REPORT ON THE ESTIMATE OF

MINERAL RESOURCES

and

MINERAL RESERVES

for the

OAXACA MINING UNIT

OAXACA, MEXICO

for

DON DAVID GOLD MEXICO, S.A de C.V.

(a wholly-owned subsidiary of Gold Resource Corp.)

Signed by:

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1 SUMMARY

1.1 Introduction and Purpose

This report was prepared as a technical report for Don David Gold Mexico S.A. de C.V. (DDGM), a wholly-owned subsidiary of Gold Resource Corporation (GRC), on its 100%-controlled Oaxaca Mining Unit, an underground and open pit gold mining operation in Oaxaca, Mexico.

Mineral Reserves, as defined by Industry Guide 7 promulgated by the U.S. Securities and Exchange Commission (SEC), are that part of a mineral deposit which could be economically and legally extracted or produced at the time of the reserve determination. The proven and probable reserves stated in this report are effective as of December 31, 2019.

On October 31, 2018, the SEC announced that it was adopting amendments to modernize the property disclosure requirements for mining registrants, and related guidance, under the Securities Act of 1933 and the Securities Exchange Act of 1934. Under the new rules ("New Rules"), a registrant with material mining operations must disclose specified information in Securities Act and Exchange Act filings concerning its mineral resources, in addition to its mineral reserves. The new rules provide a two-year transition period so that a registrant is not required to comply with the new rules until its first fiscal year beginning on or after January 1, 2021. The SEC states that a registrant may voluntarily comply with the new rules prior to the compliance date, subject to the SEC's completion of necessary EDGAR reprogramming changes. While DDGM has provided an estimate of mineral resources in this report, the Company has decided to adopt the New Rules as required in 2021 and will not disclose the estimate of resources contained herein in any SEC filing.

1.2 Property Description and Ownership

DDGM has developed a significant precious and base metals epithermal deposit at its Oaxaca Mining Unit in Mexico. The project is located in the Sierra Madre Sur Mountains of southern Mexico, in the central part of the State of Oaxaca. The project is located along a major paved highway approximately 120 kilometers (km) southeast of Oaxaca City, the state's capital city.

DDGM controls 100% interest in the Aguila Project and five other properties, which now comprise its Oaxaca Mining Unit. On December 31, 2019, DDGM controlled twenty-nine (29) mining concessions in Oaxaca State totaling 55,119 hectares. Expiration dates associated with the Oaxaca Mining Unit concessions range from March 4, 2023 to November 7, 2066.

DDGM is required to pay concession fees to the Mexican government to maintain its interest in the Oaxaca Mining Unit concessions. The annual 2019 concession tax paid for the mining concessions controlled by

DDGM was US$728,929. In 2019, DDGM satisfied the minimum investment and assessment work requirements for these concessions based on its work programs and past work completed. DDGM has also paid the total mining duty required annually to keep the Oaxaca Mining Unit concessions in good standing.

DDGM has established surface rights agreements with the San Pedro Totolapam Ejido and the individuals impacted by current and proposed operations which allow disturbance of the surface where necessary for DDGM's exploration activities and mining operations.

1.3 Geology and Mineralization

The Oaxaca Mining Unit area is dominated by multiple volcanic domes of various scales that compose the district geology. These volcanogenic features are superimposed on a pre-volcanic basement of sedimentary rocks. Gold and silver mineralization in this district is related to the manifestations of this classic volcanogenic system and is considered epithermal in character. The Oaxaca Mining Unit mineralization occurs as structurally-controlled epithermal deposits in veins and stockwork zones consisting of concentrations of sulfides containing gold, silver, lead, copper, and zinc, associated with gangue minerals such as quartz, calcite, and other minor elements. Primary sulfide mineralization consists of pyrite, galena, sphalerite, chalcopyrite associated with minor amounts of argentite and silver sulfosalts.

DDGM's exploration investigations have been mainly focused on the Aguila open pit and Arista underground mine areas. These areas include the significant Aguila, Arista, Baja and Aire veins as well as other ancillary mineralized structures. A new area of mineralization, referred to as "Switchback", has been identified approximately 500 meters northeast of the Arista deposit, for which drill results showed multiple veins over a 40 to 100-meter wide alteration zone containing numerous mineralized veins associated with rhyolite dikes and hosted in andesite, similar to the Arista vein system. Other mineralized zones and properties have been investigated, including some preliminary drilling in areas such as Escondida, Chacal and Salina Blanca on the Aguila Project, and the Margaritas, Alta Gracia and Rey properties.

1.4 Exploration and Mining History

The Oaxaca Mining Unit is located in the mining sub district of San Jose de Gracia. Only small-scale artisanal mining has been historically conducted in the district and no reliable production records exist for historic production conducted in the Oaxaca Mining Unit area. The two mining areas developed by DDGM in this sub-district, the Aguila open pit mine and the Arista underground mine, had not been previously explored by modern methods. However, they occur along a mineralized trend with potential extension of about 55 km in which DDGM has identified numerous exploration targets.

DDGM has carried out a continuous drilling program since 2003 when the company took control of the Oaxaca Mining Unit mining concessions. DDGM continues the development of an aggressive exploration program that includes extensive surface and underground drilling, along with underground mine development, such as access ramps, drifts and crosscuts into the Arista and Baja veins. Total exploration drilling (core and reverse circulation) by DDGM through the end of December 2019 amounts to 377,385 meters including 1,414 drill holes.

1.5 Mineral Resources

The modeling and estimation of Mineral Resources presented herein is based on technical data and information available as of December 31, 2019. DDGM models and estimates Mineral Resources from available technical information prior to the generation of Mineral Reserves.

As part of its modernization of the property disclosure requirements for mining registrants, the SEC is adopting the Combined Reserves International Reporting Standards Committee (CRIRSCO) framework for reporting Mineral Resources. According to CRIRSCO, a Mineral Resource is a concentration or occurrence of material of intrinsic economic interest in or on the Earth's crust (a deposit) in such form, grade or quality, and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade, geological characteristics and continuity of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge. Mineral Resources are sub-divided, in order of increasing geological confidence, into Inferred, Indicated and Measured categories. Portions of a deposit that do not have reasonable prospects for eventual economic extraction must not be included in a Mineral Resource.

Three-dimensional models were constructed by DDGM staff as triangulated irregular network wireframes defining the extent of underground workings and mineralized structures and incorporates all significant vein systems identified to date. A total of 43 individual wireframes were modeled for the Arista system, 27 for the Switchback system, 14 for the Alta Gracia system and one for the Tapada vein on the Margaritas property. Measured, Indicated and Inferred mineral resources inclusive of Mineral Reserves and Mineralized Material reported for the Oaxaca Mining Unit as of December 31, 2019 are summarized in Table 1.1.

Table 1.1 Mineral Resources (Inclusive of Mineral Reserves and Mineralized Material) for the Oaxaca Mining Unit as of December 31, 2019*

Vein System	Description	Cutoff	Tonnes	Au g/t	Ag g/t	Cu %	Pb %	Zn %
Arista	Measured	$76	1,483,700	2.09	185	0.28	1.46	4.19
	Indicated	$76	968,400	1.40	182	0.18	1.38	4.04
	Meas+Ind	$76	2,452,500	1.82	184	0.24	1.43	4.13
	Inferred	$76	95,100	0.59	64	0.22	0.96	3.79
Switchback	Measured	$76	2,344,700	2.07	93	0.46	1.90	5.55
	Indicated	$76	469,400	1.50	107	0.43	1.30	3.81
	Meas+Ind	$76	2,814,400	1.97	95	0.46	1.80	5.26
	Inferred	$76	90,200	1.42	106	0.49	0.94	2.74
Altagracia	Measured	2.50 g/t	156,800	0.91	443			
	Indicated	2.50 g/t	73,700	0.83	398			
	Meas+Ind	2.50 g/t	230,500	0.88	428			
	Inferred	2.50 g/t	27,300	0.56	310			
Margaritas (Tapada Vein)	Measured	2.50 g/t	0	0	0			
	Indicated	2.50 g/t	23,100	0.53	274			
	Meas+Ind	2.50 g/t	23,100	0.53	274			
	Inferred	2.50 g/t	36,100	0.53	308			
OAXACA MINING UNIT TOTAL	Measured	NA	3,985,200	2.03	141			
	Indicated	NA	1,534,600	1.39	171			
	Meas+Ind	NA	5,520,500	1.85	149			
	Inferred	NA	248,700	0.88	142			

*Notes on Mineral Resources in Table 1.1:

1. Mineral Resources are as defined by new guidelines proposed by the SEC and CRIRSCO definitions for Mineral Resources.
2. Mineral Resources are estimated as of December 31, 2019 and take into account production-related depletion through December 31, 2019.
3. Mineral Resources reported herein are inclusive of Mineral Reserves and Mineralized Material.
4. Metal prices used for Mineral Resources were $1,306 per ounce of gold, $16.32 per ounce of silver, $2.835 per pound of copper, $0.99 per pound of lead and $1.27 per pound of zinc. These prices reflect the three-year trailing average prices for gold, silver, copper, lead and zinc.
5. A breakeven Net Smelter Return (NSR) cutoff grade of $76 per tonne was used for estimations of Mineral Resources. The term "cutoff grade" means the lowest NSR value considered economic to process.
6. No appreciable amounts of base metals are present in the veins identified to-date at the Alta Gracia Project including the Mirador Underground Mine, and the Margaritas Project. A breakeven cutoff grade of 2.5 g/t gold-equivalent (AuEq) was used for Mineral Resources at the Alta Gracia and Margaritas Projects using gold and silver only to calculate gold equivalencies.
7. Minimum mining width for Mineral Resources is 1.5 meters.
8. Arista Mine metallurgical recovery assumptions used were 78% for gold, 91% for silver, 78% for copper, 78% for lead and 81% for zinc. Alta Gracia and Margaritas projects metallurgical recovery assumptions used were 87% for gold and 80% for silver. These recoveries reflect 2019 actual average recoveries for the Aguila and Alta Gracia Projects.
9. Mineral Resources are not diluted and factored for expected mining recovery.
10. Figures in tables are rounded to reflect estimate precision and small differences generated by rounding are not material to estimates.

1.6 Mineral Reserves

Mineral Reserves were prepared according to the guidelines of the SEC Guide 7 ''Description of Property by Issuers Engaged or to be Engaged in Significant Mining Operations''. The reserve estimate is based on technical data and information available as of December 31, 2019.

The Arista and Mirador Underground Mine mineral reserves comply with SEC Guide 7 standards and definitions of Proven and Probable mineral reserves. Mineral Reserve blocks that meet dilution and cutoff grade requirements, and that are deemed feasible and economic for extraction in a life-of-reserve mine plan, are classified as Proven and Probable, respectively, after further adjustment of tonnage for expected mining recovery. Mining dilution is applied to in situ tonnes depending on the mining method employed. Mining dilution averages about 26% at zero grade; 10% for shrinkage stoping, 26% for long-hole stoping, 25% for cut-and-fill and 15% for drifts. Mining recovery is applied to reserve blocks and depends on the mining method employed. Overall mining recoveries average 91%, after applying 90% for stopes and 95% for drifts.

DDGM uses a breakeven Net Smelter Return (NSR) cutoff grade, which considers actual metal prices, total mining, milling and general administration, smelting/refining costs and plant recoveries for Proven and Probable Reserve estimations. The cutoff grade calculation does not include either exploration or capital costs and the average operating costs used for reserve calculations are net of base metal credits and royalty payments. Plant recoveries used are the average of actual recoveries reported by the plant during the twelve months of 2019. The 2019 breakeven cutoff grade for the Arista underground mine is based on a US$ 76 per tonne NSR using gold, silver, copper, lead and zinc metal prices to calculate the NSR value. No appreciable amounts of base metals are present in the veins identified to-date at the Alta Gracia and Margaritas properties. Therefore, a breakeven cutoff grade using gold and silver only was used for these properties. The breakeven cutoff grade used for the Alta Gracia Project, including the Mirador Underground Mine, for proven and probable mineral reserves was 2.5 g/t AuEq using gold and silver only to calculate gold equivalencies.

The Proven and Probable Mineral Reserves for the Oaxaca Mining Unit as of December 31, 2019 are summarized in Table 1.2.

Table 1.2 Mineral Reserves for the Oaxaca Mining Unit as of December 31, 2019*

Class	Tonnes	Au	Ag	AuEq	Au	Ag	AuEq	Cu	Pb	Zn
		g/t	g/t	g/t	oz	oz	oz	%	%	%
Arista Mine										
Proven	2,591,700	2.04	112	3.43	169,600	9,295,900	285,900	0.42	1.68	4.88
Probable	163,700	1.47	172	3.62	7,800	906,400	19,000	0.34	1.25	4.01
Arista Mine Total	**2,755,400**	**2.00**	**115**	**3.44**	**177,400**	**10,202,300**	**304,900**	**0.42**	**1.65**	**4.83**
Mirador Mine										
Proven	75,500	0.75	365	5.31	1,800	885,700	12,900			
Probable	700	1.33	393	6.25	100	8,400	100			
Mirador Mine Total	**76,200**	**0.76**	**365**	**5.32**	**1,900**	**894,100**	**13,000**			
Oaxaca Mining Unit Total	**2,831,600**	**1.97**	**122**	**3.58**	**179,300**	**11,096,400**	**317,900**			

Notes on Mineral Reserves in Table 1.2:

1. Metal prices used for P & P reserves were $1,306 per ounce of gold, $16.32 per ounce of silver, $2.83 per pound of copper, $0.99 per pound of lead and $1.27 per pound of zinc. These prices reflect the three-year trailing average prices for gold, silver, copper, lead and zinc.
2. Precious metal gold equivalent is 80.03:1 using gold and silver only to calculate gold equivalencies.
3. A breakeven NSR cutoff grade of $76 per tonne was used for estimations of P & P reserves at the Arista Underground Mine. The term “cutoff grade” means the lowest NSR value considered economic to process.
4. No appreciable amounts of base metals are present in the veins identified to-date at the Mirador Underground Mine at the Alta Gracia property. A breakeven cutoff grade of 2.5 g/t AuEq was used for proven and probable reserves at the Mirador Underground Mine using gold and silver only to calculate gold equivalencies.
5. Mining, processing, energy, administrative and smelting/refining costs were based on 2019 actual costs for the Oaxaca Mining Unit.

