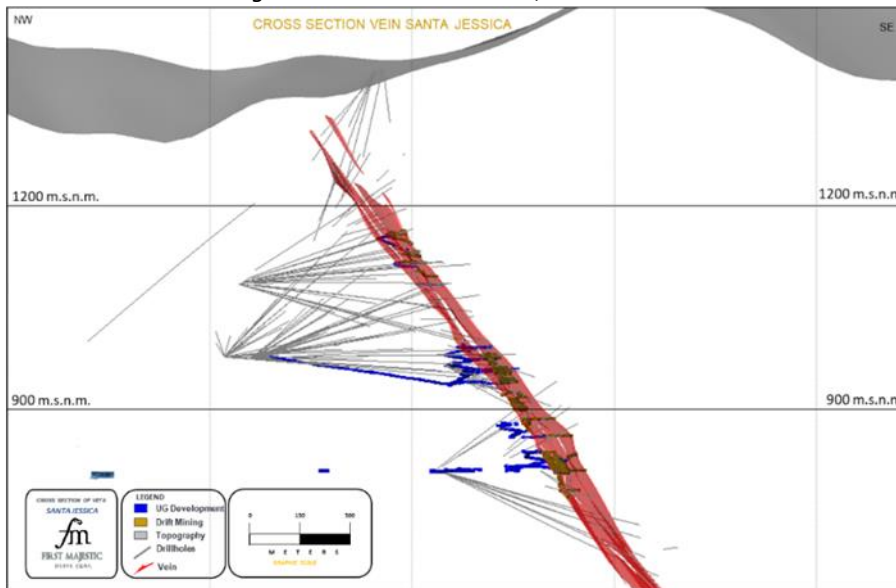
Table 10-2 lists examples of typical intercepts, including high, medium, and low silver and gold values as well as the intercept thickness in metres, for the same four vein examples.

Figure 10-2: Vertical Section, Jael Vein



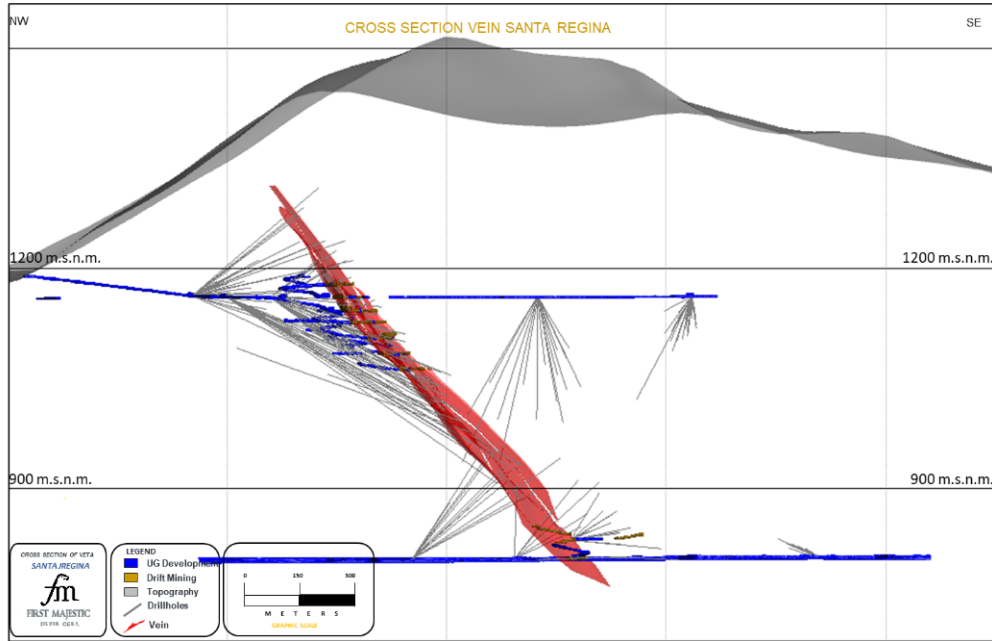
Note: Figure prepared by First Majestic, 2020.

Figure 10-3: Vertical Section, Jessica Vein



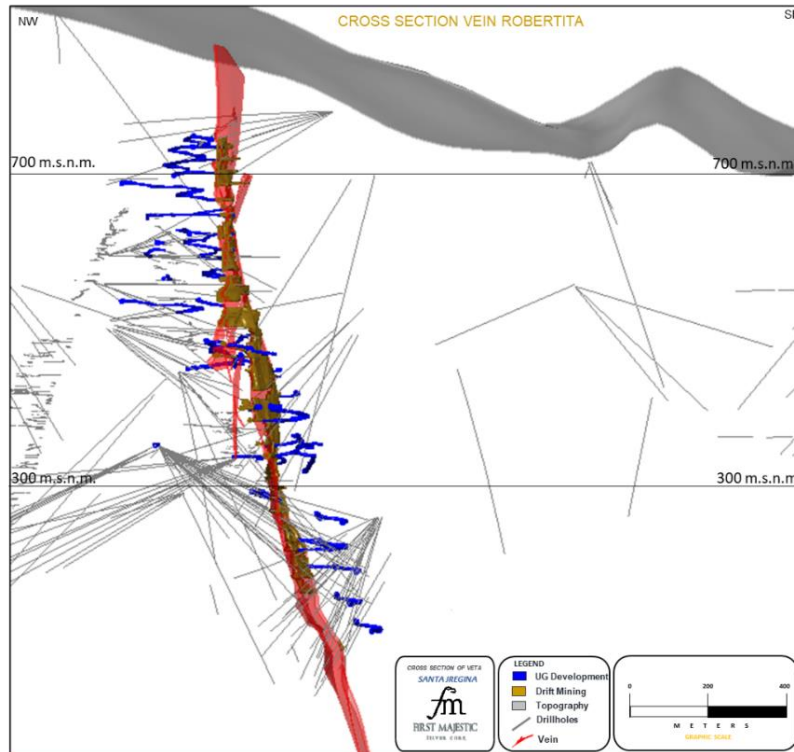
Note: Figure prepared by First Majestic, 2020.

Figure 10-4: Vertical Section, Regina Vein



Note: Figure prepared by First Majestic, 2020.

Figure 10-5: Vertical Section, Robertita Vein



Note: Figure prepared by First Majestic, 2020.

Table 10-2: Representative Drill Hole Intercepts, Jael, Jessica, Regina, and Robertita Veins

Vein	Drill Hole ID	Easting (X)	Northing (Y)	Elevation (Z)	Azimuth (°)	Dip (°)	Total Hole Depth (m)	Depth From (m)	Depth To (m)	Drilled Intercept Thickness (m)	Gold Grade (g/t Au)	Silver Grade (g/t Ag)
Jael	SOL18D_272	401,849.5	2,667,999.1	404.2	5.2	-18.6	129.4	124.0	125.7	0.85	85.21	3,893.0
	SOL18D_271	401,849.5	2,667,999.2	404.4	4.4	-6.4	101.2	88.6	89.4	0.72	14.10	1,003.0
	SOL18D_274	401,862.8	2,668,003.4	404.0	15.2	-5.7	109.1	99.6	100.5	0.64	10.24	786.0
	SOL20D_277	401,899.9	2,668,079.7	386.9	50.4	1.8	89.0	75.8	76.7	0.60	2.00	225.0
	SOL18D_273	401,869.1	2,668,009.1	400.8	27.6	-4.3	127.5	114.3	114.9	0.46	0.03	2.0
	SOL14_269	401,840.2	2,668,212.5	545.8	204.1	-27.4	250.0	233.3	235.7	2.04	0.08	10.0
Jessica	SJE19_286	400,672.1	2,670,935.0	1,083.1	325.7	-16.9	406.5	390.9	394.2	1.80	42.06	11,197.0
	SJE15_040	400,871.5	2,671,392.5	807.8	331.0	26.7	156.6	139.5	141.2	1.13	61.29	8,795.0
	SJE19_351	400,672.4	2,670,935.1	1,083.5	306.3	-3.5	276.0	260.0	262.9	1.86	20.63	2,505.0
	SJE19_306	400,716.8	2,671,056.4	1,144.7	351.3	16.1	177.0	149.6	152.5	1.98	5.75	706.0
	SJE16_064	400,673.7	2,670,935.2	1,083.3	2.0	-10.3	459.0	413.7	415.1	1.16	0.45	66.0
	SJE19_333	400,790.3	2,671,346.8	806.7	336.4	-14.0	285.0	241.9	242.8	0.69	0.13	7.0
Regina	SRE19_199	399,991.4	2,671,003.2	1,161.4	208.4	-19.3	564.0	521.3	522.9	1.19	21.44	2,445.0
	SRE20_216	399,797.2	2,671,002.6	806.5	179.9	20.5	468.8	434.6	436.0	1.03	23.39	4,309.0
	SRE17_066	400,563.8	2,670,723.3	1,161.0	291.9	-29.3	404.2	377.9	385.6	3.64	14.75	2,006.0
	SRE19_154	400,504.6	2,670,828.2	1,128.4	327.9	-21.5	211.5	189.7	196.6	5.32	4.56	545.0
	SRE19_134	400,352.2	2,670,874.2	806.2	264.8	25.3	217.0	204.9	207.4	1.32	0.18	30.0
	SRE20_226	399,797.1	2,671,002.6	806.1	187.1	12.3	393.0	326.2	328.0	1.31	0.06	4.0
Robertita	ROB14_347	401,876.6	2,668,900.5	259.7	337.2	-23.7	196.0	119.0	124.6	4.82	21.68	193.7
	ROB13_286	402,121.8	2,668,884.2	364.6	292.5	-31.5	350.0	336.2	339.1	2.04	21.14	262.1
	ROB13_282	402,121.7	2,668,884.6	364.3	303.8	-39.2	312.6	291.4	295.2	3.27	12.53	467.4
	ROB13_285	402,121.9	2,668,885.1	363.9	309.0	-50.0	352.0	297.5	299.8	1.48	4.08	361.0
	ROB13_302	402,118.9	2,668,883.1	363.3	289.1	-51.6	377.0	356.1	377.0	10.75	0.04	1.6
	ROB13_298	402,120.1	2,668,883.9	362.5	298.9	-61.4	410.0	370.4	377.6	6.12	0.02	1.9

## **10.2. Drill Hole Logging Procedure**

Drill core is boxed and transported to the core shed facilities where the core is logged and processed. The core facility has an office where the drilling programs are managed.

Historically, core was logged on paper on a columnar log and rock codes assigned at the time of data entry. Since 2013 the logged drill hole data are captured digitally using Core Logger.

Sampling is generally completed only on the known veins with an adequate interval of waste rock around the vein, with sample intervals placed on the contacts. The sample width is between 0.5–1 m. All core is labelled and photographed. The core is generally split for sampling with a diamond saw, although some softer rocks have been split using a hydraulic guillotine splitter. Samples are then bagged and tagged with sample identifiers, and since January 2019 are sent the First Majestic's Central Laboratory (Central Laboratory). Prior to 2019, samples were shipped to the SGS laboratory based in Durango (SGS Durango).

## **10.3. Core Recovery**

The rock quality at San Dimas is generally good in the mineralized intercept as well as in the wall rock. The core is received in the core shack and the pieces are reconstructed. The length of the core is measured and compared with the downhole length recorded in the core box.

A 95% recovery in the mineralized zone is considered acceptable, and the average recovery is 97%. Recoveries between 85% and 95% are usually related to fault zones, intensely altered zones, or rock cavities like vugs and geodes.

The QP reviewed the recovery data for drill holes and agrees with the Geology Department's assessment of overall good recoveries.

## **10.4. Collar Survey**

Collar coordinates and downhole azimuth and inclination are determined using total station equipment, before and after hole completion. The surveyors orient the rigs and provide proper initial alignment and inclination to the drilling rods. Collar locations are plotted and verified in plan view and cross section by geologists. This method is used in surface and underground drilling.

## **10.5. Downhole Survey**

Goldcorp established a procedure in 2008 that continues to be used consisting of down hole azimuth and inclination readings using Reflex equipment first at 12 m and then every 30–50 m downhole depending on the inclination of the hole and the rock type. The trace of the hole is validated by the geologist and the database manager. This method has been used in surface and underground drilling.

### **10.6. Geotechnical Drilling**

Geotechnical logging consists of descriptions of the fracturing degree of the mineralized veins and host rock on both sides of the vein contact, visual determination of the rock-quality designation (RQD) and rock resistance, and descriptions of the fracture types. This method has been used in surface and underground drilling.

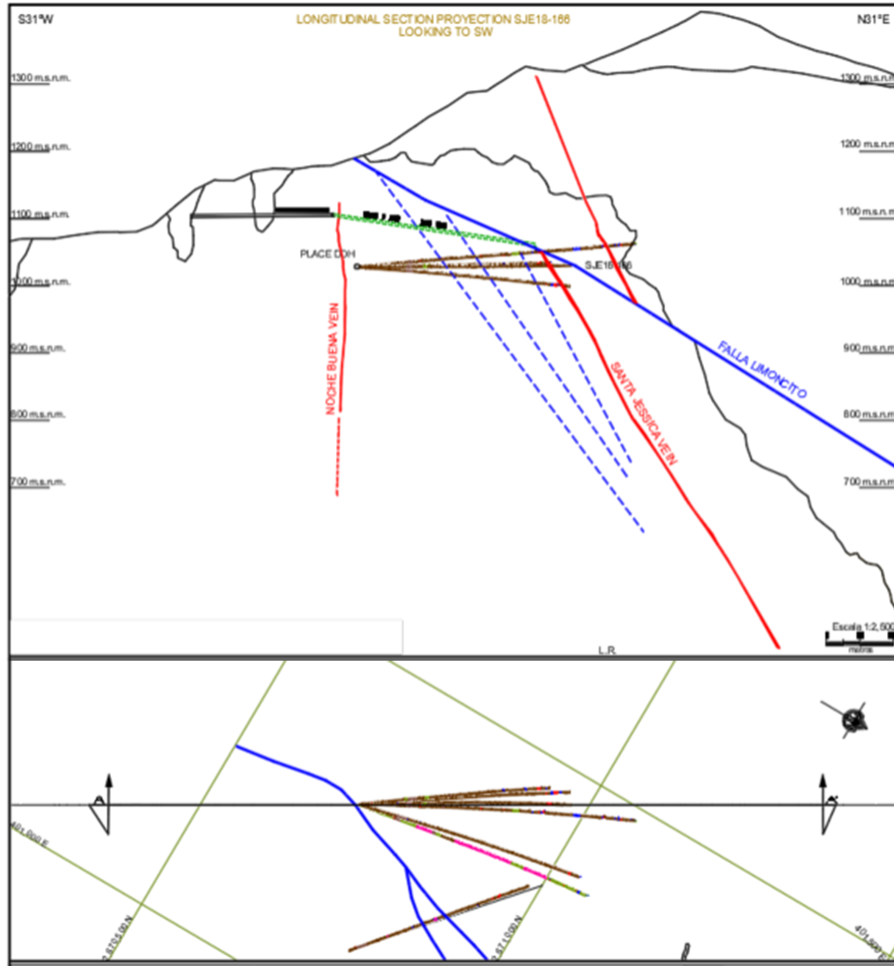
### **10.7. Drill Core Interval Length/True Thickness**

Drill holes are typically drilled to obtain the best intersection possible, such that the intersected interval is as close as possible to the true width, while giving vertical coverage. The minimum angle allowed to intercept the veins is 30°. This procedure is applicable to both surface and underground drilling.

As a result, the mineralized vein interval length observed in the drill holes does not correspond to the true thickness in most cases. The true thickness is determined by three-dimensional geological modeling.

Figure 10-6 shows a typical underground set up for drilling where the Jessica vein is drilled from a station located in the Noche Buena vein. Drill hole inclination can be negative (downward) or positive (upward).

Figure 10-6: Vertical Section and Plan View, Jessica Vein Drilling Setup



Note: Figure prepared by First Majestic, 2020.

### 10.8. Comments on Section 10

In the opinion of the QP, the quantity and quality of the lithological, geotechnical, structural, collar, and downhole survey data collected since 2000 are sufficient to support Mineral Resource and Mineral Reserve estimation.

## **11. SAMPLE PREPARATION, ANALYSES AND SECURITY**

### **11.1. Sampling Methods**

#### **11.1.1. Channel**

Prior to 2013, underground mine production channel samples for grade control and channel samples for resource estimation were taken across the roof at 1.5 m intervals in developments and at 3 m intervals in stopes using 3 m vertical cuts. From 2013–2016, production channel samples and channel samples for resource estimation were taken across the roof at 3 m intervals in developments and at 3 m intervals in stopes using 6–12 m vertical cuts. From 2016 to present, production channel samples for grade control and channel samples for resource estimation are routinely taken across the mine development face at 3 m intervals and within stopes using 3–6 m vertical cuts.

Channel sampling for resource estimation is supervised by San Dimas geologists and undertaken using a hammer and chisel with a tarpaulin laid below to collect the samples. Sample lengths range from 0.20–1.20 m. Sample intervals are first marked with a line across the face perpendicular to the vein dip, respecting vein/wall contacts and textural or mineralogical features. The samples are taken as a rough channel along the marked line, with an emphasis on representative volume sampling. The sample is collected on the tarpaulin, broken with a hammer, and quartered and homogenized to obtain a 3 kg sample. The sample is bagged and labelled with sample number and location details. Sketches and photographs are recorded of the face sampled, showing the samples' physical location from surveying and the measured width of each sample. Since 2011, all channel samples are dispatched to the San Dimas Laboratory.

#### **11.1.2. Core**

Since 2011, drill core sampling is undertaken by First Majestic's geologists who select and mark sample intervals according to lithological contacts, mineralization, alteration, and structural features. Sample intervals range from 0.25–1.20 m in length from within mineralized structures and from 0.5–1.20 m from hanging wall and footwall waste rock to obtain a minimum sample weight of 0.3–1 kg.

Drill core intervals selected for sampling are cut in half using a diamond saw. Softer rocks are split using a hydraulic guillotine splitter. One half of the core is retained in the core box for further inspection and the other half is placed in a sample bag. For smaller diameter delineation drill core (TT-46) the entire core is sampled for analysis.



The sample number is printed with a marker on the core box beside the sampled interval, and a sample tag is inserted into the sample bag. Sample bags are tied with string and placed in rice bags for shipping.

### **11.2. Density**

Bulk density measurements were systematically taken on drill core since October 2012. Since 2016, specific gravity measurements were collected on 10 cm or longer whole core vein samples using the unsealed water immersion method. The samples are weighed in air, recorded, then placed in a basket suspended in the water and the weight is again recorded. The samples are not waxed or sealed. The formula used is:

Specific gravity (SG) = Weight in air / (Weight in air – Weight in water)

Based on this method, an average bulk density value of 2.6 t/m<sup>3</sup> was determined.

In 2015, SGS Durango determined a bulk density of 2.6 t/m<sup>3</sup> based on analysis of 350 samples from various veins using a wax coat water immersion method.

The regular SG measurements made by San Dimas geologists are used to check for variation from the 2.6 t/m<sup>3</sup> bulk density value reported by SGS Durango but are not compiled in a database.

### **11.3. Laboratories**

The laboratories used for sample preparation and analysis are summarized in *Table 11-1*

.

Table 11-1: Laboratories

Laboratory	Drilling Period	Certification	Independent	Comments
San Dimas Laboratory	2004–2019	None	No	Primary laboratory for grade control and production samples. Sample preparation and analysis. Located at the San Dimas mine.
SGS Durango	2011–2018	ISO 9001:2008 ISO/IEC 7025	Yes	Primary laboratory for exploration drill core, delineation drill core and channel samples. Sample preparation and analysis. Located in Durango, Durango state, Mexico.
ALS	2013–2015	ISO 9001 ISO/IEC 7025	Yes	Secondary laboratory for check assays. Independent laboratory located in Zacatecas, Zacatecas state, Mexico. Sample Preparation and analysis.
Central Laboratory	2018–2020	ISO 9001 – 2008 in June 2015 and ISO 9001 - 2015 in June 2018	No	Primary laboratory for exploration drill-core, delineation drill-core, and channel -check samples. Sample preparation and analysis. Located at La Parrilla Mine.

#### 11.4. Sample Preparation and Analysis

##### 11.4.1. Sample Preparation

There is no detailed information describing sample preparation for channel and drill core samples applied at the San Dimas Laboratory before 2018. In general, the samples were dried, crushed, and pulverized. Since 2018, samples are dried at 110°C, crushed to 80% passing 2 mm using a Marcy jaw and Hermo crushers, split into 250-g subsamples using a Jones splitter, and pulverized using an ESSA pulveriser to 80% passing 75 µm.

At SGS Durango, drill core and channel check samples were dried at 105°, split to 3.5 kg, crushed 75% passing 2 mm, and split into a 250 g subsample which was pulverized to 85% passing 75 µm.

At the Central Laboratory, drill core and channel check samples are dried at 100°C for eight hours, crushed to 85% passing 2 mm, split into a 250 g subsample, and pulverized to 85% passing 75 µm.

##### 11.4.2. Analysis

Analytical methods by laboratory are summarized in Table 11-2.

Table 11-2: Analytical Methods

Laboratory	Code	Element	Limits	Description
ALS	Unknown	Au g/t	unknown	30 g FA and gravimetric method
	Unknown	Ag g/t	Unknown	30 g FA and gravimetric method
San Dimas Laboratory (2018–2019)	ASAG-16	Au g/t	0.01	30 g, fire assay AAS finish. Gravimetric finish if doré bead is above 12 mg
	ASAG-16	Ag g/t	5	30 g, fire assay gravimetric finish
	AWAA-100	Pb %	0.002- 50	2-acid partial digestion by AAS.
SGS Durango (2013–2020)	GE_FAA313	Au g/t	0.005-10	30 g, Au by fire assay, AAS finish.
	GO_FAG303	Au g/t	1	30 g, Au by lead fusion fire assay gravimetric finish. Over limit method.
	GO_FAG323	Au g/t	0.01	30 g, Au by lead fusion fire assay, AAS finish.
	GE_AAS21E	Ag g/t	0.3-100	2 g, 3-acid digestion, AAS finish.
	GO_FAG313	Ag g/t	10	30 g, Ag by fire assay, gravimetric finish.
	GE_ICP14B	Ag ppm	2-100	0.25 g, aqua-regia digestion ICP-OES.
	GO_FAG323	Ag g/t	10	30 g, Au by lead fusion fire assay, gravimetric finish
	GE_AAS12E	Ag g/t	0.3-100	2 g, 2-acid digestion, AAS finish.
Central Laboratory (2018–2020)	GE_ICP14B	Multi-element	Various	0.25 g, aqua-regia digestion ICP-OES.
	AUAA-13	Au g/t	0.01-10	20 g fire assay with AAS finish.
	ASAG-14	Au g/t	10	20 g fire assay gravimetric finish. Over limit method.
	AAG-13	Ag g/t	0.5-300	2 g, 3-acid digest, AAS finish.
	ASAG-12	Ag g/t	5	30 g, fire assay gravimetric finish.
	ICP34BM	Multi-element	Various	2-acid partial digestion ICP

There is no detailed information describing sample analysis for drill core and channel samples submitted to the San Dimas Laboratory before 2018. In general, samples were analyzed for gold using a 10 g fire assay with a gravimetric finish. Since 2018, channel samples submitted to the mine laboratory are analyzed for gold using a 30 g fire assay (FA) atomic absorption spectroscopy (AAS) method and by gravimetric finish if the doré bead is greater than 12 mg. Silver is determined using 30 g FA gravimetric finish. All samples received by the San Dimas Laboratory are logged into a laboratory information management system (LIMS).

Between 2013 and 2018, drill core and channel check samples sent to SGS Durango were analyzed for gold by a 30 g FA AAS method. Samples returning >10 g/t Au were reanalyzed by a 30 g FA gravimetric method. Silver was analyzed by a 2 g, three-acid digestion AAS method. Silver values >300 g/t were analyzed by a 30 g FA gravimetric method. A multi-element suite was analyzed by a 0.25 g, aqua regia digestion inductively coupled plasma (ICP) optical emission spectroscopy (OES) method.

In 2013, drill core check samples at ALS were assayed for gold and silver using a 30 g FA and gravimetric method.

Since 2018, drill core and channel check samples submitted to the Central Laboratory are analyzed for gold by 20g FA AAS method. Samples with gold values >10 g/t are reanalyzed by a 30 g, FA gravimetric method. Silver values are determined using a 2 g, three-acid digestion, AAS method. Samples with silver values >300 g/t are analyzed by a 30 g, FA gravimetric method. All exploration samples are analysed by a two-acid multi-element ICP OES method.

## **11.5. Quality Assurance and Quality Control**

### **11.5.1. Overview**

There is limited information as to whether a formal quality assurance and quality control (QAQC) program was in place prior to 2013.

From 2013 to 2018, the QAQC program for the San Dimas Laboratory samples included insertion of a standard reference material (SRM) and a blank in every batch of 20 samples.

From 2013 to 2018, the QAQC program for the SGS Durango channel and core samples included insertion of a SRM and a blank in every batch of 20 samples. In 2013, 5% of the coarse reject and pulp duplicates from core samples were randomly selected for analysis at SGS Durango and 5% of pulp checks from core samples were analyzed at ALS laboratory.

In 2019, First Majestic revised the QAQC program to include insertion of three certified reference material (CRM) samples and three blanks in every batch of 50 channel samples analyzed at the San Dimas Laboratory and one CRM and two blanks in every batch of 26 drill core and channel check samples submitted to the Central Laboratory.

SRMs were prepared using material collected from a variety of vein deposits from San Dimas mining district. SGS Durango determined the expected value from a round-robin analysis by five laboratories.

Blanks were prepared using material collected from andesitic and granitic intrusive outcrop near San Dimas. They did not undergo a round-robin analysis.

CRMs were purchased from CDN Resource Laboratories Ltd.

### **11.5.2. SRMs/CRMs**

There is no detailed information describing assessment of accuracy from SRMs before 2013.

For samples analysed between 2014 and 2020, accuracy was assessed in terms of bias of the mean values returned for SRMs and CRMs relative to the expected value. SRM and CRM sample results

for gold and silver were plotted on date-sequenced performance charts to investigate for outliers, defined as results that were above or below mean plus or minus three times the standard deviation.

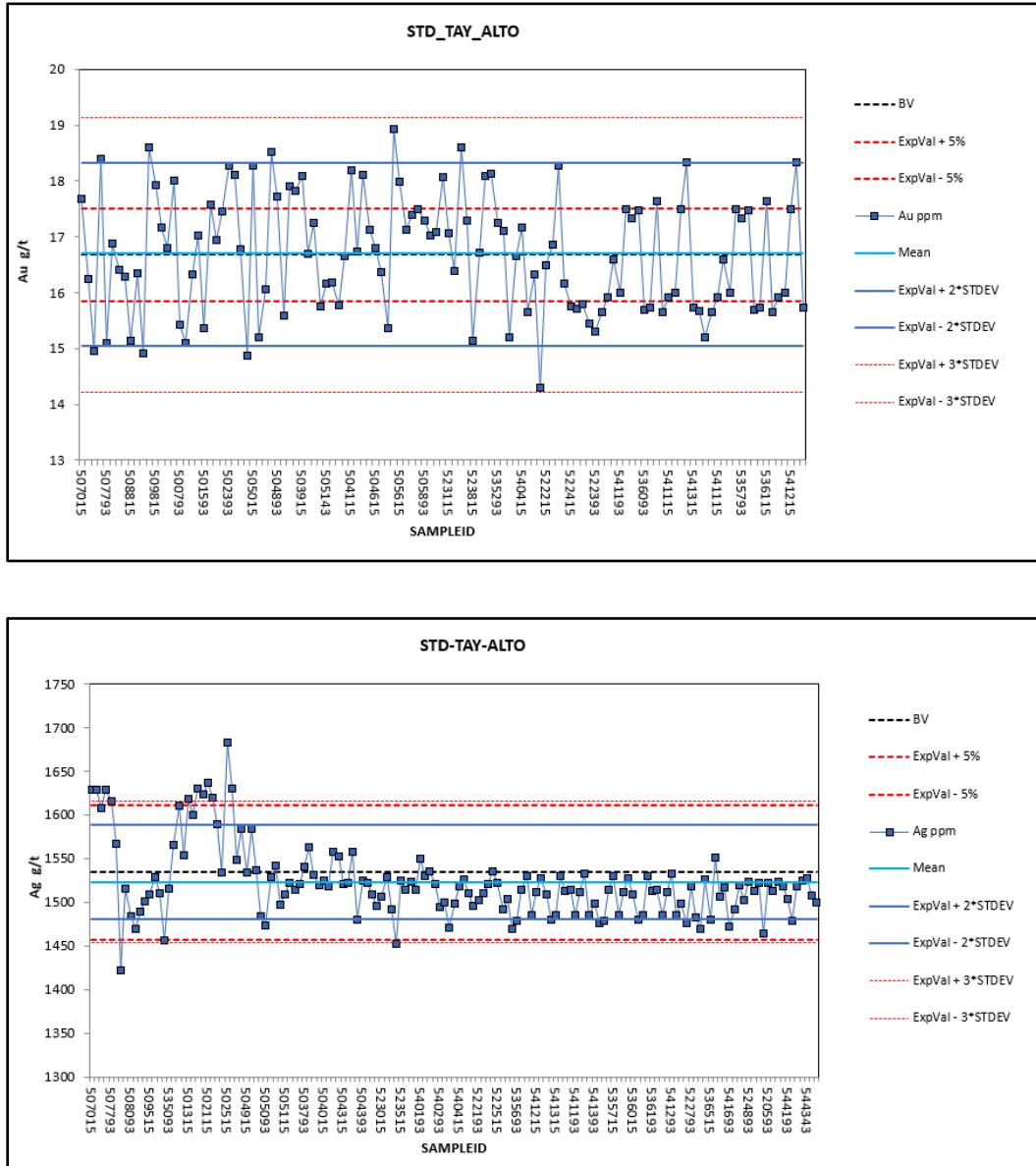
Between 2014 and 2018, the accuracy assessment identified very few errors such as mislabeling of samples. After exclusion of these errors, most of the CRM and SRM results for drill core and channel samples assayed at SGS Durango indicate no significant bias for gold and silver. In 2015, a local high bias was noted for the high-grade gold standard and a local low bias for low-grade silver standards inserted with channel samples.

During 2019, the accuracy assessment showed that very few errors, such as mislabeling of samples, were identified for samples submitted to the Central Laboratory, and error rates ranging from 1–9% were observed for samples submitted to the San Dimas laboratory. The 9% error rate is related to only 22 samples and is not considered significant. After exclusion of these errors, SRMs and CRMs for gold and silver from San Dimas and Central Laboratory show an acceptable level of bias relative to the expected values. One low-grade silver SRM shows a marginal but acceptable low bias. One low-grade gold CRM and one high-grade gold CRM show a marginal but acceptable high and low bias.

There is indication of some failures in the SRMs and CRMs (outliers = mean  $\pm$ 3STD). Since 2014, the practice has been to reassay outliers identified in areas of significant mineralization. There is no detailed information describing the reassay of the outliers detected from assessments conducted between 2014 and 2020.

An example of a time-sequence standard chart for the San Dimas Laboratory is provided as Figure 11-1. The period represented by the figure is for the year 2019.

Figure 11-1: Example of 2019 High-Grade SRM Gold and Silver Standard Charts, San Dimas Laboratory



Note: Figure prepared by First Majestic, March 2020.

### 11.5.3. Blanks

There is no detailed information about monitoring contamination before 2013.

For samples analyzed between 2014 and 2019, contamination was assessed by San Dimas geologists in terms of the values returned for blanks above two times the detection limit (failures) using sample number sequence performance charts.

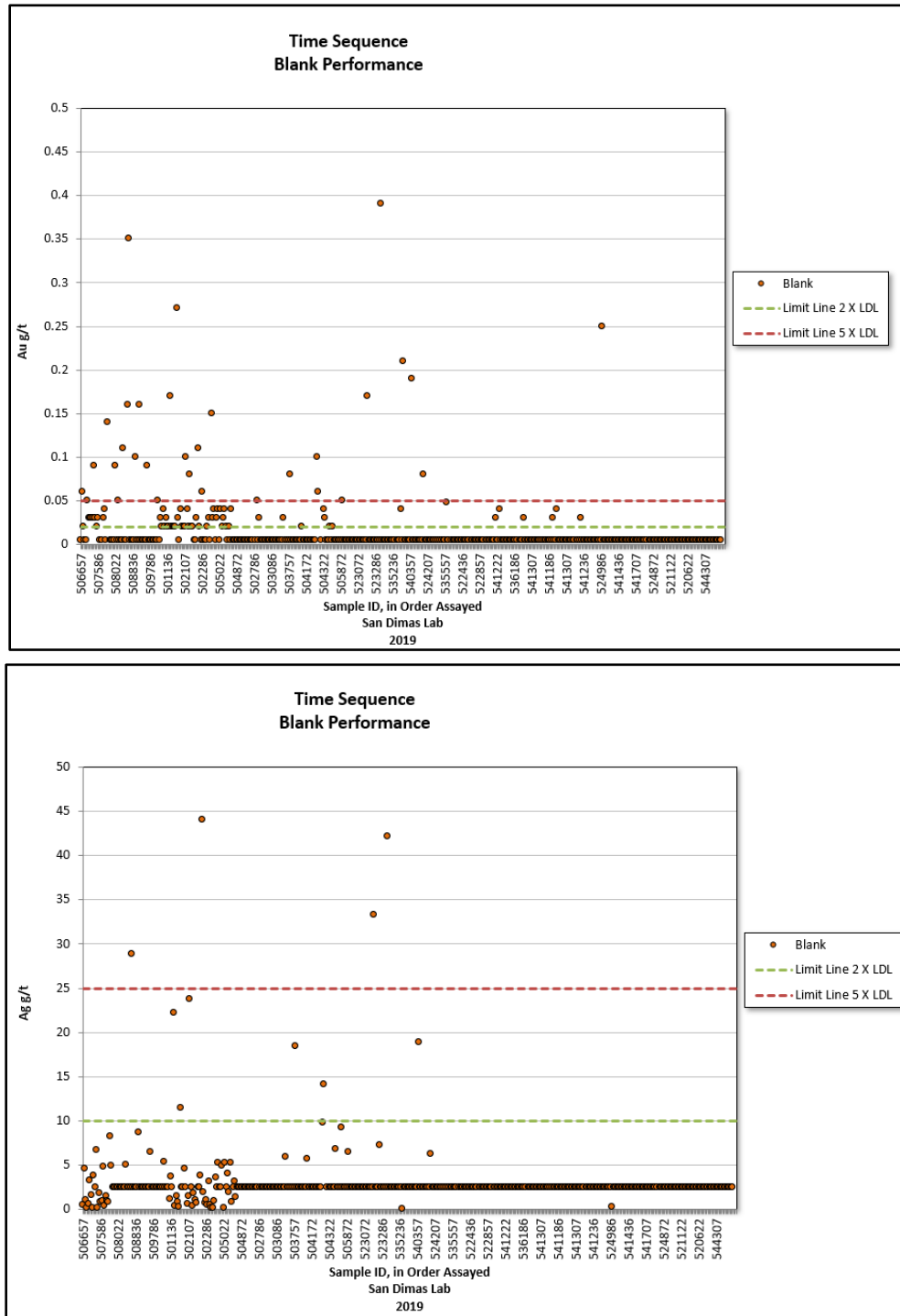
From 2014 to 2018, during the blank assessment, a few errors were identified such as mislabeling of samples. After exclusion of these errors, no significant contamination was evident.

During 2019 and 2020, the blank assessment identified a few errors such as mislabeling of samples. After exclusion of these errors, no significant contamination was evident.

Since 2013, the practice has been to reassay failures of samples in areas of significant mineralization which exceed two-times the detection limits. The failure rate between 2014 and 2018 is as high as 15% and shows continuous improvement through 2018 when failure rates are 2–3%. From 2019 to 2020, the failure rate was 11% at the San Dimas Laboratory and 1% at Central Laboratory. There is no detailed information describing the reassay of outliers. High failure rates are likely related to the quality of the blank material.

An example of blank sequence performance charts for gold and silver results for 2019 is included as Figure 11-2.

Figure 11-2: Example of 2019 Time Sequence Blank Performance Charts, San Dimas Laboratory



Note: Figure prepared by First Majestic, March 2020.



#### 11.5.4. Inter-Laboratory Bias Assessment (Check Assays)

Since 2018, a channel duplicate sample taken every third interval has been submitted to the Central Laboratory to provide a check on the original assays performed at the San Dimas laboratory. These samples are also used for resource estimation. A reduced mean axis (RMA) analysis for paired channel samples collected from the Jael, Jessica, Regina, and Robertita veins between January 18, 2019 and January 20, 2020 (after removing outliers) indicates no significant inter-laboratory bias.