6. Arista Mine metallurgical recovery assumptions used were 78% for gold, 91% for silver, 78% for copper, 78% for lead and81% for zinc. Mirador Mine metallurgical recovery assumptions used were 87% for gold and 80 for silver. These recoveries reflect 2019 actual average recoveries for the Aguila and Alta Gracia Projects.
7. P & P reserves are diluted and factored for expected mining recovery.
8. Minimum mining width for P & P reserves is 1.5 meters for the Arista and Mirador underground mines.
9. Figures in tables are rounded to reflect estimate precision and small differences generated by rounding are not material to estimates.

1.7 Mineralized Material

DDGM uses the term "mineralized material" to describe mineralization in the Oaxaca Mining Unit mineral deposits that do not constitute "Mineral Reserves" under current U.S. reporting requirements as governed by SEC Industry Guide 7. Mineralized Material is used to describe a mineralized body that has been delineated by appropriate drilling and/or underground sampling to establish continuity and support an estimate of tonnage and an average grade of the selected metal(s). Mineralized material does not have demonstrated economic viability. The SEC only permits issuers to report mineralized material in tonnage and average grade without reference to contained ounces or quantities of other metals.

For Mineralized Material, DDGM applies the same US$ 76 per tonne NSR breakeven cutoff grade for the Arista Mine and a breakeven cutoff grade of 2.5 g/t AuEq for the Alta Gracia Project, including the Mirador Mine, and the Margaritas Project. Gold and silver only are used to calculate gold equivalencies. Mineralized Material meets the same dilution, expected mine recovery and cutoff grade requirements as Mineral Reserves but does not have demonstrated economic viability. Mineralized Material is in addition to Proven and Probable Mineral Reserves.

Mineral Reserve blocks not in the life-of-reserve mine plan are classified by DDGM as Mineralized Material and excluded from the Mineral Reserves tabulation. Mineralized Material is used by DDGM for mine planning and exploration purposes only.

Mineralized Material for the Oaxaca Mining Unit as of December 31, 2019 is summarized in Table 1.3.

Table 1.3 Mineralized Material (Exclusive of Mineral Reserves) for the Oaxaca Mining Unit as of December 31, 2019*

Description	Tonnes	Au	Ag	Cu	Pb	Zn
		g/t	g/t	%	%	%
OAXACA MINING UNIT						
Arista Mine	**1,574,700**	**1.46**	**141**	**0.23**	**1.21**	**3.44**
Alta Gracia Project (inc. Mirador Mine)	**170,400**	**0.77**	**376**			
Margaritas Project	**26,000**	**0.51**	**260**			
OAXACA MINING UNIT TOTAL	**1,771,100**					

Notes on Mineralized Material in Table 1.3:

1. Mineralized Material is exclusive of Mineral Reserves
2. Metal prices used for Mineralized Material were $1,306 per ounce of gold, $16.32 per ounce of silver, $2.83 per pound of copper, $0.99 per pound of lead and $1.27 per pound of zinc. These prices reflect the three-year trailing average prices for gold, silver, copper, lead and zinc.

3. A breakeven NSR cutoff grade of $76 per tonne was used for estimations of Mineralized Material at the Arista mine. The term "cutoff grade" means the lowest NSR value considered economic to process.
4. No appreciable amounts of base metals are present in the veins identified to-date at the Alta Gracia Project including the Mirador Underground Mine, and the Margaritas Project. A breakeven cutoff grade of 2.5 g/t AuEq was used for Mineralized Material at the Alta Gracia and Margaritas Projects using gold and silver only to calculate gold equivalencies at a ratio of 80.03:1.
5. Arista Mine metallurgical recovery assumptions used were 78% for gold, 91% for silver, 78% for copper, 78% for lead and81% for zinc. Alta Gracia and Margaritas projects metallurgical recovery assumptions used were 87% for gold and 80% for silver. These recoveries reflect 2019 actual average recoveries for the Aguila and Alta Gracia Projects.
6. Mineralized Material are diluted and factored for expected mining recovery.
7. Minimum mining width for Mineralized Material is 1.5 meters for the Arista and Mirador underground mines.
8. Figures in tables are rounded to reflect estimate precision and small differences generated by rounding are not material to estimates.

DDGM also reports Mineral Resources for the Oaxaca Mining Unit that do not qualify as neither Mineral Reserves nor Mineralized Material. Mineral Resources exclusive of Mineral Reserves and Mineralized Material, as of December 31, 2019, are summarized in Table 1.4.

Table 1.4 Mineral Resources (Exclusive of Mineral Reserves and Mineralized Material) for the Oaxaca Mining Unit as of December 31, 2019

Project	Class	Cutoff	Tonnes	Au g/t	Ag g/t	Cu %	Pb %	Zn %
Arista	Measured	$76	367,300	1.09	91	0.19	0.99	3.00
	Indicated	$76	358,400	0.68	86	0.15	1.04	3.24
	Meas+Ind	$76	725,700	0.89	88	0.17	1.01	3.12
	Inferred	$76	91,800	0.59	63	0.22	0.95	3.76
Switchback	Measured	$76	187,300	0.81	65	0.37	0.83	2.88
	Indicated	$76	131,800	0.66	86	0.39	0.72	2.48
	Meas+Ind	$76	319,100	0.75	74	0.38	0.79	2.72
	Inferred	$76	82,400	1.43	108	0.49	0.87	2.58
Altagracia	Measured	2.50 g/t	41,400	0.54	263			
	Indicated	2.50 g/t	14,300	0.57	272			
	Meas+Ind	2.50 g/t	55,600	0.55	265			
	Inferred	2.50 g/t	25,500	0.52	271			
Margaritas	Measured	2.50 g/t	0	0	0			
	Indicated	2.50 g/t	23,100	0.53	274			
	Meas+Ind	2.50 g/t	23,100	0.53	274			
	Inferred	2.50 g/t	36,100	0.53	308			
OAXACA MINING UNIT TOTAL	Measured		595,900	0.97	95			
	Indicated		527,700	0.66	99			
	Meas+Ind		1,123,500	0.82	97			
	Inferred		235,800	0.87	139			

Mineral Resources reported by DDGM exclusive of Mineral Reserves and Mineralized Material do not have demonstrated economic viability. The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.

1.8 Mining Operations

DDGM commenced mining and milling operations at the Aguila Project on July 1, 2010. Mineral production during 2010 consisted of processing Mineral Resources from the Aguila open pit mine, located approximately 0.5 km from the plant. DDGM developed and mined the shallow-dipping accessible portion of the Aguila manto vein by open pit methods.

During 2010, DDGM began developing an underground mine to access two veins called the Arista and Baja veins, part of the “Arista vein system”. The underground mine is approximately two km from the plant. In March 2011, DDGM began transitioning from processing the open pit to the underground mineralization. Conventional drill and blast methods are currently used to extract the proven and probable reserves from the Arista underground mine. There are two main mining methods used in the Arista underground mine: 1) overhand mechanized cut and fill (CAF) and 2) long-hole open stoping (LHOS) with delayed fill. DDGM is subject to all Mexican federal, state and local laws and regulations governing the protection of the environment, including laws and regulations relating to protection of air and water quality, hazardous waste management and mine reclamation as well as the protection of endangered or threatened species. The Oaxaca Mining Unit is permitted according to mining, environmental, labor, tax and other Mexican regulations for the mining and metallurgical complex.

Since commercial production was declared at the Oaxaca Mining Unit on July 1, 2010, through December 31, 2019, the plant has processed a total of 3,972,332 tonnes of open pit and underground ore to recover 277,652 ounces of gold and 21,250,557 ounces of silver.

Production from the Oaxaca Mining Unit has proven that the project has the grade and continuity required to justify continued development and mining. The known veins and other targets on the Oaxaca Mining Unit are underexplored by drilling. If DDGM maintains its exploration programs, excellent potential exists for reserves to maintain or grow.

1.9 Milling and Processing

During 2009 and 2010, DDGM constructed a processing plant and infrastructure at the Aguila Project. The processing plant has a differential flotation section capable of processing polymetallic ores and producing up to three separate concentrate products for sale, and an agitated leach circuit capable of producing gold and silver doré for sale. The Aguila mill’s flotation circuit processing capacity is a nominal 1,800 tonnes per day. Up until 2018, power was mainly provided by diesel generators at the site. In 2019, DDGM successfully connected a power line to its Aguila project from the Mexican Federal Electricity Commission’s (Comisión Federal de Electricidad or CFE) power grid. Prior to this connection, the Aguila project operated 100% from electricity generated from more expensive and higher emission diesel fuel. DDGM has obtained water rights from the Mexican government for an amount of water believed to be sufficient to meet operating requirements and pump it approximately five km to the site from a permitted well located near the Rio Grande River.

A flotation tailings impoundment was constructed in a valley just below the process plant site. The impoundment is double lined with the first liner made of a clay and synthetic material that acts as a leak prevention system with the effective absorption equal to ~ 3 meters of clay. The second liner is a welded High-Density Polyethylene (HDPE), which was a permitting requirement. The method of subsequent embankment construction to obtain full capacity is up-stream.

2 INTRODUCTION

2.1 Terms of Reference and Purpose of Report

GRC, through its wholly-owned subsidiary DDGM, is currently engaged in the exploration for and production of gold, silver and base metals in Mexico. GRC was organized under the laws of the State of Colorado in 1998.

GRC went public with an initial public offering ("IPO") in August 2006. GRC used the proceeds of its IPO and additional private placements to acquire and conduct exploration activities at the Oaxaca Mining Unit in Mexico's southern State of Oaxaca. GRC controls 100% interest in the Aguila Project and five properties, which now comprise its Oaxaca Mining Unit.

Based on successful exploration efforts, GRC decided on April 11, 2007 to move forward to construct a processing plant for the Aguila Project. Mining and milling operations began on July 1, 2010.

This report comprises a summary of exploration investigations carried out by GRC through its Mexican subsidiary DDGM, as well as independent consultants for different areas of specialization, such as geological, economic geology, geochemical studies, quality control sampling techniques, and geostatistical analysis of the assay results, drilling, mining methods, metallurgical processing, and geologic modeling to determine Mineral Resources and Mineral Reserves for the Arista and Mirador underground mines and Margaritas property completed as of December 31, 2019.

2.2 Qualifications of Qualified Persons

The qualified persons (QPs) preparing this report are specialists in the fields of geology, exploration, mineral resource and mineral reserve estimation and classification, underground and surface mining, geotechnical, environmental, permitting, metallurgical testing, mineral processing, processing design, capital and operating cost estimation, and mineral economics.

The following individuals, by virtue of their education, experience and professional association, are considered QPs for this report and are members in good standing of appropriate professional institutions. The QPs are employees of either GRC or GRC Nevada Inc. (GRCN), a wholly-owned Nevada subsidiary of GRC, and therefore, the QPs are not independent of DDGM. QP certificates of authors are provided in Appendix A.

Mr. Brown graduated with a Bachelor of Science (B.Sc.) degree in Geology from New Mexico State University in 1987, obtained a Graduate Diploma in Engineering (Mining) in 1997 from the University of the Witwatersrand and a Master of Science (M.Sc.) in Engineering (Civil) from the University of the Witwatersrand in 2005. He is registered with the Association of Professional Engineers and Geoscientists of British Columbia and the Society for Mining, Metallurgy and Exploration as a Registered Member. Mr.

Brown has also worked as an Underground Mine Geologist, Mineral Resource Manager, Resident Geologist and Chief Geologist at several mines in South Africa operated by Anglo American, Anglogold and De Beers. Since 2004, before joining GRC in 2017, Mr. Brown was a Consulting Geologist specializing in mineral resource and mineral reserve estimations and reporting.

Mr. Garcia holds a Bachelor´s degree in Industrial Engineering from Universidad de Lima (2002) and a Master´s degree in Mining Engineering and Mineral Economics from McGill University (2006). He is a Professional Engineer registered with the Association of Professional Engineers and Geoscientists of British Columbia. Mr. Garcia has over 15 years of practical experience in mining engineering and capital budgeting. He is the current Corporate Chief Engineer for Gold Resource Corp and is responsible for evaluating, improving and supporting engineering processes, systems and standards at all GRC´s operations and projects. Mr. Garcia has a robust operational background in diverse mining methods and commodities. He has held various roles in operations and all aspects of mining engineering at RPM Global (Canada), Teck's Coal (Canada) and Copper (Chile) divisions, Hochschild Mining (Peru) and Newmont Mining Corporation (Peru).

Mr. Devlin holds a B.Sc. degree with honors in Geology, 1981, and a M.Sc., 1987, from the University of British Columbia, Vancouver Canada. He is also a Professional Geologist registered with the Association of Professional Engineers and Geoscientists of British Columbia and is a Member of the Society for Mining, Metallurgy and Exploration and the American Exploration and Mining Association. Mr. Devlin has worked more than 35 years in both exploration and mine production which includes working for several USA-companies, including US Borax and Chemical Corp., Hecla Mining Company and Gold Resource Corp.

Ms. Lester holds a B.Sc. in Geology and a M.Sc. in Geology from the South Dakota School of Mines and Technology, Rapid City, South Dakota. Ms. Lester's industry experiences span more than 20 years and are rooted by traditional field techniques, best practices, and supplemented by modern technologies/research and includes extensive geologic mapping, hydrologic investigations, drill program design, interpretation and management, 3-D modeling, and scoping, prefeasibility, and resource and reserve reporting. Ms. Lester's background in mining and exploration includes positions ranging from Independent Consultant, Exploration Geologist, Project Manager, and Chief Geologist for companies including Hecla Mining Company, Patagonia Gold S.A., and Gold Reserve Inc. For the past 5 years she has served as Chief Geologist for Gold Resource Corporation while overseeing exploration activities at their Oaxaca Mexico operations and exploration activities at their Nevada Mining Unit.

Technical data and information used in the preparation of this report also included some documents prepared by third party contractors. The authors' sourced information from referenced documents as cited in the text and listed in References section of this report.

2.3 Details of Inspection

The QPs and other contributing authors referenced above and in Appendix A have visited the Oaxaca Mining Unit on numerous occasions since 2013.

2.4 Sources of Information

DDGM has relied on information and technical documents listed in the References section of this report which are assumed to be accurate and complete in all material aspects. While DDGM has carefully reviewed the available information provided, DDGM cannot guarantee its accuracy and completeness.

2.5 Effective Date

The effective date of this report is December 31, 2019.

2.6 Units of Measure

The metric system for weights and units has been used throughout this report. Mass is reported in metric tons ("tonnes") consisting of 1,000 kilograms per tonne. Gold and silver ounces are reported in troy ounces converted using 31.1035 grams per troy ounce. All currency is in U.S. dollars (US$) unless otherwise stated.

3 RELIANCE ON OTHER EXPERTS

The opinions contained herein are based in part on information provided by consultants throughout the course of the investigations in support of this report. The QPs used their experience to determine if the information from previous reports was suitable for inclusion in this report and adjusted information that required amending. This report includes technical information, which required subsequent calculations to derive subtotals, totals and weighted averages. Such calculations inherently involve a degree of rounding and consequently introduce a margin of error. Where these occur, the qualified persons do not consider them to be material.

4 PROPERTY DESCRIPTION AND LOCATION

This section addresses the project land holdings, corporate agreements, existing environmental liabilities and the permitting process.

4.1 Property Location

The Aguila and Alta Gracia Projects are located in the Sierra Madre del Sur Mountains of southern Mexico, in the central part of the State of Oaxaca (Fig. 4.1). The projects are located along a major paved highway approximately 90 to 120 km southeast of Oaxaca City, the state's capital city. The city of Oaxaca has daily passenger airline service to Mexico City and Guadalajara in Mexico, and Houston, Texas through the nearby Xoxocotlan International airport.

Figure 4.1 General Location of Properties comprising the Oaxaca Mining Unit

4.2 Mineral Titles

DDGM currently holds an interest in twenty-nine (29) mining concessions in Oaxaca State totaling 55,119 hectares (Fig. 4.2; Table 4.1). Expiration dates associated with the Oaxaca Mining Unit mining concessions range from February 22, 2022 to November 7, 2066.

Table 4.1 Oaxaca Mining Unit Mining Concessions Owned by Don David Gold Mexico, S.A. de C.V.

Number	Concession Name	Title Number	Hectares	Term of Mining Concession	
				From	To
1	MINA EL AIRE	158272	72.0000	3/5/1973	3/4/2023
2	EL AGUILA	222844	899.0610	9/9/2004	9/8/2054
3	LA TEHUANA	210029	925.0000	8/31/1999	8/30/2049
4	EL CHACAL	232628	375.0000	9/26/2008	9/25/2058
5	EL PILON	232629	1,070.3463	9/26/2008	9/25/2058
6	PITAYO 1	231124	429.6269	1/17/2008	1/16/2058
7	PITAYO 2	231125	22.0481	1/17/2008	1/16/2058
8	PITAYO3	231126	113.3089	1/17/2008	1/16/2058
9	PITAYO4	231127	2.8205	1/17/2008	1/16/2058
10	EL TALAJE	231128	1,015.9512	1/17/2008	1/16/2058
11	LA HERRADURA	231129	3,628.8500	1/17/2008	1/16/2058
12	DAVID FRAC.1	232851	625.5930	10/30/2008	10/29/2052
13	DAVID FRAC.2	232852	920.7610	10/30/2008	10/29/2052
14	SAN LUIS	233124	2,820.0691	12/12/2008	12/11/2052
15	EL COYOTE	235802	2,799.5484	3/12/2010	2/11/2060
16	EL ZORRITO	235332	8,836.4199	11/12/2009	11/11/2059
17	LA CURVA	235803	1,940.2815	3/12/2010	2/11/2060
18	EL CHAMIZO	238374	17,897.5371	9/23/2011	9/22/2061
19	ZOPI	238875	504.0000	11/8/2011	11/7/2061
20	LA REYNA	225401	692.0000	8/31/2005	8/30/2011
21	EL REY	225373	172.0000	8/26/2005	8/25/2011
22	EL VIRREY	226269	36.0000	12/2/2005	12/1/2011
23	EL MARQUEZ	234213	1,434.8932	6/5/2009	6/4/2059
24	SAN MIGUEL FRACC 2	241818	1,122.8379	3/27/2013	3/26/2063
25	SAN PEDRO FRACC. 1	233694	2,554.0000	3/30/2009	2/23/2054
26	SAN PEDRO FRACC. 2	233693	1,860.2110	3/30/2009	2/23/2054
27	EL AGUILA III	242686	2,250.0000	12/16/2013	12/16/2063
28	CORRECAMINOS	244389	97.8110	8/25/2015	8/24/2065
29	TLACUACHE	245147	1.0396	11/8/2016	11/7/2066
		Total	**55,119.0156**		

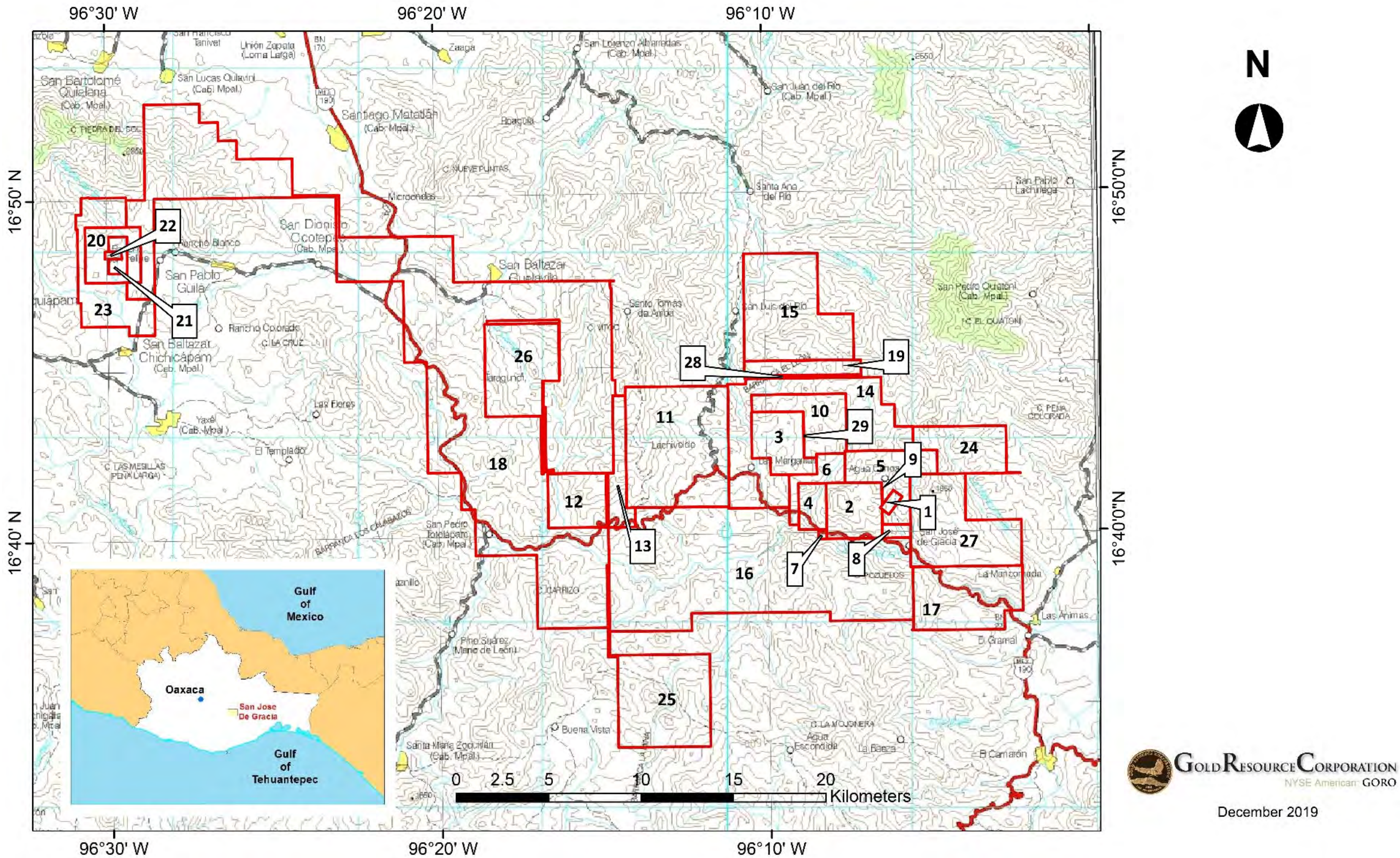

Figure 4.2 Oaxaca Mining Unit Concessions (concession numbers are listed in Table 4.1).

4.3 Royalties, Agreements and Encumbrances

4.3.1 Royalties and Agreements

On October 14, 2002, DDGM leased its first three mining concessions from a former consultant to the company. These concessions are known as El Aguila, Mina El Aire and La Tehuana, which totaled 1,896 hectares. The El Aguila and El Aire concessions are now part of DDGM's Aguila Project and the La Tehuana concession comprises the Margaritas property.

The Aguila lease agreement with the former consultant is subject to a 4% net smelter return royalty where production is sold in the form of gold/silver doré and 5% for production sold in concentrate form. Subject to meeting minimum exploration requirements, there is no expiration term for the lease. DDGM may terminate the lease at any time upon written notice to the lessor and the lessor may terminate it if DDGM fails to fulfill any of its obligations, which primarily consists of paying the appropriate royalty to the lessor.

In 2010, DDGM subsequently acquired, at no additional cost, two additional concessions from the former consultant, which are referred to as El Chacal and El Pilon, totaling 1,445 hectares, each of which are subject to a 2% royalty to the consultant, but are not subject to the lease.

DDGM has since filed for and received additional concessions for the Oaxaca Mining Unit that total an additional 45,029 hectares which DDGM refers to as El Pitayo 1 to 4, El Talaje, El Coyote, El Zorrito, San Luis, La Curva, La Herradura, David Fracción 1 and 2, El Chamizo, Zopi, San Miguel Fracción 2, El Aguila III, Correcaminos and Tlacuache. These additional concessions are not part of the concessions leased or acquired from DDGM's former consultant.

The Oaxaca Mining Unit also includes the Rey property which adjoins DDGM's El Chamizo concession on the west side. These concessions are known as El Rey, El Virrey, La Reyna and El Marquez. DDGM acquired the El Rey concession from the former consultant and it is subject to a 2% net smelter return royalty payable to the consultant. DDGM obtained the remaining concessions by staking claims and filing for concessions with the Mexican government. These concessions total 2,335 hectares.

In March 2013, DDGM acquired the San Pedro Fracción 1 and San Pedro Fracción 2 concessions from Almaden Minerals Ltd. (Almaden) and are subject to a 2% net smelter return royalty. The San Pedro Fracción 1 concession consists of 2,554 hectares and is located south of DDGM's Alta Gracia and El Chamizo properties. The San Pedro Fracción 2 concession consists of 1,860 hectares and is surrounded by DDGM's El Chamizo concession and will be included as part of the El Chamizo property. Any future production from the San Pedro Fracción 1 and San Pedro Fracción 2 concession is subject to a 2% net smelter return royalty in favor of Almaden.

4.3.2 Mining Regulations

Mineral rights in Mexico belong to the Mexican federal government and are administered pursuant to Article 27 of the Mexican Constitution. All mining concessions comprising the Oaxaca Mining Unit are exploitation concessions, which may be granted or transferred to Mexican citizens and corporations. The leases or concessions are held by Mexican subsidiaries of GRC. Exploitation concessions have a term of 50 years and can be renewed for another 50 years. Concessions grant the right to explore and exploit all minerals found in the ground. Maintenance of concessions requires the semi-annual payment of mining duties (due in January and July) and the performance of assessment work, on a calendar year basis, with assessment work reports required to be filed in the month of May for the preceding calendar year. The amount of mining duties and annual assessment are set by regulation and may increase over the life of the concession and include periodic adjustments for inflation. Mining concessions are registered at the Public Registry of Mining in Mexico City and in regional offices in Mexico.

Mexican mining law does not require payment of finder's fees or royalties to the government, except for a discovery premium in connection with national mineral reserves, concessions and claims or allotments contracted directly from the Mexican Geological Survey. None of the claims held by any of DDGM's subsidiaries are under such a discovery premium regime.

DDGM is required to pay concession fees to the Mexican government to maintain its interest in the Oaxaca Mining Unit mining concessions. The annual 2019 concession tax paid for the mining concessions controlled by DDGM (55,119 ha) was US $ 728,929.

In 2019, DDGM satisfied the minimum investment and assessment work requirements based on its annual work programs and past work completed. DDGM has also paid the total mining duty required annually to keep the Oaxaca Mining Unit concessions in good standing.

In 2013, the Mexican federal government enacted a tax reform package that was effective as of January 1, 2014. There were a number of significant changes in the Mexican tax reform package. The planned corporate income tax rate reductions to 29% in 2014 and 28% thereafter have been repealed and the corporate tax rate remained at 30%. The tax base for income tax was amplified considering certain limitations on deductions. The business flat tax (IETU) was repealed. A special mining royalty tax of 7.5% was applied to net profits derived by a property concession holder from the sale or transfer of extraction related activities. Net profits for the purpose of this royalty is determined in a manner similar to the calculation of general taxable income with certain deductions not available, including deductions for investment in fixed assets and interest. In addition, owners of mining concessions are required to pay an additional extraordinary 0.5% royalty fee on gross revenue derived from the sale of gold, silver and/or platinum. Further, a 10% withholding tax on dividend distributions was introduced but does not supersede treaty rates.

4.3.3 Ejido Lands and Surface Rights Acquisitions

Surface lands of the Oaxaca Mining Unit mining properties are Ejido lands (agrarian cooperative lands granted by the federal government to groups of Campesinos [farmers] pursuant to Article 27 of the Mexican Constitution of 1917). Prior to January 1, 1994, Ejidos could not transfer Ejido lands into private ownership. Amendments to Article 27 of the Mexican Constitution in 1994 now allow individual property ownership within Ejidos and allow Ejidos to enter into commercial ventures with individuals or entities, including foreign corporations.

Mexican law recognizes mining as a land use generally superior to agricultural. However, the law also recognizes the rights of the Ejidos to compensation in the event mining activity interrupts or discontinues their use of the agricultural lands. Compensation is typically made in the form of a cash payment to the holder of the agricultural rights. The amount of such compensation is generally related to the perceived value of the agricultural rights as negotiated in the first instance between the Ejidos and the owner of the mineral rights. If the parties are unable to reach agreement on the amount of the compensation, the decision will be referred to the government.

DDGM has established surface rights agreements with the San Pedro Totolapam Ejido and the individuals impacted by current and proposed operations which allow disturbance of the surface where necessary for DDGM's exploration activities and mining operations.

4.4 Environmental Liabilities and Permitting

The department responsible for environmental protection in Mexico is Secretaria de Medio Ambiente y Recursos Naturales ("SEMARNAT") under the corresponding laws and regulations. The DDGM mining operations are subject to environmental regulation by SEMARNAT. Regulations governing advancement of new projects or significant changes to existing projects require an environmental impact statement, known in Mexico as a MIA. DDGM may also be required to submit proof of local community support for a project to obtain final approval.