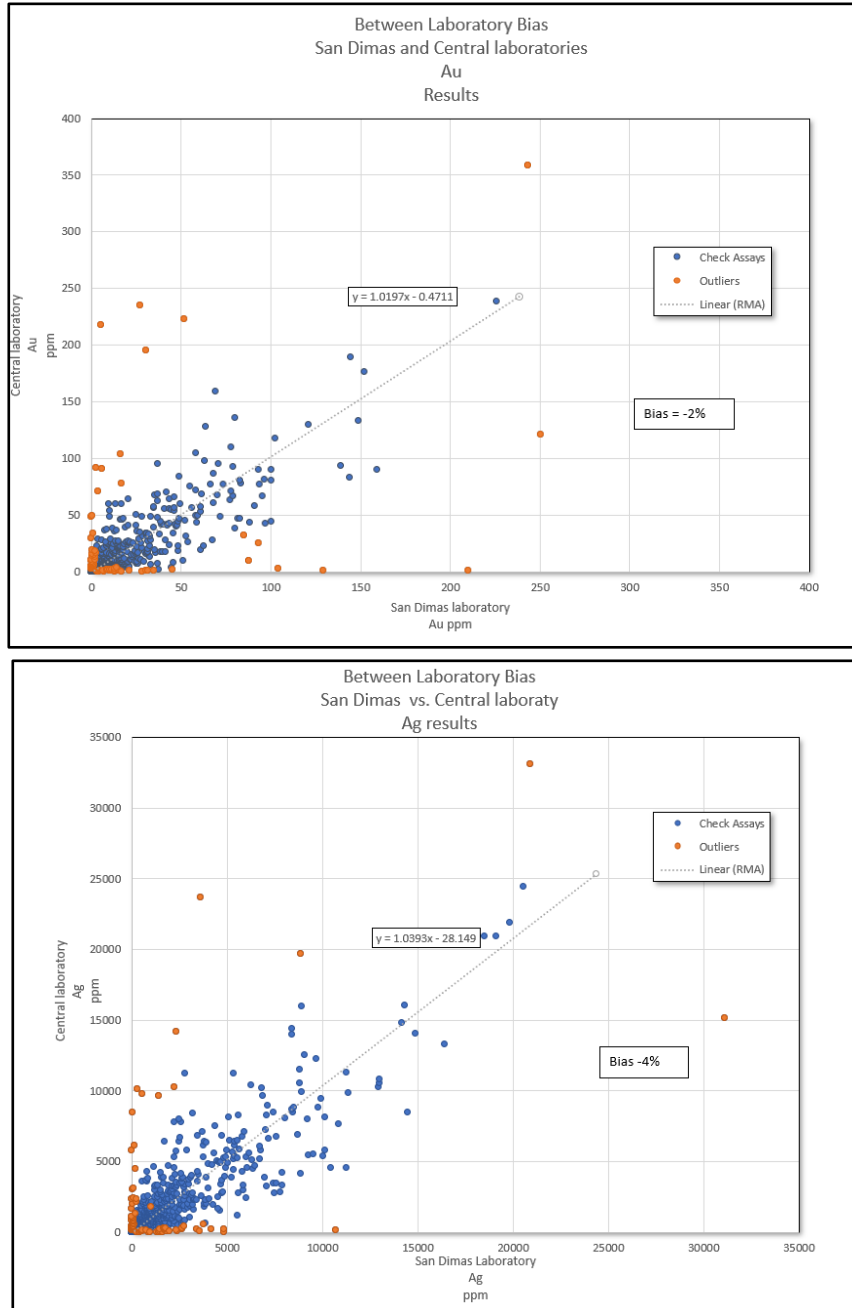
A summary of the 2019-2020 channel sample check results evaluating the potential for laboratory bias between San Dimas Laboratory and Central Laboratory is presented in Table 11-3.

*Table 11-3: Summary of Inter-Laboratory Bias Check Results*

Element	Count	Outliers	Bias
Au	1957	5%	-2%
Ag	1957	5%	-4%

An example check chart is shown in Figure 11-3 for the 2019 results.

Figure 11-3: Inter-Laboratory Bias Check, San Dimas and Central Laboratories



Note: Figure prepared by First Majestic, March 2020.

#### **11.5.5. Databases**

Collar, down-hole survey, lithology, structures, alteration, and assays are stored in a Gems database.

Logging data is captured using Core Logger. Assay data were received from the laboratories via emails in comma-separated value (CSV) data files. Core logger and assay files are imported into the Gems database. The Gems import process includes a series of built-in checks for errors at all stages, from header to individual tables. After data are imported, visual checks are done to ensure that the data were imported properly. The Gems database is backed up daily. The backup files are located on the San Dimas and Durango office servers.

#### **11.6. Sample Security**

##### **11.6.1. Channel Samples**

Throughout historical and current mine operations, channel samples have been transported from sampling areas to the San Dimas Laboratory by company trucks. The San Dimas Laboratory keeps the samples in a secured and fenced area during analysis. After analysis, samples are disposed of in the processing plant.

##### **11.6.2. Drill Core Samples**

Since the early drilling stages, drill core has been transported by personnel from First Majestic and predecessor companies and by drilling contractors' trucks from drilling locations to a secured core storage warehouse where the core is logged and processed. The core storage warehouse is located at Tayoltita, 100 m from the airport terminal, and is currently secured and guarded by First Majestic security personnel.

Upon completion of logging and sampling, all samples are securely sealed, and chain of custody documents are issued for all shipments. Samples are transported to the external laboratory using a company contractor.

The analytical results from these samples are received by authorized First Majestic personnel using secure digital transfer transmissions, and these results are restricted to qualified First Majestic personnel until their publication.

Remaining drill-core and laboratory reject samples are stored at the core storage warehouse.

### **11.7. Comment on Section 11**

Sample preparation, analysis, and quality-control measures used at the primary and secondary laboratories meet current industry standards and are providing reliable gold and silver results for channel and core samples.

The specific gravity measurement method is providing reliable results.

Sample security procedures used are providing reliable integrity to the samples results. Current quality control procedures for SG sampling should be modified to include monitoring reports and a 5% check at a secondary laboratory using wax coat water immersion methods.

There is little information supporting sampling methods, sample preparation, and analysis for pre-2013 data. Pre-2013 data represents less than 2% of the database, and therefore does not represent a material concern for overall data reliability informing the Mineral Resource estimates.

First Majestic is continually monitoring results and addressing issues as they occur. At the end of 2019, under Central Laboratory management, the San Dimas Laboratory received new equipment for sample preparation and analysis, revised sample preparation and analysis procedures, and provided employee training. All samples received by the San Dimas Laboratory are now logged in and sorted by a LIMS. Assay results are reported using the LIMS and include results from inserted laboratory quality control samples.

Production channel and drill hole samples used to support grade estimation have been assessed for laboratory accuracy but have not been assessed for laboratory precision. The QAQC insertions for production channel and drill hole samples should be modified to include field, coarse and pulp duplicates to assesses precision.

The field sampling procedure for production channel samples has some risk of introducing sampling bias but this possible bias has not yet been assessed.

## **12. DATA VERIFICATION**

### **12.1. Legacy Data**

In 2011, AMC Mining Consultants (Canada) Ltd (AMC) completed data verification in support of the San Dimas 2011 Mineral Resource and Mineral Reserve estimation and identified several deficiencies, including issues with the mine laboratory.

By 2013, the San Dimas operations had addressed these issues by submitting all new drill core and check channel samples to an independent commercial laboratory for preparation and analysis.

A subsequent data review by AMC in 2013 concluded that the results were reasonable and suitable for supporting resource estimation at the time.

### **12.2. First Majestic**

Data verification conducted by First Majestic includes a review of drill hole and channel sample data collected for the Jael, Jessica, Regina, and Robertita veins (the verification dataset) and included data transcription error checks for assay results, drill hole collar and channel location checks, downhole survey deviation checks, visual inspection of core, and an assessment of accuracy and contamination of primary and check channel samples for silver and gold. Site visits were also completed.

Drill hole collar coordinates and downhole survey data were imported to the database from digital format files. Logged attributes data were entered directly into the database through core logging software. No transcription error checks were made for these data. An inspection for gaps, overlap, and duplicates identified no issues.

A 1% selection of the gold and silver results recorded in the verification dataset were compared with electronic copies and final laboratory certificates from the Central, SGS Durango and San Dimas Laboratories. No significant errors were observed. In addition, a random selection of high-grade gold and silver results were verified against the original laboratory certificates. No significant transcription errors were observed.

All drill hole collar and channel locations in the verification dataset were inspected in three dimensions by comparing drill hole locations with their relationship to underground topography. No significant position errors were observed.

All downhole survey records in the verification dataset were inspected mathematically for angular deviation tolerance greater than 5°/30 m. No significant deviations were observed. Visual spot checks of five drill hole traces in three dimensions revealed no unusual kinks or bends.

Three drill holes from the verification dataset were visually inspected. Observed lithology, mineralogy, sample lengths, and sample numbers were compared to the logged data. No significant differences were observed.

Verification of assay accuracy and contamination is provided in Section 11 of this Report.

### **12.3. Site Visits**

Ms. María Elena Vázquez Jaimes, P.Geo., visited San Dimas mine on two occasions in 2019 and, most recently, between February 24–28, 2020. During these visits, Ms. Vazquez reviewed current drill core and channel logging and sampling procedures and inspected drill core, core photos, core logs, and QAQC reports. She also undertook spot checks by comparing lithology records in the database with archived core. No significant issues were observed.

### **12.4. Comment on Section 12**

The data verification completed by First Majestic identified no significant sample location, grade accuracy and contamination, or transcription error issues. The database is considered suitable to support Mineral Resource estimation.

Concerns identified by previous operators regarding the quality of data collected before 2013 are mitigated in part because only a small portion of the Mineral Resource estimates are supported by this data.

## 13. METALLURGICAL TESTING

### 13.1. Overview

The San Dimas mine is an operating mine, and the initial test data supporting plant design are superseded by decades of processing plant performance data.

### 13.2. Metallurgical Testing

Metallurgical testing, along with mineralogical investigation, is periodically performed. Even when the results are within the expected processing performance, the plant is continually running tests to optimize metal recoveries and operating costs. Metallurgical testing assists in several ways, such as the fine tuning of reagents usage, the maintenance of optimum particle size, variations in the backwash circuit, and testing of new reagents.

Composite samples are analyzed monthly to determine the metallurgic behaviour of the mineralized material fed into the processing plant. This metallurgical testing is carried out by the Central Laboratory.

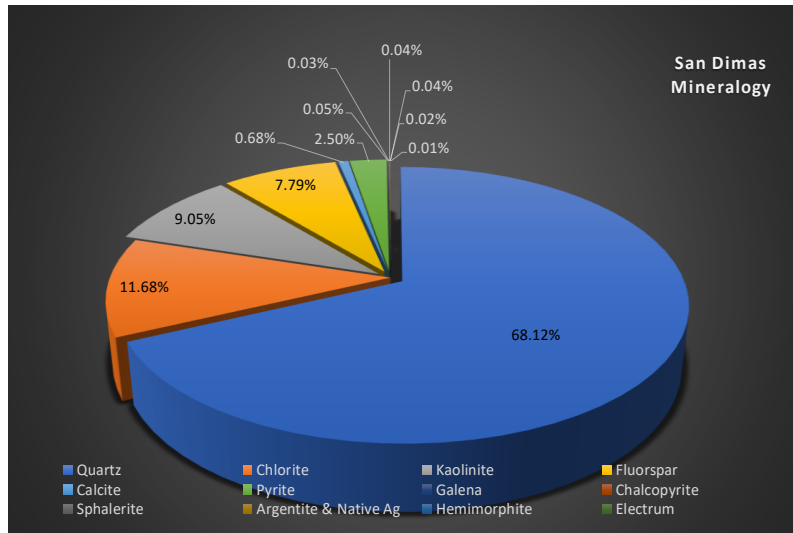
#### 13.2.1. Mineralogy

Throughout the San Dimas mining district, the most abundant mineralogical species, both metallic and non-metallic include:

- Metallic minerals (in order of abundance): pyrite ( $\text{FeS}_2$ ), galena ( $\text{PbS}$ ), chalcocite ( $\text{Cu}_2\text{S}$ ), sphalerite ( $(\text{Zn}, \text{Fe})\text{S}$ ), iron ( $\text{Fe}$ ), argentite ( $\text{Ag}_2\text{S}$ ), native silver ( $\text{Ag}$ ), hemimorphite ( $\text{Zn}_4(\text{Si}_2\text{O}_7)(\text{OH})_2 \cdot \text{H}_2\text{O}$ ), and electrum;
- Non-metallic minerals (in order of abundance): quartz ( $\text{SiO}_2$ ), chlorite ( $(\text{Mg}, \text{Fe})_3(\text{Si}, \text{Al})_4\text{O}_{10}(\text{OH})_2 \cdot (\text{Mg}, \text{Fe})_3(\text{OH})_6$ ), kaolinite ( $\text{Al}_2\text{Si}_2\text{O}_5(\text{OH})_4$ ), feldspar ( $\text{KAlSi}_3\text{O}_8 - \text{NaAlSi}_3\text{O}_8 - \text{CaAl}_2\text{Si}_2\text{O}_8$ ), and calcite ( $\text{CaCO}_3$ ).

The typical mineralogy is provided in Figure 13-1.

Figure 13-1: Typical Distribution of Minerals



Note: Figure prepared by First Majestic, March 2020.

### 13.2.2. Monthly Composite Samples

A sample is taken from the material fed into the mills on a daily and a per-shift basis. A representative amount from each sample is taken based on the milled tonnage of each shift and a monthly composite is accumulated.

The monthly composite sample is prepared by the plant’s metallurgist, with the support of the San Dimas Laboratory staff, and is forwarded to the Central Laboratory for analysis.

One of the objectives of this program is the compilation of a database that will demonstrate the relationship between the results of the metallurgical tests at laboratory scale and the actual performance of the process cyanidation plant.

### 13.2.3. Sample Preparation

Samples submitted to the Central Laboratory are dried, and then crushed to -10 or 6 mesh, depending on the test work planned.

### 13.3. Comminution Evaluations

Since July 2018, First Majestic has been running tests to estimate the Bond ball mill work index (BWi) of the monthly composite samples.

Table 13-1 shows the results of the Bond ball mill grindability tests (at 270 mesh closing screen) for the period from July 2018 to October 2020.



Table 13-1: Grindability Test Results for Different Composite Samples (2020)

Sample ID		Bond Ball Mill Work Index		
		kWh/t Metric	Feed $\mu\text{m}$	Discharge $\mu\text{m}$
		270M	F <sub>80</sub>	P <sub>80</sub>
2018	July	18.20	2469	45
	August	18.20	2428	46
	September	17.40	1950	40
	October	17.40	2055	40
	November	18.50	2386	39
	December	18.30	2109	39
2019	January	18.50	1975	55
	November	18.20	2037	39
2020	October	17.76	2051	36
Statistics of the 9 samples				
Average		18.05		
Standard Deviation		0.43		
Minimum		17.40		
25 <sup>th</sup> Percentile		17.76		
Median		18.20		
75 <sup>th</sup> Percentile		18.30		
Maximum		18.50		

The BWI results demonstrate a low level of variability with values ranging from 17.4–18.5 kWh/t. In addition to the October composite sample, a master composite for the 2021 forecast plant feed was also tested in 2020 and resulted in a BWI of 18.4 kWh/t which also fits within the range of observed values for the last three years.

#### 13.4. Cyanidation, Reagent and Grind Size Evaluations

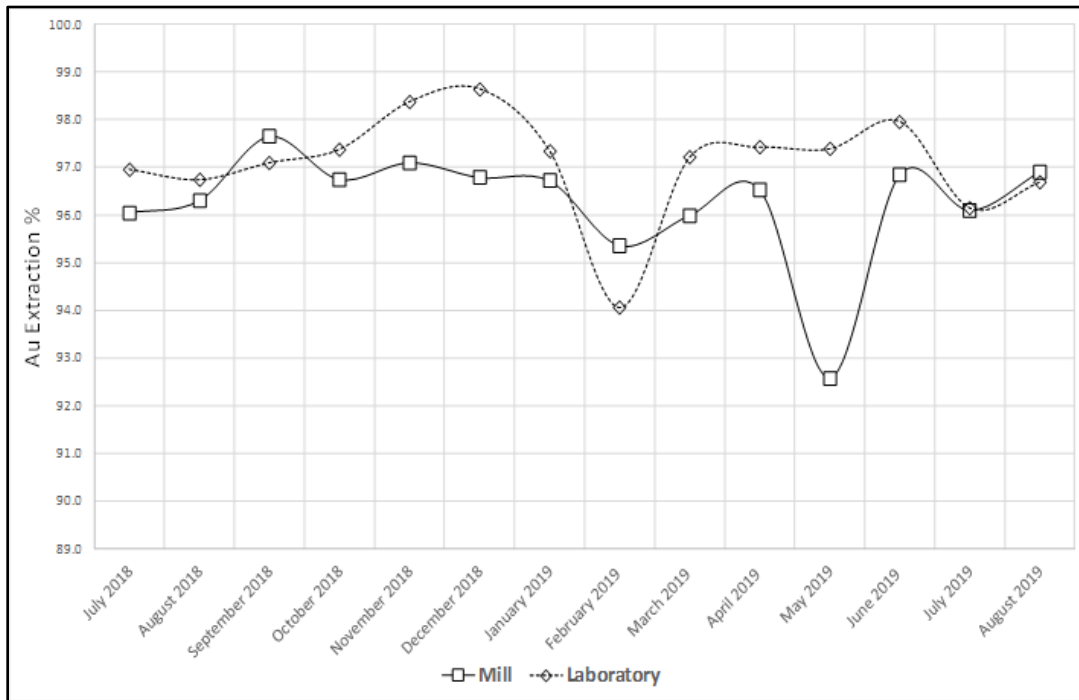
In addition to the analysis of repeatability for the metallurgical recovery of gold and silver for each monthly composite, and depending on the problems or needs experienced during the months prior to the monthly sample being collected, a series of tests can be conducted that may include the following:

- Standard cyanidation (under similar conditions to those in the plant: grinding size, addition of reagents and cyanidation times);
- Testing with different reagents;
- Testing with different grinding sizes.

Results are shared with the plant operation personnel to facilitate continuous improvement initiatives.

As an example of the continuous monitoring of plant performance through the work conducted by the Central Laboratory, Figure 13-2 shows a comparison between the monthly mill performance and the Central Laboratory monthly composites results, in terms of metallurgical recovery for gold.

Figure 13-2: Comparison of Au & Ag Extractions Between Mill and Laboratory Performances



Note: Figure prepared by First Majestic, January 2020.

As it can be observed, during the months when the plant performed in line with forecasts (Au recovery > 95%), the laboratory vs. plant results are mostly within a 1% to 1.5% difference. An exception occurred in May 2019 due to operational issues.

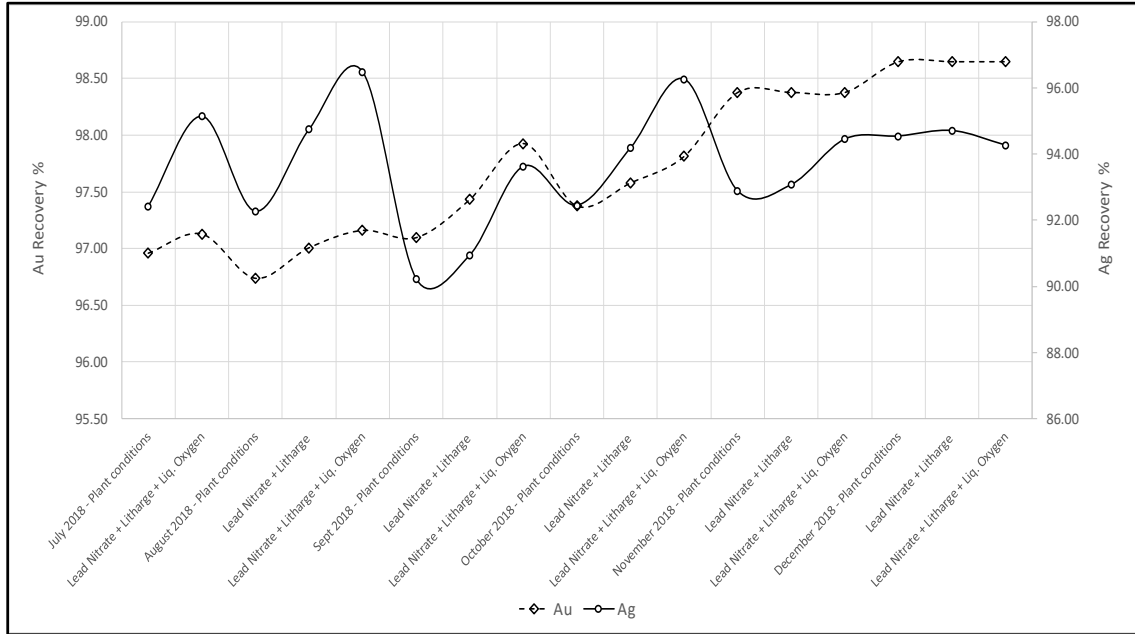
### 13.5. Oxidant Studies

In the continuous effort to optimize plant performance, oxidant addition tests have been performed. The addition of some oxidants favours sulphide oxidation, in particular argentite. Oxygen is fundamental in the gold and silver leaching reaction. The oxidants that have been tested in 2018–2019 include:

- Lead (II) nitrate ( $Pb(NO_3)_2$ );
- Litharge ( $PbO$ );
- Liquid oxygen;

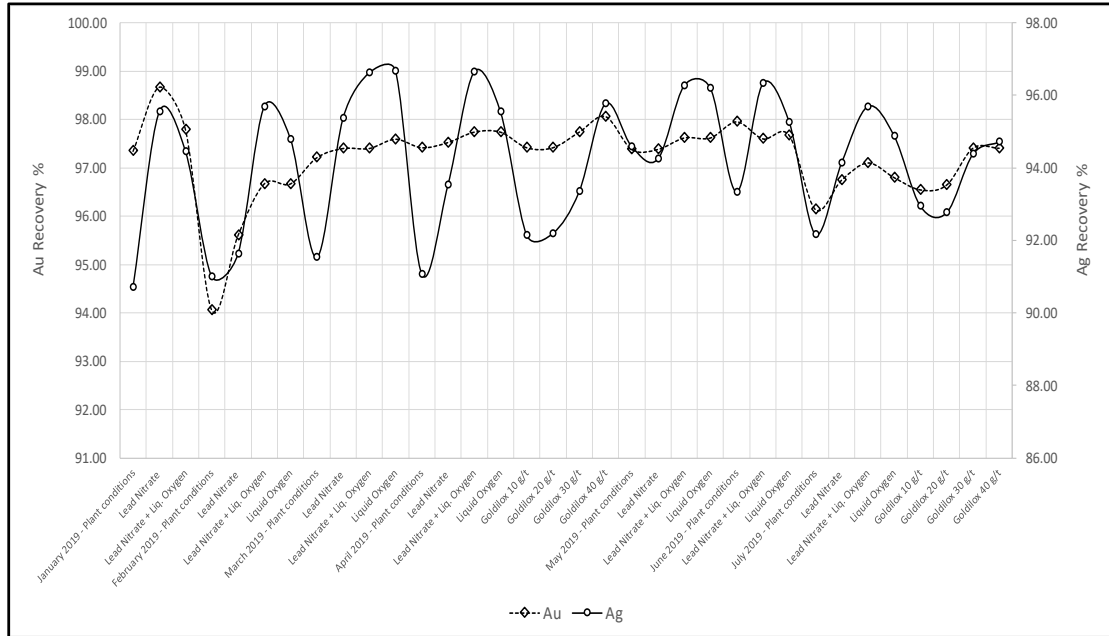
GoldiLOX (sold by Gekko). Figure 13-3 and Figure 13-4 illustrate the general tendency toward the more oxidizing agents that are added, the better the sulphur oxidation results the better the metal recoveries. All tests used P80 of 100 µm, NaCN of 2,000 ppm, and a leach time of 107 hours.

Figure 13-3: Comparative Results at Bench Scale: Plant Conditions Versus Oxidant Addition – 2018



Note: Figure prepared by First Majestic, January 2020.

Figure 13-4: Comparative Results at Bench Scale: Plant Conditions Versus Oxidant Addition – 2019



Note: Figure prepared by First Majestic, January 2020.

### 13.6. Extra-Fine Grinding

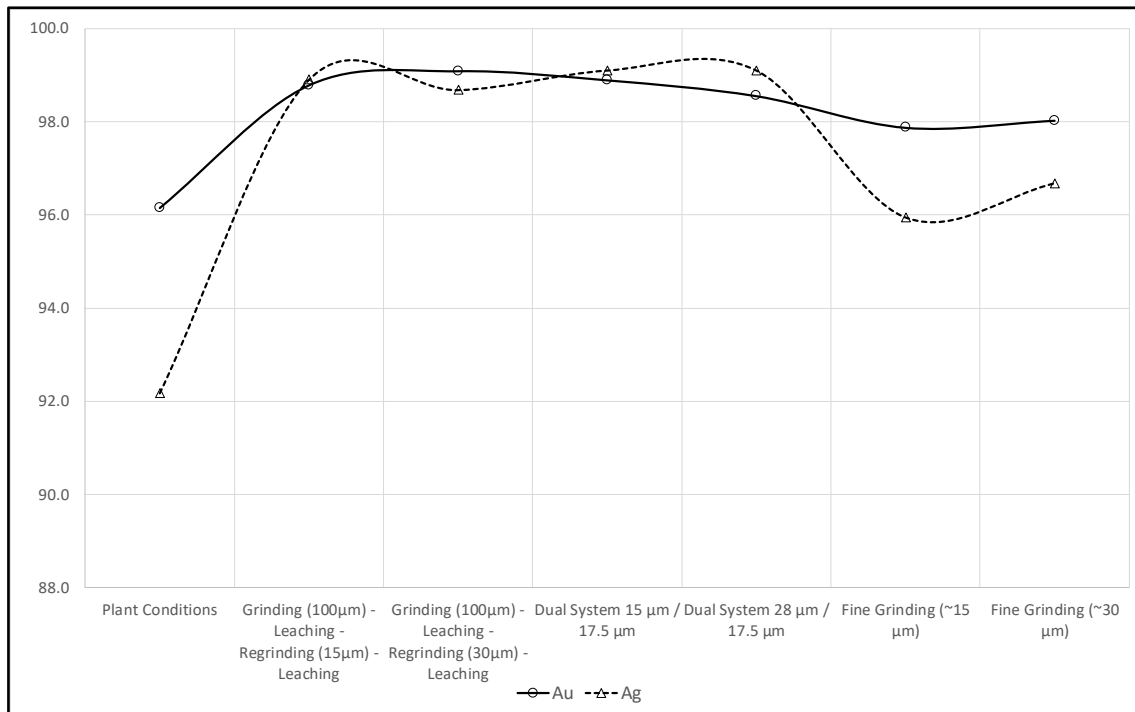
To investigate the effect a grinding size on metal liberation and recovery and to identify possible opportunities to improve plant performance, some tests using extra-fine grinding (P80 = 15 to 28 µm) have been carried out on a July 2019 composite sample. The programs tested three different routes:

- Fine grinding alternative 1:
  - Grinding (100 µm) → leaching → regrinding (minus 30 µm) → leaching;
- Fine grinding alternative 2:
  - “Dual system”:
    - grinding (100 µm grinding) → classification into two streams: “coarse” > 20 µm AND “fines” < 20 µm;
    - “fines” → leaching;
    - “coarse” → regrinding (minus 30 µm) → leaching;
- Fine grinding alternative 3:
  - Grinding (100 µm) → regrinding (minus 30 µm) → leaching.

Cyanide concentration at 2,000 ppm was the same for all the tests. There was no addition of lead (II) nitrate or litharge. The only oxidant agent used, in some cases, was GoldiLOX. Retention time was invariably 107 hours.

Laboratory results are summarized in Figure 13-5.

Figure 13-5: Comparative Results Using an Extra-Fine Particle Size



Note: Figure prepared by First Majestic, January 2020.

Overall, the results indicate that particle size liberation is a relevant factor. The finer the grind the greater recoveries were, as long as an excess of slimes was not generated. The slimes were reduced when the grinding process is carried out in two stages. The best results were achieved when leaching was split in two products: the primary mill fines and the regrind product.

This investigation demonstrated that there is an opportunity to achieve higher metal recoveries with the implementation of a regrinding processing stage.

### 13.7. Recovery Estimates

The metallurgical recovery projections assumed in the LOM plan are supported by the historical performance in the processing plant as well as on the results of recent testing performed at the SGS Lakefield laboratory in 2019.

The metal recovery estimates for the LOM plan and the financial analysis were projected as 94.0% for Ag and 96.5% for Au; the assumption of these recoveries was based on the plant performance from 2018 to 2020 and the results of testing carried out on a representative sample compiled in 2019 (the 2019 sample). Table 13-2 shows the metallurgical recovery achieved at the San Dimas processing plant for the past three years.

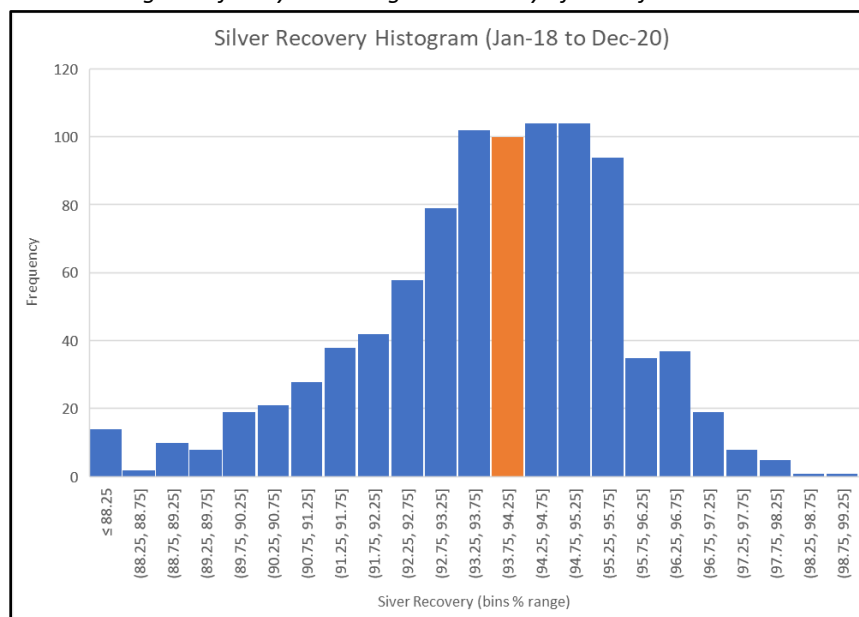
*Table 13-2: Metallurgical Recoveries achieved in San Dimas 2018-2020*

Year	Production k ton	Recovery % Ag	Recovery % Au
2018 <sup>(1)</sup>	435	94.5%	96.7%
2019	692	93.0%	96.5%
2020	713	93.9%	96.3%
Yearly Average	690	93.7%	96.5%

*Note: (1) 2018 results includes production from May to December.*

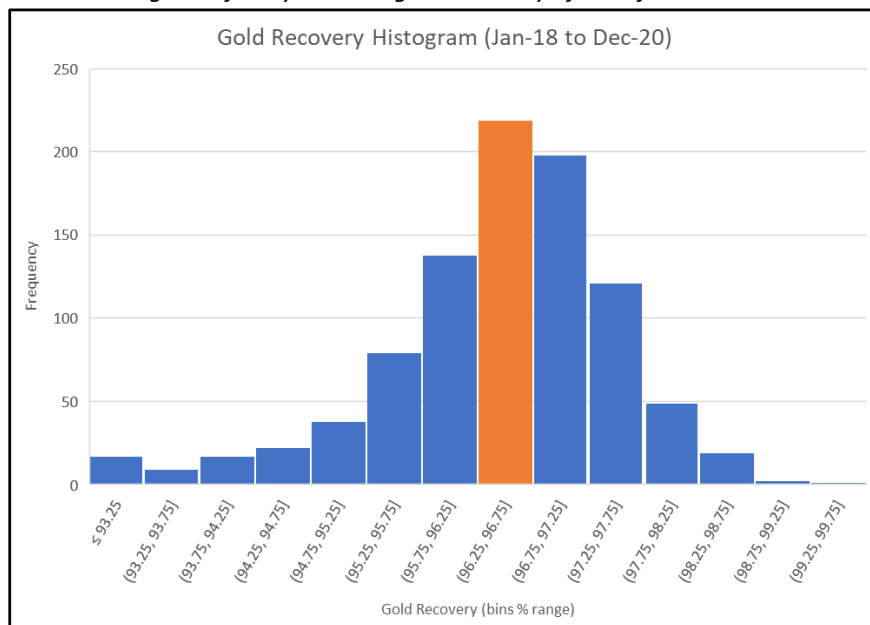
Figure 13-6 and Figure 13-7 show the histogram of daily metallurgical recovery registered in the San Dimas processing plant, the bin corresponding to the projected recovery used in the LOM plan and the economic analysis is highlighted.

*Figure 13-6: Histogram of Daily Metallurgical Recovery of Silver from Jan-2018 to Dec 2020*



*Note: Figure prepared by First Majestic, January 2021.*

Figure 13-7: Histogram of Daily Metallurgical Recovery of Gold from Jan-2018 to Dec 2020



Note: Figure prepared by First Majestic, January 2021.

Potential recovery improvements observed during several recent investigations and optimization initiatives have not been taken in consideration for the recovery forecasts to be used in the LOM plan; however, there is potential for improvements, i.e., the investigation on the effect of oxidants, as described in Section 13-5 of this Report.

### 13.8. Metallurgical Variability

The 2019 sample, examined in the SGS laboratory test, consisted of 46.4 t of material compiled from 26 different stopes and development faces of eight different veins of the Central Block and the Sinaloa Graben. The Central Block veins sampled include Jessica, Gertrudis, Roberta, Robertita, Jael and Regina veins; and the veins sampled from the Sinaloa Graben were the Victoria and Alexa veins. The estimated metal of these eight veins represents 66% of the metal projected to be mined in the LOM plan.

The sample contains material from the veins and its host rocks in proportions intended to replicate the expected mining dilution. A master composite of the sample was prepared and ground to slightly coarser specifications, when compared to the operating conditions of the San Dimas plant and resulted with a head-grade of 304 g/t Ag and 4.3 g/t Au. The results of seven different leaching tests show silver extraction of ranging from 90–94% and gold extraction ranging from 96–97%. These results are expected to be improved in the San Dimas plant, particularly for silver, as the effect of washing is not considered in the type of test carried out.

The sample is described as material from an epithermal deposit of low-sulfidation quartz–calcite veins hosted in igneous rocks on the hanging and footwall typical of the San Dimas mining district. The vein material is white quartz, from crystalline to milky in appearance, with limited calcite content and shows silver sulphide minerals associated with gold, as secondary minerals it contains rhodonite in bands, adularia, and chlorite as alteration. The host rock is identified as light to dark-green andesite displaying a low to medium-propylitic alteration revealing the presence of chlorite minerals and epidote with very little presence of disseminated iron sulphides (pyrite). In less extent, the host rock is described as light-grey colored rhyolite with fragments of the same composition showing silicified areas and low propylitic alteration.

The type of material comprising the sample shows large similarities with the material to be extracted in the mine, as found in the exposed faces of development and in the exploration drilling core. The geological and mineralogical conditions of the material planned to be mined is similar to the plant feed that has been historically mined in San Dimas.

### **13.9. Deleterious Elements**

Due to the purity of the San Dimas doré, which exceeds 97% silver and gold, no penalties are applied by the refineries for the presence of other heavy metals or any deleterious elements.

A treatment charge is levied by weight on the doré produced at the San Dimas Plant, due to the trace presence of heavy metals, including copper, lead, zinc, and iron in the doré. The treatment charge is considered reasonable and is included in the cut-off grade calculation.



## 14. MINERAL RESOURCE ESTIMATES

### 14.1. Introduction

Information from drill core, production channel samples, technical information including economic parameters, and mining depletion were used as the basis for the mineral resource estimates. The majority of the Mineral Resource estimates were completed using block modeling techniques, but some of the Mineral Resources are still based on two-dimensional polygonal estimation methods. All polygonal resource estimates were classified as Inferred Mineral Resources. Three-dimensional geological modeling was completed for 66 of the 118 veins, of which 61 veins were modeled using Leapfrog Geo and five veins using GEOVIA Surpac. Each of the veins was modelled as a single resource estimation domain. A total of 40 of the 66 domains were estimated using GEOVIA Gems and 26 domains with Leapfrog EDGE. Table 14-1 shows where the domains are located, and the modeling methods used for each domain.

*Table 14-1: Mineral Resource Estimation and Modelling Methods by Mine Zone*

Mine Zone	Model				Estimation			
	Leapfrog Geo	Surpac	Not Modelled	Total	Leapfrog EDGE	Gems	Polygonal	Total
West Block	3	0	14	17	3	0	14	17
Graben Block	5	0	3	8	5	0	3	8
Central Block	15	5	1	21	15	5	1	21
Tayoltita Block	27	0	16	43	0	27	16	43
Santa Rita Area	8	0	11	19	0	8	11	19
El Cristo Area	3	0	4	7	3	0	4	7
Alto Arana Area	0	0	1	1	0	0	1	1
San Vicente Area	0	0	2	2	0	0	2	2
Total	61	5	52	118	26	40	52	118

The geological modelling, data analysis, and block model estimations were completed by Mizrain Sumoza, a First Majestic employee, under the supervision of Joaquín Merino, P. Geo.

### 14.2. Block Model-Based Mineral Resource Estimation

#### 14.2.1. Overview

The block model-based Mineral Resource estimates are based on the current database of exploration drill holes and production channel samples, geological mapping of underground levels,

geological interpretations and geological models, as well as surface topography and underground mining development wireframes.

Geostatistical analysis, analysis of semi-variograms, and validation of the model blocks were completed with Leapfrog EDGE and GEOVIA Gems. Stope analysis to determine reasonable prospects for eventual economic extraction was completed with Maptek Vulcan.

Due to the large number of veins that are modelled and estimated at San Dimas, the following subsections use the Jael, Jessica, Regina, and Robertita veins to illustrate the resource estimation procedures followed. These four veins represent 43% of the Measured and Indicated Mineral Resource categories.

#### 14.2.2. Sample Database

The drill hole and channel sample database was reviewed, verified, and supports that the QAQC program was reasonable. The estimate is supported by core drilling and production channel samples. Table 14-2 summarizes the drill hole and production channel sample data used in the estimates by mine zones.