Mining operations in México operate under a unique environmental license (Licencia Ambiental Unica). This environmental license is issued after approval of the Evaluación del Impacto Ambiental (EIA). As well, special permits are issued for certain new developments such as expansions, tailings dams, etc.

The Aguila Project of the Oaxaca Mining Unit is permitted according to mining, environmental, labor, tax and other Mexican regulations for the mining and metallurgical complex. DDGM is also required to obtain various permits for surface and underground water use and discharge of waste water discharge. The permissions are granted by the Comisión Nacional del Agua (CONAGUA), the administrative, technical advisory commission of SEMARNAT. CONAGUA administers national waters, manages and controls the country's hydrological system, and promotes social development.

5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 Topography, Elevation and Vegetation

The Oaxaca Mining Unit is located in the state of Oaxaca in southern Mexico, which is bordered by the states of Puebla, Veracruz, Chiapas and Guerrero with the Pacific Ocean to the south.

Oaxaca has several mountain chains with elevation varying from sea level to more than 3,700 meters above sea level. Oaxaca has one of the most rugged terrains in Mexico, with mountain ranges that abruptly fall into the sea. Between these mountains are mostly narrow valleys, canyons and ravines. The mountains are mostly formed by the convergence of the Sierra Madre del Sur, Sierra Madre de Oaxaca and Sierra Atravesada into what is called the Oaxaca Complex (Complejo Oaxaqueño).

The Aguila and Alta Gracia projects of the Oaxaca Mining Unit are located within the Municipality of San Pedro Totolapa. The surface of the municipality is irrigated by the Rio Grande. The area is very rocky with vegetation typical of a dry climate. Subsistence farming occurs in the area and the main agricultural crop is agave cactus that is cultivated for the production of mezcal.

5.2 Accessibility and Transportation to the Property

The Municipality of San Pedro Totalapa is located in the Region of the Central Valleys, 89 km southeast of the city of Oaxaca. It belongs to the District of Tlacolula. DDGM's primary operations are located within and near the town of San José de Gracia, in the Municipality of San Pedro Totolapa. San Jose de Gracia has the following GPS coordinates:

- Longitude(dec):-96.097222
- Latitude (dec): 16.659167

The Aguila Project is approximately 4 km northwest from the village of San Jose de Gracia. A gravel and paved road has been constructed from the village to the mine and mill sites which supports adequate access to the property by small and large vehicles.

The Alta Gracia Project is approximately 20 km northeast from the town of San Pedro Totalapa, the seat of the municipal government. Access to the project is by a gravel road that departs the paved highway approximately 13 km east of the town of San Pedro Totalapa. The haulage distance by road from Alta Gracia to the Aguila Plant, where the ore will be produced, is approximately 32 km.

5.3 Climate

The climate of the Oaxaca Mining Unit areas are dry and warm to very warm with most rainfall occurring in the summer and annual precipitation averaging only 423.7 mm. The average yearly temperature is 26.6 degrees centigrade.

5.4 Sufficiency of Surface Rights

All mineral resources and mineral reserves in this report is located on mining concessions controlled by DDGM. As described in detail in Sections 1 and 4, DDGM has secured and maintained the necessary permits for exploration, development and production of the Oaxaca Mining Unit.

5.5 Infrastructure Availability and Sources

5.5.1 Power

The majority of power for mining operations is provided by electrical grid power available through the public network of the Comisión Federal de Electricidad (CFE) and with some from DDGM generating diesel power plants.

5.5.2 Water

Water sources at the Aguila Project include the mine, recycled water from the tailings impoundment facilities, and water available through the water rights allowing for taking water from a permitted well located near the “river” called Rio Grande River.

Water used for mining operations at the Alta Gracia Project are sourced locally and transported to storage tanks in water trucks.

5.5.3 Mining Personnel

The metropolitan area of the capital city of Oaxaca has a population of approximately 694,000. Tourism is a principal industry in the area, and numerous hotels and restaurants are available. A workforce that is familiar with mining and the necessary support facilities is present in the region.

The village of San Jose de Gracia supplies some of the workforce for the mine, while other workers come from Oaxaca City and other nearby villages. The company provides travel for the workforce to and from their local home bases.

5.5.4 Tailings Storage Areas

The initial Tailings Storage Facilities, TSF 1 and 2, have nearly reached reach maximum capacity and receive only limited tailings from the Aguila plant. Phase 3 (TSF 3) is currently the active impoundment area for mill tailings.

5.5.5 Waste Disposal Areas

DDGM has several permitted waste-rock disposal areas at the Aguila and Alta Gracia projects. These waste disposal areas were designed mainly as valley fill sites.

5.5.6 Processing Plant Site

The location of the processing plant was considered when selecting sites for tailings storage áreas. The Aguila plant site, as described in Section 17 of this report, is adjacent to and up-gradient from the current tailings storage areas.

6 HISTORY

6.1 Mining History

The Aguila and Alta Gracia Projects are located in the regional Tlacolula mining district within the south-western part of the state of Oaxaca, México. According to the Mexican Geological Survey, the Servicio Geológico Mexicano (SGM), mining activity was initiated in the early 1880s in the Tlacolula mining district with production of some 300,000 ounces of gold and silver from an ore shoot of the La Leona mine, although no separate amounts of production were reported for each metal. SGM reports that in 1892 two smelters were built and operated (Magdalena Teitipac and O'Kelly) near the village of Tlacolula for processing ores from the Alta Gracia, La Soledad, San Ignacio y Anexas, La Leona, La Victoria, and San Rafael silver mines. Subsequently, in 1911, Mr. Sken Sanders carried out investigations of the Totolápam mining region with special interest in the Margaritas mine. Most of these historical mines are situated within DDGM's land concessions.

6.2 Oaxaca Mining Unit Production

The Aguila and Alta Gracia Projects are located in the smaller mining sub districts of San Jose de Gracia and Alta Gracia, respectively. Only small-scale artisanal mining has been historically conducted in these districts. No reliable production records exist for the historic production conducted in the Aguila and Alta Gracia Project areas.

Since commencement of production from the Oaxaca Mining Unit in 2010, DDGM has produced 277,652 ounces of gold and 21,150,557 ounces of silver from the 3,972,332 tonnes shipped to the Aguila Plant (Table 6.1). In addition, 10,783 tonnes of copper, 42,581 tonnes of lead and 121,486 tonnes of zinc have been produced from the plant.

Table 6.1 Oaxaca Mining Unit Production 2010 through 2019

Year	Milled Tonnes	Gold Oz	Silver Oz	Copper Tonnes	Lead Tonnes	Zinc Tonnes
2010	166,237	10,493	111,316			
2011	214,215	21,586	2,180,309	620	1,840	3,730
2012	282,120	34,417	2,996,743	986	3,374	9,115
2013	316,270	33,942	3,032,841	926	2,742	7,452
2014	375,623	35,552	3,297,204	1,254	4,555	13,195
2015	413,626	29,644	2,506,337	1,310	4,174	13,900
2016	450,221	27,628	1,857,658	1,035	4,049	14,302
2017	449,177	28,117	1,773,263	1,141	5,365	16,301
2018	611,670	26,838	1,672,034	1,652	7,280	19,808
2019	693,173	29,435	1,722,852	1,859	9,202	23,683
Totals	**3,972,332**	**277,652**	**21,150,557**	**10,783**	**42,581**	**121,486**

7 GEOLOGICAL SETTING AND MINERALIZATION

The Oaxaca Mining Unit area is dominated by multiple volcanic domes of various scales, and it is suspected that non-vented intrusive domes also, dominate the district geology. These volcanogenic features are imposed on a pre-volcanic basement of sedimentary rocks. Gold, silver and base metal mineralization in this district is related to the manifestations of this classic volcanogenic system and is considered epithermal in character.

7.1 Regional Geology

The Oaxaca Mining Unit is located in the physiographic sub-province of Tierras Altas de Oaxaca, which is part of the Sierra Madre del Sur physiographic province, in the southeastern part of México.

The regional geology encompassing the Oaxaca Mining Unit is dominated by volcanic rocks that vary in composition from rhyolitic to andesitic in flows, tuffs, agglomerates, and ignimbrites.

The Oaxaca Mining Unit includes mineral deposits situated along a 55-km NW–SE mineralized trend which is hosted by volcanic, sedimentary, igneous, and metamorphic rocks ranging in age from Miocene to Cretaceous.

Figure 7.1 shows the regional geology for the Oaxaca Mining Unit area taken from SGM (formerly the CRM; Sánchez Rojas et al., 2000). Figure 7.2 shows the stratigraphic column for rock units shown on Figure 7.1 and corresponding to DDGM's local geologic investigations.

7.2 Local and Property Geology

The Aguila and Alta Gracia Projects are located in old mining districts which had been inactive since about the 1950s, until DDGM initiated geologic reconnaissance in search of precious metal deposits.

7.2.1 Aguila Project

A semi-detailed regional geologic map of the area at scale of 1:5000 was initiated in 2007 by DDGM's on-site geologic staff (Fig. 7.3). The recorded information included lithology, structural, alteration zone features, and hand sample locations. Previous information based on aerial photographic interpretation and field data were incorporated in the geologic map.

A Cretaceous sedimentary lithic sequence, composed of fine-grained sandstones intercalated with shale, siltstone, and calcareous rocks, has been identified in outcrops on the central part of the Aguila Project area surrounding the Cerro Colorado peak and in drill hole intercepts. Younger andesite, rhyolite, intrusive dikes, and small stocks of granitic to granodiorite composition crop out within the area and have been intercepted in drill holes. The intrusive rocks appear to have caused structural conditions favorable for subsequent deposition of mineralization along dikes, faults and breccia zones, as well as replacement and skarn deposits into favorable contact zones with the sedimentary sequence.

The mineralized structures appear to be associated with a transpressional structural system which intersects a Tertiary-aged volcanic “caldera.”

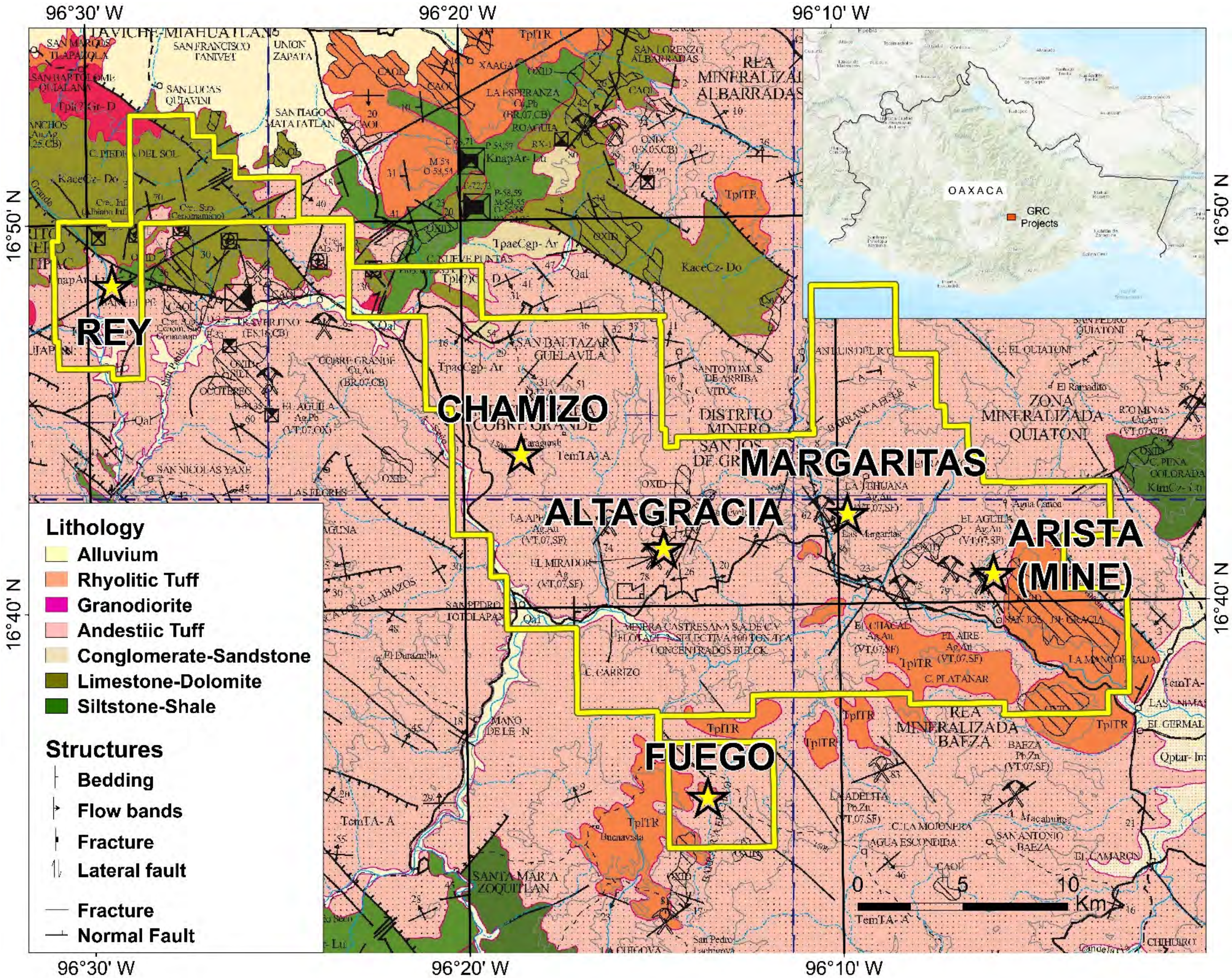

Figure 7.1 Oaxaca Mining Unit Regional Geology Showing DDGM Concession Boundaries in Yellow (after Sánchez Rojas et al., 2000; map insert from INEGI 2019).