Table 14-2: Diamond Drill Hole and Production Channel Data by Mine Zone, San Dimas

Vein	Mine Zone	Core Drilling		Channel Sampling	
		# Samples	Meters	# Samples	Meters
All Veins	West Block	103	32,120	389	487
	Graben Block	1,071	289,935	11,598	29,420
	Central Block	2,048	485,227	57,039	120,785
	Tayoltita Block	335	66,568	7,896	14,494
	Santa Rita Area	100	21,514	2,820	6,108
	El Cristo Area	113	31,996	695	1,299
	Alto Arana Area	20	13,242	NA	NA
	San Vicente Area	3	1,015	NA	NA
	Total	3,793	941,618	80,437	172,594

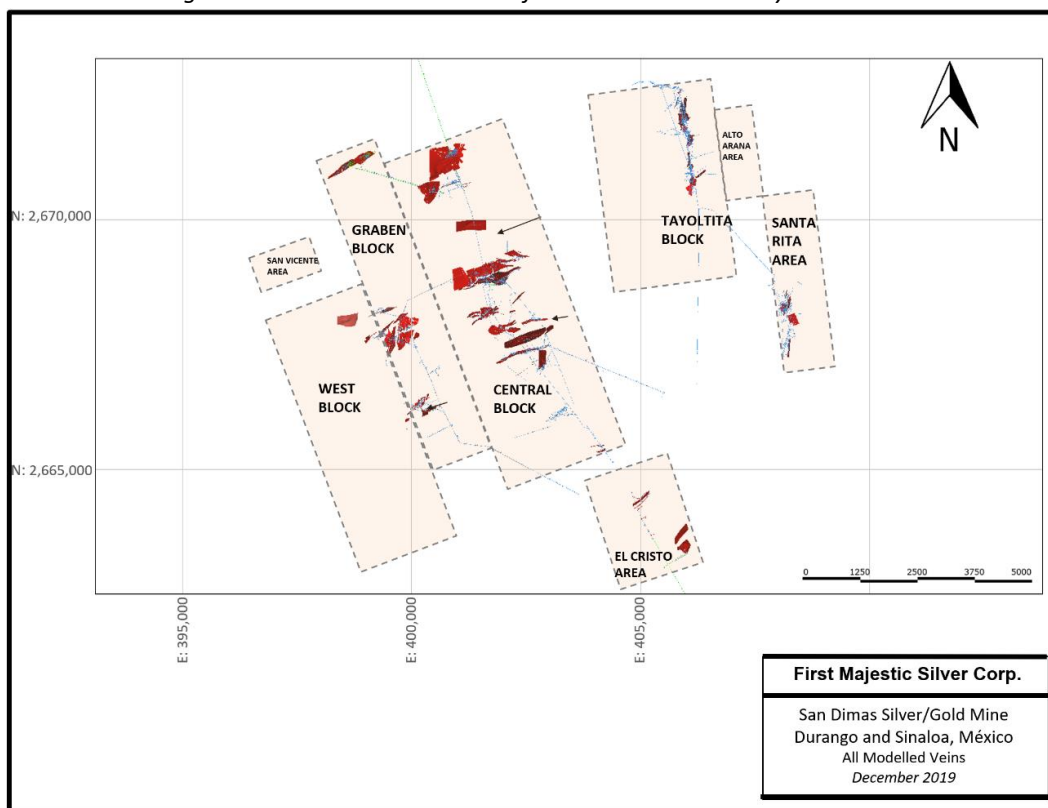
#### 14.2.3. Geological Interpretation and Modeling

The Mineral Resource estimates were constrained by the three-dimensional geological interpretation and modelled domains for vein-hosted mineral deposits at San Dimas. The modelled domains were constructed using information collected by mine geology staff and interpreted by geologists. Information used included underground geological mapping, drill hole logs and drill hole assays, production channel sampling and assays. The interpreted boundaries of the domain models

strictly adhered to the contacts of quartz veins with the surrounding country rock to produce reasonable representations of the deposit locations and volumes. The domains also incorporated numerous faulted sub-domains that were identified by the underground mine. Each vein was modelled as a single estimation domain.

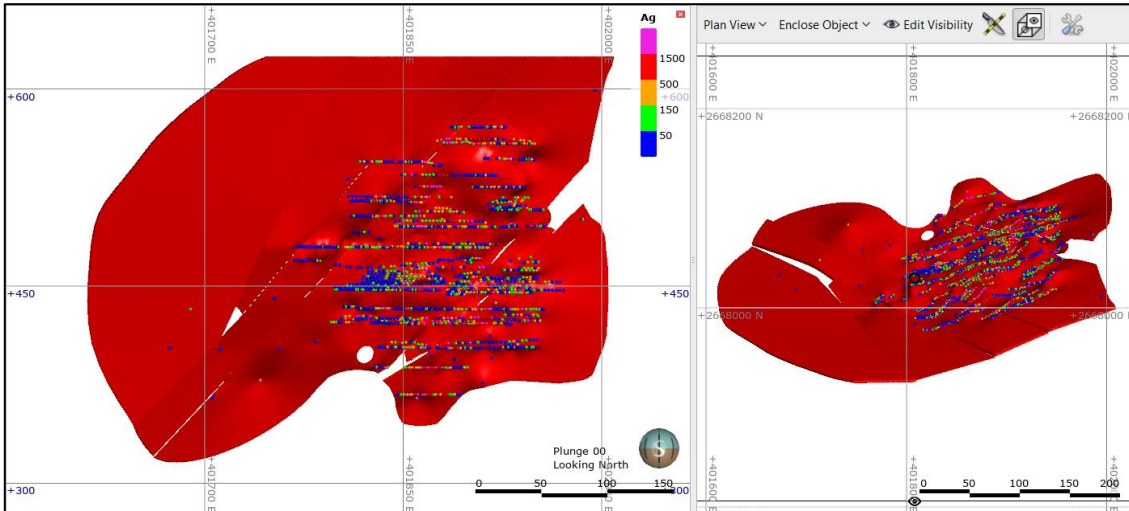
Figure 14-1 shows the location of the modelled domains, and examples of the geological models constructed for the Jael, Jessica, Regina, and Robertita veins are provided in Figure 14-2, Figure 14-3, Figure 14-4, and Figure 14-5 respectively.

Figure 14-1: Plan-view Location of Estimation Domains by Mine Zone



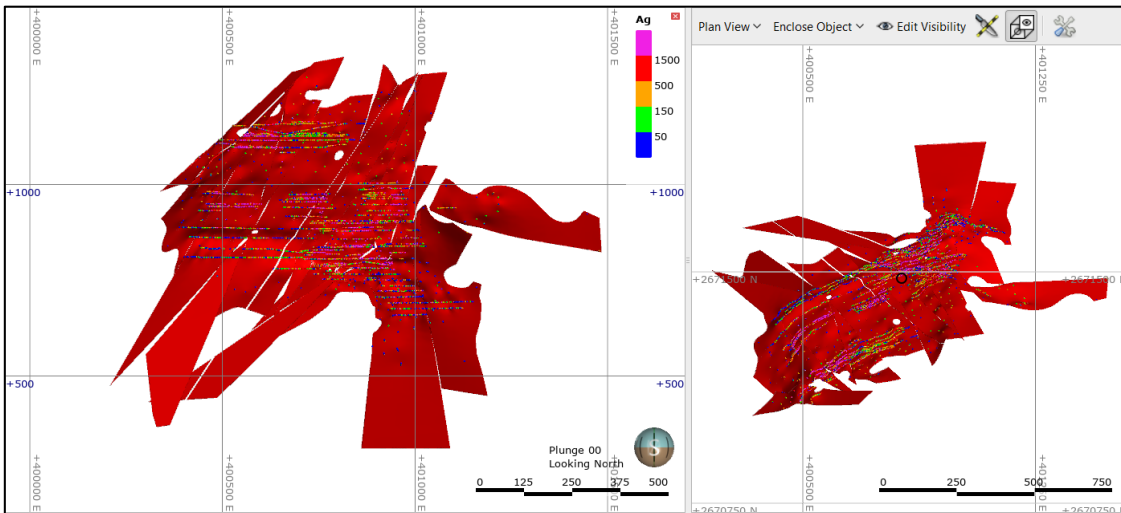
Note: Figure prepared by First Majestic, August 2020.

Figure 14-2: Faulted Geological Model for the Jael Vein, Vertical and Plan Views



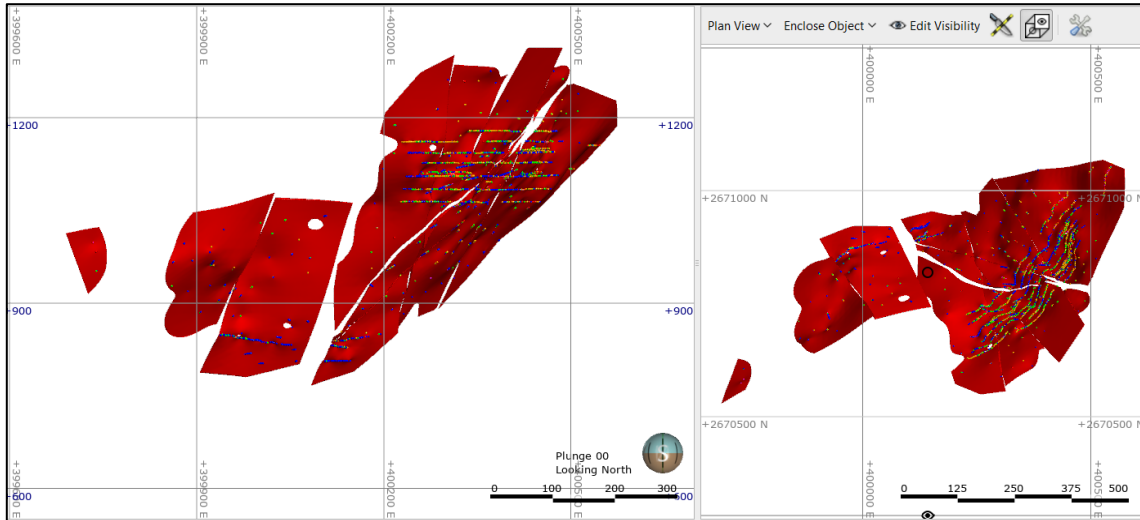
Note: Figure prepared by First Majestic, August 2020. The Mineral Resource domain for the quartz vein is shown in red. Drill hole intercepts and channel samples shown in colored dots

Figure 14-3: Faulted Geological Model for the Jessica Vein, Vertical and Plan Views



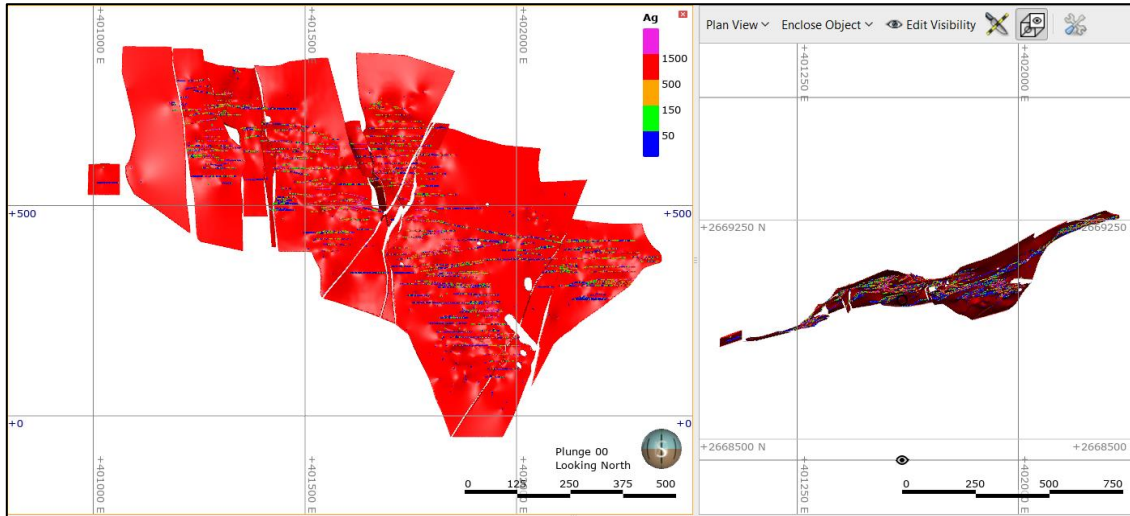
Note: Figure prepared by First Majestic, August 2020. The mineral resource domain for the quartz vein is shown in red. Drill hole intercepts and channel samples shown in colored dots.

Figure 14-4: Faulted Geological Model for the Regina Vein, Vertical and Plan Views



Note: Figure prepared by First Majestic, August 2020. The mineral resource domain for the quartz vein is shown in red. Drill hole intercepts and channel samples shown in colored dots.

Figure 14-5: Faulted Geological Model for the Robertita Vein, Vertical and Plan Views



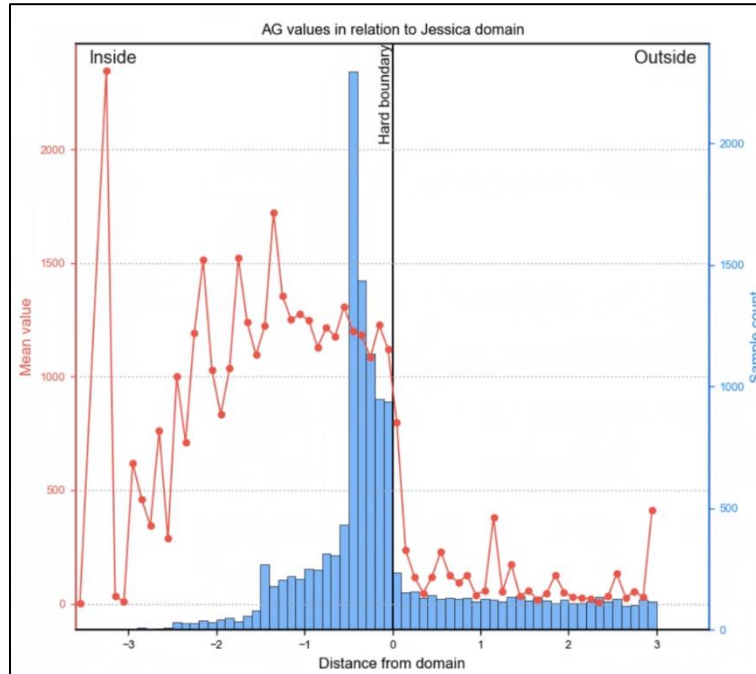
Note: Figure prepared by First Majestic, August 2020. The mineral resource domain for the quartz vein is shown in red. Drill hole intercepts and channel samples shown in colored dots.

#### 14.2.4. Exploratory Sample Data Analysis

Exploratory data analysis was completed for gold and silver sample assay values for each of the estimation domains to assess the statistical and spatial characteristics of the sample data. The sample data were examined in three dimensions to determine the spatial distribution of mineralized intervals and to look for possible mixed sample populations.

Contact analysis was completed for each of the mineral resource domains to review the change in metal grade across the domain contacts by the use of boundary plots. Evaluations showed that there is a sharp grade change across the contact indicating hard boundary conditions, and therefore, hard boundaries were used during the creation of composite samples during mineral resource estimation. The composite samples were restricted to their respective estimation domain. Figure 14-6 shows an example of contact analysis for silver for the Jessica vein.

Figure 14-6: Example of Hard Boundary Contact Analysis for Silver for the Jessica Vein.



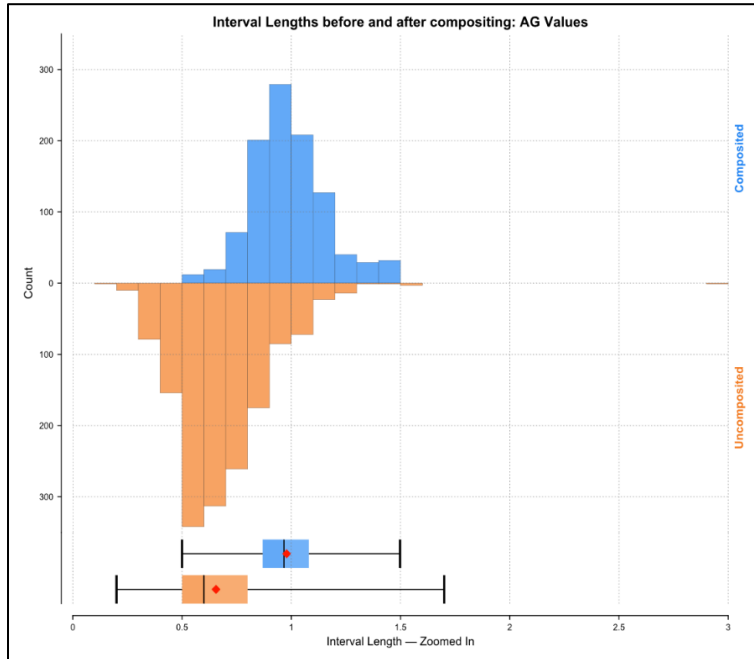
Note: Figure prepared by First Majestic, August 2020.

#### 14.2.5. Composite Sample Preparation

To select an appropriate composite sample length, the sample intervals were reviewed for each resource domain. The selected composite length varied by domain with the most common composite sample length being 1.0 m. The assay sample intervals were composited within the limits of the domain boundaries and then tagged with the appropriate domain code. Any short residual composite samples left at the end of the vein intersection were distributed evenly across the vein composite intervals.

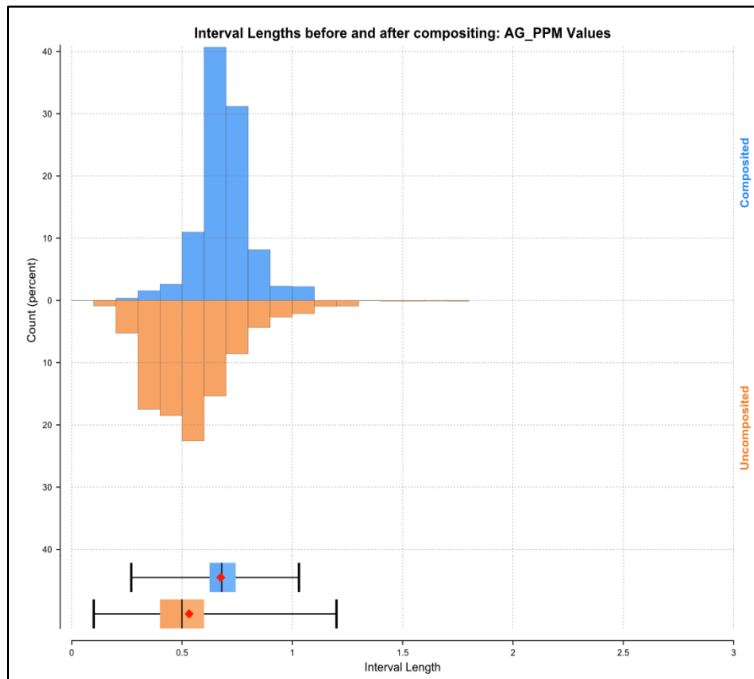
Figure 14-7 to Figure 14-10 show the sample interval lengths before and after compositing for the Jessica, Jael, Regina and Robertita veins.

Figure 14-7: Sample Interval Lengths, Composited vs. Uncomposited, Jessica Vein



Note: Figure prepared by First Majestic, August 2020.

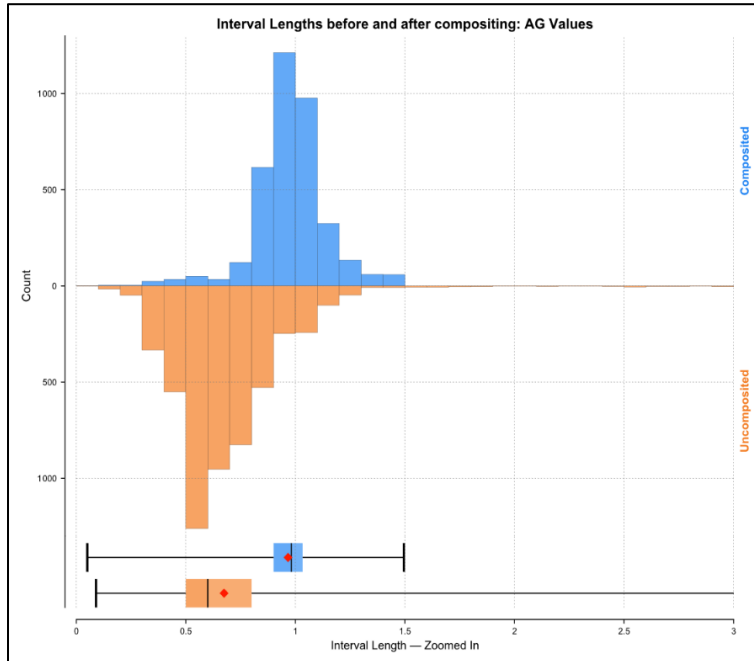
Figure 14-8: Sample Interval Lengths, Composited vs. Uncomposited, Jael Vein



Note: Figure prepared by First Majestic, August 2020.

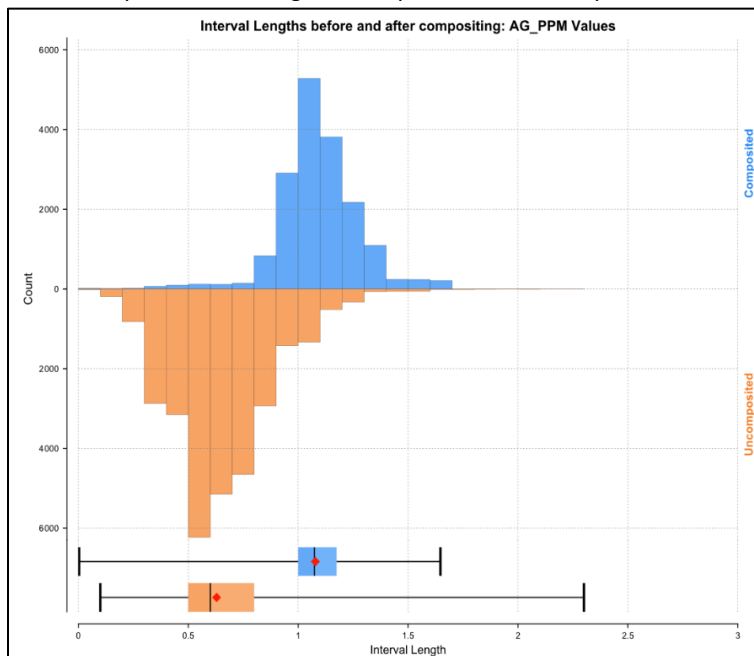


Figure 14-9: Sample Interval Lengths, Composited vs. Uncomposited, Regina Vein



Note: Figure prepared by First Majestic, August 2020.

Figure 14-10: Sample Interval Lengths, Composited vs. Uncomposited, Robertita Vein



Note: Figure prepared by First Majestic, August 2020.

#### 14.2.6. Evaluation of Composite Sample Outlier Values

Drill hole and channel composite samples were evaluated for high-grade outliers and those outliers were capped to values considered appropriate for the estimation. The outlier values were identified for both gold and silver from inflection points of cumulative probability plots at the high end of the grade distributions. The spatial distribution of such outliers was also investigated. To quantify the impact of capping, the resource was evaluated to assess the change in metal content for the estimation.

Table 14-3 shows the percentage of the outlier values that were capped. Table 14-4 shows the impact of the capping on the metal content by domain.

*Table 14-3: Percentage of Composite Samples Capped by Domain*

Domains	Number Composites	Silver			Gold		
		Capping g/t Ag	Number Capped	% Capped	Capping g/t Au	Number Capped	% Capped
Jessica	8,568	8,400	202	2.4%	60	227	2.6%
Jael	3,825	3,000	82	2.1%	40	88	2.3%
Regina	3,660	1,400	77	2.1%	12	70	1.9%
Robertita	17,383	5,800	373	2.1%	160	285	1.6%

*Table 14-4: Remaining Metal content by Domain after Capping*

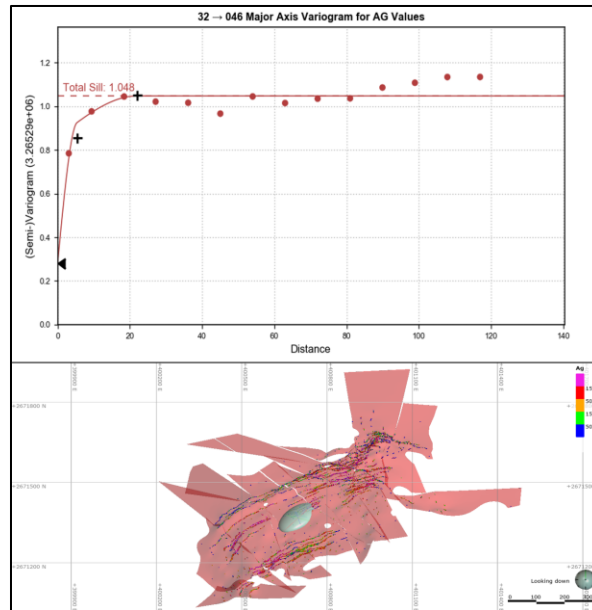
Metal Content After Capping		
Domains	Ag	Au
	t. oz	t. oz
Jessica	95%	92%
Jael	90%	82%
Regina	88%	81%
Robertita	93%	92%

#### 14.2.7. Variography

The dominant trends for gold and silver mineralization were identified based on the three-dimensional numeric models for the metal in each domain that were created using the radial basis function in Leapfrog Geo. To establish the metal grade continuity for the veins, model variograms for gold and silver composite values were developed along the trends identified, and the nugget values were established from downhole variograms.

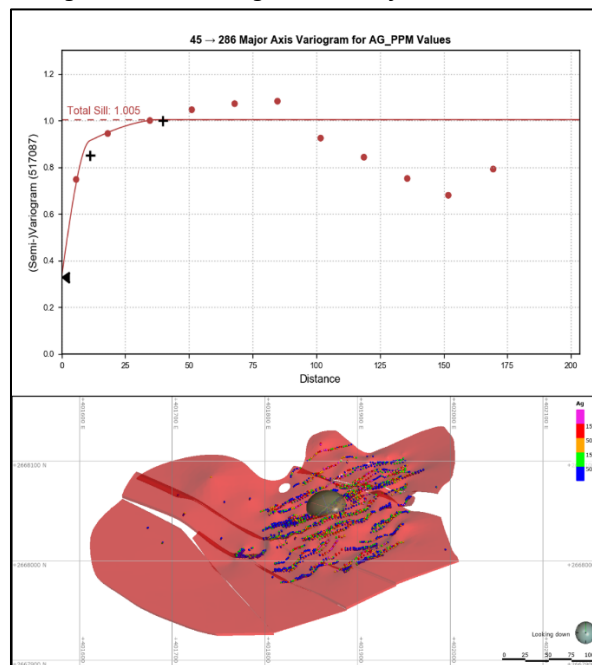
Figure 14-11 to Figure 14-14 show the variogram plots and trend ellipsoids for the Jael, Jessica, Regina, and Robertita domains.

Figure 14-11: Variogram Model for the Jessica Vein



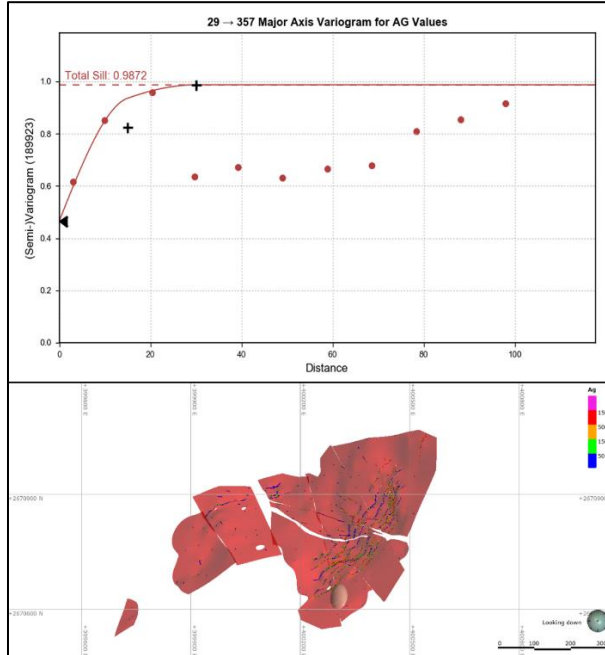
Note: Figure prepared by First Majestic, August 2020.

Figure 14-12: Variogram Model for the Jael Vein



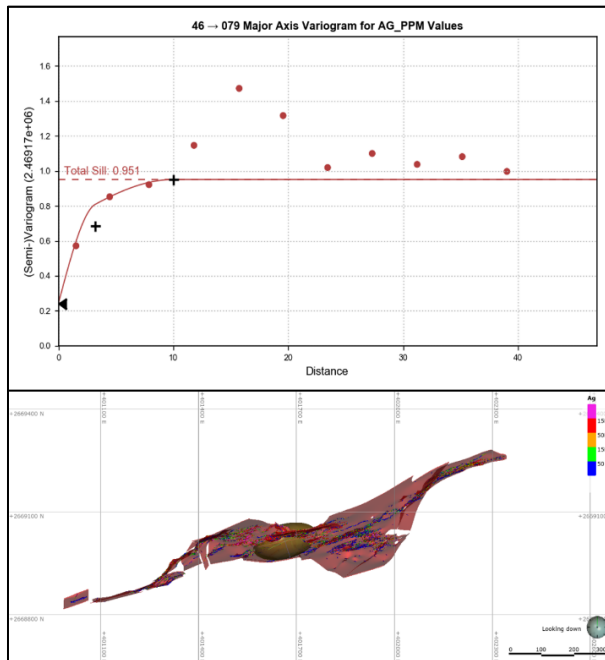
Note: Figure prepared by First Majestic, August 2020.

Figure 14-13: Variogram Model for the Regina Vein



Note: Figure prepared by First Majestic, August 2020.

Figure 14-14: Variogram Model for the Robertita Vein



Note: Figure prepared by First Majestic, August 2020.

#### **14.2.8. Bulk Density**

An average bulk density value of 2.6 t/m<sup>3</sup> was used in estimation for all resource domains (refer to discussion in Section 11.2).

#### **14.2.9. Resource Estimation Process**

A separate block model was developed for each estimation domain. The block models were rotated so that the x and y axes lay parallel to the domains and the minimum z direction was perpendicular to the domain. A sub-blocked model was created that consisted of primary parent blocks that were sub-divided into smaller sub-blocks whenever triggering surfaces intersected them. The selected parent block sizes were based on the exploratory drill hole sample spacing and the mining methods. Block models typically used 10 m x 10 m x 1 m parent blocks (x, y, z) that were sub-blocked to 1 x 1 m x variable heights, with a minimum of 0.1 m (x, y, z). Gold and silver grades were estimated into the parent blocks.

Block grades were estimated primarily by inverse distance weighting to the second power (ID<sup>2</sup>) and less commonly by ordinary kriging (OK). After inspection of the estimated gold and silver grades many of the block models were judged to perform better with ID<sup>2</sup> than with OK. The method chosen in each case considered the characteristics of the domain, data spacing, variogram quality, and which method produced the best representation of grade continuity.

All channel samples that were used during construction of the geological models were reviewed. Only those channels that completely cross the mineralized deposit were used during grade estimation. Channel samples that cross only a portion of the mineralized deposit were generally excluded as non-representative samples of the mineralization.

The channel sampling method has some risk of collecting samples that could result in local bias and poor precision. However, the large number of samples collected and used in the estimation may compensate for this issue resulting in accurate results. There remains a risk that the channel samples could suffer from a systematic sampling issue that could also result in poor accuracy. These risks are recognized and addressed during resource grade estimation by eliminating the undue influence of channel samples over drill hole samples for blocks estimated at longer distances.

The grade estimation was completed two or three successive passes when channel samples were used. The first pass used all composites, including channel samples, and only estimated blocks within a restricted short distance from the channel samples. The second or third longer passes applied less restrictive criteria using drill hole composites only.

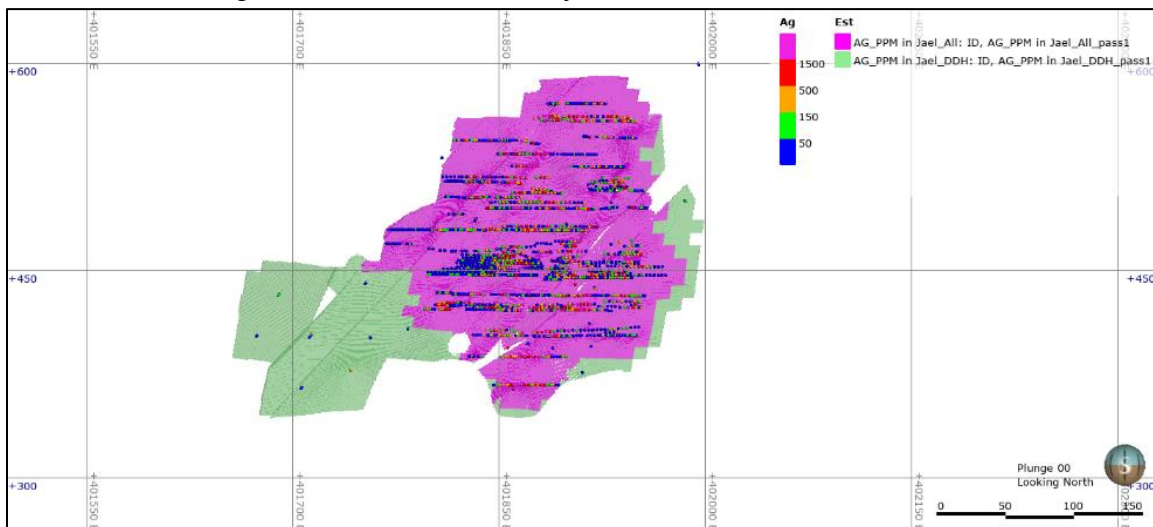
*Examples of the gold–silver estimation parameters for each of the Jael, Jessica, Regina, and Robertita domains are included in Table 14-5.*

Figure 14-15 to Figure 14-18 show the blocks estimated by each of the three passes for the Jael, Jessica, Regina, and Robertita veins, respectively.

Table 14-5: Summary of Ag-Au Estimation Parameters for the San Dimas Block Models

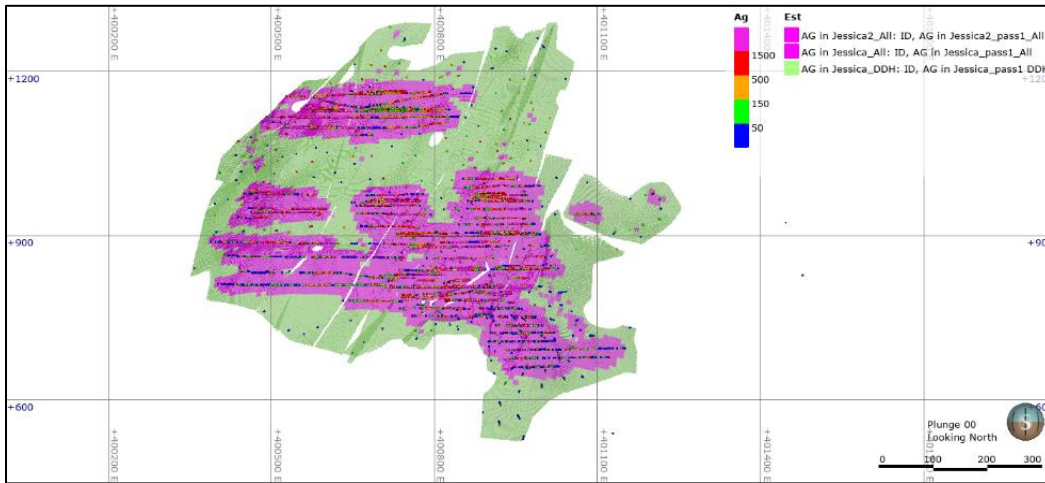
Estimation Domain	Jael			Jessica			Regina			Robertita		
	Pass 1	Pass 2	Pass3	Pass 1	Pass 2	Pass3	Pass 1	Pass 2	Pass3	Pass 1	Pass 2	Pass3
Value Clipping Upper (g /t Ag)	3000	3000	3000	8400	8400	8400	1400	1400	1400	5800	5800	5800
Value Clipping Upper (g /t Au)	40	40	40	60	60	60	12	12	12	160	160	160
Search Ellipsoid Orientation												
Dip	60	60	60	56	56	56	50	50	50	83	83	83
Dip-Azimuth	340	340	340	341	341	341	295	295	295	162	162	162
Pitch	55	55	55	140	140	140	140	140	140	46	46	46
Search Ellipsoid Length (m)												
Maximum	25	110	160	30	160	200	25	90	140	30	120	140
Intermediate	20	70	70	15	90	90	20	70	80	25	80	80
Minimum	15	15	15	20	60	60	15	50	60	20	15	60
Minimum Samples	13	7	3	11	7	3	13	7	3	13	7	3
Maximum Samples	30	16	16	30	16	16	30	16	16	30	16	16
Drill Hole Limit												
Max Samples Per Drill Hole	3	3	3	3	3	3	3	3	3	3	3	3

Figure 14-15: Estimation Passes for the Jael Vein, Vertical Section



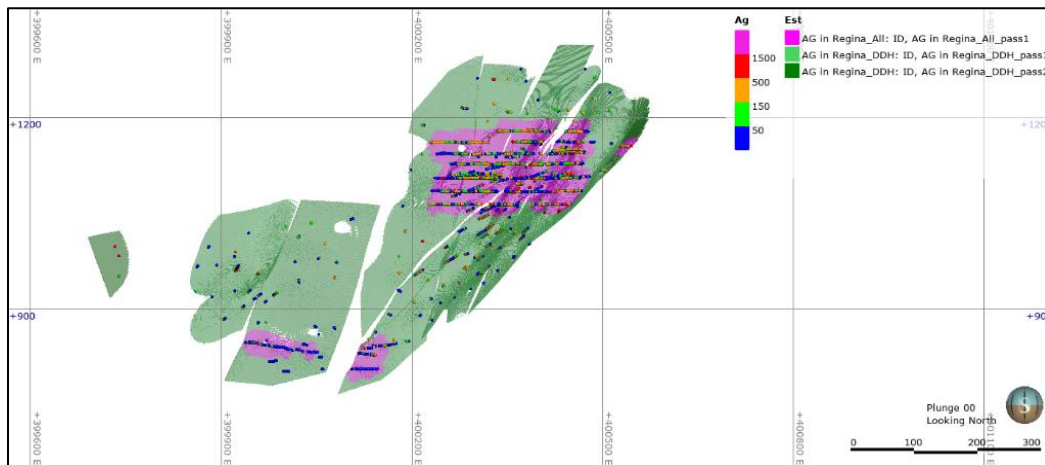
Note: Figure prepared by First Majestic, August 2020.