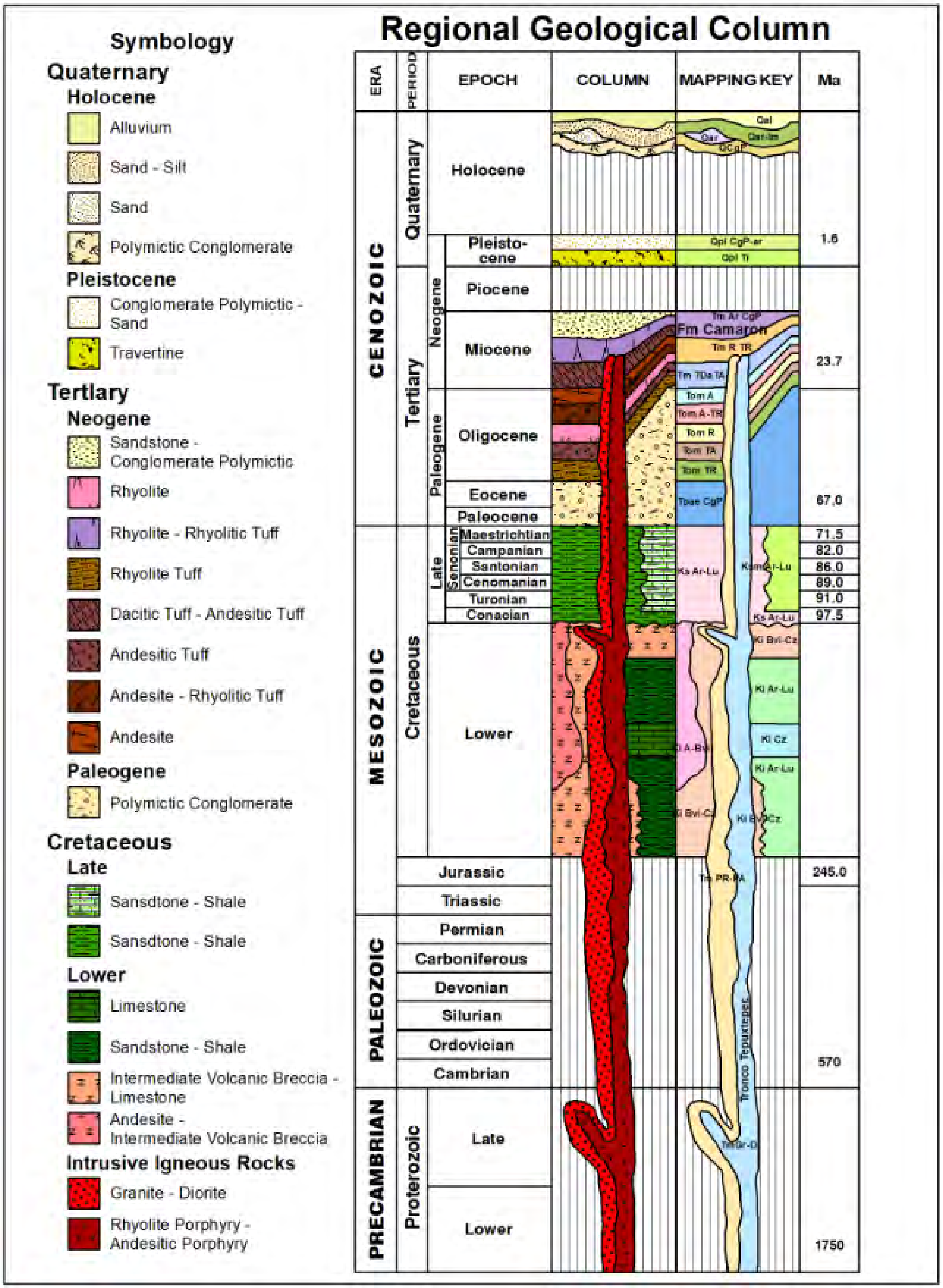

Figure 7.2 Stratigraphic Column for the Oaxaca Mining Unit Area

7.2.1.1 Stratigraphy

The stratigraphy of the Aguila Project area can be divided into a Cretaceous basement and overlying Tertiary units, as shown in Figure 7.3. The Cretaceous units are composed of rocks of sedimentary origin, weakly to moderately metamorphosed and intensely deformed by structural (or compressive) shortening. These rocks are unconformably overlain by the Tertiary units comprised mainly of sub aerial volcanic rocks. The rocks of Tertiary cover have experienced only extensional deformation and in some places are gently tilted. The Tertiary-aged rocks correspond to a period of tectonism accompanied by volcanism and intrusive magmatic activity.

According to geologic investigations by DDGM's on-site staff and numerous consultants the predominant rocks identified within the Aguila Project area include volcanic rocks of medium to acid composition (andesite and rhyolite).

7.2.1.1.1 Rocks of Cretaceous Age

- **Black Breccia (KAr-Lm-Md)** - The basement rocks within the Aguila Project area consist of the Late Cretaceous formation locally referred to as ''Black Breccia''. This formation consists of lithic sedimentary rocks composed of carbonaceous shale, fine-grained sandstone, siltstone, and calcareous rocks including some layers of argillaceous limestone. The Black Breccia strata occur in thicknesses that vary from 5 - 80 cm, while sandstone beds may reach up to 1.00 m in thickness. The formation hosts rounded lithic fragments of a few millimeters up to 1.00 m in diameter and are composed of the same host formation which may have originated as a result of tectonic events. This formation occurs in the area surrounding Cerro Colorado peak. Its thickness is about 300 m to 400 m according to the SGM, and dates from the period of Albian – Mastrichtian (Late Cretaceous), based on fossil identification.

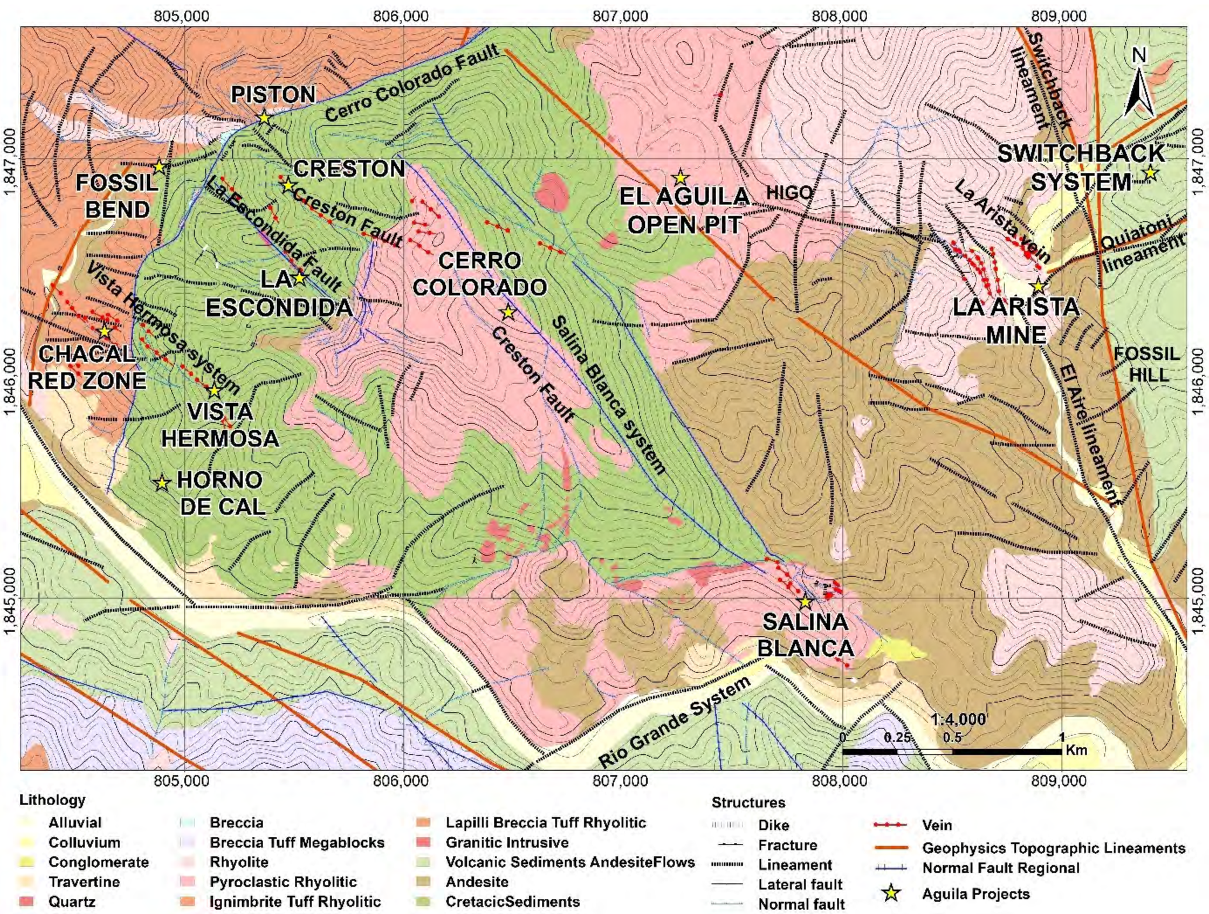

Figure 7.3 Geologic Map of the Aguila Project and Arista Underground Mine Area Highlighting Prominent Structures and Exploration Prospects or Mines

7.2.1.1.2 Rocks of Tertiary Age

The Tertiary units consist of a series of volcanic rocks of andesitic and rhyolitic composition occurring as flows, tuffs, ignimbrites, and agglomerates and have been classified as follows:

- **Andesite (TM Tan-An) -** This unit was dated by Petróleos Mexicanos (Murillo and Torres, 1987) as Late Oligocene – Early Miocene age (26.4 +- 1.3 million years, Ma to 19.0 +- 0.95 Ma); while SGM dated this unit as Middle to Late Miocene (15.3 to 17.32 Ma). This unit was classified as Laollaga Formation and consists of a series of andesite flows, tuffs, and breccia zones with complex contacts between occurrences. The unit outcrops in about 60 percent of the Aguila Project area proximal to and capping Cerro Colorado Peak.
- **Rhyolite (Tm Ry) -** Consists of rhyolite flows with some pyroclastic phases hosting abundant phenocrysts of plagioclase and quartz crystals ("eyes"). Outcrops are noted in the northeast and southeast parts of the project area and overlie the andesite with discordant and structural contacts. In drill holes, it appears as lithic tuff (DH-107021). This unit was dated by SGM as Middle Miocene (16.57 to 15.82 Ma). This rock unit constitutes the core of the Cerro Pilón dome.

- **Pyroclastic Rhyolite (Tm PclRy – Ry) -** This unit crops out within the Aguila open pit, around the western slope of Cerro Pilón, and on the slopes and top of Cerro Colorado. The unit consists of a sequence of strata with 10 - 30 cm thick beds, exhibiting clastic textures enclosing rock fragments composed of shale and coarse-grained sandstone within a fine-grained matrix. The unit exhibits strong alteration; including silicification, argillization, and oxidation. This unit may be part of an underlying breccia unit. It has been identified in drill holes 105023, 106005, and 106009 with a thickness of 70 m to 135 m and it has been dated as of Middle Miocene age.
- **Rhyolite Tuff – Ignimbrite (Tm Try – Ig) -** This unit occurs on the north-western part of the Arista underground mine area. It consists of a series of pyroclastic units occurring as lithic tuffs with different degrees of consolidation. Typically, outcrops are present in the Chacal creek area, occurring as thin to massive strata 25 - 30 cm thick. The unit contains abundant lithoclasts enclosed by fine-grained matrix hosting quartz "eyes". It has been considered to be of Middle Miocene age. According to Lipman (2011) this rock unit may be considered as an intra-caldera unit due to its significant thickness (260 m) intercepted on the southwestern slope of Cerro Pilón (drill hole 111001).
- **Rhyolitic Tuff – Agglomerate (Tm Try – Agl) -** This unit occurs as a mesa on the Tablón mountain to the north-east of San José de Gracia, consisting of a sequence of stratified lithic tuffs with intercalated ignimbrite beds of up to 5 m in thickness. These rocks contain quartz crystals, feldspars, and abundant rounded and sub-rounded, poorly classified, slightly consolidated fragments of ignimbrites. The unit has a thickness of about 200 m at the top of the Tablón Mountain. This unit's physical characteristics, such as stratification including cross stratification, and rounded to sub-rounded fragments, indicate a volcano-sedimentary sequence where deposition was interrupted by volcanic events that caused deposition of intercalated beds of ignimbrites, rhyolites, and tuffs. It has been defined as of Late Miocene age.
- **Andesite (TPl An) -** This unit consists of massive dark-grey aphanitic andesite with occasional plagioclase crystals. Some dikes and sills of this unit intrude the Rhyolite Tuff – Ignimbrite unit at Chacal creek. The thickness is estimated at about 100 m and is of Pliocene age.

7.2.1.1.3 Intrusive Rocks

- **Granite – Porphyry Rhyolite – Felsic Rhyolite (Tm Gr, Pry, Ry-Fel) -** Few small outcrops of this unit have been observed within the Aguila Project area, namely at the eastern side of the Arista underground mine, and on the top of the Cerro Colorado peak. In outcrop, they appear as granular holocrystalline rocks composed of white feldspar with quartz. This unit has been intercepted as dikes in some of the Arista mine area drill holes. The unit appears to be related to other regional rhyolite intrusions and may have played a role in the uplift of the Cerro Colorado dome. These rocks are considered to be Middle Miocene age.

7.2.1.1.4 Other Rocks of Quaternary Age

The youngest rocks identified in the Aguila Project area include surficial deposits of alluvium, colluvium, and gravel as products of weathering of the surrounding pre-existing units. Locally and particularly near Salina Blanca, active travertine deposition occurs as a result of infiltration and deposition of carbonate bearing water, which may be an indication of an active hydrothermal system and/or dissolution of carbonate sedimentary rocks.

7.2.1.2 Structure

The Aguila Project coincides with a structurally complex system. Numerous lineaments have been identified on satellite images and aerial photographs, many of which were later verified during field investigations and drilling. Figure 7.3 highlights the prominent structures discussed below.