Figure 14-16: Estimation Passes for the Jessica Vein, Vertical Section



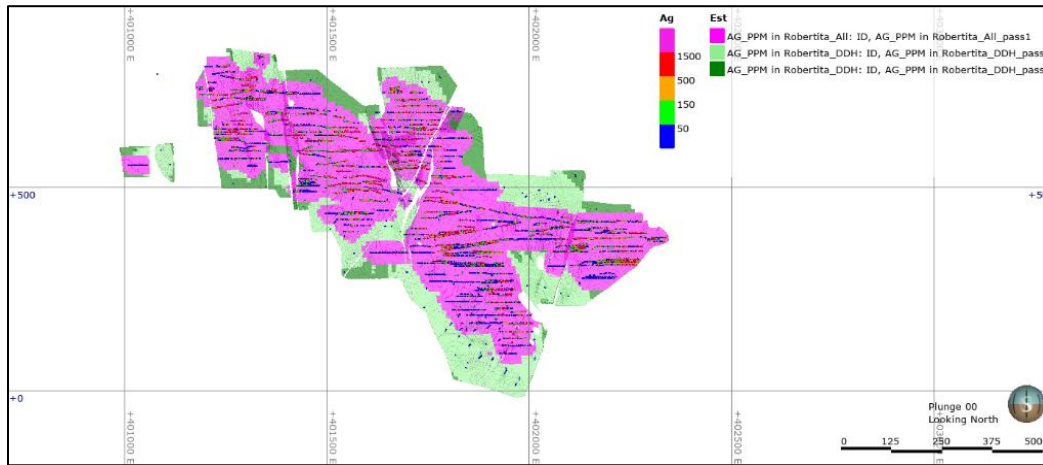
Note: Figure prepared by First Majestic, August 2020.

Figure 14-17: Estimation Passes for the Regina Vein, Vertical Section



Note: Figure prepared by First Majestic, August 2020.

Figure 14-18: Estimation Passes for the Robertita Vein, Vertical Section



Note: Figure prepared by First Majestic, August 2020.

#### 14.2.10. Block Model Validation

Validation of the silver and gold grade estimations in the block models was completed for each of the resource estimation domains. The procedure was conducted as follows:

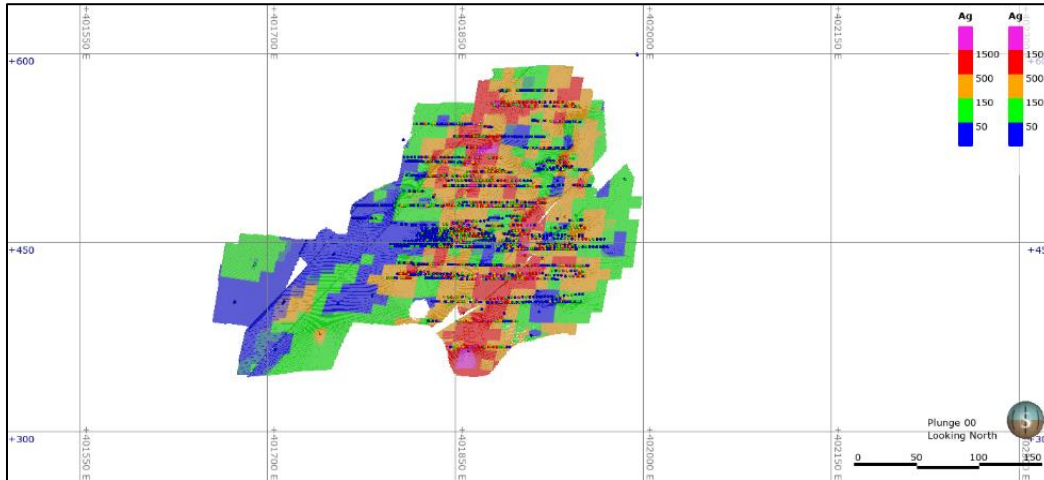
- Comparison of wireframe domain volumes to block model volumes for the domains;
- Visual inspection comparing the composite sample silver and gold grades to the estimated block values;
- Comparison of the gold and silver grades in "well-informed" parental blocks with the average sample values of the composited samples contained within those blocks using scatter plots.
- Comparison of the global mean composite grades to the block model mean grade for each resource domain;
- Comparison of local block grade trends to composited sample grades along the three block model axes (i.e., easting, northing, and elevation) with swath grade trend plots.

The silver and gold estimated block grades were visually inspected in vertical sections. This review indicated that the supporting composite sample grades closely matched the estimated block values.

Figure 14-19 to Figure 14-22 show the estimated block model silver grades and the composite sample grades used in the estimation for the Jael, Jessica, Regina and Robertita veins, respectively.

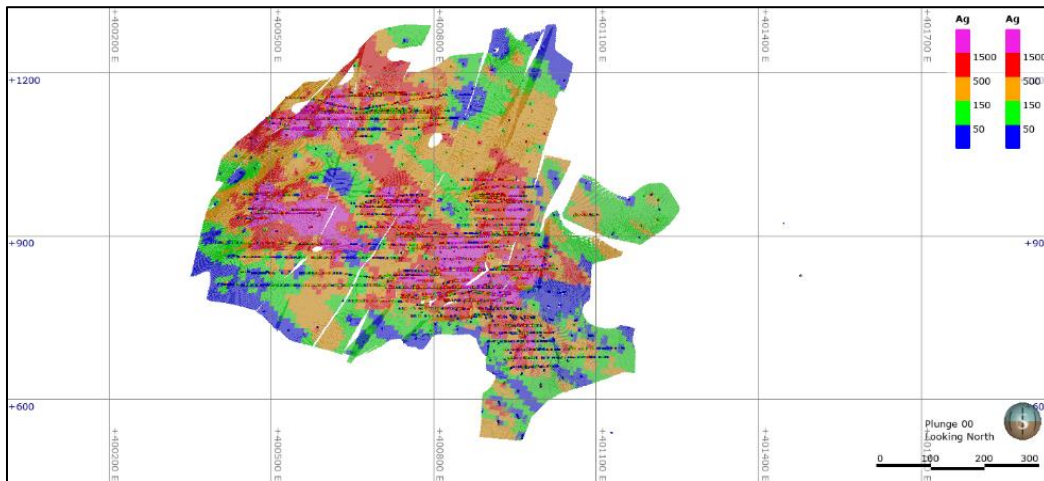


Figure 14-19: Jael Ag Block Model and Composite Sample Values, Vertical Section



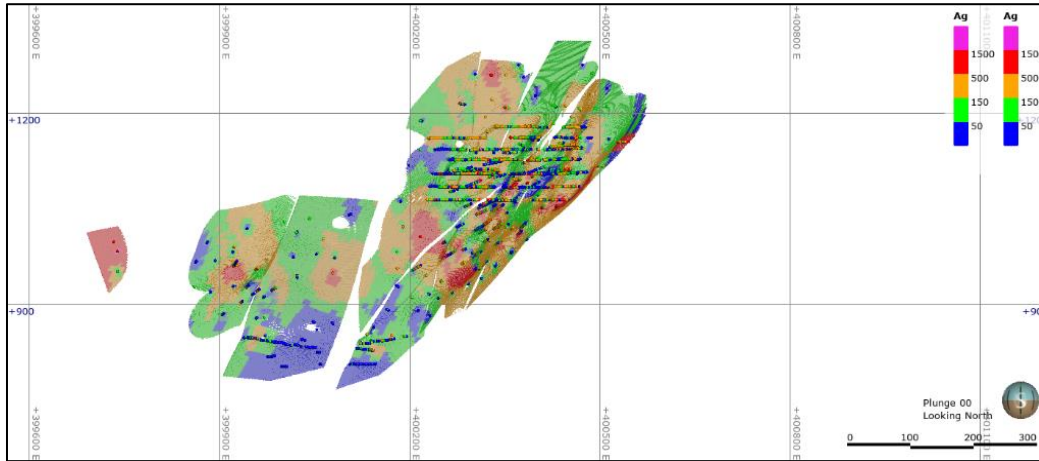
Note: Figure prepared by First Majestic, August 2020.

Figure 14-20: Jessica Ag Block Model and Composite Sample Values, Vertical Section



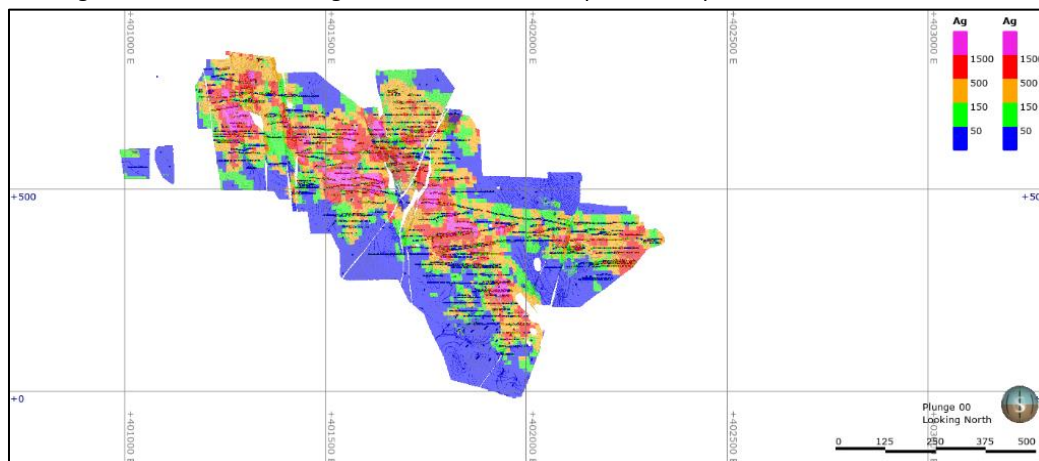
Note: Figure prepared by First Majestic, August 2020.

Figure 14-21: Regina Ag Block Model and Composite Sample Values, Vertical Section



Note: Figure prepared by First Majestic, August 2020.

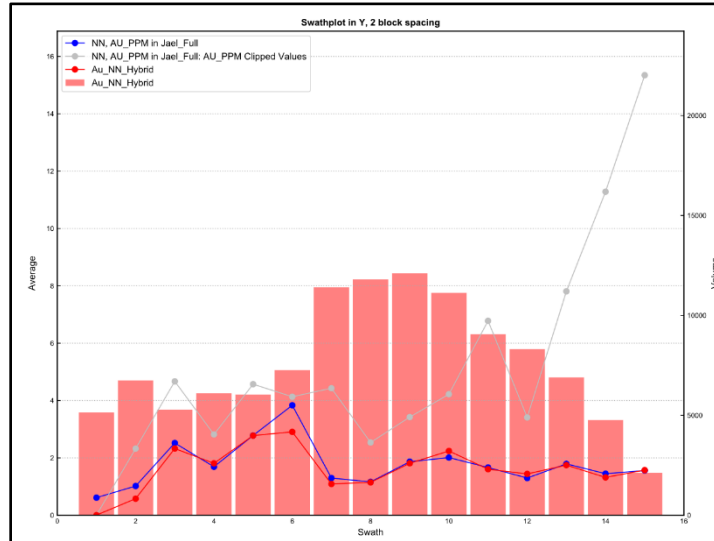
Figure 14-22: Robertita Ag Block Model and Composite Sample Values, Vertical Section



Note: Figure prepared by First Majestic, August 2020.

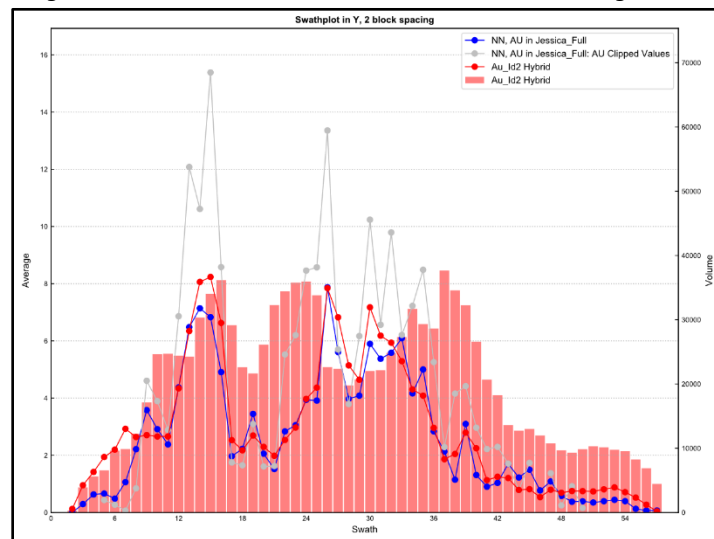
The block model estimates were validated by comparing the estimated block grades for gold and silver to nearest neighbor (NN) block estimates and to the composite sample values in swath plots oriented in three directions. The estimated block grades, NN grades, and composite sample grade trends are similar in all directions for all resource domains. Figure 14-23 to Figure 14-26 and show swath plots for silver grades estimated by ID<sup>2</sup>, OK, and NN along the y-axis for the Jael, Jessica, Regina, and Robertita veins.

Figure 14-23: Swath Plot in Y across the Jael Vein, Ag Values



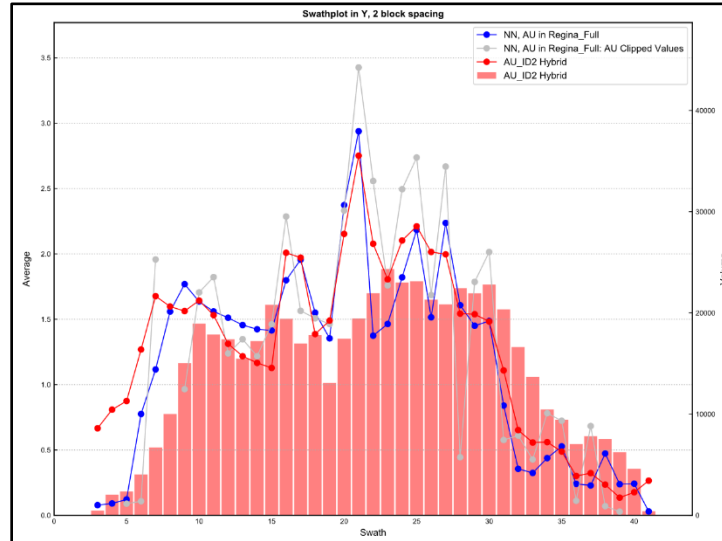
Note: Figure prepared by First Majestic, August 2020.

Figure 14-24: Swath Plot in Y across the Jessica Vein, Ag Values



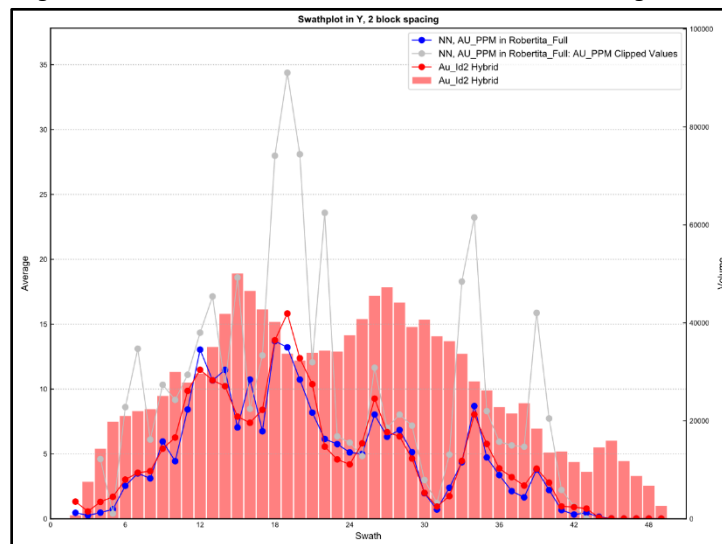
Note: Figure prepared by First Majestic, August 2020.

Figure 14-25: Swath Plot in Y across the Regina Vein, Ag Values



Note: Figure prepared by First Majestic, August 2020.

Figure 14-26: Swath Plot in Y across the Robertita Vein, Ag Values



Note: Figure prepared by First Majestic, August 2020.

Since the June 30, 2020 cut-off date for sample data used in the Mineral Resource estimates, additional drilling and production channel sampling from new mine developments has been completed and reviewed. This new data supports both the geological model and the mineral resource estimates. Overall, the validation supports that the current resource estimates are a reasonable representation of the input sample data.

#### **14.2.11. Mineral Resource Classification**

The Mineral Resource estimates were classified into Measured, Indicated, or Inferred categories and considered the following factors:

- Confidence in the geological interpretation and models;
- Confidence in the continuity of metal grades;
- The sample support for the estimation and reliability of the sample data;
- Areas that were mined producing reliable production channel samples and detailed geological control.

The primary method of sample support used for the Mineral Resource classification was the calculation of the nominal drill hole spacing required to support confidence classifications. The nominal drill hole spacing was produced by an estimation pass for each block in the model that used three composite samples with a maximum of one sample per drill hole, which required three separate drill holes. The average distance for each block to the three closest drill holes was estimated, and then nominal drill hole spacing was estimated by dividing the average distance to drill holes by 0.7.

Blocks were flagged to consider for the Measured category if the nominal drill hole spacing was <15 m or the blocks were within 15 m of a mined development with production channel samples and geological control.

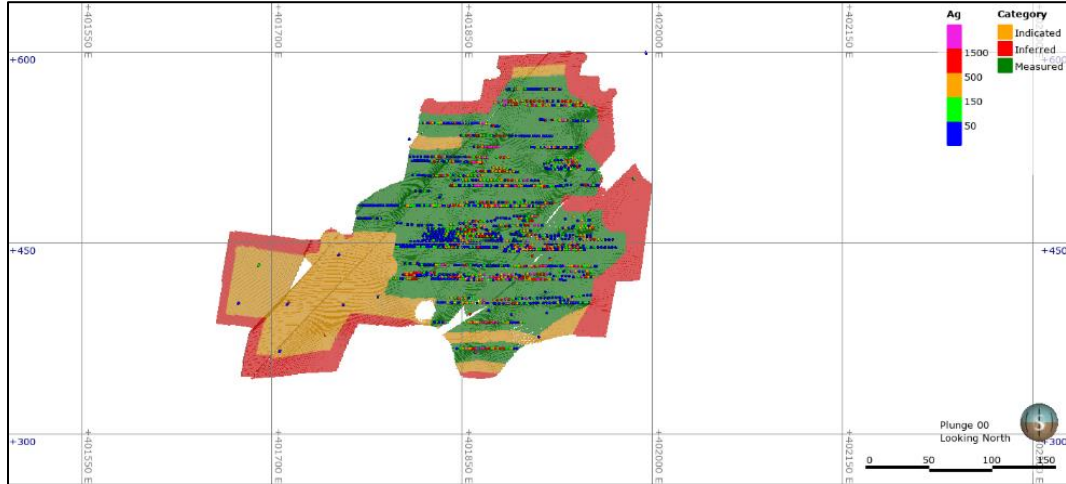
Blocks were flagged to consider for the Indicated category if the nominal drill hole spacing was <30 m or the blocks were within 30 m of a mined development with production channel samples and geological control.

Blocks were flagged to consider for the Inferred category if the nominal drill hole spacing was <45 m.

For the blocks flagged by the classification criteria developed, wireframes were constructed to encompass block model zones for Measured, Indicated, and Inferred categories. This process allowed for review of the geological confidence assigned to the deposit along with drill hole support and expanded certain areas but excluded others from the classification. Blocks were finally assigned to a classification category by the respective wireframe if the centroid of the block fell inside the wireframe.

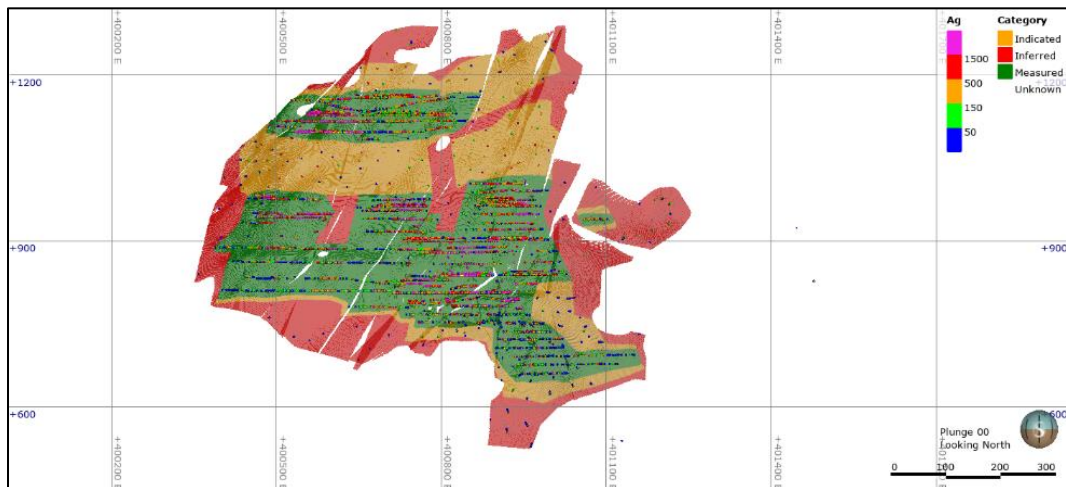
Additional sample and underground mapping data collected since June 30, 2020 has been reviewed and supports the mineral resource classifications presented here. Figure 14-27 to Figure 14-30, are projected vertical sections showing the Measured, Indicated, and Inferred Mineral Resource classification categories for the Jael, Jessica, Regina, and Robertita veins, respectively.

Figure 14-27: Measured, Indicated, and Inferred Mineral Resource Confidence Assignments, Jael Vein



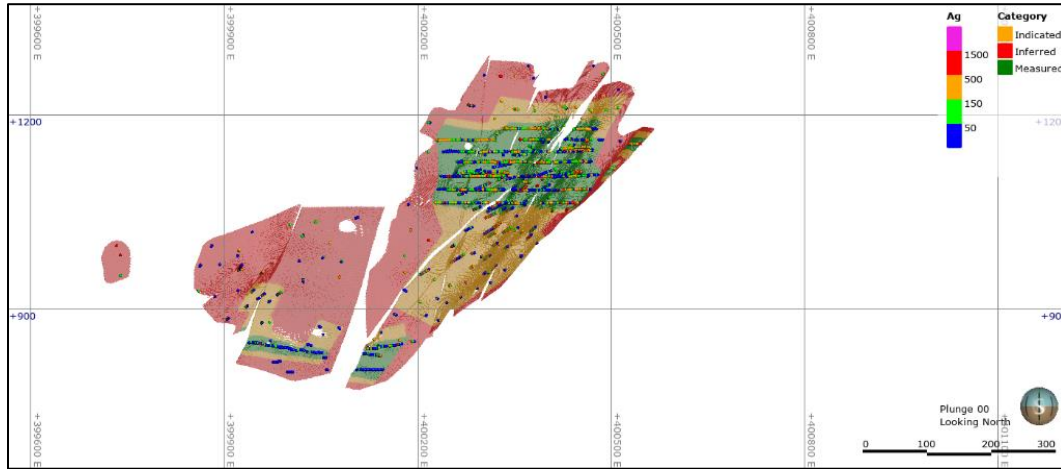
Note: Figure prepared by First Majestic, August 2020.

Figure 14-28: Measured, Indicated, and Inferred Mineral Resource Confidence Assignments, Jessica Vein



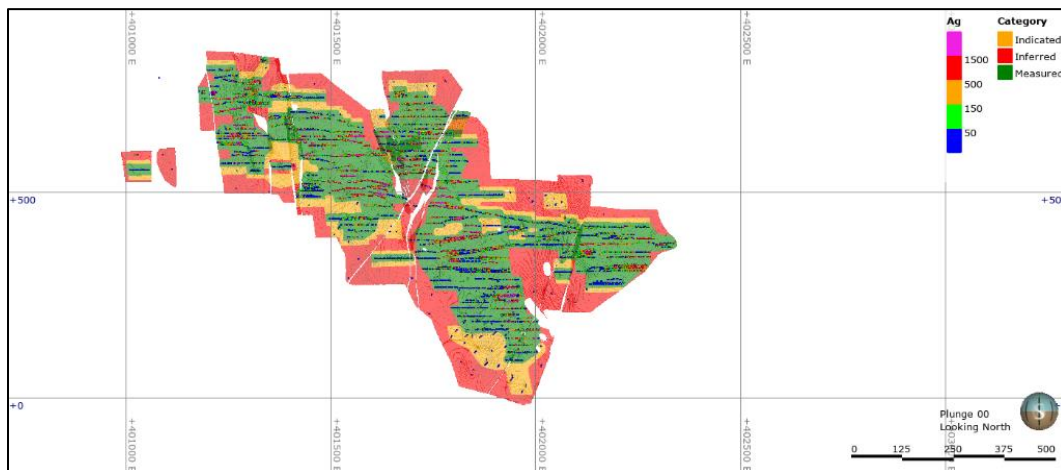
Note: Figure prepared by First Majestic, August 2020.

Figure 14-29: Measured, Indicated, and Inferred Mineral Resource Confidence Assignments, Regina Vein



Note: Figure prepared by First Majestic, August 2020.

Figure 14-30: Measured, Indicated, and Inferred Mineral Resource Confidence Assignments, Robertita Vein



Note: Figure prepared by First Majestic, August 2020.

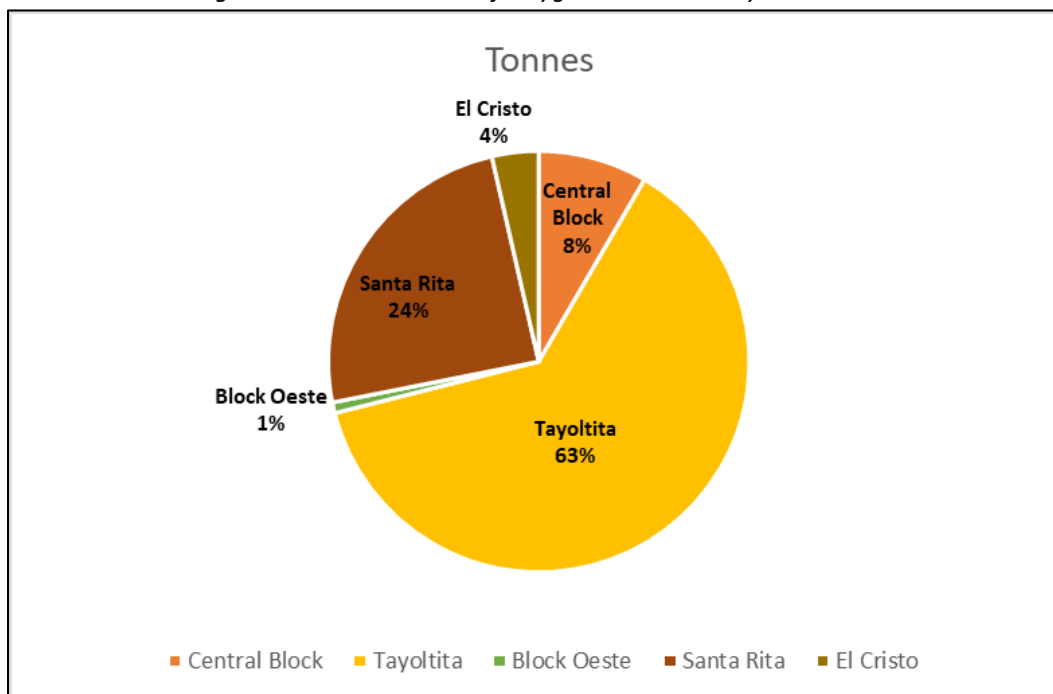
### 14.3 Polygonal Method for Resource Estimation

Prior to 2011, Mineral Resources and Mineral Reserves were estimated by a polygonal method on projected vertical long sections for individual veins. These estimates were consolidated into a database that included a listing of veins in the different mining zones, which are the fault-bounded blocks discussed in Section 7. These entries were tabulated and graphically represented in both a Mineral Resource and a Mineral Reserve book, or compendiums, which were produced each year.

Block model techniques have been applied since 2011, and no new domains have been estimated by polygonal method. However, there remain 52 minor veins and remnants of previously-mined veins that have Mineral Resources estimated using the polygonal method. All mineral resources estimated by polygonal methods are currently assigned to the Inferred Mineral Resource category.

Figure 14-31 is a pie chart outlining the mine zones where polygonal estimates are located.

Figure 14-31: Distribution of Polygonal Resources by Mine Zone



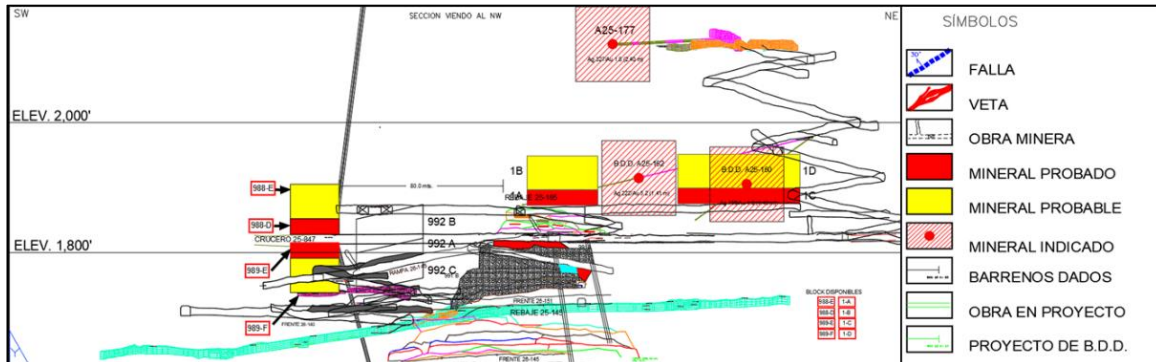
Note: Figure prepared by First Majestic, August 2020.

### 14.3.1 Polygonal Estimation of Tonnage and Grade

An orthogonal polygon was drawn on a vertical longitudinal section with the vein sample intersection centered in the polygon. An example of these polygons is shown on the schematic longitudinal section for the Alto de Arana vein in Figure 14-32.



Figure 14-32: Example of 2D Polygons in a Schematic Long Section



Note: Figure prepared by First Majestic, August 2020.

The shape and size of the polygon depended on the geological interpretation and thickness of the veins. This ranged between 25 m x 25 m for veins <1.0 m in thickness to 50 m x 50 m for veins >1.5 m thick.

The polygon volume was estimated by length x height x vein thickness or was estimated using AutoCAD software for more complex shapes.

The gold and silver grades for the vein sample interval were assigned to the polygon. In cases where there were multiple intercepts within a polygon, the silver and gold grades were estimated using a length-weighted average.

To estimate the contained metal the silver and gold grades were multiplied by the true vein thickness for each of the intercepts within the polygon, and then the resulting numbers were totalled and divided by the sum of the total true thicknesses. The process was validated by the Head of the Geology department in San Dimas by independently repeating the process on a subgroup of veins.

#### 14.3.2 Mineral Resource Classification for the Polygonal Method Estimates

All polygonal estimates are currently assigned to the Inferred Mineral Resource category. In total, Inferred Mineral Resources estimated using polygonal methods represent approximately 49% of the total Inferred Mineral Resource estimates for the San Dimas mine. The Inferred Mineral Resource using the polygonal method are reduced every year as they are converted to block model estimates or depleted by mining.

#### 14.4 Reasonable Prospects for Eventual Economic Extraction

The Mineral Resource estimates were evaluated for reasonable prospects for eventual economic extraction by application of input parameters based on mining and processing information from actual operations performance during 2019 and 2020. The economic parameters assumed for

Mineral Resource estimates include operating costs, metallurgical recovery, metal prices and other parameters are shown in Table 14-6.

Table 14-6: Input Parameters for Evaluation of Reasonable Prospects of Eventual Economic Extraction.

Concept	Units	Values
Direct Mining Cost	\$/t	94.4
Indirect and G&A Costs	\$/t	49.7
Sustaining Costs	\$/t	35.2
Metallurgical Recovery Ag	%	93.2
Metallurgical Recovery Au	%	96.4
Metal Payable Ag and Au	%	99.95
Metal Price Ag	\$/oz Ag	18.50
Metal price Au	\$/oz Au	1,750.00

Longhole and cut-and-fill mining methods are assumed with minimum mining widths of 1.6 m and 1.2 m, respectively.

These economic parameters result in a silver equivalent (Ag-Eq) cut-off grade of 255 g/t. The Ag-Eq metal grades for the Mineral Resource estimates were calculated as follow:

- $Ag-Eq\ g/t = Ag\ g/t + (Au\ g/t * Au\ Factor);$ 
  - $Au\ Factor = Au\ Revenue / Ag\ Revenue;$ 
    - $Au\ Revenue = (Au\ Metal\ Price / 31.1035) \times Au\ Recovery \times Au\ Payable;$
    - $Ag\ Revenue = (Ag\ Metal\ Price / 31.1035) \times Ag\ Recovery \times Ag\ Payable.$

The Vulcan underground stope analyser software was used to identify the blocks that represent potentially mineable shapes that exceeded the cut-off value while complying with the aggregate of economic parameters. For constraining resources deemed to be extracted by underground methods, the use of this tool provides an advantage based on the ability to aggregate blocks into the minimum stope dimensions and eliminate outliers that do not comply with these conditions. The underground stope analyser was used on the six most important metal deposits at San Dimas as defined by their total estimated mineral resources which together represent 47% of the Measured and Indicated Mineral Resource categories.

#### 14.5 Mineral Resource Estimate Statement

The QP for the Mineral Resource estimates is Mr. Joaquín Merino, P. Geo., who is First Majestic's Senior Advisor in Geology. Mineral Resources are reported using the 2014 CIM Definition Standards assuming underground mining methods, and a cut-off grade of 255 g/t Ag-Eq. The effective date for the mineral resource estimates is December 31, 2020.

Measured and Indicated Mineral Resource estimates are provided in Table 14-7, and Inferred Mineral Resource estimates are included in Table 14-8. Measured and Indicated Mineral Resources are reported inclusive of those Mineral Resources converted to Mineral Reserves. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

Table 14-7: San Dimas Measured and Indicated Mineral Resource Estimate  
(effective date December 31, 2020)

Category / Area	Mineral Type	Tonnage	Grades			Metal Content		
			ktonnes	Ag (g/t)	Au (g/t)	Ag-Eq (g/t)	Ag (k Oz)	Au (k Oz)
Measured Central Block	Sulphides	1,438	526	6.75	1,186	24,310	312	54,830
Measured Sinaloa Graben	Sulphides	449	441	7.51	1,176	6,370	108	16,990
Measured Tayoltita	Sulphides	57	324	3.46	663	590	6	1,210
Measured Other Areas	Sulphides	131	326	3.25	644	1,380	14	2,720
<b>Total Measured</b>	<b>Sulphides</b>	<b>2,075</b>	<b>489</b>	<b>6.60</b>	<b>1,135</b>	<b>32,650</b>	<b>440</b>	<b>75,750</b>
Indicated Central Block	Sulphides	1,266	393	4.23	807	15,980	172	32,820
Indicated Sinaloa Graben	Sulphides	439	383	3.92	766	5,400	55	10,800
Indicated Tayoltita	Sulphides	176	391	4.49	831	2,210	25	4,700
Indicated Other Areas	Sulphides	561	353	3.31	677	6,360	60	12,210
<b>Total Indicated</b>	<b>Sulphides</b>	<b>2,441</b>	<b>382</b>	<b>3.98</b>	<b>771</b>	<b>29,950</b>	<b>312</b>	<b>60,530</b>
M+I Central Block	Sulphides	2,703	463	5.57	1,008	40,290	484	87,650
M+I Sinaloa Graben	Sulphides	888	412	5.73	974	11,770	164	27,790
M+I Tayoltita	Sulphides	233	375	4.24	790	2,800	32	5,910
M+I Other Areas	Sulphides	692	348	3.30	671	7,740	73	14,930
<b>Total M+I</b>	<b>Sulphides</b>	<b>4,516</b>	<b>431</b>	<b>5.18</b>	<b>939</b>	<b>62,600</b>	<b>753</b>	<b>136,280</b>

Table 14-8: San Dimas Inferred Mineral Resource Estimate (effective date December 31, 2020)

Category	Mineral Type	Tonnage	Grades			Metal Content		
			ktonnes	Ag (g/t)	Au (g/t)	Ag-Eq (g/t)	Ag (k Oz)	Au (k Oz)
Inferred Central Block	Sulphides	1,387	339	4.35	765	15,140	194	34,140
Inferred Sinaloa Graben	Sulphides	423	468	5.56	1,013	6,360	76	13,760
Inferred Tayoltita	Sulphides	2,016	311	3.08	612	20,140	199	39,670
Inferred Other Areas	Sulphides	1,675	346	3.21	660	18,620	173	35,550
<b>Total Inferred</b>	<b>Sulphides</b>	<b>5,501</b>	<b>341</b>	<b>3.63</b>	<b>696</b>	<b>60,260</b>	<b>642</b>	<b>123,120</b>

- 1) Mineral Resource estimates have been classified in accordance with the 2014 CIM Definition Standards.
- 2) The Mineral Resource estimates have an effective date of December 31, 2020
- 3) Drill hole and production channel sample data collected through a cut-off date of June 30, 2020 were used to produce the estimates.
- 4) Mineral Resource estimates account for mining depletion through December 31, 2020.
- 5) The information provided was prepared and reviewed by Mizraín Sumoza under the supervision of Joaquín Merino, P. Geo.
- 6) The silver-equivalent (Ag-Eq) grade was estimated considering metal price assumptions, metallurgical recovery, and the metal payable terms.  

$$\text{Ag-Eq} = \text{Ag Grade} + (\text{Au Grade} \times \text{Au Recovery} \times \text{Au Payable} \times \text{Au Price}) / (\text{Ag Recovery} \times \text{Ag Payable} \times \text{Ag Price}).$$
  - a. Metal prices considered for Mineral Resources estimates were \$18.50/oz Ag and \$1,750/oz Au.
  - b. Metallurgical recovery used was 93.2% for silver and 96.4% for gold.
  - c. Metal payable used was 99.95% for silver and gold.
- 7) The reasonable prospects for eventual economic extraction was tested using a silver-equivalent cut-off grade to constrain resources. The cut-off grade was prepared under the assumption of the operation of a mechanized underground mining method, the treatment of the material in a leaching plant and that silver Dore will be produced and sold to a refinery. Operating mining costs are assumed to be \$59/t at a nominal production rate of 1.0 Mt/a. Processing costs are assumed to be \$30/t, and indirect and general and administrative costs to be \$51/t. The resulting cut-off grade that equals estimated payables with the assumed costs was 255 g/t Ag-Eq.
- 8) Tonnage is expressed in thousands of tonnes; metal content is expressed in thousands of ounces.
- 9) Totals may not add up due to rounding.
- 10) Measured and Indicated Mineral Resources are reported inclusive of Mineral Reserves. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

#### **14.6 Factors that May Affect the Mineral Resource Estimate**

Factors that may materially impact the Mineral Resource estimates include:

- Mineral Resources reported using polygonal assumptions may have the confidence classification assigned amended when the polygons are converted into block models that use best practice estimation methods;
- Changes to the assumptions used to generate the silver-equivalent grade cut-off grade including metal price and exchange rates;
- Changes to interpretations of mineralization geometry and continuity;
- Changes to geotechnical, mining, and metallurgical recovery assumptions;
- Assumptions as to the continued ability to access the site, retain mineral and surface rights titles, maintain environment and other regulatory permits, and maintain the social license to operate.
- The production channel sampling method has some risk of non-representative sampling that could result in poor accuracy locally. In addition, there is potential for the large number of channel samples to overwhelm samples from the drill holes in some areas. This is recognized and addressed during resource estimation by restricting the area of influence related to these samples to very short ranges.

#### **14.7 Comments on Section 14**

The QP for First Majestic is of the opinion that the Mineral Resource Estimates for San Dimas were estimated according to industry best practices and conform to the 2014 CIM Definition Standards for Mineral Resources. In the opinion of First Majestic, the resource estimates reported here are a reasonable representation of the mineral resources found on the property at the current level of sampling.

## 15. MINERAL RESERVES ESTIMATES

This section summarizes the methods, assumptions, parameters, and modifying factors used by First Majestic in the preparation of the mineral reserve estimates for the San Dimas mine.

The mine design and scheduling work supporting the compilation of the mineral reserve estimates discussed herein was prepared by Cesar Becerra, First Majestic's Senior Mining Specialist, and other staff members whose work was performed under the direct supervision of Mr. Ramón Mendoza Reyes, P.Eng. and the QP responsible for these estimates.

### 15.1. Methodology

The Mineral Reserve estimation process consists of converting Measured and Indicated Mineral Resources to Proven and Probable Mineral Reserves by identifying material that exceeds the mining cut-off grades while conforming to specified geometrical constraints determined by the applicable mining method and applying modifying factors such as mining dilution and mining recovery factors. If the Measured and Indicated Mineral Resources comply with the previous constraints, Measured Mineral Resources could be converted to Proven Mineral Reserves and Mineral Indicated Resources could be converted to Probable Mineral Reserves, in some instances Measured Mineral Resources could be converted to Probable Mineral Reserves if any or more of the modifying factors reduced the confidence of the estimates.

The conversion of Measured and Indicated Mineral Resources to Proven and Probable Mineral Reserves estimates involves the following procedures:

- Selection of a viable mining method for each of the geological domains, considering geometry of the deposit, geotechnical and geohydrological conditions, metal grade distribution as observed during the examination of the block model and other mine design criteria;
- Review metal price assumptions approved by First Majestic's management for Mineral Resource and Mineral Reserve estimates to be considered reasonable and following the "2020 CIM Guidance on Commodity Pricing and Other Issues related to Mineral Resource and Mineral Reserve Estimation and Reporting";
- Calculate Ag-Eq, net smelter return (NSR) and cut-off grades (COGs), based on the assumed metal price guidance, assumed cost data, metallurgical recoveries, and smelting and refining terms as per the selling contracts;
- Prepare the block models by adding an Ag-Eq field, which is used in the stope optimization, and ensuring Inferred Mineral Resources will not be considered in the Mineral Reserves constraining process;
- Compile relevant mine design parameters such as stope dimensions, minimum mining widths and pillar dimensions;

- Compile modifying factors such as dilution from blasting overbreak and geotechnical conditions as well as mining loss considering benchmarking from actual surveys and underground observations;
- Outline potentially-mineable shapes from the block model based on Measured and Indicated Mineral Resources that exceed the COG;
- Screen potentially-mineable shapes using stope optimization mining software to account for vein widths, minimum mining widths, dilution assumptions and economic factors;
- Refine potentially mineable shapes by removing permanent sill and rib pillars, removing areas identified as inaccessible or unmineable due to geotechnical or stability conditions;
- Design mine development and mine infrastructure required to access the potentially-mineable shapes;
- Carry out an economic analysis for groups of mineable shapes, such as sublevels or contiguous groups of shapes, removing areas that are isolated from contiguous mining areas that will not cover the cost of development to reach those areas;
- Set the mining sequence and define the production rates for each relevant area to produce the production schedule;
- Estimate capital and operating costs required to extract this material and produce saleable product;
- Estimate expected revenue after discounting selling costs;
- Validate the economic viability of the overall plan with a discounted cash flow model;
- Once these steps are completed and a positive cash flow is demonstrated, the Mineral Reserve statement can be prepared.

The common mining methods used in San Dimas are sublevel longhole stoping (longhole) and cut-and-fill. The assigned method to a vein or section depends on the vein characteristics and attitude (i.e., width, dip, and rock competence, among others). The current tonnage contribution by mining method is 50% longhole and 35% cut-and-fill, with the remaining 15% coming from development in ore.

## 15.2. Net Smelter Revenue and Cut-off Grades

The Ag-Eq grade is the variable that was used as indicator to segregate if the revenue from the mineralized material in a block that is part of the Measured and Indicated Mineral Resources, exceeds the operating and capital costs. The Ag-Eq grade is calculated by:

$$Ag - Eq \text{ Grade} = Ag \text{ Grade} + Au \text{ Grade} * \frac{(Au \text{ Recovery} * Au \text{ Payable} * Au \text{ Price})}{(Ag \text{ Recovery} * Ag \text{ Payable} * Ag \text{ Price})}$$

Where, Ag grade is the silver in grams per tonne, Au grade is the gold in grams per tonne, Recovery is the metallurgical recovery percentage of gold and silver, Payable is the percentage payable by the refineries and Price is the metal price of gold and silver, respectively.

The Ag-Eq grade was coded into the block model.

NSR formulas were derived from the assumed economic parameters shown in Table 15-1.

*Table 15-1: Economic Parameters Assumed for Calculation of NSR.*

Concept	Units	Values
Metal Price Ag	\$/oz Ag	17.50
Metal Price Au	\$/oz Au	1,700
Metallurgical Recovery Ag	%	93.2%
Metallurgical Recovery Au	%	96.4%
Metal Payable Ag and Au	%	99.95%
Dore Transport Cost Cost	\$ / oz Dore	0.109
Insurance and Representation Cost	\$ / oz Dore	0.031
Refining Charge Ag	\$ / oz Ag	0.025
Refining Charge Au	\$ / oz Au	0.050

A mine COG was calculated based on the parameters summarized in Table 15-2 and Table 15-3 corresponding to the operating and sustaining costs observed in San Dimas during 2019.

*Table 15-2: Initial Cut-Off Grade Applied to Longhole*

Operating Costs - Longhole		Full Cost	Incremental Cost	Marginal Cost
Mining (excluding haulage to plant)	\$/ t	41.57	37.41	
Haulage to plant	\$/ t	5.77	5.77	5.77
Milling	\$/ t	29.24	23.39	23.39
Indirect	\$/ t	44.89	44.89	22.45
G&A (site)	\$/ t	2.40	2.40	
Sustaining plant and infrastructure	\$/ t	8.57	8.57	
Sustaining mine and development	\$/ t	25.34		
Infill exploration and mining rights	\$/ t	7.59		
<b>Total</b>	<b>\$/ t</b>	<b>165.37</b>	<b>122.44</b>	<b>51.61</b>
Cut-off grade*		General	Incremental	Marginal
ROM all veins	g/t Ag-Eq	340	250	100
In situ all Jessica veins**	g/t Ag-Eq	680	495	210
In situ all other veins**	g/t Ag-Eq	485	355	150

\* Rounded to nearest 5 g/t Ag-Eq.

\*\* Assuming dilution of 60% for Jessica and 30% for all other veins



Table 15-3: Initial Cut-Off Grade Applied to Cut-and-Fill

Component	Unit	Metal Price	Recovery	Metal Payable
Silver	USD / oz.	17	93.81%	99.95%
Gold	USD / oz.	1,350	96.47%	99.95%
Component				Au
Ag equivalent ratio	Ag-Eq.			81.66
Operating costs cut-and-fill		Full Cost	Incremental Cost	Marginal Cost
Mining (excluding haulage to plant)	\$ / t	35.71	32.14	
Haulage to plant	\$ / t	5.77	5.77	5.77
Milling	\$ / t	29.24	23.39	23.39
Indirect	\$ / t	44.89	44.89	22.45
G&A (site)	\$ / t	2.40	2.40	
Sustaining plant and infrastructure	\$ / t	8.57	8.57	
Sustaining mine and development	\$ / t	25.34		
Infill exploration and mining rights	\$ / t	7.59		
Total	\$ / t	159.51	117.16	51.61
Cut-off grade *		General	Incremental	Marginal
ROM all veins **	g/t Ag-Eq	320	240	100
In situ all Jessica veins	g/t Ag-Eq	810	595	260
In situ all other veins	g/t Ag-Eq	460	340	150

\* Rounded to nearest 5 g/t Ag-Eq.

\*\* Assuming dilution of 60% for Jessica and 30% for all other veins

COG have been determined for the San Dimas mine: general COG, incremental COG, and marginal COG.

### 15.3. Block Model Preparation

The mine planning software used for identifying potentially-mineable shapes is Deswik, which is used to discretize the mineralized structures by dividing the vein wireframes into 3 m-high by 3 m-long blocks but maintaining the vein width as a block attribute. The grade and tonnage, among other physical characteristics, are also assigned to these blocks from the mineral resource block model. Waste dilution is added to the 3 x 3 m blocks considering zero grade and a SG of 2.6 t/m<sup>3</sup>.

The next step consists of introducing the modifying mining factors into the model, which are used to estimate diluted grades based on the selected mining method, vein thickness, minimum mining width and external dilution assumptions. The mining loss factor is also incorporated into the model based on the assumed mining method.

#### 15.4. Dilution

Modifying mining factors are the combination of dilution and mining loss that affect the quality and quantity of the material extracted from a mining operation. Dilution is waste material that enters the material movement stream and often has two negative impacts:

- Increased cost (mining, processing, treatment and increasing the storage of tailings); and,
- Increased mineralized material loss (through increased processing costs and impacting on mining recoveries).

There are multiple sources of dilution, but these can be classified in the following two categories: planned dilution and unplanned dilution.

Planned dilution is additional waste that is deliberately mined concurrently with the target mineralised material, allowing the mineralised material to be fully recovered; however, leading to an overall lower grade being mined. Many operations undergo an economic trade-off between selective, less productive methods and less selective, more productive methods, to determine if reducing the waste entering the ore stream results in better economic outcomes.

Unplanned dilution is waste material that unintentionally finds its way into the ore stream during the course of extraction and can be from a variety of sources including:

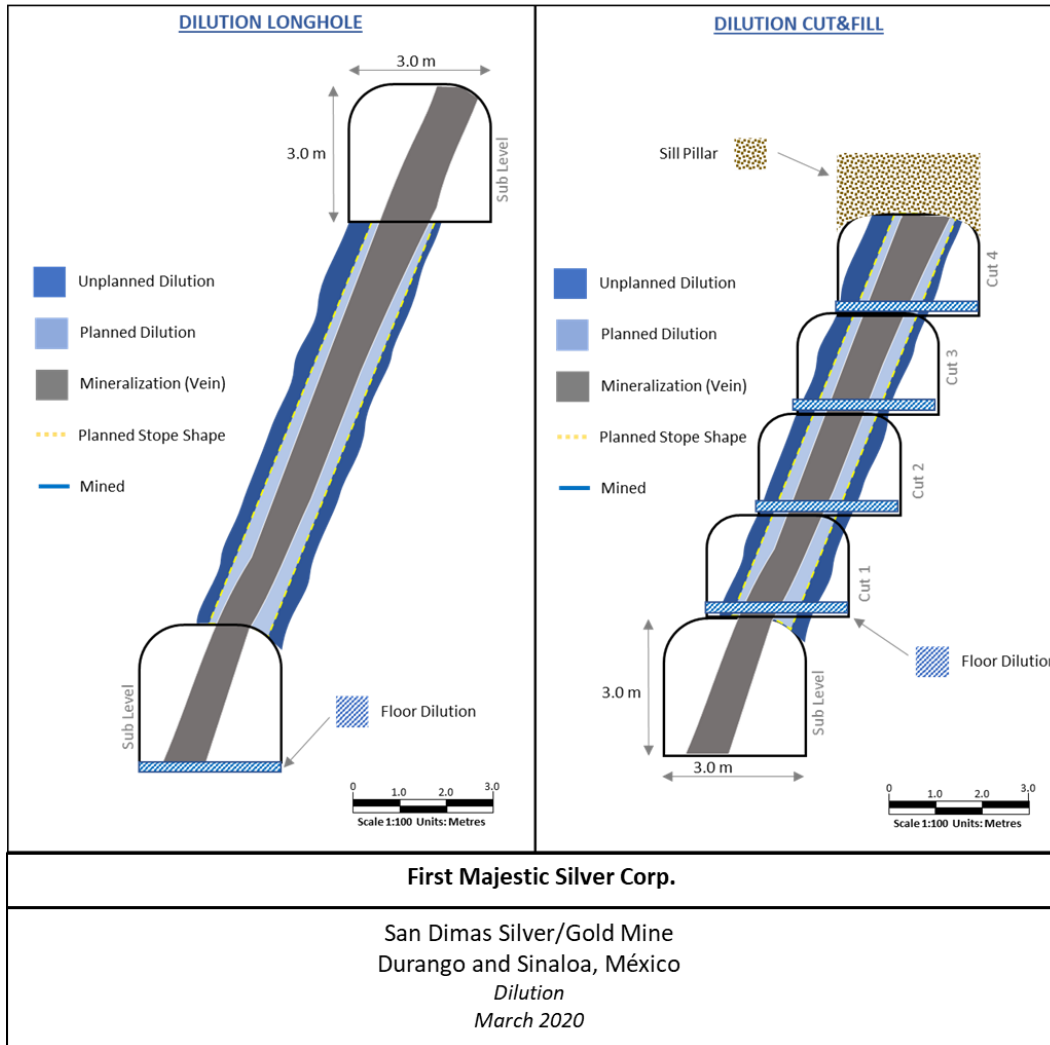
- Over-break during mining;
- Mucking of waste material (or backfill or road base material) during the mucking of mineralised material;
- Misrouting and dumping of waste material on the ore stockpile (ROM);
- Misrouting and dumping of waste in ore locations (stockpiles, ore passes) leading to a mixing of mineralised material and waste rock; and,
- Backfill dilution from adjacent stopes.

The planned dilution assumes a minimum mining width, which will depend on the applied mining method. The minimum mining width for cut-and-fill using jackleg drills was 0.8 m, while when using jumbo drills was 2.5 m. In the case of longhole mining, the minimum mining width assumed was 1.2 m.

The estimated overbreak in each side of the designed stope is 0.2 m for the two mining methods, longhole and cut-and-fill. An extra dilution from the backfill floor of 0.3 m for longhole and 0.2 m for cut-and-fill is also assumed.

Figure 15-1 shows illustrations of the dilution assessment approach for each type of vein width and equipment used.

Figure 15-1: Schematic Example of Dilution



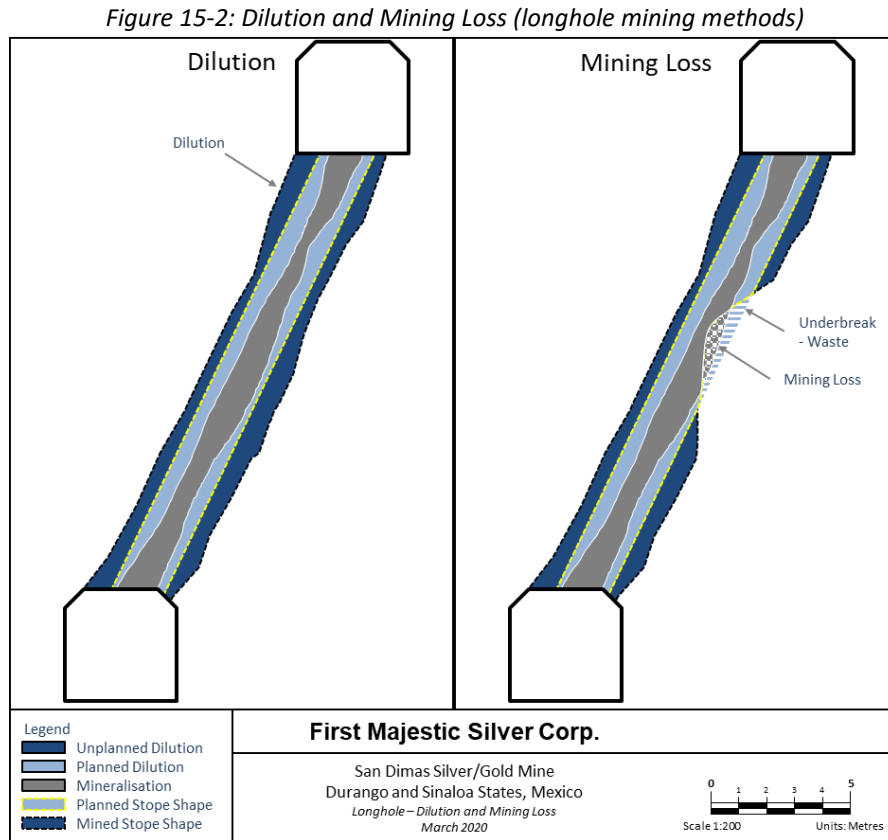
Note: Figure prepared by Entech Mining Consultants Ltd. for First Majestic, March 2020.

### 15.5. Mining Loss

Mining loss refers to the percentage of above COG mineralized material within the mine designs that will not be converted into plant feed for various operational reasons.

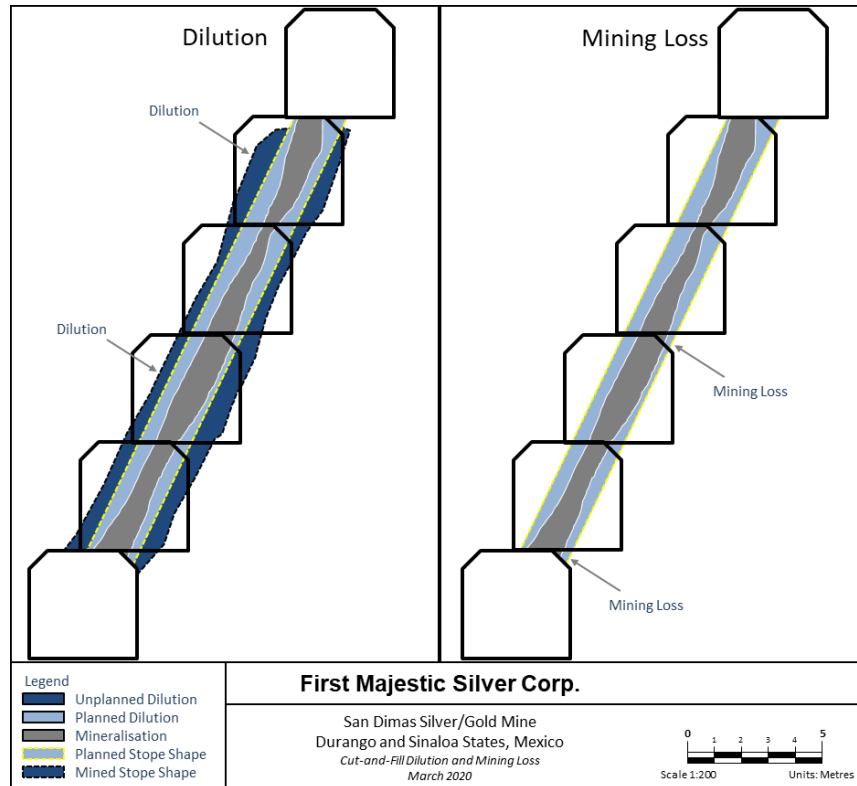
Mining loss has a significant impact on the mining business, with a reduction of revenue through the loss of mineralised material. Mining loss can occur in a variety of different ways such as, poor blasting, poor stope recovery, weak ground conditions impacting on the access to the mineralised material, etc. Mining loss occurs in most mining operations and an allowance for a reduction in revenue is prudent for budgeting and assessing for profitability.

An example of dilution and mining loss via underbreak (poor blasting practices) is illustrated below in Figure 15-2 and Figure 15-3. Note that underbreak in waste is an economic benefit, however it reflects that the operation is not achieving the targeted mining shape.



*Note: Figure prepared by Entech Mining Consultants Ltd. for First Majestic, March 2020.*

Figure 15-3: Dilution and Ore Loss (cut-and-fill mining method)



Note: Figure prepared by Entech Mining Consultants Ltd. for First Majestic, March 2020.

Other than for sill mining, the average mining loss throughout each mining block for both cut-and-fill and longhole mining has been assumed to be 5%. A factor of 25% has been used for sill pillars, which in the modelling process have been assumed to be 3 m high at the top of the mining block and immediately below the sill drive. Table 15-4 shows the dilution and mining loss parameters assumed in this Report.

Table 15-4: Dilution and Mining Loss Parameters

Mine	Mining Method	Mining Loss	Mineable Width	Overbreak	Floor Dilution
All mines	Longhole	5%	1.2 m	0.2 m	0.2 m
	Cut-and-fill jumbo	5%	2.5 m	0.2 m	0.2 m
	Cut-and-fill jackleg	5%	0.8 m	0.2 m	0.3 m
	Sill	25%	-	-	-

### 15.6. Mineral Reserve Estimates

To convert from Measured and Indicated Mineral Resources to Proven and Probable Mineral Reserves, the resource blocks were interrogated by applying economic criteria as well as geometric

constraints based on the mining method envisioned. Mineable blocks or stopes were defined by following this process.

The COG was used as the main economic constraint and was derived from a NSR model prepared with the parameters described earlier; for this purpose, the silver and gold grades were expressed in terms of Ag-Eq.

Deswik software was used to interrogate each vein. Stope shapes were only considered if the grade of the shape met or exceeded the general COG as a first pass to define new extraction levels, followed by the corresponding incremental COG for each vein and mining method assumed to identify contiguous material that could be extracted with the same infrastructure assumed for the material screened by the general COG. Once the development infrastructure was designed, a review was carried out to identify the blocks that have to be mined to access the mineable shapes. If the material was above the marginal COG then these blocks were included into the Mineral Reserve estimates.

Blocks below the general COG were included in the Mineral Reserve estimates as long as they fulfilled the criteria to be classified under the incremental and marginal COGs. Mineral Reserve blocks over the cut-off grades are excluded when the blocks appear to be isolated or don't pass any other economic considerations.

#### **15.7. Mineral Reserves Statement**

The Mineral Reserves are tabulated in *Table 15-5*, and have an effective date of December 31, 2020. The QP for the estimate is Mr. Ramón Mendoza Reyes, P.Eng.

Table 15-5: San Dimas Mineral Reserves Statement (effective date December 31, 2020)

Category / Area	Mineral Type	Tonnage kt	Grades			Metal Content		
			Ag (g/t)	Au (g/t)	Ag-Eq (g/t)	Ag (k Oz)	Au (k Oz)	Ag-Eq (k Oz)
Proven Central Block	Sulphides	1,307	418	4.81	902	17,570	202.3	37,900
Proven Sinaloa Graben	Sulphides	386	263	4.50	715	3,260	55.8	8,870
Proven Tayoltita	Sulphides	54	265	3.13	579	460	5.4	1,000
Proven Other Areas	Sulphides	140	228	2.41	470	1,030	10.9	2,120
<b>Total Proven</b>	<b>Sulphides</b>	<b>1,887</b>	<b>368</b>	<b>4.52</b>	<b>822</b>	<b>22,320</b>	<b>274.4</b>	<b>49,890</b>
Probable Central Block	Sulphides	977	333	3.53	687	10,450	110.9	21,590
Probable Sinaloa Graben	Sulphides	421	256	2.55	512	3,460	34.4	6,930
Probable Tayoltita	Sulphides	196	269	3.19	589	1,690	20.1	3,710
Probable Other Areas	Sulphides	514	268	2.67	536	4,430	44.2	8,860
<b>Total Probable</b>	<b>Sulphides</b>	<b>2,108</b>	<b>296</b>	<b>3.09</b>	<b>606</b>	<b>20,030</b>	<b>209.6</b>	<b>41,090</b>
P+P Central Block	Sulphides	2,285	381	4.26	810	28,020	313.2	59,490
P+P Sinaloa Graben	Sulphides	806	260	3.48	609	6,720	90.2	15,800
P+P Tayoltita	Sulphides	250	268	3.17	587	2,150	25.5	4,710
P+P Other Areas	Sulphides	654	259	2.62	522	5,460	55.1	10,980
<b>Total P+P</b>	<b>Sulphides</b>	<b>3,995</b>	<b>330</b>	<b>3.77</b>	<b>708</b>	<b>42,350</b>	<b>484.0</b>	<b>90,980</b>

(1) Mineral Reserves have been classified in accordance with the Canadian Institute of Mining, Metallurgy and Petroleum ("CIM") Definition Standards on Mineral Resources and Mineral Reserves, whose definitions are incorporated by reference into NI 43-101.

(2) The Mineral Reserve statement provided in the table above have an effective date of December 31, 2020 and are based on resource models prepared with drill-hole and production channel sample data collected with a cut-off date of June 30, 2020.

(3) The Mineral Reserve estimates account for mining depletion through December 31, 2020.

The information provided was prepared and reviewed under the supervision of Ramón Mendoza Reyes, PEng, and a Qualified Person ("QP") for the purposes of NI 43-101.

(4) Silver-equivalent grade (Ag-Eq) is estimated considering metal price assumptions, metallurgical recovery for the corresponding mineral type/mineral process and the metal payable of the selling contract.

(a) The Ag-Eq grade formula used was:

$$\text{Ag-Eq Grade} = \text{Ag Grade} + \text{Au Grade} * (\text{Au Recovery} * \text{Au Payable} * \text{Au Price}) / (\text{Ag Recovery} * \text{Ag Payable} * \text{Ag Price}).$$

(b) Metal prices considered for Mineral Reserves estimates were \$17.50/oz Ag and \$1,700/oz Au.

(c) Other key assumptions and parameters include: Metallurgical recoveries of 93.2% for silver, 96.4% for gold; metal payable of 99.95% for silver and 99.95% for gold; direct mining costs of \$55.28/t for Longhole and \$63.09/t for Cut and Fill, processing costs of \$31.32/t mill feed, indirect and G&A costs of \$49.66/t and sustaining costs of \$42.28/t for Longhole and \$44.28/t for Cut and Fill.

(5) A two-step constraining approach has been implemented to estimate reserves for each mining method in use: A General Cut-Off Grade (GC) was used to delimit new mining areas that will require development of access, infrastructure and all sustaining costs. A second Incremental Cut-Off Grade (IC) was considered to include adjacent mineralized material which recoverable value pays for all associated costs, including but not limited to the variable cost of mining and processing, indirect costs, treatment, administration costs and plant sustaining costs but excludes the access development assumed to be covered by the block above the GC grade.

(6) Modifying factors for conversion of resources to reserves include consideration for planned dilution due to geometric aspects of the designed stopes and economic zones, and additional dilution consideration due to unplanned events, materials handling and other operating aspects. Mineable shapes were used as geometric constraints.

(7) Tonnage is expressed in thousands of tonnes; metal content is expressed in thousands of ounces. Metal prices and costs expressed in USD.

(8) Numbers have been rounded as required by reporting guidelines. Totals may not sum due to rounding.

### **15.8. Factors that May Affect the Mineral Reserve Estimates**

Factors that could affect the Mineral Reserves estimate include changes to the following assumptions:

- Metal prices and exchange rates;
- Unplanned dilution;
- Mining recovery;
- Geotechnical conditions;
- Equipment productivities;
- Metallurgical recoveries;
- Mill throughput capacities;
- Operating cost estimates;
- Capital cost estimates
- Changes to the assumed permitting and regulatory environment under which the mine plan was developed;
- Changes in the taxation conditions;
- Ability to maintain mining concessions and/or surface rights;
- Ability to renew agreements with the San Dimas and Rincon de Calabazas Ejidos;
- Adverse outcomes to the court cases with the Ejidos as described in Section 20.11.1;
- Ability to obtain and maintain social and environmental license to operate.

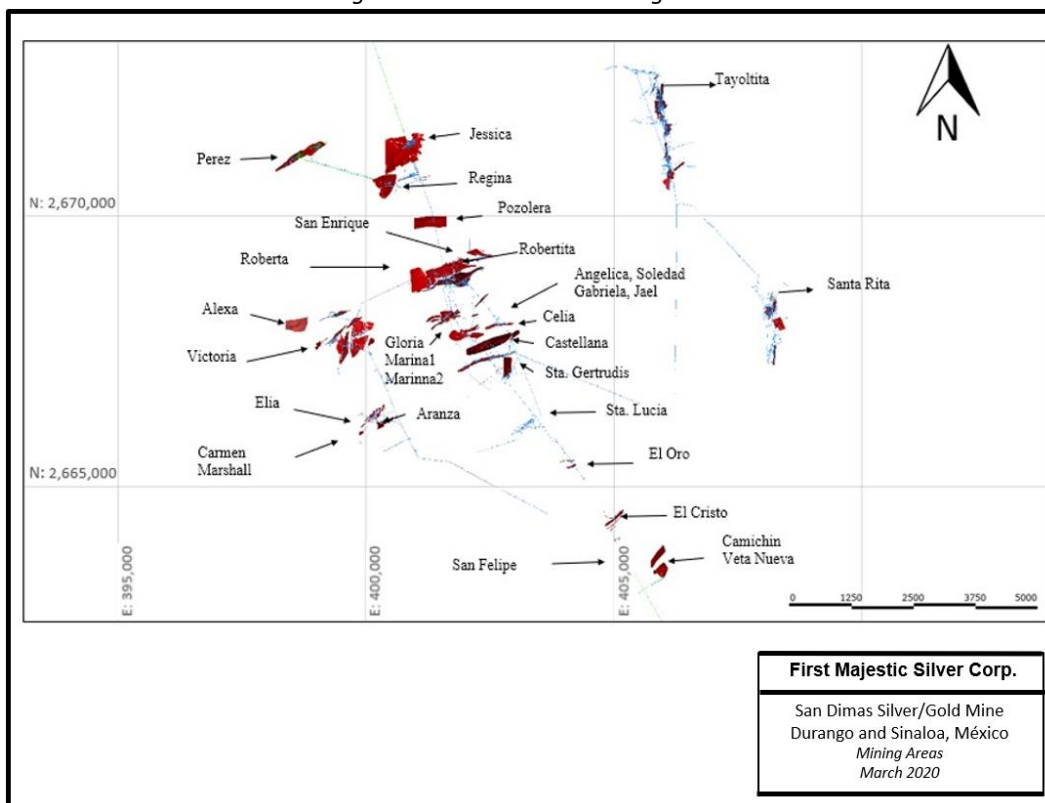


## 16. MINING METHODS

### 16.1. General Description

The San Dimas mine includes five main underground gold and silver mining areas: West Block (San Antonio mine), Sinaloa Graben Block (Graben Block), Central Block, Tayoltita Block, and the Arana Hanging-wall Block (Santa Rita mine). In 2020, 68% of ROM production came from the Central Block, 29% from the Sinaloa Graben and 3% from the Tayoltita Block and other areas. A plan view of the mining blocks and the main access tunnels is shown in Figure 16-1.

Figure 16-1: San Dimas Mining Areas



Note: Figure prepared by First Majestic, March 2020.

Mining activities are conducted by both contractor and First Majestic personnel. Two mining methods are currently being practiced at San Dimas, cut-and-fill and longhole mining. Cut-and-fill is carried out by either jumbo or jackleg drills. Primary access is provided by adits and internal ramps from an extensive tunnel system through the steep, mountainous terrain.

## 16.2. Mining Methods and Mine Design

### 16.2.1. Geotechnical and Hydrogeological Considerations

Geotechnical parameters for rock mass classification are systematically collected in the underground workings. The rock mass quality is estimated following two widely used empirical systems: the NGI Q-system after Barton et al. (1974) and the rock mass rating (RMR) system after Bieniawski (1973).

Five geotechnical units were defined in the San Dimas mine. Table 16-1 shows the main characteristics of the geotechnical units.

Table 16-1: San Dimas Geotechnical Units

Geotechnical Unit	General Description	Probability of Fault Mode	Q Index	Classification	RMR
UNIT 1	INTRUSIVE - Granodioritic rocks of light gray to pinkish white color with good rock quality.	Low probability of detachment of blocks, this is in line with the quality of the rock and the alteration of the rocky massif, the shape of the structures also considered.	40 to 100	VERY GOOD	81 to 100
UNIT 2	PRODUCTIVE ANDESITE - Medium-grained andesitic flows, interbedded with agglomerate tuffs of rhyolite and andesite, continuous fracturing impacted only by natural weathering.	Medium to low probability of detachment of blocks, this is in line with the quality of the rock and the alteration of the rocky massif, the shape of the structures also considered.	10 to 40	GOOD TO VERY GOOD	61 to 80
UNIT 3	PRODUCTIVE ANDESITE - Andesitic flows interbedded with agglomerate tuffs of rhyolite and andesite, with continuous fracturing forming wedges of considerable size which in turn form blocks. There are areas with intense fracturing dipping 45° or less thus affecting the stability of the blocks; high impact of weathering due to changes in temperature.	Medium to high probability of progressive detachment of blocks, this is in line with the quality of the rock and the alteration of the rocky massif, the shape of the structures also considered.	4 to 10	REGULAR TO GOOD	41 to 60
	RIOLITE - These rocks outcrop in the periphery of the Tayoltita mine. They consist of ignimbrite in a volcanic sand matrix, interbedded with packages of latites, dacites and andesites.				
	DIKES.- Fine-grained of andesitic composition.				
UNIT 4	PRODUCTIVE ANDESITE - This unit consists of a lower quality rock that is made up of fine-grained andesitic flows interbedded with agglomerate tuffs, containing a greater number of families in different orientations, causing great fracturing and causing wedges of regular size, constantly impacted by water flows weakening the fillings between fractures.	High probability of progressive detachment due to gravity from efforts in the sky and tables, with an increase due to high water seepage and very poor quality of the rock massif.	1 to 4	BAD TO REGULAR	21 to 40
	ANDESITE SOCAVON - Regular quality rock composed of pseudo-strata with a low angle of inclination of 15° to 40° and random fracturing causing wedges of regular magnitude.				
	BOLAÑOS DIKE.- Medium to coarse grained varying in composition from dacite to riodacite.				
UNIT 5	PRODUCTIVE ANDESITE. - Poor quality rock made up of fine-grained andesitic flows interspersed with agglomerate tuffs with sub-rounded fragments of rhyolite and andesite, containing a considerable number of families of fractures, causing that the rock is almost crushed with fractures filled with clays.	Very high probability of progressive detachment due to gravity from efforts in the roof and walls. Ground conditions can get worse due to high water seepage and very poor quality of the rock massif.	0,1 to 1	BAD	0 to 21
	ANDESITIC DIKES - Fine-grained rock, regularly in contact with the mineralized vein. Highly fractured and weathered causing instability typically at the footwall of the veins. Having at least four families of fractures which form small blocks of rocks, the fractures are filled with clays that in contact with humidity and ventilation can become detached from the rock mass.				



Groundwater inflow has not been a significant concern in the San Dimas mine area. Indicative of this are the dewatering requirements for the mine pumping systems as noted in Section 16.3.3.

### 16.2.2. Development and Access

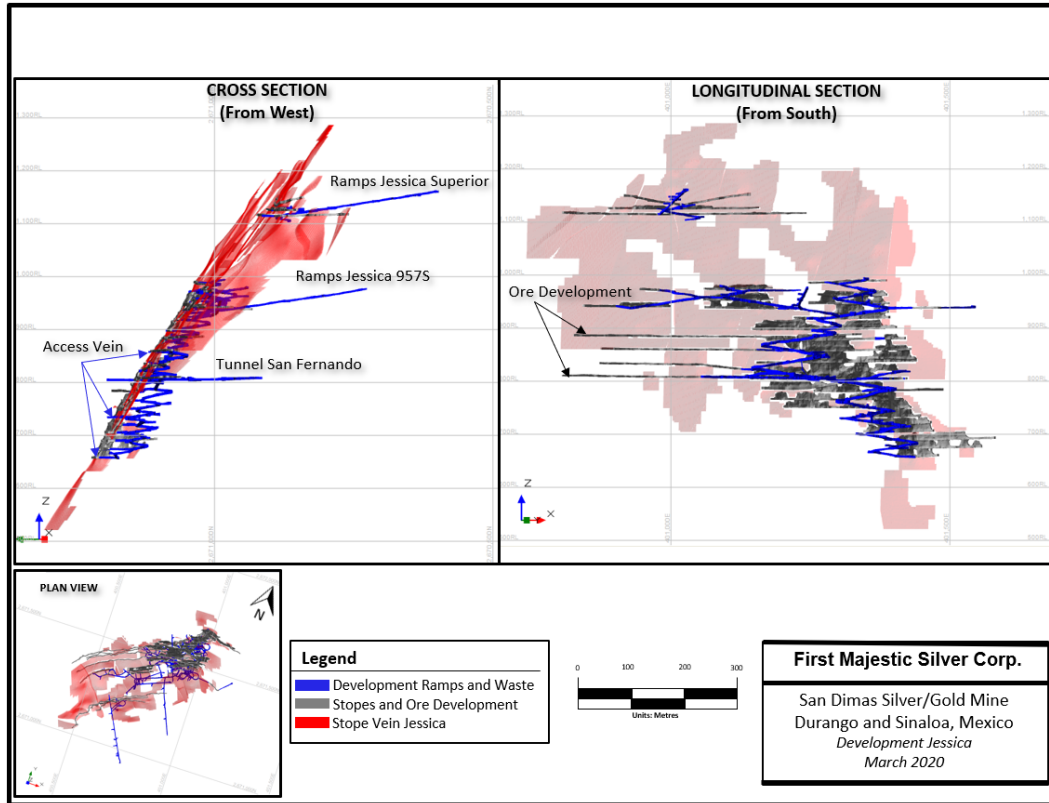
Access to the mining areas is achieved by adits and internal ramps. The main adits from the surface are shown in Figure 16-1. The Central Block and Sinaloa Graben rely solely on truck haulage, whereas Tayoltita ROM material is transported to the surface stockpile via rail. Main accesses are typically driven at 5 m wide by 5 m high, with accesses to the stopes at 3 m wide by 3 m high. Typical rail haulageway dimensions are 3.5 m wide by 3.5 m high. Main ramps are generally driven at a gradient of 15% as shown in Table 16-2.