The identified structures have been grouped to define a possible regional transpressional wrench-fault system determined by relative movements and inter-relations between the various individual structures. The most significant regional structures within the Aguila Project area, and shown on Figure 7.3, are summarized as follows:

- **Río Grande System** - Identified along the valley of the Río Grande River in the southern part of the area and is represented by a series of sub-parallel faults, oriented ENE - WSW with an ancillary system of perpendicular fractures with a NW-SE orientation.
- **Aire Lineament -** Occurs as strong quartz vein (Aire vein) along the Aire creek and adjacent to - Arista mine road, striking N25˚W cutting the local andesite and rhyolite units. In the Arista mine area this lineament changes orientation to the north, and appears to be intersecting two other lineaments, Quiatoni and Higo.
- **Quiatoni Lineament** - This lineament is oriented N60˚E and is located at the eastern side of the Arista mine. It cuts through andesite and a lithic agglomerate tuff unit. A drill hole intercepting an ore shoot at the Arista mine appears to be related to this structure. Other sub-parallel structures have been identified to the north of the Quiatoni structure which appears to indicate a strong and wide structural system.
- **Switchback Lineament -** Occurs as a sub-parallel structure to the Aire Lineament oriented at N17˚W. It is enclosed by pyroclastic acid volcanic rocks and rhyolite that constitute part of the Pilón dome. This lineament was intersected in drill hole 108030 as a significant fault zone.
- **Higo Lineament** - Occurs along the Higo creek oriented N78˚W and is projected from the Arista underground mine to the Aguila open pit mine. Outcrops exhibit quartz veins and veinlets along fractures within the lineament system.
- **Arista Vein System-** Consists of up to 40cm thick vein exposed along Arista ridge oriented N45^{0}W, 70NE. Drilling has defined this significant vein system to a depth of more than 500m and extending at least 650m along strike with a thickness varying from 3 to 5m. The vein corresponds to high-grade mineralization in the Arista underground mine workings.
- **Salina Blanca System** - Composed of two parallel faults oriented N39W hosting sub-parallel structures, exposed on the northeast side of Cerro Colorado peak. Locally the structure exhibits evidence of lateral and vertical movement, as well as strong silicification and stockwork, quartz veins and often exhibits disseminated oxidation.
- **Crestón Fault -** Exposed as a sub-vertical structure with “en echelon” configuration, the SE extension in the Cerro Colorado area strikes N32˚W, while its NW extension exhibits a N66˚W orientation. Quartz veins with intense silicification associated with the structure occur at the contact with sedimentary rocks. This structure is associated with the Escondida, Vista Hermosa, and Salina Blanca systems surrounding the Cerro Colorado peak, and appears to bound the Cerro Colorado uplift, generating a horst (or piston-like) configuration.

- **Escondida Fault -** Occurs on the western side of Cerro Colorado peak as a normal fault oriented N40˚W, dipping to the SW. At the Escondida mine area, this fault is associated with a quartz vein and a rhyolitic dike, and base metal mineralization is also present within the structure.
- **Vista Hermosa System -** Consists of a group of sub-parallel normal faults with an average strike of N40˚W, dipping to the SW. It is considered as part of the "en echelon" systems of Crestón and Escondida in the southwestern area of Cerro Colorado peak. This system shows evidence of vertical movement and hosts quartz veining with associated mineralization.
- **Cerro Colorado Fault -** Occurs as a curvilinear normal fault orientation N7˚E, N30˚E, and N70˚E on the western and north-western sides of Cerro Colorado peak respectively. Quartz veins and mineralization are associated with the fault zone an area nominated as the "Red Zone".
- **Chacal Fault -** Occurs on the northern side of the Chacal creek oriented N25˚E and exhibits evidence of lateral movement. This fault appears to have been displaced by the Escondida and Vista Hermosa structural systems.

7.2.1.2.1 Local Structures

Detailed structural examination from underground mine workings, surface exposures, and drill core intercepts (in context of the regional regime) provide evidence of transpressional-wrench faulting as the dominant structural control at the Aguila Project. Consultants of SRK (Canada) performed site visits and subsequent desktop studies at the mine project in 2012 and 2013 examining the kinematics and overall structural system (Vos et al, 2012; Couture, 2012; Kramer and Couture 2013). Their conclusions support previous conceptual models and are summarized below (Fig. 7.4):

- The Arista Fault is a northwest-striking, steeply northeast-dipping fault zone that comprises breccia and colloform veins and exhibits evidence for sinistral strike-slip fault movement. It is composed of two main segments oriented at 305^0 and 280^0 (100^0)
- The Alta Vein and Vein 3 are northwest-striking, sub-vertical fault zones that comprise breccia and colloform veins and exhibit evidence for sinistral strike-slip fault movement with minor components of dip-slip movement; additional post mineralization offset is oriented at 345^0.
- The 100 Vein (Arista NW trend transitioning to Santiago vein) is a 100° (280^0)-striking, sub vertical extensional vein that comprises breccia and colloform veins, and exhibits evidence for normal-dextral movement along a rare sub-fault bounding the vein;
- The Baja Vein is a 320°-striking, sub vertical extensional vein that comprises mainly colloform veins and limited breccia and exhibits only a narrow fault zone along its walls;
- Approximately 345^0 (165°) striking, sub vertical sinistral strike-slip faults offset gold-silver-lead-zinc-bearing veins and are interpreted to post-date mineralization.

Late structural events are suspected to play a significant role in the current configuration of vein positions (Fig. 7.5) with the most prominent trend oriented 340-350^0 (sinistral strike-slip, +/- oblique thrust). Many veins including Baja exhibit internal deformation (multiphase concurrent with mineralization and post mineralization), and several splays including Arista and Vein 3 are suspected to have been juxtaposed side-by-side by the post mineralizing events such that an artificial thickening of veins results from transposition or "stacking". Evidence has been documented on measurable fault surfaces exposed in the upper levels of current mine workings on the Arista fault vein, Vein 3 and Baja vein to support this interpretation. Likewise, bonanza grades have been attributed to these intersecting structural sites.

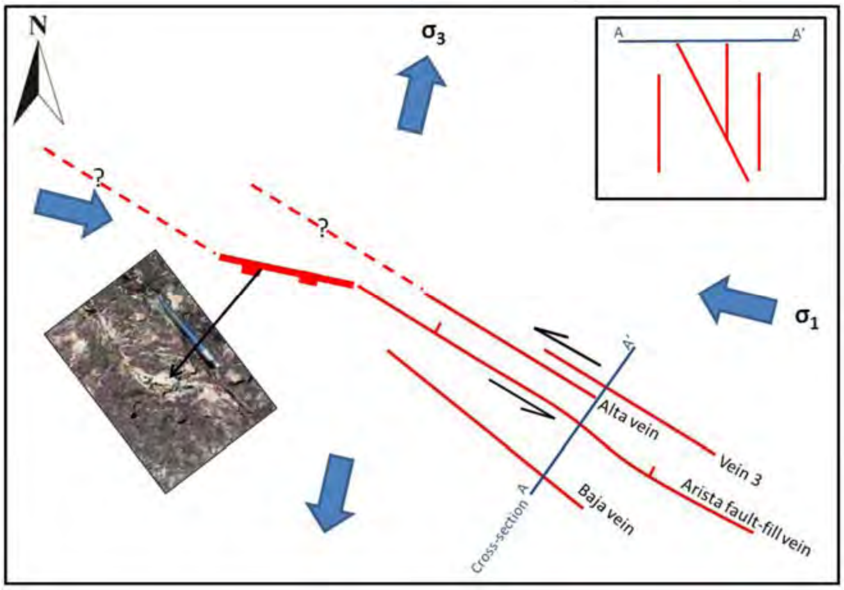

Figure 7.4 Simplified Structural Framework Sketch (highlights observed fault-vein geometries for the Arista mine, inset photo illustrates outcrop expression of dilation jog as favorable sites for vein/mineralization) (mod. from Vos et al., 2012)

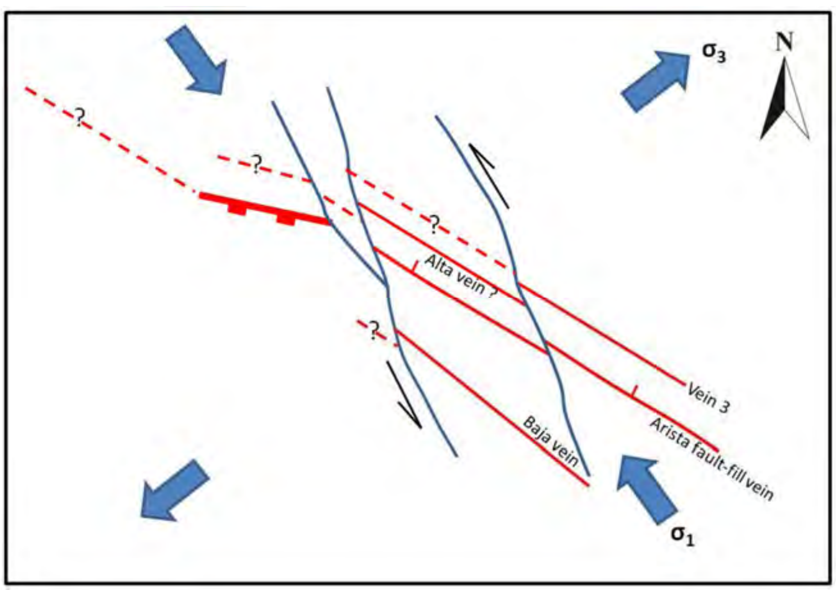

Figure 7.5 Generalized Structural Framework Sketch, indicating post-mineralization deformation of the Arista vein system (mod. from Vos et al., 2012)

7.2.2 Alta Gracia Project

Since April 2010, DDGM's on-site geologic staff has reviewed available information and conducted preliminary geological reconnaissance and semi-detailed surface and underground geological mapping in historic mining areas on the Alta Gracia property (Fig. 7.6). The recorded information included lithology, structural, alteration zone features, and hand sample locations. Previous information based on aerial photographic interpretation and field data were incorporated in the geologic map.

7.2.2.1 Stratigraphy

Geological mapping by DDGM geologists has shown the historic Alta Gracia mining district to be dominated by rhyolite flows and tuffs which are underlain by andesite flows and tuff. Granodiorite and felsic intrusives are observed to outcrop to north and east of the Mirador mine.

The sedimentary and volcanic units mapped at Alta Gracia are similar to those observed at the Aguila project. Known vein occurrences are mainly hosted in andesite and rhyolite of Tertiary age.

The rock units mapped on the Altagracia Project can be divided as follows:

- Cretaceous-age basement sedimentary rocks consisting mainly of sandstone and calcareous sandstone units. These units are quite deformed and form numerous folds, in moderate to thinly bedded strata. Basement rocks can only be observed in the roadcuts of Panamerican Highway 190 in the vicinity of the town of San Juan Guegoyache. These rocks are possibly correlative with the unit informally named "Black Breccia" of the Aguila project. The basement rocks have not been encountered in DDGM's drill holes, possibly due to the elevation differences with respect to where it outcrops (1,100 meters above sea level) and the area of the drilling (1,600 meters above sea level). Thick Tertiary volcano-sedimentary cover also unconformably overlies the Cretaceous sedimentary units.
- Tertiary-age volcano-sedimentary units consisting mainly of pseudostratified tuffs of intermediate composition that vary from ash tuffs to volcanic breccias, medium to coarse-grained texture, and containing principally subangular clasts. Pyroclastic units are locally intercalated with porphyritic andesite flows, that are possibly up to more than 400 meters in thickness. Also present are very localized, possible calcareous horizons with interbeds of colloidal silica, within the volcano-sedimentary units. These "exhalative" horizons can easily be confused with limestones interbedded with chert. Rhyolitic flows generally overly the pyroclastic and andesite units and crown the tops of the hills that make up the Alta Gracia area in the vicinity of historic mine workings. Rhyolite flows are typically white in color but become either yellow or brown when weathered. The texture is generally aphanitic with the presence of quartz and feldspars. The thickness is very variable and ranges from one to a few meters up to 150 meters, based on observations in drill holes completed to-date.
- Intrusive dikes of possible granodioritic and felsic composition are also present in Barrancón Creek. In some drill holes, hypabyssal rocks of probable monzonitic composition, have been encountered.

7.2.2.2 Structure

The structural geology of the Alta Gracia area is somewhat masked at surface by the presence of extensive soils and vegetation. Numerous quartz veins, however, are exposed in accessible underground workings and prospect pits at Alta Gracia. Veins are mainly hosted in rhyolite at the surface and andesite where developed in deeper underground mine workings. Two dominant vein trends have been mapped: N25°E dipping 65° - 85°NW and N50°E dipping 65° - 85°NW. Vein widths generally average from 20cm to just over 2m (true width). At least 9 major veins/vein systems have been identified at Alta Gracia that include the following:

- **Mirador Vein** - The Mirador vein is a fissure filling vein hosted in andesite with a bearing 240 ° - 250 °, dip of 60 ° - 80 ° NW and a variable thickness of 0.80 to 1.80 meters. The Mirador vein is offset by a system of transverse faults bearing 340 ° -350 °NW, dipping 45 ° -60 ° NE, with displacements of 1 to 11 meters.
- **Huaje Veins** - Two principal parallel veins, separated by 25 to 75 meters, comprise the Huaje vein system. These veins strike from 230 ° -240 ° with a dip of 65 ° -70 ° NW and variable thicknesses from 0.80 to 0.90 meters. The Huaje veins occur along faults hosted in andesite.
- **San Juan Veins** - The San Juan and at least 5 subparallel ancillary veins strike 200 ° -210 ° with a dip of 60 ° -80 ° NW and a variable thickness of 0.30 to 1.20 meters. The veins are hosted in rhyolitic flows.
- **Victoria Vein** - The Victoria vein strikes 190 ° -210 °, dipping 70 ° -80 ° NW, and has a variable width from 0.15 to 0.60 meters. It is hosted in rhyolite flows.
- **Independencia Vein** - The Independencia vein has bearing of 240 ° -250 °, a dip of 60 ° -80 ° NW and average thickness of 0.40-1.20 meters with intervals of up to 10 meters (pinch and swell). It his mainly hosted in rhyolitic flows.
- **Aguacatillo Veins** - The Aguacatillo area is comprised of two vein systems with very similar strikes of 40 ° -50 °, dipping 80 ° -85 ° SE, and thicknesses varying between 0.25 to 0.50 meters. To the west, veins are hosted by rhyolitic flows and to the east they occur in andesitic tuff.
- **Chamizo Vein** - The Chamizo vein has bearing of 260 ° -280 ° and dips 45 ° - 70 ° NW. The vein contains good base metal values over very narrow widths (from 0.10 to 0.30 meters). The Chamizo vein is hosted in andesite tuff.
- **Navajas Veins** - Navajas veins consists of a system of subparallel veins of variable thickness (0.20 -0.30 meters) with a bearing of 30 ° -40 °, a dip of 70 ° -80 ° SE and contains significant levels of gold and silver. The veins are hosted in rhyolitic flows.
- **Base Metal Prospect** - In the southwest part of Alta Gracia is a prospective area with significant base metal showings. Mineralization is hosted at the rhyolite tuff and andesite contact with abundant carbonate flooding and local fault gouge. This is an area undefined by any historic mine workings, but mapping indicates that it lies at the intersection of 3 structures. The intersection coincides roughly with a N45E trending fault(?)/contact between andesite and rhyolite.