Table 16-2: Development Profiles

Development Type	Width (m)	Height (m)	Gradient (%)
Ramp (primary haulage)	4.0	4.5	± 15%
Secondary Ramp	4.0	4.0	± 15%
Stope-ramp	3.0	3.5	± 15%
Access longhole	3.0	3.5	+ 0.5%
Access cut-and-fill	3.0	3.5	- 15%
Muck-bay	4.0	4.0	+ 0.5%
Stockpile	4.0	4.0	+ 0.5%
Access ventilation	4.0	4.0	+ 0.5%
Sump	2.5	2.5	- 17%
Ore drifts	3.0	3.5	+ 0.5%
Safety bay	2.5	2.5	+ 1%
Electrical bay	2.5	2.5	+ 1%
Robbins station	9.0	7.0	+ 1%
Drilling station	6.0	6.0	+ 1%
Electrical substation	6.0	6.0	+ 1%

The view shown in Figure 16-3 is an example of development adjacent to a vein, in this case the Jessica vein.

Figure 16-3: Jessica Vein Access Development



Note: Figure prepared by First Majestic, March 2020.

Internal ramps connect stopes from both the hanging wall and foot wall, and often, when two or more veins are in close proximity, single ramps can provide access to multiple veins. In the case of Marina 1, ROM material is typically hauled out the San Luis tunnel, through ore-passes connecting to the San Francisco tunnel, and then hauled directly to the mill.

Since the mine was acquired by First Majestic, the development rate has been steadily increasing as shown in Table 16-3.

Table 16-3: San Dimas Development 2018 to 2020

Development	Unit	2018*	2019	2020
Waste expansionary	m	1,426	2,595	2,018
Waste sustaining	m	5,592	11,373	11,929
Development in Ore	m	6,045	10,053	12,207
<b>Total Development</b>	<b>m</b>	<b>13,063</b>	<b>24,021</b>	<b>26,154</b>

\* Development May-Dec 2018

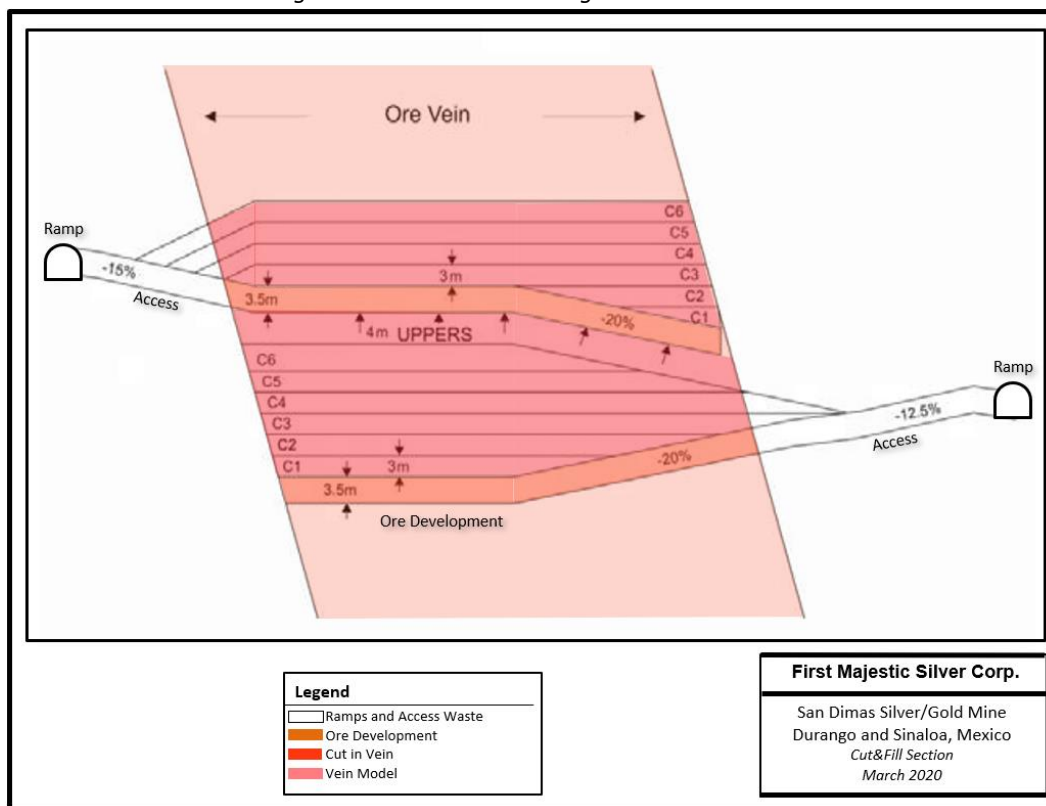
### 16.2.3. Mining Methods and Stope Design

The predominant mining methods at the San Dimas mine are mechanized cut-and-fill and longhole mining. Longhole mining was introduced in 2012 and is becoming increasingly important.

Cut-and-fill mining is carried out using jumbo or jackleg drills and load-haul-dump (LHD) machines. Minimum mining widths of 2.5 m and 0.8 m for jumbo and jackleg mining, respectively, may be attainable. Waste rock is used as fill material and provides both wall support and a working base from which to take subsequent cuts after the initial sill cut.

Figure 16-4 is a representative long-section schematic showing the cut pattern followed after establishing accesses to the mineralized veins.

Figure 16-4: Cut-and-Fill Long Section Schematic



Note: Figure prepared by First Majestic, March 2020.

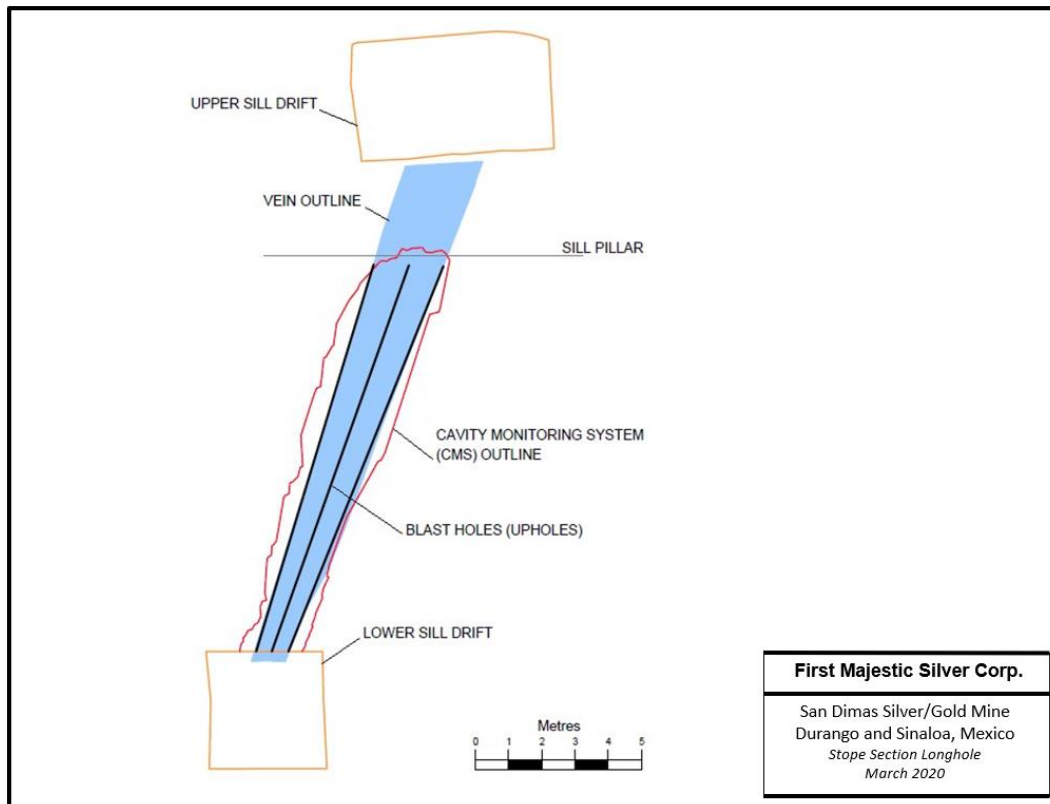
Typically, an initial 3.5 m high sill cut is taken followed by a second 3.0 m cut. Waste rock is then used to fill the void to about 1.0 m from the back, so as to form the working floor for the next cut. The next 3.0 m cut is then breasted down on top of the fill. When this mineralized material is mucked out, filling occurs again to within about 1.0 m of the back. The process is repeated until within about

4.0 m of the next sill cut. Sills beneath waste fill are mined using uppers. The general mining recovery factor is about 95%, and that for sill mining is about 75%.

Longhole mining consists of drilling production holes in the pillar between two mineralized drifts. A minimum mining width of 1.2 m is envisaged for the method. A drop raise or an inverse raise is drilled and blasted at the extremity of the mining block. The length of the block is determined relative to the geotechnical condition of the exposed walls. Stopes can be mined either with upholes or downholes, with respective maximum heights of 12 m and 15 m. The longhole mining method offers increased productivity, lower unit operating costs, and reduced waste dilution in veins of consistent geometry.

A typical section of an uphole longhole stope is shown in Figure 16-5.

Figure 16-5: Longhole Uphole Stope Section



Note: Figure prepared by First Majestic, March 2020.

Twelve-metre long upholes are drilled from the lower drift. In this example, the blast holes are stopped 4 m from breakthrough into the upper drift to maintain a sill pillar. Where possible, holes are drilled along the contact of the vein, and typical overbreak on the hanging-wall and footwall is approximately 0.3 m. San Dimas has regularly mined veins less than 1 m in width with success using this method.

#### **16.2.4. Ore and Waste Haulage**

Ore is hauled from the underground mine to the surface by means of 14 m<sup>3</sup> conventional trucks. Most truck haulage at San Dimas is carried out by contractors, however First Majestic has 12 trucks used for material transfers inside the mine.

To transfer material between underground levels, a system of reamed ore-passes is used.

Ore from the three mine areas, Central Block, West Block, and Sinaloa Graben, is hauled to the mill site via three main tunnels known as the San Luis, San Fernando, and San Francisco tunnels. The mine is setup with a series of ore passes that connect the stopes areas to the haulage levels for the material to flow and to be loaded and hauled to surface and the plant stockpiles. From there, the ROM material is hauled to the mill site and dumped in the stockpile patios or directly into the crusher. The ROM material from the Tayoltita mine sector is transported by rail to the mill.

Development waste is generally moved to stopes as backfill with a limited surplus hauled to surface and stored in the waste storage facility known as La Herradura.

### **16.3. Mine Services**

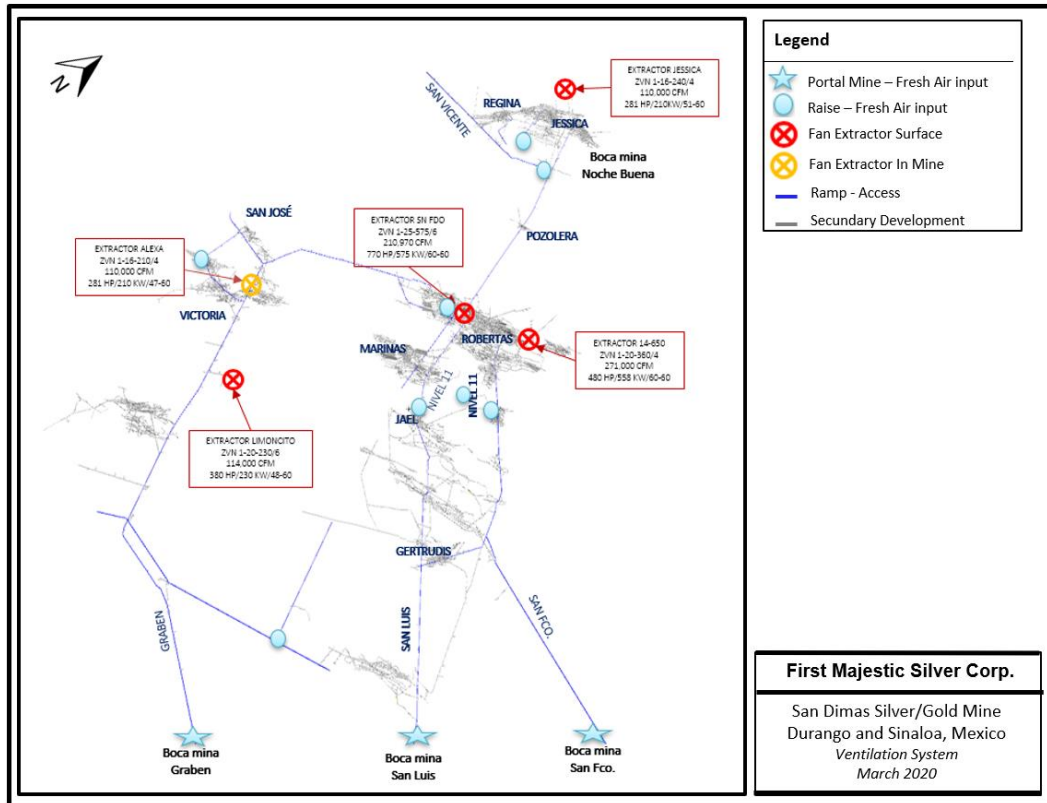
#### **16.3.1. Ventilation**

The San Dimas ventilation system consists of an exhaust air extraction system through its main fans located on surface. These fans generate the necessary pressure change for fresh air to enter through the portals and ventilation raises.

Figure 16-6 shows the ventilation connections among the different mine sectors in San Dimas, and the location for the fans, ventilation raises, and main portals.



Figure 16-6: Ventilation System



Note: Figure prepared by First Majestic, March 2020.

The system and the quality of the air is constantly monitored by First Majestic personnel. The software used to model the performance of the ventilation system and to design the required ventilation infrastructure is Ventsim.

The main ventilation system has a capacity of 998,000 cubic feet per minute (cfm) totalling 2,500 installed horsepower (HP). It is made up of seven fans in total, of which two are currently inactive. The total capacity is sufficient to provide the 714,000 cfm that are needed for personnel, equipment, and explosive gas dilution requirements. The fresh-air needs are shown in Table 16-4.

Table 16-4: Fresh Air Requirement

Area	Request			
	Personnel (cfm)	Equipment (cfm)	Explosives (cfm)	Total (cfm)
Alexa	2,597	75,863	5	78,465
San José	1,643	82,575	7	84,225
San Antonio	1,378	39,263	12	40,653
Victoria	1,802	90,818	11	92,631
Jessica	2,385	133,339	21	135,745
Jessica Upper	1,537	79,500	10	81,047
Regina	1,219	20,625	1	21,845
Gertrudis	1,643	64,050	13	65,706
Jael	1,325	54,938	5	56,268
Marina 1	1,219	30,413	3	31,635
Marina 2	1,325	24,413	5	25,743
Total	18,073	695,797	93	713,963

As part of the ventilation system, the mine uses secondary fans with capacities ranging from 30.5 to 100 hp. These secondary fans are used to bring fresh air over to the developments faces to provide fresh air and remove dust and fumes.

### 16.3.2. Backfill

The waste material from the main underground infrastructure development is used as backfill for longhole and cut-and-fill stopes. The rock size distribution is adequate to stabilize the cavities and no cement is needed. The back-filling process is carried out with the same equipment used for mucking and hauling.

### 16.3.3. Dewatering

Dewatering systems in San Dimas consist of main and auxiliary pumps in place at each of the mine areas. In the Central Block, main pumps of 100, 150, and 300 hp provide a combined capacity of approximately 1,500 gallons per minute (gpm); actual quantities pumped to surface are in the 400–500 gpm range.

In the Sinaloa Graben area, two 75 hp pumps (moving 455 m of head), one 100 hp pump provide over 100 gpm capacity, and ten 30 hp pumps provide 220 gpm capacity.

One 50 hp pump gives around 100 gpm capacity in the Tayoltita area.

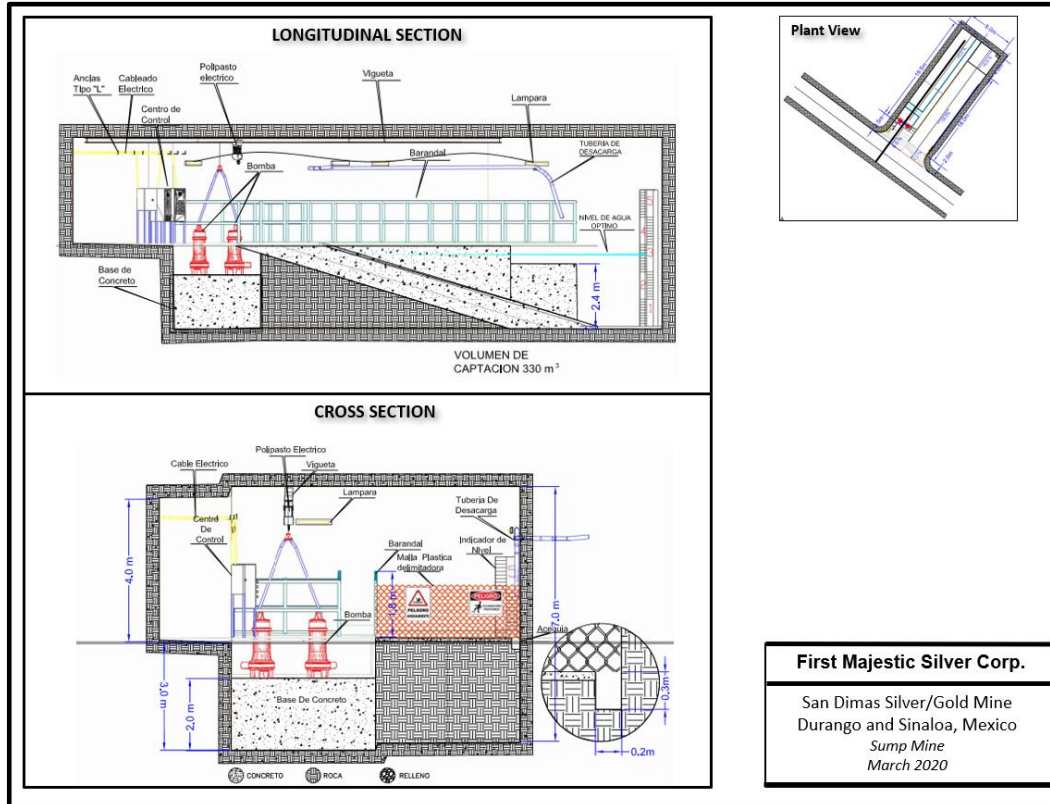
Santa Rita has 300 gpm capacity from a 150 hp pump.

Additional pumping requirements and necessary extensions to individual systems were identified and included in the sustaining capital budget.

#### 16.3.4. Water Supply

Water supply for diamond drilling and other mining activities in the Central Block is provided by two water pumps with a capacity of 125 gpm each. Fresh water is sourced from the Piaxtla River. When possible, the Central Block recycles underground drainage water. Figure 16-7 shows the method to clean up the water through a sump system. Most of the water in the Sinaloa Graben sector is recycled drainage water.

Figure 16-7: Pumps Station Typical Arrangement



Note: Figure prepared by First Majestic, March 2020.

Water for the mining operations is obtained from recycled underground water (Central Block), from wells, and from the Piaxtla River. First Majestic supplies water to the town of Tayoltita from an underground thermal spring at the Santa Rita mine.

### **16.3.5. Power Supply**

Electric power is provided by a combination of First Majestic's own power generated through its "Las Truchas" hydroelectric plant, leased diesel generators, and when needed from the national power grid operated by the Federal Energy Commission (CFE).

Section 18.4 describes in more detail the distribution and consumption of electrical power in San Dimas.

### **16.3.6. Compressed Air**

There are 15 stationary air compressors installed in the mine, distributed among the different operational sectors. The compressors are used for different kinds of services, including exploration drilling. The capacity of the stationary air compressors varies from 900 to 1,300 cfm and delivers a total installed capacity of 14,700 cfm.

There are another six mobile electric compressors dedicated to assisting the production drilling (longhole). The total capacity of the mobile compressors is 6,500 cfm.

### **16.3.7. Explosives**

The general magazine in the San Dimas mine is located on surface. It has the capacity to store the explosives requirements for all the production and development areas. It complies with all the current permits and authorizations which were granted by the Ministry of National Defense (SEDENA). The storage is correctly sectorized between high explosives, agents, and initiators, as requested by the authorities. The explosives are distributed to the working areas in safety trucks. There is an internal procedure implemented and monitored by the company to hand out the explosives.

## **16.4. Production and Scheduling**

### **16.4.1. Development Schedule**

Based on the current LOM plan, San Dimas will develop an average of 16 km of waste development and 4–5 km of ore development per year for the next four years. LOM total is 67 km of lateral waste development, 5 km of vertical development and 21 km of development in ore as shown in Table 16-5.

*Table 16-5: San Dimas Life-of-Mine Development Schedule*

Type	Units	Size (m)	2021	2022	2023	2024	2025	Total
Main Access Ramp	m	4.5x4.5	4,818	3,603	3,095	2,887	-	<b>14,403</b>
Main Level Access	m	3.5x3.5	4,638	5,980	2,998	2,544	-	<b>16,160</b>
Ancillary	m	3.5x3.5	2,789	1,852	1,423	1,329	-	<b>7,393</b>
Drifting for Exploration	m	4.5x4.5	6,575	5,100	5,640	4,740	-	<b>22,055</b>
Ventilation Raises	m	2.5 diam.	2,429	893	300	1,042	-	<b>4,664</b>
<b>Total Waste Development</b>	<b>m</b>		<b>21,249</b>	<b>17,429</b>	<b>13,456</b>	<b>12,542</b>	-	<b>64,675</b>
Ore Development	m	3.5x3.5	6,593	4,462	4,341	2,707	-	<b>18,104</b>
<b>Total Development</b>	<b>m</b>		<b>27,842</b>	<b>21,891</b>	<b>17,797</b>	<b>15,249</b>	-	<b>82,779</b>

#### 16.4.2. Production Schedule

The development and production schedules were developed in Deswik and Excel based on the San Dimas mine design standards and considering previous performance indicators for production and development rates. The schedule tracks and reports development metres and stope production for each domain on a monthly basis. These schedules are used as inputs to the economic model to review if positive cashflow is obtained.

The production schedule is based on the assumption that the cut-and-fill and longhole stopes will continue to perform as they have historically and that all mining will be from the Mineral Reserves.

Based on historic performance, it is expected that First Majestic will be mining some material that is not currently classified as Mineral Reserves, this material is commonly found when drifting towards exploration targets and mineralized structures are found. In addition, some extensions to the modelled veins are extracted during normal course of mining. This material is neither estimated nor considered in the production schedule incorporated into the economic model.

The production schedule for the LOM plan is presented in Table 16-6.

Table 16-6: San Dimas Life-of-Mine Production Schedule

Type	Units	2021	2022	2023	2024	2025	Total
ROM Production / Plant Feed	k t	846	943	1,005	1,031	171	<b>3,995</b>
Silver Grade	g/t Ag	320	290	376	366	109	<b>330</b>
Gold Grade	g/t Au	3.13	3.56	3.72	4.38	4.70	<b>3.77</b>
Silver-Equivalent Grade	g/t Ag-Eq	634	649	749	806	582	<b>708</b>
Contained Silver	M oz Ag	8.7	8.8	12.1	12.1	0.6	<b>42.4</b>
Contained Gold	k oz Au	85	108	120	145	26	<b>484</b>
Contained Silver-Equivalent	M oz Ag-Eq	17.2	19.7	24.2	26.7	3.2	<b>91.0</b>
Metallurgical Recovery Silver	%	94.0%	94.0%	94.0%	94.0%	94.0%	<b>94.0%</b>
Metallurgical Recovery Gold	%	96.5%	96.5%	96.5%	96.5%	96.5%	<b>96.5%</b>
Produced Silver	M oz Ag	8.2	8.3	11.4	11.4	0.6	<b>39.8</b>
Produced Gold	k oz Au	82	104	116	140	25	<b>467</b>
Produced Silver-Equivalent	M oz Ag-Eq	16.4	18.8	23.0	25.5	3.1	<b>86.7</b>

A total of 4.0 Mt of ore is considered to be mined and processed with grades of 330 g/t Ag and 3.77 g/t Au. Total metal produced is estimated at 42.4 Moz Ag and 484 koz Au.

#### 16.4.1. Equipment and Manpower

The workforce at the San Dimas mine is made up of company personnel (staff and unionized) and contractor personnel. Table 16-7 is a breakdown of personnel on site as of December 2020, which is considered sufficient for to the requirements of the LOM plan.

Table 16-7: Breakdown of Personnel as of December 2020

AREA	UNION	STAFF	CONTRACTOR	TOTAL
Administration		44	152	196
Geology and Exploration	32	68	65	165
Technical Services	13	23		36
Mine Operation	379	46	247	672
Mine Maintenance	151	51		202
Mine Services	56	37		93
Processing Plant	121	25		146
Plant Maintenance	72	17	45	134
Assays Lab		16		16
Supply Chain	29	18		47
Human Resources & Camp		87		87
Hydroelectric Plant	11	5		16
Airline		6		6
CSR		29		29
<b>TOTAL</b>	<b>864</b>	<b>472</b>	<b>509</b>	<b>1,845</b>

Table 16-8 is a summary of mine equipment on site as of December 2020, which is considered sufficient for to the requirements of the LOM plan.

Table 16-8: Equipment Summary as of December 2020

Equipment	Capacity	Number	Total
Jumbos	12 ft	2	16
	14 ft	2	
	16 ft	12	
Rock support drills	8 ft	7	7
Longhole drills	20 mt	8	8
LHDs	1.5 cu yd	8	34
	2 cu yd	4	
	3 cu yd	4	
	4 cu yd	7	
	6 cu yd	9	
Trucks	10 ton	1	12
	15 ton	11	
Raiseboring machines	6 ft	1	2
	7-8 ft	1	
Ancillary vehicles	-	32	32
Utility vehicles	-	51	51

## 17. RECOVERY METHODS

### 17.1. Introduction

The processing plant at the San Dimas has been successfully operating for several years and continuously achieved high levels of recoveries for silver and gold as described in Section 13. The process is based on cyanide tank leaching and Merrill-Crowe precipitation of ground plant-feed to produce silver–gold doré bars. The installed plant capacity is for 3,000 tpd. However, the current throughput levels are around 2,000 tpd. The average feed contains head grades in the order of 300 g/t Ag and 3.6 g/t Au.

The plant consists of the following operating units:

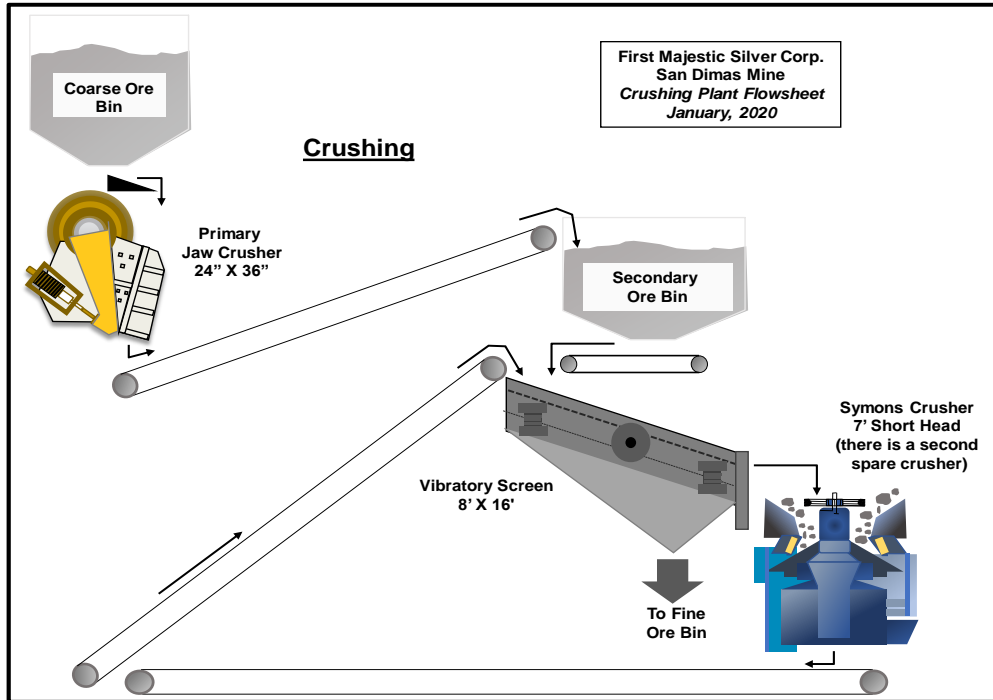
- Crushing – a two-stage crushing circuit with a primary jaw crusher followed by two cone crushers, one in operation and one in standby, in closed circuit with dry vibrating screens;
- Grinding – three ball mills, each paired with hydrocyclones in closed circuit working in parallel;
- Cyanide leaching – plant-feed is leached with cyanide in a series of agitated tanks;
- Counter current decantation (CCD) – two CCD thickeners working in series;
- Merrill-Crowe and precipitate handling plant;
- Filtering and tailings management facilities.

#### 17.1.1. Process Flowsheet

Figure 17-1 presents the comminution flowsheet and Figure 17-2 presents the overall flowsheet from the crushed ore bins to the production of doré bars.

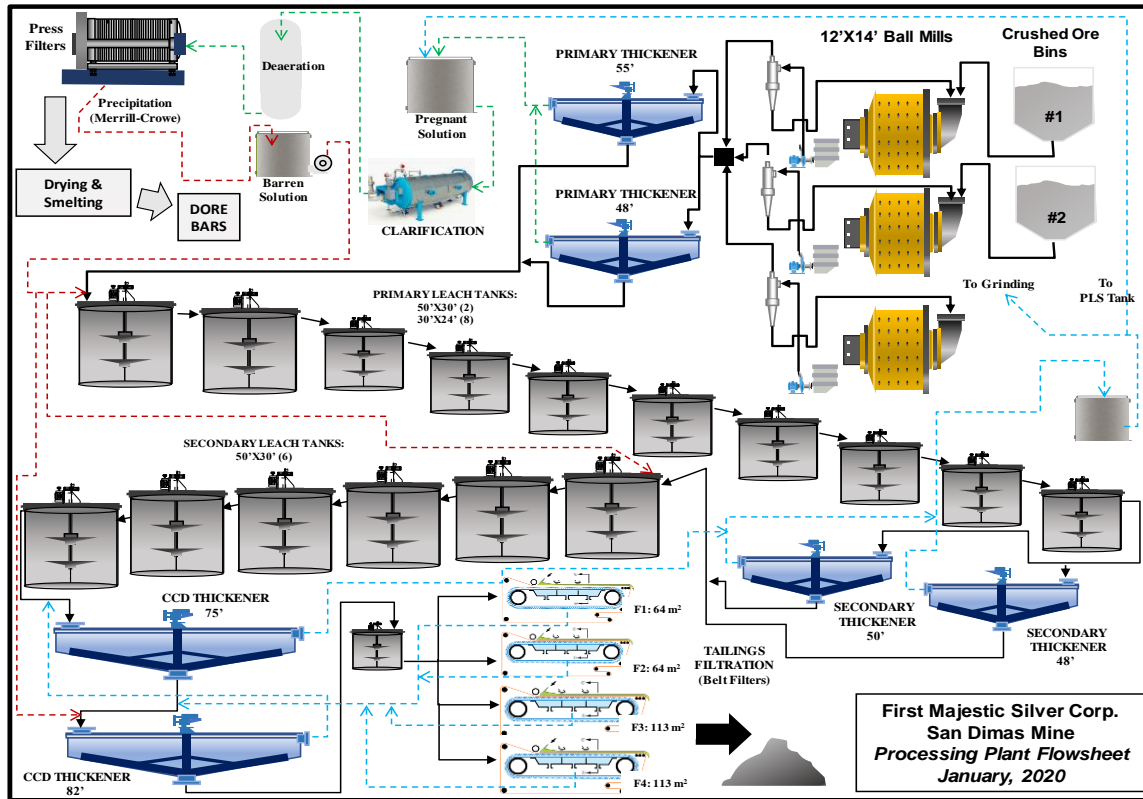


Figure 17-1: San Dimas Schematic Crushing Plant Flowsheet



Note: Figure prepared by First Majestic, January 2020.

Figure 17-2: San Dimas Processing Plant Flowsheet



Note: Figure prepared by First Majestic, January 2020.

## 17.2. Processing Plant Configuration

The San Dimas processing plant is built as a single train with the crushing area split from the remaining areas and connected through a belt conveyor to transfer the crushed product from the screening underflow to the fine-ore bins.

The remaining areas are the following: grinding circuits, leach tanks, CCD tanks, Merrill-Crowe circuit, smelting and tailings filtration and stacking.

### 17.2.1. Plant Feed

ROM material delivered from the mines is dumped into a steel-made coarse ore bin of 1,000 t capacity. The coarse ore bin is equipped with a grizzly static screen at the top. The grizzly has openings of 12" x 12"; oversize material is reduced in size using a hydraulic hammer.

### 17.2.2. Crushing

The crushing plant is divided into two parts: primary crushing and secondary crushing. The coarse-ore bin has a lower discharge chute that discharges into a vibrating feeder. The -12" + 4" material is fed into a 20" x 36" primary jaw crusher and reduced to a minus 3" to 3-½". This product is transported by a belt conveyor to a 450 t capacity secondary bin, which subsequently feeds an 8' x 16' double-deck vibrating screen.

The upper section has 1" x 1" openings, while the lower section has ½" x ½" openings. The underflow of the screen contains material from 90–95% minus 5/16" (8 mm), as well as an average of 70% minus ¼" (6.4 mm).

The upper discharge of the vibrating screen flows into one of two 7' Symons short head secondary crushers that reduces the size to minus 5/16". There are two secondary crushers, one working and the other on standby. The secondary crusher product becomes the circulating load which returns to the screen feed.

The lower discharge of the vibrating screen (underflow) is transported through a belt conveyor and a pipe conveyor and unloaded into two ore bins (number 3 & 4), which have a capacity of 1,300 t each.

The fine mineralized material is considered 90–95% minus 5/16" with average moisture content of 3–4%. The overall crushing plant capacity is 145 t/hr.

### 17.2.3. Grinding

The grinding section consists of three ball mills circuit. The three mills have the same dimensions: 12' diameter x 14' long equipped with 1,500 HP drives and D-20" gMax Krebs cyclones. Every ball mill is equipped with a cyclone classification system and a pair of pumps (one in operation the second on stand-by). The mills only use 3" diameter balls.

The crushed ore from bin #3 feeds ball mill #1, while bin #2 feeds ball mills #2 and #3.

The reagents added in the mills are as follows:

- Cyanide: grinding is carried out by adding semi-pregnant solution, which has a cyanide concentration of 1,000 ppm;
- Lime: added only in ball mills #1 and #2 in dry form. Lime consumption is 0.7 kg/t;
- Litharge (lead oxide) added in all three ball mills (35 g/t).

The average pulp densities that are handled at each point of the circuits are as follows:

- Ball mill discharge 1.85 kg/L (75% solids);

- Cyclone underflow 1.90 kg/L (77% solids);
- Cyclone overflow 1.20 kg/L (27% solids).

The final ground product is approximately 70% minus 200 mesh, equivalent to a P80 of 90 µm. The product of the three grinding circuits is pumped to the two primary thickeners (hi-capacity) with dimensions of 55' x 12' and 48' x 12'.

#### **17.2.4. Sampling**

Sampling is carried out in several points of the circuit, as follows:

- Automatic sample cutter:
  - Feed conveyor belts (three mills);
  - Final tailings at the CCD thickener discharge;
- Manual sampling:
  - Cyclones overflow;
  - Pregnant leach solution;
  - Barren solution;
  - Final tailings (belt filter cake);
  - Leach tanks (all);
  - Solution recovered in tailings deposits returned to the plant;
  - Semi-pregnant solution used for grinding.

Sample cuts occur every 15 minutes and a sample is composited for every eight-hour shift. The samples are prepared and assayed in the San Dimas Laboratory. With this information a daily metallurgical balance is calculated, this balance shows the gold and silver grades, and the metal contents of the material fed to the plant, including tailings as well as the pregnant and barren solutions.

#### **17.2.5. Cyanide Leaching circuit**

The following reagents and dosages are used for leaching:

- In order to maintain a concentration of 1,500–2,000 ppm, cyanide is added in briquettes in four points of addition: the 1<sup>st</sup>, 5<sup>th</sup>, 9<sup>th</sup>, and 12<sup>th</sup> tanks. Cyanide consumption is 1.5 kg/t;
- Lime is only added to ball mills #1 and #2 in dry form. Lime is not added in the leaching circuit.

The slurry that comes from the grinding cyclone overflows is divided into two flows, each one feeding one of two primary thickeners (Westpro hi-capacity) with the following diameters: #1 55' x 12' and #2 48' x 12'. In these thickeners, an anionic BASF flocculant is added at a concentration of 0.11% and an addition of 25 g/t.

The primary thickening has two objectives: the adjustment of the pulp density prior to the agitated leach tanks and the recovery of pregnant leach solution (PLS) in the overflow, which goes to the Merrill-Crowe stage.

The PLS obtained in the overflow (supernatant solution) is sent to a storage tank, which subsequently feeds three 12 m<sup>3</sup> clarifier auto-jet filters. Perlite is used as a filter aid.

Underflow density is 1.55 kg/L (58% solids). This slurry is diluted with barren solution until reaching a density of 1.40 kg/L (46% solids). The primary leaching consists of 10 leach tanks connected in series. In the first tank, the density is adjusted to 1.40 kg/L (46% solids). Tanks dimensions are as follows: leach tanks #1 and #2: 50' diameter x 30' high and leach tanks from #3 to #10: 30' diameter x 24' high. At this stage compressed air is added to reach 5 ppm of dissolved oxygen.

After the first leaching stage, the slurry goes into two secondary thickeners which are called intermediate thickeners: a Delkor tank with dimensions of 50' diameter x 12' high and a Westpro hi-capacity tank with dimensions of 48' diameter x 10' high. The overflow solution goes to the semi-pregnant solution tank. Most of this solution subsequently flows into the PLS tank, which feeds the auto-jet clarifiers. The balance of that solution is used in grinding. Meanwhile the underflow slurry is pumped to a second series of six 50' x 30' leach tanks. The six tanks are equipped with compressed air injection in order to get a concentration of dissolved oxygen like that of the first leach stage (~5 ppm). Slurry density in this stage is 1.4 kg/L (46% solids).

Table 17-1 shows the retention time in both stages, depending on the throughput.

Table 17-1: Leach Time Retention Time in the San Dimas Plant

t/d	Leach Time (hours)		
	Stage 1	Stage 2	Total
3000	31	47	78
2000	46	70	116

#### 17.2.6. Counter Current Decantation System

Slurry from the last agitated tank feeds the CCD thickeners. There are two thickener tanks working in series, a Delkor and an Outotec with dimensions of 75' diameter x 12' high and 82' diameter x 12' high, respectively. Underflow from tank #2 feeds a final tailings storage tank which feeds the slurry to three Putzmeister-HPS1500 positive displacement pumps, of which two are operating and one is on standby.

The overflow from the second thickener goes to the first thickener feed, mixing with the slurry from leach tank #16. The second thickener receives the barren solution that comes from the filter-presses, as part of the Merrill-Crowe circuit, as well as the solution from the tailings filtration plant, and thus counter-current washing is completed.

The overflow solution from the first thickener goes to the semi-pregnant solution receiver tank. There it is mixed with the overflow solution from the intermediate thickener tanks.

#### **17.2.7. Merrill Crowe and Precipitate Handling**

Pregnant solution is sent to a storage tank, with a turbidity rating of ~80 nephelometric turbidity units (NTU), then filtered and clarified through three auto-jet pressure clarifiers. The product from the auto-jet filters, with turbidity of ~15 NTU, is then pumped through a tower comprising two de-aerator cylinders in order to remove dissolved oxygen, which goes from 5 ppm to less than 1 ppm of oxygen.

After de-aeration, pregnant solution is pumped to five 1,500 mm press filters, equipped with 62 plates each. Before being pumped, zinc dust is added to the solution to carry out a precipitation reaction. Zinc consumption is of 1.4 kg per kg of doré. The hourly production of pregnant solution is about 500 m<sup>3</sup> with a grade of ~38 ppm Ag and ~0.7 ppm Au.

The precipitate is dried at 225°C in a Holo-Flite screw dryer with 600 kg/hr nominal capacity, and then smelted in a 1,000 kg induction furnace, producing 32 kg doré bars with a purity range of 96–97%.

The flux mixture used in smelting is 7% borax, 7% sodium nitrate and 0.7% soda ash. The furnace uses silicon carbide crucibles and works at 1,100°C.

When silver grade in the slag is higher than 20 kg/t, the slag is crushed and ground in a hammer-mill to later be concentrated in a Knelson concentrator and a shaking table. The final gravity concentrate is re-smelted. When the silver grade in the slag is less than 20 kg/t, the slag is fed to the mill to be reprocessed in the leach plant.

#### **17.2.8. Tailings Management**

The three Putzmeister positive displacement pumps are used to pump final tailings from the plant to the tailings filtering plant through a 6" pipe with a length of approximately 2 km and to an elevation of 125 m above the base of the pumps. The tailings pulp contains 56% of solids.

At the filter plant, the tailings are fed to four horizontal belt filters, two sized at 64m<sup>2</sup> each with a capacity to filter ~855 tpd and two additional filters sized at 113 m<sup>2</sup> each with a capacity to filter ~1,350 tpd. The filtered cake, which contains 25% moisture, is deposited and compacted on the

stabilization berms of the deposit buttress. The filtered solution is returned to the processing plant into thickener #2 of the CCD system.

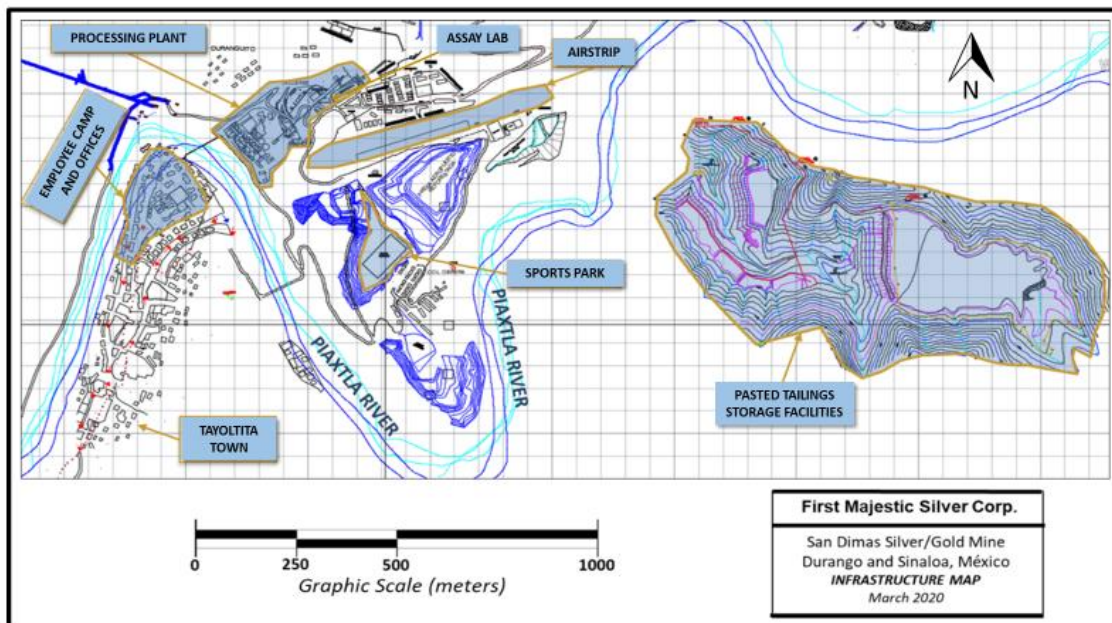
## 18. INFRASTRUCTURE

The infrastructure in San Dimas is fully developed to support current mining and mineral processing activities. Some of the mine facilities are located in the town of Tayoltita.

### 18.1. Local Infrastructure

The main infrastructure consists of access roads, the San Dimas mines, which are divided into five mining areas, crushing and processing facilities known as the Tayoltita mill, the Tayoltita/Cupias tailings facilities, an assay laboratory, offices and staff camp, the Las Truchas hydro-electric generation facilities, a diesel-powered emergency generation plant, a local airport and infrastructure supporting the inhabitants of the Tayoltita townsite including a local clinic, schools and sport facilities. The main administrative offices and employee houses are located in Tayoltita, along the southern bank of the Piaxtla River, while the warehouses, assay laboratory, core shack and other facilities are located on the north bank. Figure 18-1 shows the local infrastructure.

Figure 18-1: San Dimas Infrastructure Map



Note: Figure prepared by First Majestic, March 2020.

### 18.2. Transportation and Logistics

Most of the personnel and light supplies for the San Dimas mine arrive on First Majestic's regular flights from Mazatlán and Durango. Heavy equipment and main supplies are brought by road from Durango and Mazatlán. Access details are described in Section 5.1.



### **18.3. Waste Rock Storage Facilities**

The La Herradura waste rock storage facility (WRSF) is located approximately 1 km southeast of Tayoltita and has the capacity to store 3 Mt of waste rock and has an expected service life of 16 years which is sufficient for the waste material produced in the LOM plan presented in this Report.

This facility holds waste rock generated from underground development, which is transported to the surface, placed and spread over the crest of the WRSF. The embankment construction follows the ascending construction with terracing method. Since the underground mining method used is primarily cut-and-fill, only a limited amount of waste is stored on the surface and may eventually be a source of backfill for stopes mined at depth.

### **18.4. Tailings Storage Facilities**

The Cupias tailings storage facility (Cupias TSF) has a capacity of approximately 8.3 Mm<sup>3</sup> of pasted filtered tailings, estimated at 12 years of additional storage, sufficient to support the LOM plan presented in this Report. The Cupias TSF has two main structures, the West Dam or Main Dam and the Eastern Sedimentation Berm. The Cupias TSF was originally operated as a conventional slurry tailings facility with an embankment raised using upstream construction methodology. In 2007, a tailings filtration plant was commissioned, and the facility was converted into a filtered tailings facility. Since then, filtered tailings have been placed and compacted in the valley downstream of the original tailings dam and act as a buttress to the original TSF.

The Cupias TSF facility includes a downstream shell toe berm, an underdrain system, surface water diversion channels, and a facility-specific process/storm water pond.

The downstream shell toe berm was constructed as homogeneous rockfill structure using the native materials available in the basin upstream of the former slurry tailings dam. The rockfill toe berm, downstream of the starter berm, acts as a foundation for the placement area and allows the crest of the tailings shell to reach a sufficiently high elevation to retain the final general placement area.

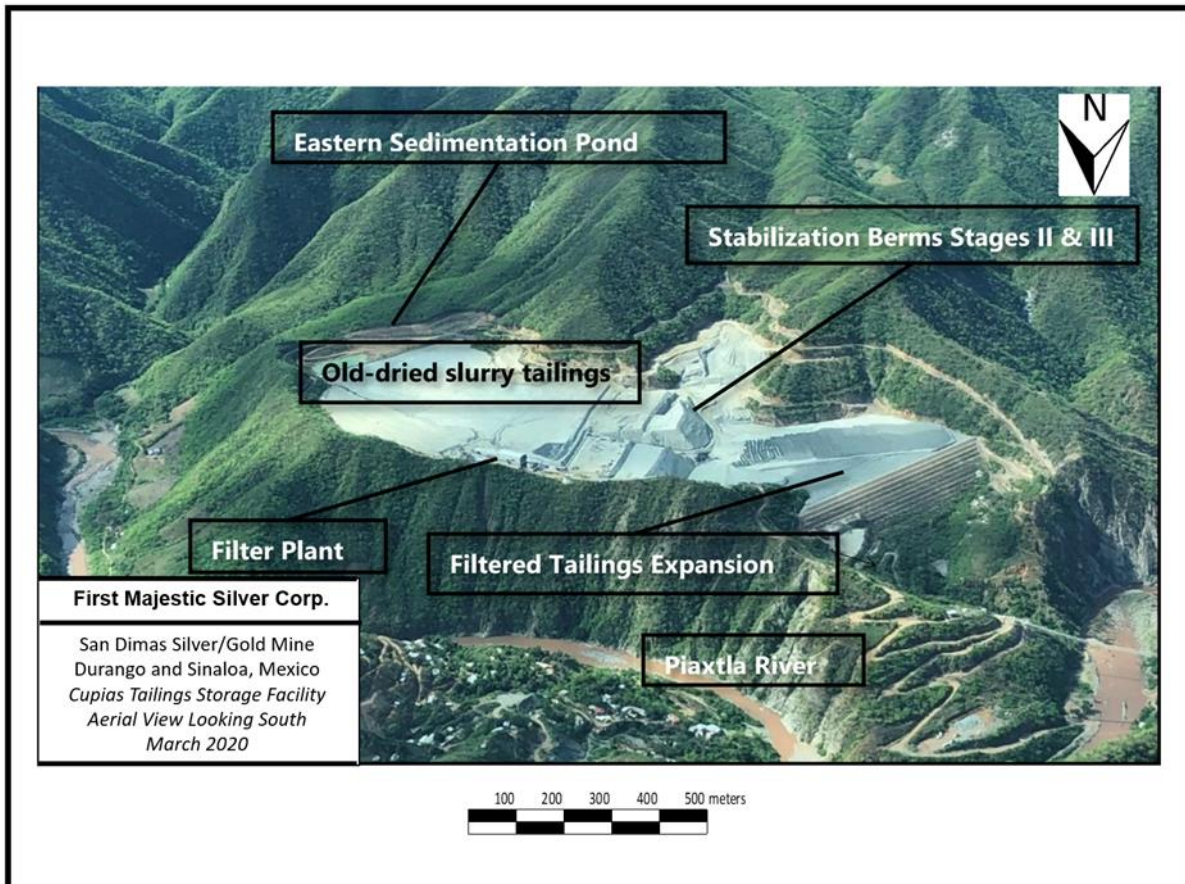
The surface water diversion channels include the eastern and western diversion channels, which start near the center line of the original tailings dam. At this location, the eastern and western channels divert the flow of rainwater around the Cupias TSF.

The eastern diversion channel routes the water east along the southern boundary of the Cupias TSF past the eastern sedimentation berm and eastern sedimentation pond into a natural channel located south of the sedimentation pond. The natural channel downstream of the eastern diversion channel, is very steep and it discharges water to the Piaxtla River.

The western diversion channel routes water west along the southern boundary of the Cupias TSF past the downstream toe of the tailings dam and ends in a steep drop located 500 m downstream

of the main tailings dam. Water from the western diversion channel also discharges to the Piaxtla River. Figure 18-2 shows the Cupias TSF from an aerial view.

Figure 18-2: Tailings Storage Facility – Overall Plan Site



Note: Figure prepared by First Majestic, March 2020, adapted from Wood Environment & Infrastructure Solutions, Inc., September 2019.

### 18.5. Camps and Accommodation

San Dimas' infrastructure includes three camps for First Majestic's staff, security personnel and contractors with an approximate capacity of 500 beds. In addition, there are multiple hotels available in the town of Tayoltita that are commonly used by suppliers and contractors.

### 18.6. Power and Electrical

Electrical power is provided by a combination of First Majestic's own Las Truchas hydroelectric generation system and the CFE supply system. First Majestic operates the hydroelectric generation plant, which is interconnected with the CFE power grid, and a series of back-up diesel generators

for emergencies. Since 2015, Las Truchas has been equipped with two generators with a capacity of more than 60 GWh hours per year. Figure 18-3 shows an aerial view of the Las Truchas dam and Figure 18-4 show several images of the Las Truchas Hydroelectric generation plant.

*Figure 18-3: Las Truchas Dam - Aerial View*



*Note: Figure prepared by First Majestic, February 2021.*

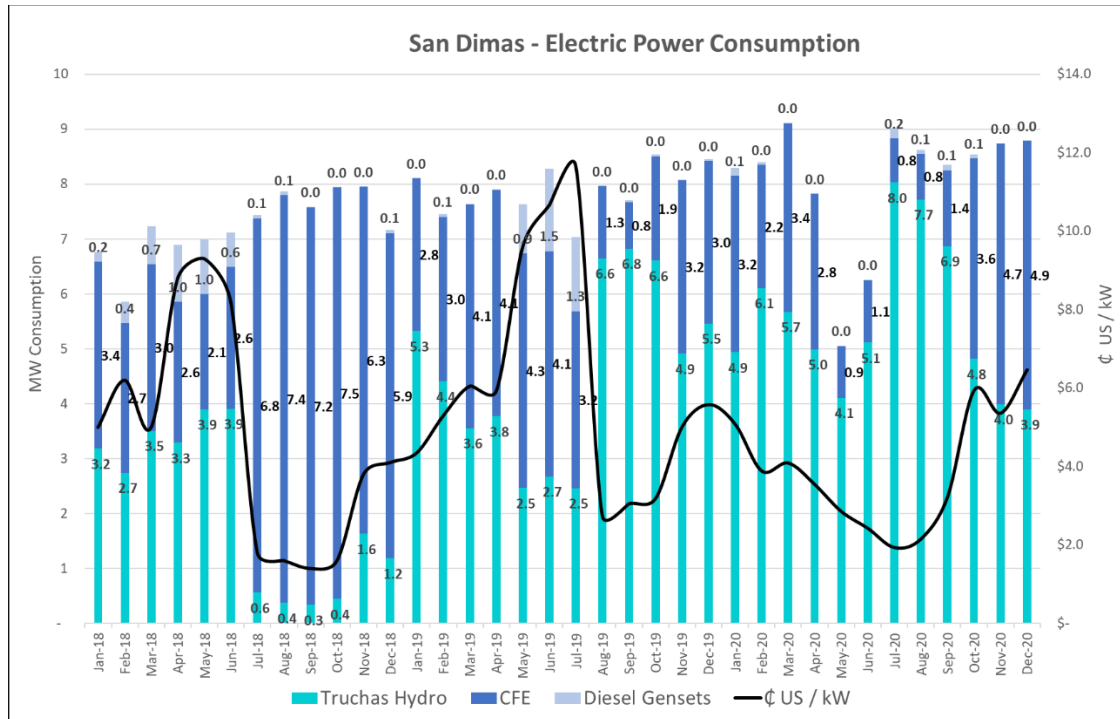
*Figure 18-4: Las Truchas Hydroelectric Plant*



*Note: Figure prepared by First Majestic, March 2020.*

On average, First Majestic’s hydroelectrical power plant (Figure 18-5) has provided 52% of the yearly requirement of the San Dimas mine in the last three years.

Figure 18-5: San Dimas Energy Consumption



Note: Figure prepared by First Majestic, February 2021.

During the dry season, the San Dimas operations are mainly supplied by CFE with approximately 50% of the demand, the remaining is supplied by the hydroelectrical generation plant (34%) and by diesel generation (16%).

In addition, First Majestic is assessing the feasibility of constructing a second water storage dam with a capacity of 18 Mm<sup>3</sup>, which would feed the Las Truchas dam and increase its power generation capacity to close to 100% of the required demand.

### 18.7. Communications

The communication system is interconnected with First Majestic’s data and voice network facilitating communication with the Durango City office and with the corporate offices in Vancouver. This system is based on an antennas network that provides internet services and digital telephone.

Underground mine communications use a leaky feeder very-high-frequency system, which includes a total of 55 km of cable installed along tunnels, main ramps, underground refugees, control points, etc. This system uses a coaxial cable that works as if it were an antenna installed along the tunnels.

Radioelectric amplifiers located every 400 m allow the signal to reach the radio receivers of the different users in the mine.

#### **18.8. Water Supply**

The source of water for industrial use comes from mine dewatering stations but mainly from the recycled filtered-tailings water after it has been treated. The balance is sourced from the Santa Rita well which fills from the Piaxtla River. Currently, about 80% of the water required for processing activities is being treated and recycled.

## 19. MARKET CONSIDERATION AND CONTRACTS

The end product from the San Dimas mine comes in the form of silver–gold doré bars. The physical silver–gold doré bars contain approximately 96% silver and 1.3% gold in weight, plus other impurities. Doré bars are delivered to refineries where they are refined to commercially marketable 99.9% pure silver and gold bars.

### 19.1. Market Considerations

Silver and gold are considered global and liquid commodities. Silver and gold are predominantly traded on the London Bullion Market Association (LBMA) and COMEX in New York. The LBMA is the global hub of over-the-counter trading in silver and gold and is these metals’ main physical market. ICE Benchmark Administration (IBA) provides the auction platform, methodology, as well as the overall administration and governance for the LBMA. Silver and gold are quoted in US dollars per troy ounce.

### 19.2. Commodity Price Guidance

First Majestic has established a standard procedure to determine the medium and long-term silver and gold metal price guidance to be used for Mineral Resource and Mineral Reserves estimates. This procedure considers the consensus of future metal price forecasts from different sources including major Canadian and global banks, projections from financial analysts specializing in the mining and metals industry, and metal price forecasts used by other peer mining companies in public disclosures.

Based on the above information, a recommendation as to acceptable consensus pricing is put forward by First Majestic’s QP to the company executives, and a decision is made to set the metal price guidance for Mineral Resource and Mineral Reserve estimates. This guidance is updated at least annually, or on an as-required basis.

Metal prices used for the June 2020 Mineral Resource and Mineral Reserve estimates are listed in Table 19-1.

Table 19-1: Metal Prices Used for the June 2020 Mineral Resource and Mineral Reserve Estimates

Metal Price	Units	Resource Estimation	Reserves Estimation and Mine Plan
Silver	\$/oz Ag	18.50	17.50
Gold	\$/oz Au	1,750	1,700

Foreign exchange rates used in the cost estimates and in the LOM model were USD:CAD 1.30 and USD:MXN 20.00.

### **19.3. Product and Sales Contracts**

Silver and gold produced at the San Dimas mine is sold by First Majestic using a small number of international metal brokers who act as intermediaries between First Majestic and the LBMA. First Majestic delivers its production to a number of refineries, and once they have refined the silver and gold to commercial grade, the refineries then transfer the silver and gold to the physical market for consumption. First Majestic transfers risk at the time it delivers its doré from the processing plant to armoured truck services under contract to the refineries. First Majestic normally receives up to 97% of the value of its sales of doré on delivery to the refinery, depending on the timing of sales with the metals broker, with final settlements upon outturn of the refined metals, less processing costs.

Contracts with refining companies as well as metals brokers and traders are tendered periodically and re-negotiated as required. First Majestic continually reviews its cost structures and relationships with refining companies and metal traders to maintain the most competitive pricing possible.

### **19.4. Streaming Agreement**

First Majestic has a purchase agreement with Wheaton Precious Metals. Wheaton Precious Metals invested \$220 million as an advance deposit in May 2018 which entitles Wheaton Precious Metals to receive 25% of the gold equivalent production from the San Dimas mine (based on a fixed exchange ratio of 70 silver ounces to 1 gold ounce) in exchange for ongoing payments equal to the lesser of \$606 (subject to a 1% annual inflation adjustment) and the prevailing market price, for each gold equivalent ounce delivered under the agreement. The exchange ratio includes a provision to adjust the gold to silver ratio if the average gold to silver ratio moves above or below 90:1 or 50:1, respectively, for a period of six months.

### **19.5. Deleterious Elements**

The San Dimas mine's silver-gold doré bars are very pure, based on past performance and current production projections, and no relevant impurities have been recorded. Considering the characteristics of the mineralized material and the processing practice, it is reasonable to expect that the San Dimas mine's silver-gold doré bars will not carry impurities over the LOM production planned that could be materially penalized at the refineries.

### **19.6. Supply and Services Contracts**

Contracts and agreements are currently in place for the supply of goods and services necessary for the mining operations. These include, but are not limited to, contracts for diamond drilling services, mine development in waste, waste and ore haulage, maintenance service for the mining equipment, supply of diesel for equipment operation, supply of explosives, supply of power with CFE, supply of

process reagents including sodium cyanide, and transportation and logistics services including camp maintenance, catering and personnel transportation.

#### **19.7. Comments on Section 19**

The doré produced by the mine is readily marketable.

Metal prices are set corporately for Mineral Resource and Mineral Reserve estimation. The QP has reviewed the consensus future metal price forecasts and the internal analysis results and considers them reasonable to support the metal price assumptions used in this Report.

In the opinion of the QP, the terms, rates and charges set in the relevant service contracts and supply agreements for the mining operation are within industry practice in Mexico.

The QP has reviewed commodity pricing assumptions, marketing assumptions and the current major contract areas, and considers the information acceptable for use in estimating Mineral Reserves and in the economic analysis that supports the Mineral Reserves.



## **20. ENVIRONMENTAL STUDIES, PERMITTING, AND SOCIAL OR COMMUNITY IMPACT**

### **20.1. General**

First Majestic's operating practices are governed by the principles set out in its Health and Safety Policy, Environment and Code of Business Conduct and Ethics. First Majestic's senior management team have committed to the sustainability reporting process with the first stand-alone 2019 sustainability report published in August 2020 and will continue to report through First Majestic's Annual Report and website.

The San Dimas mine has implemented the First Majestic Environmental Management System (EMS), which supports the implementation of environmental policy and is applied to standardize tasks and strengthen a culture focused on minimizing environmental impacts. The EMS is based on the requirements of the international standard ISO 14001:2015 and the requirements to obtain the Certificate of Clean Industry, issued by the Mexican environmental authorities, the Ministry of Environment and Natural Resources (SEMARNAT), through the Federal Attorney for Environmental Protection in Mexico (PROFEPA). The EMS includes an annual compliance program to review all environmental obligations. Additionally, the Company has implemented an online risk management platform that contains all the environmental obligations or conditions that must best fulfilled under the environmental permits.

In May 2018, the San Dimas mine received the Clean Industry Certification for improvements to its environmental management practices at the mine. The voluntary program is coordinated by the Mexican environmental authority and reviews regulatory compliance together with the Company's best practices and continuous improvement in environmental performance. In 2019, the San Dimas mine completed all requirements for its certification renewal and is awaiting an announcement by PROFEPA.

In February 2020, for the ninth consecutive year, the San Dimas mine was awarded the Socially Responsible Company (ESR) designation by the Mexican Center for Philanthropy (CEMEFI). The ESR award is given to companies operating in Mexico that are committed to sustainable economic, social, and environmental operations in all areas of corporate life, including business ethics, involvement with the community, and preservation of the environment.

### **20.2. Environmental Studies, Permits and Issues**

Environmental and social studies are routinely performed in San Dimas to characterize existing conditions and to support the preparation of Risk Assessments and Accident Prevention Programs for the operation and are documented as part of the EMS.

### 20.2.1. Surface Hydrology

Table 20-1 summarizes relevant surface hydrological studies completed.

Table 20-1: Summary of Surface Hydrology Studies

Study Name	Date	Company	Study Scope	Main Results
Water Management Plan Detail Design	Feb 2016	Amec Foster Wheeler Environment & Infrastructure, Inc.	Technical review and a risk assessment of the Cupías TSF	Recommendations for updating the hydrological design inputs and the water management design

### 20.2.2. Surface Water Geochemistry

Surface water geochemistry studies are carried out regularly with samples sent to an independent laboratory as required by the Mexican regulation. Results of these studies have shown that the monitoring parameters are in compliance (Table 20-2).

Table 20-2: Summary of Surface Water Studies

Study Name	Date	Company	Study Scope	Main Results
Surface water quality	Annual	ALS	Physical, chemical, and biological parameters.	Results are below the maximum limits permitted by the Mexican regulation: NOM-001-SEMARNAT-1994.

### 20.2.3. Hydrogeology

Mining operations in San Dimas are located in the mountain range north and south of the Piaxtla River and are currently operating above the water table. No hydrological studies have been conducted in the area to date.

### 20.2.4. Soil

Soil studies are in progress. Results of these studies will be incorporated into the updated site remediation/reclamation plan.

Table 20-3: Summary of Soil Sampling Studies

Study Name	Date	Company	Study Scope	Main Results
Tailings and Waste Rock Characterization	Annual	ALS Lab	Soil Sampling	The results are within the maximum limits permitted by the Mexican regulation: NOM-141-SEMARNAT-2003 and NOM-157-SEMARNAT-2009.

### 20.2.5. Air Quality

Air quality study results are provided in Table 20-4.

Table 20-4: Air Quality Studies

Study Name	Frequency	Company	Study Scope	Main Results
Perimeter particle study	Annual	GAMATEK	Particle perimeter monitoring: around process plant and tailings dam.	Results are within the maximum limits permitted by the Mexican regulation: NOM-025-SSA1-1993.
Emissions from fixed sources	Annual	GAMATEK	Monitoring of fixed sources (smelter, crusher and laboratory) to determine total particles and combustion gases	No impacts on operations or mine plans were identified.

### 20.2.6. Noise

Table 20-5 summarizes the noise impact studies completed to date.

Table 20-5: Noise Impact Studies

Study Name	Date	Company	Study Scope	Main Results
Perimeter noise study	Annual	GAMATEK	Perimeter noise monitoring: access control gate, several access points in the town of Tayoltita, access road to the tailings deposit, tailings dams 1 and 2, process plant, and main access road.	The results are within the maximum limits permitted by the Mexican regulation: NOM-081-SEMARNAT-1994.

### 20.2.7. Flora and Fauna

General details of the completed flora and fauna surveys are provided in Table 20-6.

Table 20-6: Flora and Fauna Studies

Study Name	Date	Company	Study Scope	Main Results
Aquatic life inventory	Annual (since 2012)	Consultoría y Tecnología Ambiental	Compile an inventory of aquatic life through Piaxtla river.	No damage to aquatic species has been identified as a consequence of the operation of the mine.

### 20.2.8. Social and Cultural Baseline Studies

General details of the social survey carried out in Tayoltita are provided in Table 20-7.

Table 20-7: Summary of Social Studies

Study Name	Date	Company	Study Scope	Main Results
Community Diagnostics Study	July 2015	Almeda Consultores	Assess the economic, social, and cultural conditions of the inhabitants of the town of Tayoltita.	Provided a baseline of areas of interest or concerns of the community related to the activities and support that the company could offer to the community.

### 20.2.9. Historical and Cultural Aspects

No historical or cultural studies have recently been conducted in the area.

### 20.3. Tailings Handling and Disposal

Currently, tailings handling and disposal is undertaken in accordance with the applicable Mexican regulations. Annual tailings characterization studies indicate that the tailings to date are not potentially acid generating (PAG), nor will they result in metals leaching (ML).

Stability analyses are performed periodically by First Majestic staff and these are periodically reviewed by an independent consulting firm. An agreement is in place for the independent consulting firm to conduct regular twice-yearly site visits, one site visit during the dry season and the second during the rainy season. The objective of the visits is to assess the stability conditions and inspect the implementation of the standard operating procedures. A Dam Safety Inspection report is prepared by the consulting firm for First Majestic that includes recommendations for improvement where noted.

The last inspection performed was in July 2019, from which three items were identified that required immediate attention:

- a) Complete the Cupías TSF surface water management system construction, including channel lining, Eastern Sedimentation Berm and Pond expansions, spillway construction, etc.
- b) Eliminate the uncontrolled discharge of solution into the old Cupías impoundment.
- c) Remove the “barrier” berms constructed on the old dried tailings impoundment and regrade the surface at 1.5–2% toward the Eastern Sedimentation Pond (downward slope).

At the Report effective date, activities a) and c) were in progress with estimated completion for the fourth quarter of 2021, and item b) had been addressed and solved.

No independent inspections were performed in 2020 by the independent consulting firm due to travel disruptions caused by the world-wide pandemic. First Majestic staff continues to monitor the facility, and reports observations to the independent consulting firm for feedback and guidance.

#### 20.4. Waste Material Handling and Disposal

Currently in San Dimas there are 17 WRSFs 16 of which are not currently operative. These include Noche Buena, La Verdosa 2 and 3, Castellana, As de Oros, San Francisco, Santa María, Promontorio 1, 2 and 3, San Luis, Graben, Queleles and Santa Rita 1-4, 5 and 6). The operating facility is the La Herradura facility. Not all of the WRSFs are covered by authorizations or Environmental Impact Assessments (EIAs), because some of the facilities pre-date First Majestic’s control of the underlying concessions and surface lands or were constructed by previous operators. Inventory and permitting-related initiatives implemented by First Majestic will be incorporated into the overall remediation/reclamation plan currently being compiled.

Annual waste rock characterization studies are undertaken to determine PAG and ML potential, as shown in Table 20-8.

Table 20-8: Tailings and Waste Rock Studies

Study Name	Date	Company	Study Scope	Main Results
Tailings and Waste Rock Characterization	Annual	ALS Lab	Potential acid generation and Metal leaching.	The results are within the maximum limits permitted by the Mexican regulation: NOM-141-SEMARNAT-2003 and NOM-157-SEMARNAT-2009.

#### 20.5. Mine Effluent Management

The San Dimas operation generates mine-dewatering effluents from some of the mines, which is measured, recorded, and notified to the National Water Commission (CONAGUA) every quarter and the corresponding water usage rates are paid. Registration for the use and transfer of surplus groundwater with the CONAGUA is still to be obtained.

#### 20.6. Process Water Management

All process water is recycled in a closed circuit, so there are no process water discharges. The make-up water required in the processing plant is obtained from several sources, all of them through authorization from CONAGUA. Water consumption is measured, recorded, and notified to CONAGUA quarterly and the corresponding water usage rates are paid.

#### 20.7. Hazardous Waste Management

The management of hazardous waste within the San Dimas operations is carried out in accordance with the provisions of the applicable Mexican official standards. First Majestic is registered with SEMARNAT for waste management and waste handling. The San Dimas mine has adequate handling, labeling and temporary storage protocols in place to meet the Mexican regulations requirements.

First Majestic contracts companies authorized by SEMARNAT for waste transportation and final disposal.

## 20.8. Monitoring

Table 20-9 summarizes monitoring activities currently undertaken.

Table 20-9: Environmental Monitoring Activities

Element	Frequency	Monitoring Activities
Water	Quarterly	Monitoring of surface, underground, drinking, contact and wastewater, by a certified independent laboratory.
Air	Annual	Monitoring of fixed emissions sources (smelter, crusher and laboratory) to determine total particles and combustion gases emissions. Perimeter particle monitoring - around the process plant and tailings dam area
Waste rock and tailings	Annual	Characterization of tailings and waste rock in terms of PAG and ML. Evidence from periodic monitoring shows that the waste rock and tailings is not PAG and will not cause ML.
Perimeter noise	Annual	Perimeter noise monitoring, around the process plant and tailings deposit area.

The following is a description of the principal obligations relating to environmental matters for San Dimas.

- Yearly operation licence (COA): Report presented annually containing environmental information on the operation of the mine, including water, air, waste discharge, materials, and production;
- Dangerous waste declaration: Official document that controls the operation of dangerous waste from the mining installation to the site where it will be disposed (final disposal site);
- Quarterly payment for water use;
- Quarterly payment for water disposal;
- Bimonthly payment for federal occupation; and
- Monitoring plan for water, air, waste, and noise: These are carried out at different times in accordance with regulatory requirements.

## **20.9. Permits**

The main environmental permit is the environmental license “Licencia Ambiental Unica” (LAU) under which the mine operates its industrial facilities in accordance with the Mexican environmental protection laws administered by SEMARNAT as the agency in charge of environment and natural resources.

The most recent update to the main environmental permit was approved in July 2019.

Other significant permits are those related to water, one for water supply rights, and another for water discharge rights.

San Dimas is an operating mine, as such it holds all major environmental permits and licenses required by the Mexican authorities to carry out mineral extracting activities in the mining complex. Table 20-10 contains a list of the major permits issued to San Dimas. Permits that are in process are listed in Table 20-11.

Table 20-10: Major Permits Issued

Permit	Date Granted	Document No.	Status	Expiration Date
Environmental License (LAU)	12-07-2019	LAU-10/042-2011	Current	Unlimited
Water Rights Concession Colony Central	14-03-2011	03DGO101536/10EADL11	Current	30-11-2044
Water Rights Concession Mala Noche 2011	14-03-2011	03DGO102180/11IDDL11	Current	14-03-2035
Water Rights Concession Truchas 2011	14-03-2011	03DGO101534/10JADL11	Current	23-07-2026
Federal Land Use Concession Puente Madera	16-03-2011	03DGO101220/10FADL11	Current	22-12-2019
Federal Land Use Concession Puente San Luis 2019	08-08-2019	813175	Current	08-08-2049
Federal Land Use Concession Servicios 1	16-03-2011	03DGO117421/10EADL11	Current	08-02-2050
Federal Land Use Concession Servicios 2	16-03-2011	03DGO117422/10EADL11	Current	08-02-2050
Federal Land Use Concession La Herradura Waste Dump	12-06-2012	03DGO150098/10EADA12	Current	12-06-2042
Federal Land Use Concession Truchas 2011	16-03-2011	03DGO118864/10JADL11	Current	14-05-2030
Environmental Impact Assessment Perimeter Fence	15-05-2018	SG/130.2.1.1/0896/18	Current	Unlimited
Environmental Impact Assessment San Luis Bridge	15-05-2018	SG/130.2.1.1/0897/18	Current	Unlimited
Environmental Impact Assessment Exploration Mala Noche II	16-07-2020	SG/130.2.1.1/0820/20	Current	16-07-2025
Environmental Impact Assessment Piactla River Aggregates	04-10-2019	SG/130.2.1.1/2406/19	Current	04-10-2040
Environmental Impact Assessment La Herradura Waste Dump	10-05-2012	SG/130.2.1.1/001099/12	Current	10-11-2031
Water Discharge - San Dimas	12-07-2011	03DGO101668/10EADL11	Current	08-05-2045
Mining Hazardous Materials Handling Plan - San Dimas 2018	23-08-2018	10-PPM-I-0183-2018	Current	23-08-2035
Hazardous Materials Handling Plan - San Dimas 2016	08-02-2016	10-PMG-I-1931-2016	Current	Unlimited
Accident Prevention Plan (PPA) - San Dimas 2016	10-03-2016	DGGIMAR.710/002404	Current	Unlimited
Register Environmental Handling Unit (UMA) - Las Truchas 2011	28-10-2011	SEMARNAT-UMA-EX-0374- DGO	Current	Unlimited



Table 20-11: Permits in Process

Permit	Date Granted	Document No.	Status	Expiration Date
Clean Industry Certificate 2016	21-10-2015	PFPA/1/1S.3/0974/2015	Update in progress (% completion)	04-05-2018
Water Rights Concession - Puente Madera	16-03-2011	03DGO101220/10FADL11	Update in progress	22-12-2019
Special Hazardous Materials Handling Plan - San Dimas 2020	26-10-2020	SRNyMA.SMA.0971.2020	Update in progress	31-12-2020

## 20.10. Closure Plan

The closure plan is intended to comply with policies and terms included in the obligations denominated as Asset Retirement Obligations (ARO), in particular those related to the works and activities to be carried out in closure preparation and post-closure. The San Dimas closure plan includes the following concepts: post-operation activities, closure of facilities, reclamation of certain areas, monitoring and site abandonment.