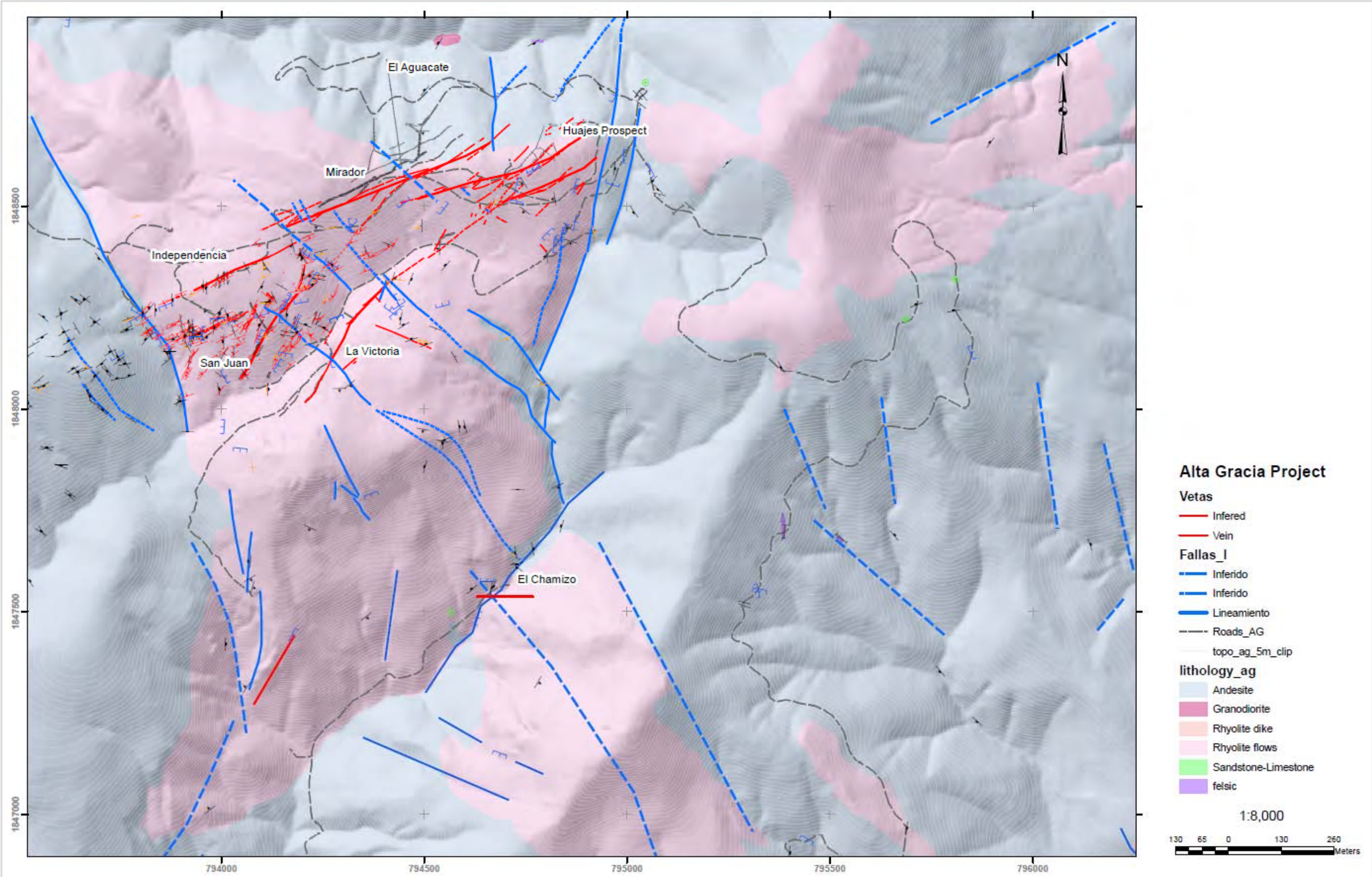

Figure 7.6 Plan Map Showing Geology and Vein Targets/Prospects at the Alta Gracia Property.

7.3 Mineralization

The Oaxaca Mining Unit mineralization occurs as structurally-controlled epithermal deposits in veins and stockwork zones consisting of concentrations of sulfides containing gold, silver, lead, copper, and zinc, associated with gangue minerals such as quartz, calcite, and other minor elements. The economic mineralization at the Arista Mine is gold, silver, copper, lead and zinc. Structurally-controlled epithermal veins and stockwork zones at Alta Gracia Project contain mainly silver-gold bearing sulfides. The economic mineralization currently being exploited at the Alta Gracia Project is only gold and silver.

Primary sulfide mineralization within the mineralized structures, containing pyrite, galena, sphalerite, argentite, some chalcopyrite, and other silver sulfosalts associated with quartz and calcite as gangue minerals, are found at depth.

Weathering of the mineralization has caused oxidization and shallow secondary enrichment zones containing sulfosalts (cerargyrite, pyrargyrite, stephanite) and carbonates (cerussite, hydrozincite, hemimorphite), sulfates (anglesite, willemite), and iron oxides (hematite, limonite, etc.) that may reach depths of up to 150 m from the outcroppings. Other mineralization indicators such as alteration-replacement events recorded in the rocks include the presence of alunite-natrojarosite-jarosite, and widespread sericitization and potassium alteration (adularia) especially in the Margaritas and Trenes prospect areas.

A petrographic study (Hansley, 2014) indicated additional species of silver sulfosalts including miargyrite, freibergite, and acanthite associated with mineralization particularly at the Alta Gracia prospect. Samples from Splay 5 at the Arista mine exhibited abundant gold intimately associated with chalcopyrite and associated with pyrite and galena. Other important determinations included disequilibrium features representing possible hybridization of intrusive units (Chacal-Escondida-Fossil Bend areas), alteration assemblages such as widespread sericitization and potassium alteration (including adularia) at Margaritas and Trenes. And finally, identification of associated Na-K alteration (alunite-natrojarosite-jarosite) indicates a hypogene event was present in the district.

Economic concentrations of precious metals are present in “shoots” distributed vertically and laterally between non-mineralized segments of the veins. Vein intersections are locally the site of important historic bonanzas. Overall, the style of mineralization is pinch-and-swell with some flexures resulting in closures and others generating wide cymoidal breccia zones. A schematic cross section through the deposit illustrates the general geologic configuration based on drilling intercepts (Fig. 7.7). Recent production has mainly been extracted from two principal vein systems, the Arista and Baja, and their related splays at the Arista underground mine at the Aguila Project. Other significant veins and/or deposits at Aguila include the historically exploited Aire and Aguila Manto veins and the recently-identified Switchback vein system. Significant historic underground production was also extracted from the Mirador and other veins at the Alta Gracia Project.

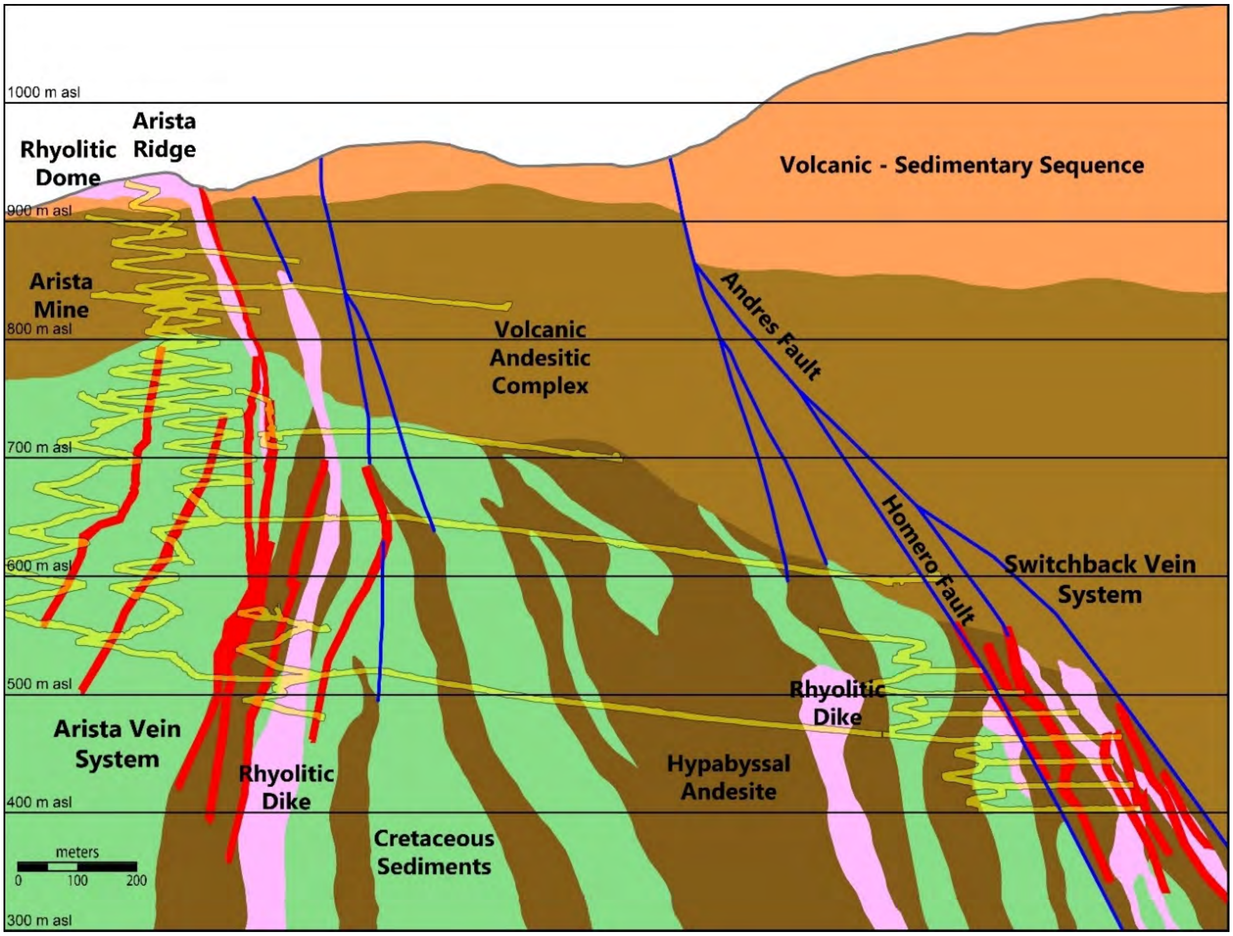

Figure 7.7 Schematic Cross-Section View Looking Northwest at the Arista and Switchback Veins.

7.3.1 Arista Vein

The Arista vein consists of multiple parallel veins and splays of varying length and width associated with the predominant fault bounded structure and the vein is enclosed in strongly silicified rhyolite breccia including stockwork zones that occur associated with the vein. Mineralization is present as multi-phase (related to discrete structural and leaching events within the bounding fault) however a restricted mineralogy is associated with variable grades and textures from fault contacts inward. Mineralization is often a range/mix of breccia, colloform banded quartz, crustiform quartz, and multi-phase banded sufhides with coarse-grained quartz intergrowths. Base-metal sulfides include massive galena, sphalerite, and chalcopyrite; +/-disseminated remnants of pyrite; +/- trace rhodochrosite (?); later quartz veins cut through sulfides; other trace sulfides include euhedral arsenopyrite overgrowths on dendritic native silver (?), magnetite, pyrrhotite, pyrite, acanthite, boronite, and tetrahedrite-tennanite. Areas of secondary sericite, clay and microcrystalline quartz are often observed in petrographic analysis with complex intermixtures of hydrothermal, metasomatic, and retrograde minerals including cordierite, diopside, albite, calcite, epidote, adularia, chlorite, and clay. EM-EDX analyses confirmed the presence of argentite and freibergite associated with leaching of base metals. Gold and silver are suggested as occurring late in the paragenetic sequence (after base metal sulfides and after a leaching/fracturing event). Gold occurs as micron-size "inclusions" in "recrystallized" arsenopyrite around vugs; antimony also appears related to gold in petrographic evidence (Hansley, 2012).

Underground production and exploration of the Arista vein has developed more than 600 m of ore grade mineralization along strike on multiple levels. The Arista vein was first investigated by cross cutting on Level 2 at 872 meters above sea level (masl), where it occurs as a narrow vein (35 cm to 40 cm). There is an indication that the vein was emplaced below the current surface, where only a narrow zone of silicified outcrop represents the expression of the vein. In the mine at 4 Level (831 masl) the vein has a 5.5 m true width. Figure 7.8 illustrates typical vein morphology in underground workings at the Arista mine.

Figure 7.8 Typical Colloform Banded Style of the Arista Vein (mine Level 6). Vein is nearly 5m wide from foot of miner to upper right of photo as indicated by yellow arrows.

7.3.2 Baja Vein

The Baja vein was discovered during an exploration drilling program on the Arista vein and generally hosts high-grade silver mineralization. The Baja vein occurs as 1.0 m to 1.5+ m wide mineralized structure with mineralization hosted within fractures and opened spaces as crustiform occurrences. The vein is composed of several splays and parallel veins of varying lengths and widths and includes Splay 66. The average orientation is 310^0, dipping 70°E to vertical, and has been developed to date, by underground workings in the Arista mine to 700-800 (masl). It has an indicated strike length (defined through drilling) of at least 500m. The vein appears as multi-phase vuggy textured, crustiform banded, coarse-grained quartz, with replacement of carbonate, locally adularia replaced by carbonate is noted. Sulfides include very fine to very fine-grained and banded occurrences (often disseminated at vein contacts), including bladed galena (possibly replacing carbonate), massive sphalerite, coarse stibnite, fine grained and disseminated chalcopyrite and pyrite, other important sulfides include proustite (Ag_3AsS_3), pyrargyrite (Ag_3SbS_3) and other silver minerals. Petrography has identified submicroscopic gold, and argentite (after base metal sulfides (?)), antimony associated with gold and trace amounts of kyanite, corundum, and garnet.

7.3.3 Aire Vein

The Aire vein is located at about 100 m west of the Arista vein and is oriented 345^0, dipping 70SW to vertical. It is hosted mainly by andesite with some rhyolite occurring to the east of the vein towards the Arista deposit. The Aire vein has been traced for over 400 m along strike. Mineralization styles are similar to those veins previously described with abundant vuggy, replacement (after carbonate), coarse and crustiform quartz (locally recrystallized); sulfides occur often as massive masses including sphalerite, galena, proustite (microveinlets in sphalerite), disseminated arsenopyrite, and native silver; accessory minerals include abundant corundum (inclusions in quartz), adularia (as microveinlets) replaced by alunite(?), rhodochrosite rhombs (suggested as late stage or post event), calcite, sillimanite and kaolinite, fine grained K-spar and rounded zircon.