One of the purposes of the plan is to quantify the budget required to support and complete the closing works and mitigation activities relevant to soil quality, surface water, groundwater, and wildlife in the area of influence of the infrastructure used for the mining and processing activities.

First Majestic records a decommissioning liability for the estimated reclamation and closure of the Property, including site rehabilitation and long-term treatment and monitoring costs, discounted to net present value (NPV).

The NPV is determined using the liability-specific risk-free interest rate. The estimated NPV of reclamation and closure cost obligations is re-measured on an annual basis or when changes in circumstances occur and/or new material information becomes available. Increases or decreases to the obligations arise due to changes in legal or regulatory requirements, the extent of environmental remediation required, cost estimates and the discount rate applied to the obligation. The NPV of the estimated cost of these changes is recorded in the period in which the change is identified and quantifiable. Reclamation and closure cost obligations relating to operating mine and development projects are recorded with a corresponding increase to the carrying amounts of related assets.

The San Dimas mine is subject to a full closure plan and reclamation of the site upon cessation of operations, which would involve all facilities currently being used (mill, hydro-electric power plant, mines, surface infrastructure, power lines, roads, dry tailings). First Majestic has accrued a decommissioning liability consisting of reclamation and closure costs for the San Dimas mine. The undiscounted cash flow amount of the obligation was US\$14.2 million on December 31, 2020.

The estimation of restoration and closing costs was carried out using the Standardized Reclamation Cost Estimator (SRCE) model. The SRCE model contains best practices for estimating the remediation and restoration costs of areas impacted by industrial processes. First Majestic adapted the model to reflect current regulations in Mexico, and estimates were escalated for inflation. Table 20-12 shows the estimated closure costs as of December 2020.

*Table 20-12: Closure Cost Estimate 2020*

Facility	Brief Description	SRCE Model US\$ 000
Waste rock storage facilities	Ripping/scarifying, grading, cover placement and topsoil placement	1,278.7
Tailings storage management facilities	Embankment regrading, tailings surface grading, cover placement, topsoil placement and revegetation	2,981.6
Roads	Ripping/scarifying, grading, cover placement and revegetation	29.1
Underground openings	Portals and declines plugging, shaft backfill/cover and shaft capping	100.1
Equipment removal	Equipment removal	3,385.8
Process ponds	Backfilling, growth media placement, revegetation, liner cutting and folding costs	1,443.5
Buildings and foundation demolition	Buildings demolition, walls demolition and concrete slabs demolition	903.8
	Growth media placement, cover placement and ripping/scarifying costs	
	Revegetation cost	
Yards	Regrading, cover placement, revegetation, ripping/scarifying and growth media placement costs	26.9
Waste disposal	Hazardous materials, solid waste - off site, solid waste - on site and contaminated soils	35.2
Miscellaneous costs	Removal of rip-rap, rock lining, substations/transformers, power lines, culverts and buried pipes, fences, surface pipe and other removal items	236.1
Reclamation, monitoring and maintenance	Erosion maintenance, revegetation maintenance, reclamation monitoring and water quality monitoring	388.1
Other costs	Transport of discarded materials, purchase of topsoil, installation of piezometers, cleaning and decontamination of equipment	929.1
Indirect costs	Contractors and contractor administration	26.9
<b>Total Closure Cost Estimate</b>		<b>14,202.8</b>

First Majestic is currently dealing with two historical environmental liabilities: reclamation of the old San Antonio milling facilities (Contraestaca) and closure and reclamation of the old San Antonio tailings facilities. Reclamation work of these areas is scheduled in line with the closure plan.

### **20.11. Corporate Social Responsibility**

First Majestic maintains a close relationship with the local government and inhabitants of Tayoltita and surrounding communities through the Corporate Social Responsibility (CSR) department which has established a system for risk management to monitor and address any relevant impact the operation may have on the community. As a result of First Majestic's efforts to date, the social operating license within the local communities has been maintained and strengthened.

In 2018 and through 2019 First Majestic completed an internal assessment of materiality in sustainable development reporting. The process included the San Dimas mine and involved identifying the issues of highest impact or most importance to First Majestic's stakeholders and prioritizing those considering internal and external perspectives. Workplace health and safety, labour relations, land access, regulatory compliance and water management were identified as issues with the highest impact on San Dimas operations over the next several years. The process considers all issues identified in the assessment and will broaden to include external verification with employees and other stakeholder groups.

First Majestic, through its ownership of Primero Empresa, supports community education and provides a 50% tuition subsidy to all students who attend the school in Tayoltita. In 2019, 220 students were enrolled at the school. First Majestic continues to work closely with the College of Professional Technical Education (CONALEP) campus in Tayoltita where students participate in classroom activities as well as hands-on practical experience in San Dimas' laboratories and workshops. Over the 13 years since the program started, approximately 40% of the 350 graduates have been employees of the San Dimas mine. In 2013 The Mexican Ministries of Education and Labor recognized Primero Empresa's ongoing support to this program with a first-place distinction for practices in education and employment at the College.

#### **20.11.1. Ejidos**

An Ejido is a form of communal ownership of land recognized by Mexican federal laws. Following the Mexican Revolution, beginning in 1934 as an important component of agrarian land reform, the Ejido system was introduced to distribute parcels of land to groups of farmers known as Ejidos. While mineral rights are administered by the federal government through federally issued mining concessions, in many cases, an Ejido may control surface rights over communal property. An Ejido may sell or lease lands directly to a private entity, it also may allow individual members of the Ejido to obtain title to specific parcels of land and thus the right to rent, distribute, or sell the land.

Three of the properties included in the San Dimas mine and for which First Majestic holds legal title are subject to legal proceedings commenced by Ejidos asserting title to the property. None of the proceedings name First Majestic or its subsidiaries as a party and First Majestic therefore has no standing to participate in the proceedings. In all cases, the defendants are previous owners of the properties, either deceased individuals who, according to certain public deeds, owned the properties more than 80 years ago, corporate entities that are no longer in existence, or Goldcorp companies. The proceedings also name the Tayoltita Property Public Registry as co-defendant.

In 2015, First Majestic obtained a federal injunction (known as an amparo) against the Ejido Guamuchil. This proceeding (the “Guamuchil Suit”) was then reinstated resulting in the First Majestic 's subsidiaries gaining standing rights as an affected third party permitted to submit evidence of the Company's legal title. In February 2017, First Majestic received a favourable decision which was confirmed on appeal. A final appeal of this decision has yet to be resolved.

First Majestic is also pursuing nullity of a decision obtained by the Ejido Guarisamey.

An additional administrative procedure was initiated before the Federal government by the Ejido San Dimas requesting the purchase of land that is the subject of the Guamuchil Suit for designation as “National Land”. First Majestic has submitted evidence of ownership that First Majestic believes invalidates the Ejido San Dimas request. Conclusion of this procedure remains outstanding.

If First Majestic is not successful in these challenges, the San Dimas mine could face higher costs associated with agreed or mandated payments that would be payable to the Ejidos for use of the properties.

## 21. CAPITAL AND OPERATING COST

### 21.1. Capital Costs

The San Dimas mine has been under First Majestic operation since May 10, 2018. The sustaining capital expenditures are budgeted on an as-required basis, established on actual conditions at the mine and the processing plant infrastructure. The LOM plan includes estimates for sustaining capital expenditures for the mining and processing activities required.

Sustaining capital expenditures will mostly be allocated for on-going development, infill drilling, mine equipment rebuilding, major overhauls or replacements, plant maintenance and on-going refurbishing, and for tailings management facilities expansion as needed.

Estimated sustaining capital expenditures for the life of mine plan are assumed to average \$54.3 million per annum. The amount of exploration conducted to find new targets, with the objective of replacing and/or expanding the Mineral Resources will be dependent on the success of exploration and diamond drilling programs. Due to the uncertainty of the exploration success, the potential new sources of mineralization are not included in the LOM plan. Sustaining capital is focused on maintaining current operational capacities, plant and equipment, while expansionary capital is focussed on expanding new sources of mineralization. Table 21-1 present the summary of the sustaining and expansionary capital expenditures estimated for San Dimas.

*Table 21-1: San Dimas Mining Capital Costs Summary (Sustaining Capital)*

Type	Total	2021	2022	2023	2024	2025
Mine Development	\$ 85.6	\$ 26.6	\$ 23.7	\$ 18.7	\$ 16.6	\$ -
Exploration	\$ 27.1	\$ 6.0	\$ 6.7	\$ 7.1	\$ 7.3	\$ -
Property, Plant & Equipment	\$ 80.8	\$ 12.9	\$ 17.9	\$ 27.7	\$ 20.0	\$ 2.3
Other Sustaining Costs	\$ 4.2	\$ 1.0	\$ 1.0	\$ 1.0	\$ 1.0	\$ 0.1
<b>Total Sustaining Capital Costs</b>	<b>\$ 197.7</b>	<b>\$ 46.5</b>	<b>\$ 49.3</b>	<b>\$ 54.5</b>	<b>\$ 45.0</b>	<b>\$ 2.4</b>
Near Mine Exploration	\$ 22.8	\$ 4.9	\$ 5.4	\$ 5.7	\$ 5.8	\$ 0.9
<b>Total Capital Costs</b>	<b>\$ 220.6</b>	<b>\$ 51.5</b>	<b>\$ 54.7</b>	<b>\$ 60.2</b>	<b>\$ 50.8</b>	<b>\$ 3.3</b>

### 21.2. Operating Costs

San Dimas has a well-established cost management system and a good understanding of the costs of operation. Although the cost inputs are based on site actuals and contractor quotes, the majority of which are priced in Mexican pesos and converted to US dollars for the purposes of this Report (e.g., labour, various supplies, etc.), there will be variances from the estimates used for this Report and the actual costs. The total cost of mining is expected to be within  $\pm 15\%$ , which is considered in sufficient detail that, with the current experience at San Dimas, Mineral Reserves can be supported.

A summary of the San Dimas operating costs resulting from the LOM plan and the cost model used for assessing economic viability is presented in Table 21-2. A summary of the annual operating expense is presented in Table 21-3.

*Table 21-2: San Dimas Operating Costs*

Type	\$/tonne milled
Mining Cost	\$ 53.5
Processing Cost	\$ 27.0
Indirect Costs	\$ 43.4
<b>Total Production Cost</b>	<b>\$ 123.8</b>
Selling Costs	\$ 5.9
<b>Total Cash Cost</b>	<b>\$ 129.7</b>

*Table 21-3: San Dimas Annual Operating Costs*

Type	Total	2021	2022	2023	2024	2025
Mining Cost	\$ 211.6	\$ 48.1	\$ 49.3	\$ 53.5	\$ 52.6	\$ 8.1
Processing Cost	\$ 107.9	\$ 24.4	\$ 25.4	\$ 27.0	\$ 27.0	\$ 4.2
Indirect Costs	\$ 172.1	\$ 38.1	\$ 42.4	\$ 42.5	\$ 42.6	\$ 6.6
<b>Total Production Cost</b>	<b>\$ 491.6</b>	<b>\$ 110.5</b>	<b>\$ 117.1</b>	<b>\$ 123.0</b>	<b>\$ 122.2</b>	<b>\$ 18.9</b>
Selling Costs	\$ 23.6	\$ 4.6	\$ 5.2	\$ 6.2	\$ 6.7	\$ 1.0
<b>Total Cash Cost</b>	<b>\$ 515.1</b>	<b>\$ 115.1</b>	<b>\$ 122.2</b>	<b>\$ 129.1</b>	<b>\$ 128.8</b>	<b>\$ 19.9</b>

## **22. ECONOMIC ANALYSIS**

First Majestic is using the provision for producing issuers whereby producing issuers may exclude the information required under Item 22 for technical reports on properties currently in production and where no material production expansion is planned.

Mineral Reserve declaration is supported by a positive cashflow.

## **23. ADJACENT PROPERTIES**

This section is not relevant to this Technical Report.

## **24. OTHER RELEVANT DATA AND INFORMATION**

This section is not relevant to this Technical Report.

## **25. INTERPRETATION AND CONCLUSIONS**

The following interpretations and conclusions are a summary of the QPs' opinions based on the information presented in this Report.

### **25.1. Mineral Tenure, Surface Rights and Agreements**

Information provided by First Majestic technical and legal experts supports that the mining tenure held is valid and is sufficient to support declaration of Mineral Resources and Mineral Reserves; San Dimas has adequate mineral concessions and surface rights to support mining operations over the planned underground LOM presented in this Report.

For exploration purposes, if new areas of investigation are targeted, it is expected that there will be a need to formalize agreements with Ejidos and landowners.

Primero Empresa has agreements with the Ejidos and some of these agreements may be subject to renegotiation from time to time. Material changes to the existing agreements may have a significant impact on operations at San Dimas mine.

If First Majestic is not able to reach an agreement for the use of the lands with the Ejidos, then First Majestic may be required to modify its operations or plans for the exploration and development of its mines.

### **25.2. Geology and Mineralization**

The current understanding of mineralization and alteration styles, as well as the structural and lithological controls on mineralization in the San Dimas mine district, is sufficient to support the Mineral Resource and Mineral Reserve estimations.

The San Dimas mine area deposits are considered to be examples of silver and gold bearing epithermal quartz veins that formed in a low-sulphidation setting.

### **25.3. Exploration and Drilling**

The exploration programs completed to date are appropriate for San Dimas's mineralization style. Sampling methods (diamond drill hole and channel sampling) and data collection are acceptable given San Dimas' deposit dimensions, mineralization true widths, and the style of the deposits. The programs are reflective of industry-standard practice and can be used in support of Mineral Resource and Mineral Reserve estimation.



#### **25.4. Data Analysis**

Collar, downhole survey, lithology, core recovery, specific gravity and assay data collected are considered suitable to support Mineral Resource estimation. Sample preparation, analysis, and quality-control measures meet current industry standards and provide reliable gold and silver results.

The absence of information supporting sampling methods, preparation, and analysis for pre-2013 legacy data is mitigated by the fact that less than 2% of the pre-2013 database supports the resource estimate.

The channel sampling method used to collect channel samples used in resource estimation has some risk of producing non-representative samples. First Majestic will continue monitoring the quality of the channel assay data and integrate measures to improve the channel sampling techniques if needed.

First Majestic has implemented corrective actions to address QAQC results for the certified reference materials and standard reference materials indicating an accuracy issue related to the fire assay gravimetric procedures at Central and San Dimas laboratories in 2019 and 2020, and for outliers possibly related to sample handling during sample preparation for the gravimetric method. Any impact on the resource estimate as a result of the gold assays from the Central Laboratory and San Dimas would be localized and is likely to result in a conservative estimate of the gold grades in those areas.

First Majestic has implemented corrective actions to address QAQC gold results for coarse blanks inserted in the channel sample stream during 2019. First Majestic will ensure the material will undergo a round-robin assessment to assure the grade is sufficiently below expected laboratory detection limits. Pulp blanks will be included to assess contamination during analysis and duplicates will be added to the QAQC program to assess precision.

#### **25.5. Metallurgical Testwork**

The metallurgical analysis discussed in this Report is primarily based on plant operational historical data, mineralogical investigations, and plant performance monitoring tests performed by the Central Laboratory. The tests performed by the Central Laboratory show good level of repeatability when compared to plant performance.

After performing several comminution tests, based in the BWi approach, a low level of variability in the hardness of the material processed has been observed. Mineralogy characteristics of the mineralized material processed to date is similar to the mineralogy observed, at the macroscopic level, in the drill core samples representing potential plant feed assumed in the LOM plan.

Besides performing laboratory tests using standard plant conditions, metallurgical investigations are conducted on monthly composites to systematically evaluate the effect of key processing variables. The objective of this ongoing program is to explore ways to optimize silver and gold recoveries, and to assist operations in recognising production issues and recommending solutions to these issues. Study variables include grind-particle size, cyanide dosage, retention time, reagent type, and oxidizing agents such as pure oxygen and lead nitrate.

The maturity of the processing operation, the established practices in metallurgical monitoring and investigations, and the knowledge of the future ores support the ongoing metallurgical recoveries considered in the LOM plan presented in this Report and in the economic analysis that supports the Mineral Reserves, and were assumed at 94% for silver and 96.5% for gold. However, in the unlikely possibility that future ores will present significant differences to historical ores, there is a risk that the recovery levels may not be fully achieved.

#### **25.6. Mineral Resource Estimates**

The Mineral Resource estimates for the San Dimas mine were estimated according to industry best practices and were reported using the 2014 CIM Definition Standards. The resource estimates are a reasonable representation of the mineralization found in the project at the current level of sampling.

The majority of the Mineral Resource estimates were completed using block modeling techniques, but some of the Mineral Resources are still based on two-dimensional polygonal estimation methods. All of the polygonal estimates have been categorized as Inferred Mineral Resources and represent less than 49% of the Inferred Mineral Resources. The polygonal resource estimates are reduced every year as they are converted to block model estimates or depleted by mining.

The Mineral Resources estimated from block models are based on the current database of exploration drill holes and production channel samples, the geological mapping of underground development, the geologic interpretation and models, as well as the surface topography and underground mining development wireframes.

The Mineral Resources were classified into the Measured, Indicated, or Inferred categories based on the following factors:

- Confidence in the geological interpretation and models;
- Confidence in the continuity of metal grades;
- The sample support for the estimation and reliability of the sample data;
- Areas that were mined producing reliable production channel samples and detailed geological control.

Factors that may materially impact the Mineral Resource estimates include:

- Mineral Resources reported using polygonal assumptions may have the confidence classification reassigned when the polygons are converted into block models that use best practice estimation methods;
- Changes to the assumptions used to generate the silver-equivalent grade cut-off grade including metal price and exchange rates;
- Changes to interpretations of mineralization geometry and continuity;
- Changes to geotechnical, mining, and metallurgical recovery assumptions;
- Assumptions as to the continued ability to access the site, retain mineral and surface rights titles, maintain environment and other regulatory permits, and maintain the social license to operate.

### **25.7. Mineral Reserve Estimates**

The Mineral Reserves estimates for the San Dimas mine include considerations for the underground mining methods in use, dilution, mining widths, mining extraction losses, metallurgical recoveries, permitting and infrastructure requirements.

Factors which may materially affect the Mineral Reserve estimates for the San Dimas mine include fluctuations in commodity prices and exchange rates assumptions used; material changes in the underground stability due to geotechnical conditions that may increase unplanned dilution and mining loss; unexpected variations in equipment productivity; material reduction of the capacity to process the mineralized material at the planned throughput and unexpected reduction of the metallurgical recoveries; higher than anticipated geological variability; cost escalation due to external factors; changes in the taxation considerations; the ability to maintain constant access to all working areas; changes to the assumed permitting and regulatory environment under which the mine plan was developed; the ability to maintain mining concessions and/or surface rights; the ability to renew agreements with the San Dimas and Rincon de Calabazas Ejidos; adverse outcomes to the court cases with the Ejidos as described in Section 20.11.1 and the ability to obtain and maintain social and environmental license to operate.

### **25.8. Mine Plan**

Mining operations can be conducted year-round in the San Dimas mine. The underground mine plan presented in this Report was designed to deliver an achievable plant feed, based on the current knowledge of geological, geotechnical, hydrological, mining and processing conditions. Production forecasts are based on current equipment and plant productivities.

In the opinion of the QP, it is reasonable to assume that if the sustaining capital expenditures expressed in the LOM plan are executed, the San Dimas mine will have the means to continue operating as planned.

The current mine life to 2025 is considered achievable based on the projected annual production rate and the estimated Mineral Reserves. There is some upside if some or all of the Inferred Mineral Resources can be upgraded to higher confidence Mineral Resource categories.

### **25.9. Operations Continuity**

Although First Majestic has the capacity to continue certain administrative functions remotely, temporary or permanent unavailability of key personnel (including due to contraction of COVID-19 or as a result of mobility restrictions imposed by governments and private actors to combat the spread of COVID-19) may have an adverse impact on the continuity of the operations.

In San Dimas, the operations employees are represented by unions and labor strikes and work stoppages have occurred in the past, which were resolved in a relatively short period. However, in some instances, labor strikes and work stoppages may take longer to resolve and may have a material adverse effect on the operation continuity. There can be no assurance that First Majestic will not experience future labor strikes or work stoppages.

In the opinion of the QP, such interruptions do not preclude First Majestic from extracting the Mineral Reserves after those interruptions have been resolved.

### **25.10. Processing**

The processing plant is mostly built as a single train and has already been operating for a long period of time. The flowsheet is based on well established technology; several areas of the plant are built with parallel and/or redundant equipment (e.g., three ball mills in parallel, and operating-standby secondary crushers). Overall plant availability is high, and the risk of catastrophic failures and consequently unplanned long shutdowns is low.

Due to the age of the plant, the original equipment selection, and systems currently in place, there are some areas of opportunity such as: the addition of automated samplers and the implementation of modern control systems. Such modernization plans are currently being investigated as they can improve representativity of the samples, metallurgical accounting, and facilitate production data reconciliation.

### **25.11. Infrastructure**

The San Dimas mine, although located in a remote location, is well equipped with the basic services required to support the mine and plant operations. Access to site is year-round by land and by air. The mine has all required infrastructure in place to support operations for the LOM plan presented in this Report.

The capacity of the Cupías TSF is sufficient to hold compacted filtered paste tailings generated from the production contained in the LOM plan.

#### **25.12. Markets and Contracts**

The end product from the San Dimas mine is in the form of silver–gold doré bars. The physical silver–gold doré bars, usually containing greater than 96% silver and 1.3% gold in weight, are delivered to refineries where doré bars are refined to commercially marketable 99.9% pure silver and gold bars. The terms contained within the existing sales contracts are typical of, and consistent with, standard industry practices.

Selling costs, including freight, insurance and representation, as well as refining charges, payable terms, deductions, and penalties terms for San Dimas doré bars, were reviewed by the QP and found to be in line with similar commercial conditions of metal producers in Mexico. All these costs have been incorporated into the long-term economic analysis.

The likelihood of securing ongoing contracts for doré sales is a reasonable assumption; however, in downturn market conditions, there can be no certainty that the San Dimas mine or First Majestic will always be able to do so or what terms will be available at the time.

#### **25.13. Permitting, Environmental and Social Considerations**

Permits held by First Majestic for the San Dimas mine are sufficient to ensure that mining activities are conducted within the regulatory framework required by the Mexican government and that Mineral Resources and Mineral Reserves can be declared.

First Majestic is working with Mexican regulatory authorities to address areas with pre-existing environmental legacy issues from historical operators. Certain areas in the historical San Antonio mining complex are in this regularization process.

Closure provisions are appropriately considered in the mine plan and economic analysis.

#### **25.14. Capital and Operating Cost Estimates**

The capital and operating cost provisions for the LOM plan that supports the San Dimas Mineral Reserves have been reviewed. The basis for the estimates is appropriate to the known mineralization, mining and production schedules, marketing plans, and equipment replacement and maintenance requirements.

Capital cost estimates include appropriate estimates for sustaining capital.

#### **25.15. Economic Analysis Supporting Mineral Reserve Declaration**

First Majestic is using the provision for producing issuers, whereby producing issuers may exclude the information required under Item 22 for technical reports on properties currently in production and where no material expansion of current production is planned.

An economic analysis to support presentation of Mineral Reserves was conducted. Under the assumptions presented in this Report, the operations show a positive cash flow, and can support Mineral Reserve estimation.

#### **25.16. Conclusions**

Under the assumptions used in this Report, the San Dimas mine has positive economics for the LOM plan, which supports the Mineral Reserve statement.

## **26. RECOMMENDATIONS**

Work or studies recommended by the QPs is presented in two phases.

### **26.1. Phase 1**

The proposed work or studies presented in Phase 1 are not dependent on previous results or the outcome of the different projects or studies. These works or studies can be carried out concurrently between them.

#### **26.1.1. Exploration**

San Dimas is of sufficient geological potential to recommend exploration programs focused on resource extension and exploration targeting. The exploration programs should consist of underground and surface drilling aimed to identify new areas to support mineral resource conversion to higher confidence categories and to look for new discoveries.

At San Dimas - an annual 70,000 metre infill sustaining drill program to support short term production plans and an annual 25,000 meter near mine drill program to support mid term production projections.

Regionally – an annual 25,000-meter brownfield surface drill program on two or three prospects.

This 120,000 m annual exploration drill program is estimated to costs \$12.0M dollars per year excluding related underground access development costs.

In addition, an annual prospect generation program consisting of prospecting, soil and rock geochemical surveys, mapping, and geophysical surveys is recommended. This annual prospect generation program is estimated to cost \$250k per year.

The amounts and estimated cost of these recommended exploration program should be reviewed annually.

#### **26.1.2. Production Channel Samples**

The field sampling procedure for production channel samples has some risk of introducing sampling bias but this possible bias has not yet been assessed. A study to assess channel sample quality should be performed and could consist of a comparison of 30 sawn channels samples with paired un-sawn channel samples. This study is estimated to cost \$7,500 and the estimate execution time is one month.

### **26.1.3. Resource Estimation using Polygonal Method**

Part of the Inferred Mineral Resources at San Dimas has been estimated using a polygonal method. The polygonal resource estimation at San Dimas has been migrated to implicit modeling followed by block model estimation techniques for all Indicated and Measured Mineral Resources. It is recommended this process to be continued until all the domains are estimated using block modeling techniques.

### **26.1.4. Reconciliation**

A reconciliation system for the San Dimas mine operation, based on the mine value chain concept, is being implemented at the mine. The procedures are based on best practices adopted in other reconciliation systems across the mining industry. The reconciliation system currently in use in San Dimas compares the estimates of mineral resource, mineral reserves, grade control and mine planning with the measured results from ore/waste transport, processing, and final product. It is recommended that reconciliation monitoring be used to continuously improve the comparison of estimates to measured results all along the mine value chain to highlight opportunities to improve the traceability, identification and control of temporary storage areas, transfers and materials handling practices.

The estimated time to complete the implementation of the integral reconciliation system at San Dimas is 12-18 months at a cost of \$200k.

### **26.1.5. Expansion of the CCD Circuit**

The San Dimas operational team and the Central Laboratory metallurgical team have studied options to increase the washing performance of the CCD circuit and concluded that additional CCD thickeners can facilitate the reduction of the concentration of precious metals in the final tailings solution.

Thickener installation is estimated to cost \$17.0 M with an estimated project execution time of 12-18 months. It is recommended that the project be assessed for implementation.

### **26.1.6. Fine Grinding**

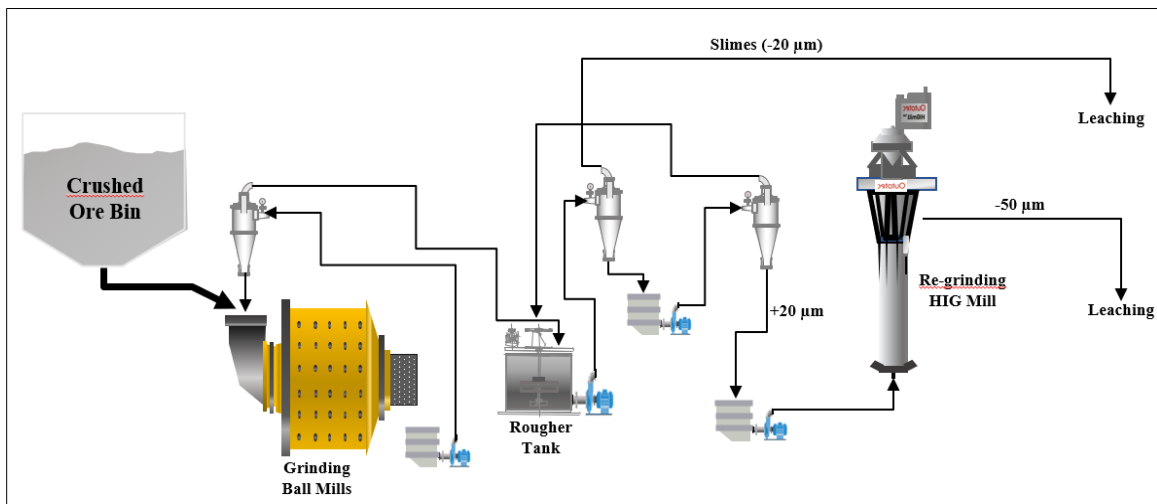
Currently, the San Dimas mine cyanide leaching process receives a feed with a particle size distribution with a P80 of approximately 90  $\mu\text{m}$ . However, according to the results of the



metallurgical research programs that have been carried out at the Central Laboratory, it has been evident that fine grinding can improve both silver and gold recoveries.

Based on these testwork results and First Majestic's successful experience in another of its operating mines (Santa Elena), the circuit and equipment recommended to realize these gains consists of a dual circuit and a re-grinding high intensity grinding mill (HIG-mill) with the capacity to regrind to a particle size of  $\sim 30 \mu\text{m}$ . Figure 26-1 shows a schematic flowsheet for such a circuit.

Figure 26-1: Dual Circuit with Stirred Mill for Partial Secondary Grinding



Note: Figure prepared by First Majestic, March 2020.

Installation of a dual circuit and HIG-mill is estimated to cost \$20.0 M with an estimated project execution time of 12-18 months. It is recommended that the project be assessed for implementation.

### 26.1.7. Tailings Filtering

An area for improvement in the San Dimas processing plant is tailings filtration. Currently there are four belt-filters installed. However, if fine grinding is applied, the current system may not be able to achieve the required moisture content for the dry stacking tailings deposition. A low level of moisture is required for proper handling and to fulfill the geotechnical requirements. The major component of the filtration upgrade circuits would be the acquisition and installation of two new filters based on high-capacity filter-press technology and having one in operation and the other on standby.

A preliminary project has been conducted for the design and installation of two filter-presses, each equipped with 98 square plates (3.2 m x 3.2 m) with one operating and one in stand-by. It is

recommended that this project be re-assessed for potential implementation in the San Dimas processing plant by the completion of a value engineering study to rationalize capital requirements, to analyze the possibility of installing only one filter-press, and to use the current belt-filters as backup. The estimated cost of this study is \$0.5 M, with an estimated study time of 6 months.

#### **26.1.8. “Cuevecillas” Water Storage Dam**

Electrical power for the San Dimas mine is supplied by a combination of First Majestic’s hydro-electric power generation plant and the CFE grid; however, power provided by CFE faces voltage variations resulting in power blackouts and occasionally plant shutdowns. Engineering studies have been conducted to assess the opportunity of building a storage and flow-regulator dam upstream from the existing Las Truchas dam at Cuevecillas. This dam would increase First Majestic’s hydro-electric generation capacity, reducing reliance on the power provided by CFE. Studies suggest that the implementation of a regulator dam will result in less plant downtime from power blackouts, improvements in gas emissions, and potentially reduced operating costs.

A Phase 1 study is recommended for a feasibility analysis to be completed to confirm economic viability and estimate return of investment. The cost of this study is estimated at \$50k and will take 3 months to be completed.

### **26.2. Phase 2**

#### **26.2.1. Tailings Filtering**

If Phase 1 of the Tailings Filtering study confirms viability, a second phase could follow for the installation of the filter-press, which as of the Report Effective Date is estimated to cost \$30.0M with an estimated project execution time of 12-18 months.

#### **26.2.2. “Cuevecillas” Water Storage Dam**

If Phase 1 of the Cuevecillas Water Storage Dam study confirms viability, a second phase could follow for the construction of the dam. The cost estimate from the preliminary engineering design is estimated at \$35 M with an estimated project execution time of 24-36 months.

## 27. REFERENCES

Amec Foster Wheeler Environment & Infrastructure, Inc., 2016: Water Management Plan Detail Design, Cupías Tailings Storage Facility, San Dimas Mine, Prepared for Primero Empresa Minera S.A de C.V., 148 pp.

Amec Foster Wheeler Environment & Infrastructure, Inc., 2016: Cupías Tailings Storage Facility Operation, Maintenance and Surveillance Manual, Prepared for Primero Empresa Minera S.A de C.V., 93 pp.

Arribas Jr, A., Hedenquist, J.W., Itaya, T., Okada, T., Concepción, R.A., Garcia Jr, J.S., 1995. Contemporaneous Formation of Adjacent Porphyry and Epithermal Cu-Au deposits over 300 ka in Northern Luzon, Philippines. *Geology*, 23(4), p. 337-340.

Barton, N., R. Lien and J. Lunde (1974): Engineering Classification of Rock Masses for the Design of Tunnel Support. *Rock Mechanics and Rock Engineering* 6 (4): p. 189-236.

Bieniawski, Z.T. (1973): Engineering Classification of Jointed Rock Masses. *Civil Engineering in South Africa*, 15 (12), p. 335-343

Canadian Institute of Mining, Metallurgy and Petroleum (CIM), 2014: CIM Definition Standards for Mineral Resources and Mineral Reserves, 9 pp.

CIM, 2019: Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines (MRMR Estimation Best Practice Guidelines), 74 pp.

CIM Mineral Resource & Mineral Reserve Committee, 2020: CIM Guidance on Commodity Pricing and Other Issues related to Mineral Resource and Mineral Reserve Estimation and Reporting., 9 pp.

Clarke, M., 1986. Hydrothermal Geochemistry of Ag-Au Veins in the Tayoltita and the San Dimas Mining District, Durango and Sinaloa, Mexico. Unpublished Ph.D. thesis, 151 pp.

Clarke, M. and Titley, S.R., 1988: Hydrothermal evolution in the formation of silver-gold veins in the Tayoltita mines, San Dimas District, Mexico, *Economic Geology*, v. 83, p. 1830-1840.

Conrad, M.E., O'Neil, J.R. and Petersen, U., 1995: The relation between widespread 18O depletion patterns and precious metal mineralization in the Tayoltita mine, Durango, Mexico, *Economic Geology*, v. 90, p. 322-342.

Conrad, M.E., Petersen, U. and O'Neil, J.R., 1992: Evolution of an Au-Ag – producing hydrothermal system: the Tayoltita mine, Durango, Mexico, *Economic Geology*, v. 87(6), p. 1451-1474.

Enriquez E., Iriondo A. and Campubri A., 2018: Geochronology of Mexican mineral deposits. VI: the Tayoltita low-sulfidation epithermal Ag-Au district, Durango and Sinaloa, *Boletín de la Sociedad Geológica Mexicana*, p. 531-547.

Enriquez, E. and Rivera, R., 2001: Geology of the Santa Rita Ag-Au deposit, San Dimas District, Durango Mexico. Society of Economic Geologists, SP8, p. 39-58.

Hedenquist, J.W., and Arribas, A.Jr., 1999. Epithermal Gold Deposits: I. Hydrothermal processes in intrusion-related systems, and II. Characteristics, examples and origin of epithermal gold deposits. Society of Economic Geologist, 31, p. 13-63.

Horner, Johannes Thomas, 1998: Structural Geology and Exploration in the San Dimas District, Durango, Mexico – An Alternative Geological Model. Doctoral Thesis, University of Salzburg, Austria, 8 pp.

Montoya-Lopera, P.A., Ferrari, L., Levresse, G., Abdullin F., Mata, L., 2019. New Insights into the Geology and Tectonics of the San Dimas Mining District, Sierra Madre Occidental, Mexico. Ore Geology Reviews, Vol. 105, p 273-294.

Montoya-Lopera, P.A., Levresse, G., Ferrari, L., Orozco-Esquivel, T., Hernandez-Quevedo, G., Abdullin F., Mata, L., 2020: New Geological, Geochronological and Geochemical Characterization of the San Dimas Mineral System: Evidence for a Telescoped Eocene-Oligocene Ag/Au Deposit in the Sierra Madre Occidental, Mexico., Vol 118.

Panteleyev, A., 1996: Epithermal Au-Ag: Low Sulphidation, in Selected British Columbia Mineral Deposit Profiles, Volume 2 - Metallic Deposits, Lefebure, D.V. and Höy, T, Editors, British Columbia Ministry of Employment and Investment, Open File 1996-13, p 41-44.

Shannon J M, Webster R, Smith HA, Riles A, April 16, 2012, Technical Report on the San Dimas Property, San Dimas District, Durango and Sinaloa States, Mexico. Prepared for Primero Mining Corp. 122 pp.

Smailbegovic A., 2013. Overview of available geophysical data, San Dimas Project, Mexico. Prepared for Primero Mining, internal report, 31 pp.

Smee and Associates Consulting Ltd., 2012. Results of an Audit of the Primero Mining San Dimas Mine and SGS Laboratories and Quality Control Review on the Drilling and Mine Sampling Durango Province, Mexico. Prepared for Primero Mining Corp. 74 pp.

Smith D.M. Jr., Albinson, T. and Sawkins, F.J., 1982: Geologic and fluid inclusion studies of the Tayoltita silver-gold vein deposit, Durango, Mexico, Economic Geology, v. 77, p. 1120-1145.

Spring V., and Watts G., 2010: Technical Report on the Tayoltita, Santa Rita and San Antonio Mines in the San Dimas District, Durango State, Mexico, prepared by Watts, Griffis and MacOuat Ltd, Ontario, Canada, prepared for Goldcorp Inc. and Mala Noche Resources Corp. 103 pp.

Spring, V. and Watts, G., 2011: Technical report on the Tayoltita, Santa Rita and San Antonio Mines. Durango, Mexico. Prepared for Primero Mining Corp. 106 pp.

San Dimas Silver/Gold Mine  
Durango and Sinaloa States, Mexico  
Technical Report on Mineral Resource and  
Mineral Reserve Estimates



Ventilation Innovation, 2018: Ventilation Study of San Dimas Mine. Prepared for First Majestic Silver Corp. 37 pp.

Voicu G., Shannon M. and Webster R., April 18, 2014: Technical Report on the San Dimas Property, in the San Dimas District, Durango and Sinaloa States, Mexico, prepared by Primero Mining Corp. of Vancouver, Canada and AMC Mining Consultants (Canada) Ltd. of Vancouver, Canada. 119 pp.

Wood Environment & Infrastructure Solutions, Inc., 2019: Dam Safety Inspection. Prepared for First Majestic Silver Corp. 39 pp.