7.3.4 Aguila Manto Vein

The Aguila manto vein consists of shallow dipping near surface epithermal quartz vein oriented N70°E, dipping 30°NW, and is composed of sugary to coarse-grained quartz hosted in volcanic hydrothermal breccia (composed of large blocks of volcanic fragments and tuff). The host rock appears to transition from the volcanic breccia to a porphyritic rhyolite, which is highly silicified and cut by quartz veinlets generating a stockwork with strong oxidation after pyrite and marcasite. Some of the fragments contained within the breccia zone are un-silicified and include fragments of basement sedimentary rocks. Typical mineralization is hosted in microcrystalline to coarse and vuggy quartz hosting dominantly "horn silver" cerargyrite (AgCl), with sulfosalts jamesonite, boulangerite common in vugs. In polished thin section gold appears exclusively within the "horn silver" and occurs with traces of pyrite, electrum, native silver, chalcopyrite, covellite, +/- galena; abundant black to red oxides are also associated with antimony (bindheimite) and traces of native gold. Accessory minerals include disseminated calcite or aragonite and microcrystalline quartz, jarosite (after pyrite), illite (associated with quartz), leucoxene, and anatase (Hansley, 2008).

7.3.5 Switchback Veins

Surface mapping in the ''Switchback'' Hill area, approximately 500 meters northeast of the Arista underground mine, indicated the presence of a NNW-SSE trending porphyritic felsic dike with associated intense sulfate (gypsum) alteration and minor quartz-amethyst veining. Geochemical rock chip samples taken by DDGM geologists from this altered zone returned base metal anomalies with weakly elevated silver values. Subsequent holes drilled from the Arista mine underground workings into (beneath) this area intercepted multiple zones of well-mineralized vein material intimately associated with a strongly porphyritic felsic dike.

Like the Arista vein system, the Switchback vein system consists of multiple subparallel veins and splays of varying length and width. To-date, seven major veins have been identified in drill holes: Soledad, Sofia, Selene, Silvia, Sabrina, Sagrario and Susana. The quartz +/- calcite +/- dolomite/ankerite veins are hosted in andesite and associated with altered rhyolite porphyry dikes, similar to the Arista vein system. The enclosing andesite and rhyolite are strongly silicified and pyritized with locally intense quartz stockwork veining.

Switchback veins are typically brecciated with fragments of quartz and bleached, silicified andesite wallrock fragments. Colloform and/or crustiform textures are common with bands of quartz, sphalerite and galena in places encrusting breccia fragments. The breccia matrix mainly consists of fine-grained, dark grey quartz, the dark color due to presence of very fine-grained pyrite. Small, drusy quartz crystals filling vugs are observed locally. Mineralization in the Switchback veins is comprised of mainly pyrite with varying amounts of sphalerite, galena and chalcopyrite. The enclosing wallrock of the veins is strongly altered by silica, carbonate, clay (smectite-illite-sericite). Pyrophyllite and kaolinite are also present indicating that acid sulfate alteration took place, probably at the time of mineralization (Hansley, 2014).

7.3.6 Alta Gracia Veins

The Alta Gracia property hosts multiple sub parallel veins and splays of varying length and width. Visible silver mineralization observed in the Alta Gracia veins includes accessory sulfide and sulfosalts such as pyrargyrite-proustite, arsenopyrite, abundant (3-5%) high color euhedral and disseminated pyrite, sphalerite, traces of covelite, jamesonite, tetrahedrite, stibnite, and galena. Vein textures included carbonate coatings on quartz, carbonate replacement by silica, banding/cockade white to grey quartz, druzy quartz coatings, massive amethyst, and open space voids and/or clay fillings. Other evidence of mineralization included minerals such as malachite-azurite, limonite-hematite and other oxides; and alteration as pervasive kaolinite, sericite, illite, extensive argillization, as well as locally vuggy silica flooding. Locally abundant pervasive silicification is noted, and often hosts disseminated pyrite.

Examples of mineralized quartz veins at DDGM's Oaxaca Mining Unit are shown in Figure 7.9.

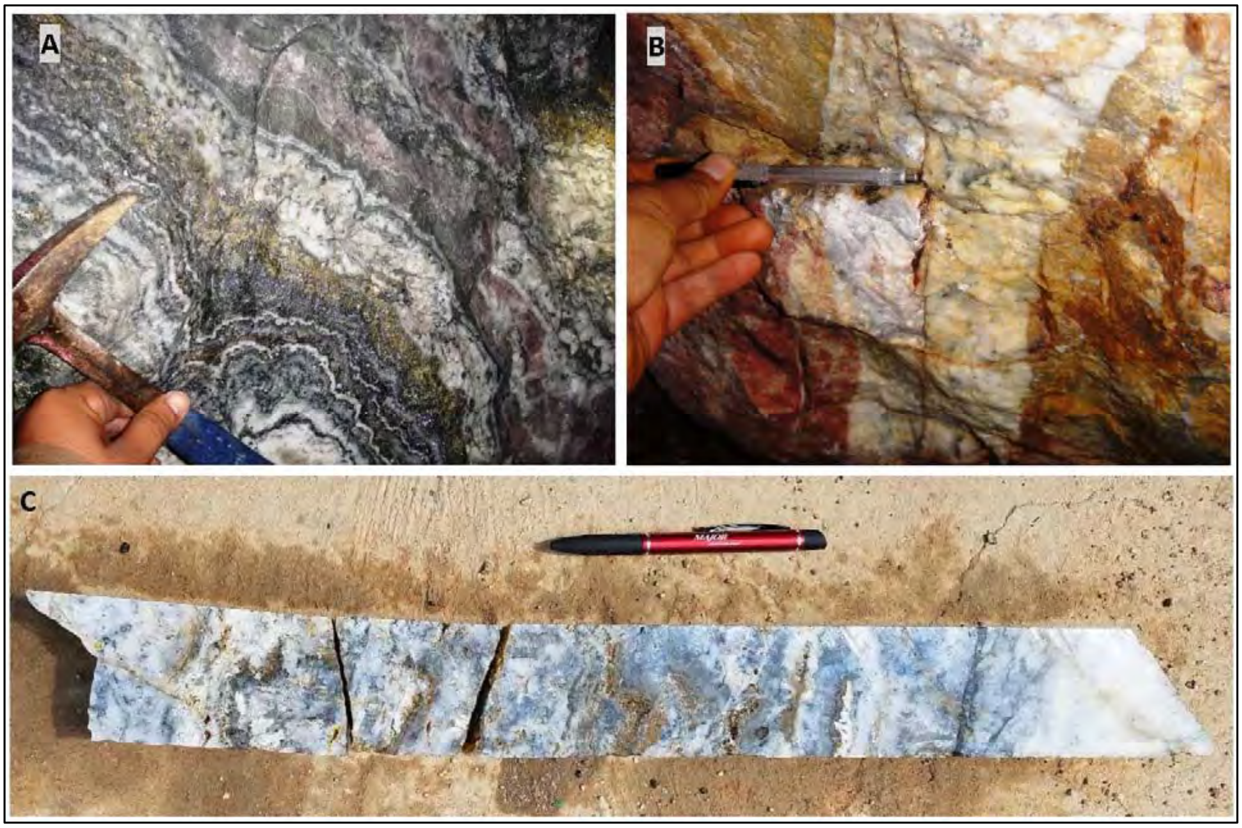

Figure 7.9 Examples of mineralized quartz veins at DDGM's Oaxaca Mining Unit. A) Colloform banded and crustiform quartz and banded sulfides of the Arista deposit from Mine Level 5 - note red banded mineralization in center (and throughout) is coarse ruby silver bordering banded quartz; view 0.5m wide B) Underground photo of narrow, low-sulfidation quartz vein from the Alta Gracia property. C) Drill core from Alta Gracia showing banded white to dark-gray quartz, open-space druzy quartz coatings, sulfides of pyrite, silver sulfosalts and arsenopyrite.

8 DEPOSIT TYPE

The San Jose de Gracia and Alta Gracia gold- silver sub-districts of the Oaxaca Mining Unit are characterized by classic, high grade silver-gold, epithermal vein deposits with low to intermediate-sulfidation mineralization and quartz-adularia-sericite alteration. The veins are typical of most epithermal silver-gold vein deposits in Mexico with respect to the volcanic or sedimentary host rocks and the paragenesis and tenor of mineralization.

Epithermal systems form near the surface, usually in association with hot springs, and to depths on the order of a few hundred meters. Hydrothermal processes are driven by remnant heat from volcanic activity. Circulating thermal waters rising up through fissures eventually reach a level where the hydrostatic pressure is low enough to allow boiling to occur. This can limit the vertical extent of the mineralization, as the boiling and deposition of minerals is confined to a relatively narrow range of thermal and hydrostatic conditions. In many cases, however, repeated healing and reopening of host structures can occur, imparting cyclical vertical movement of the boiling zone and resulting in mineralization that spans a much broader range of elevation.

As the mineralizing process is driven by filling of void spaces and fissures, mineralization geometry is affected by the permeability and orientation of the host structures. Mineralization tends to favor dilatant zones in areas where fractures branch or change orientation, which may be driven, in turn, by wall rock competency and/or relative hardness of individual strata.

Low to intermediate-sulfidation deposits are formed by the circulation of hydrothermal solutions that are near neutral in pH, resulting in very little acidic alteration with the host rock units. The characteristic alteration assemblages include quartz, illite, sericite and adularia that are typically hosted either by the veins themselves or in the vein wall rocks. Essentially all of the major veins at the Oaxaca Mining Unit have silicification halos. The hydrothermal fluid can travel along discrete fractures creating vein deposits, or it can travel through permeable lithology such as poorly welded ignimbrite flows, where it may deposit its load of precious metals in a disseminated fashion.

Epithermal veins in Mexico typically have a well-defined, sub horizontal ore horizon about 300 m to 1,000 m in vertical extent, where high grade ore shoots have been deposited by boiling hydrothermal fluids. The minimum and maximum elevations of the mineralized horizons at the Oaxaca Mining Unit have not yet been established but current production spans a vertical elevation range of approximately 400 m, from 850 down to 450 m elevation above sea level. The mineralized horizon has been extended by drilling another 250 m vertically, down to the 200-meter elevation above sea level.

Similar geologic characteristics are present in other mining districts in Oaxaca. Another example includes Fortuna Silver's San José mine, located closer to the city of Oaxaca, where mineralization has been reported to span vertical elevation ranges greater than 600 m.

9 EXPLORATION

DDGM's detailed exploration investigations have been mainly focused on the Aguila open pit and Arista underground mine areas. This area includes the significant Aguila manto and Arista, Baja and Aire and Switchback veins as well as other ancillary mineralized structures. Other mineralized zones and properties have been investigated, including some preliminary drilling in areas such as Escondida, Chacal and Salina Blanca on the Aguila Project, and the Margaritas, Alta Gracia and Rey properties. The focus of this report is mainly on the Arista and Switchback vein systems of the Aguila Project, and the Mirador and other veins of the Alta Gracia Project.

Primary exploration targets are extensions of vein mineralization at depth and along strike, as well as additional outlying sub-parallel veins present in the main block of contiguous claims that make up the Aguila and Alta Gracia Projects. It is likely that continued exploration will locate sufficient viable mineralization to enable a long life for the Oaxaca Mining Unit. There are many known gold and silver bearing veins on DDGM's mining concessions that have not been fully explored. Mineralized veins are also known to occur on the Fuego property which is not contiguous with the main concession block, and these veins also warrant further exploration.

Total exploration drilling by DDGM through the end of December 2019 on the Oaxaca Mining Unit amounts to 377,385 meters including 1,414 drill holes (Table 9.1). Surface drill holes completed through December 31, 2019 at the Oaxaca Mining Unit are shown on Figure 9.1

Table 9.1 Oaxaca Mining Unit Exploration Drilling Activity through December 31, 2019

Project & Year	RC - Surface		Core - Surface		Core - Underground		Total	
	No. of Holes	Meters	No. of Holes	Meters	No. of Holes	Meters	No. of Holes	Meters
Aguila (including Aguila Manto, Arista & Switchback Veins)								
2003	63	3,840	5	52	0	0	68	3,892
2005	0	0	37	2,808	0	0	37	2,808
2006	0	0	13	1,688	0	0	13	1,688
2007	103	10,527	93	15,186	0	0	196	25,713
2008	0	0	46	17,219	0	0	46	17,219
2009	0	0	12	7,394	0	0	12	7,394
2010	0	0	36	14,000	0	0	36	14,000
2011	0	0	43	21,026	45	5,198	88	26,224
2012	0	0	62	32,204	78	8,993	140	41,197
2013	0	0	94	36,688	64	15,236	158	51,924
2014	0	0	69	30,046	24	8,955	93	39,001
2015	0	0	48	15,488	45	13,557	93	29,045
2016	0	0	0	0	52	15,453	52	15,453
2017	0	0	0	0	41	12,946	41	12,946
2018	0	0	0	0	28	12,287	28	12,287
2019	0	0	0	0	34	11,795	34	11,795
Aguila Total	**166**	**14,367**	**558**	**193,799**	**411**	**104,420**	**1,135**	**312,586**
Rey								
2007	0	0	12	1,276	0	0	12	1,276
2008	0	0	36	3,997	0	0	36	3,997
Rey Total	**0**	**0**	**48**	**5,273**	**0**	**0**	**48**	**5,273**
Alta Gracia								
2011	0	0	37	8,270	0	0	37	8,270
2012	0	0	12	3,262	0	0	12	3,262
2014	0	0	39	7,589	0	0	39	7,589
2015	0	0	9	2,554	0	0	9	2,554
2017	0	0	44	9,946	0	0	44	9,946
2018	0	0	20	4,279	0	0	20	4,279
2019	0	0	18	2,327	0	0	18	2,327
Alta Gracia Total	**0**	**0**	**179**	**38,227**	**0**	**0**	**179**	**38,227**
Margaritas								
2012	0	0	15	5,002	0	0	15	5,002
2013	0	0	9	3,033	0	0	9	3,033
2015	0	0	23	10,409	0	0	23	10,409
2016	0	0	5	2,855	0	0	5	2,855
Margaritas Total	**0**	**0**	**52**	**21,299**	**0**	**0**	**52**	**21,299**
GRAND TOTAL	**166**	**14,367**	**837**	**258,598**	**411**	**104,420**	**1,414**	**377,385**

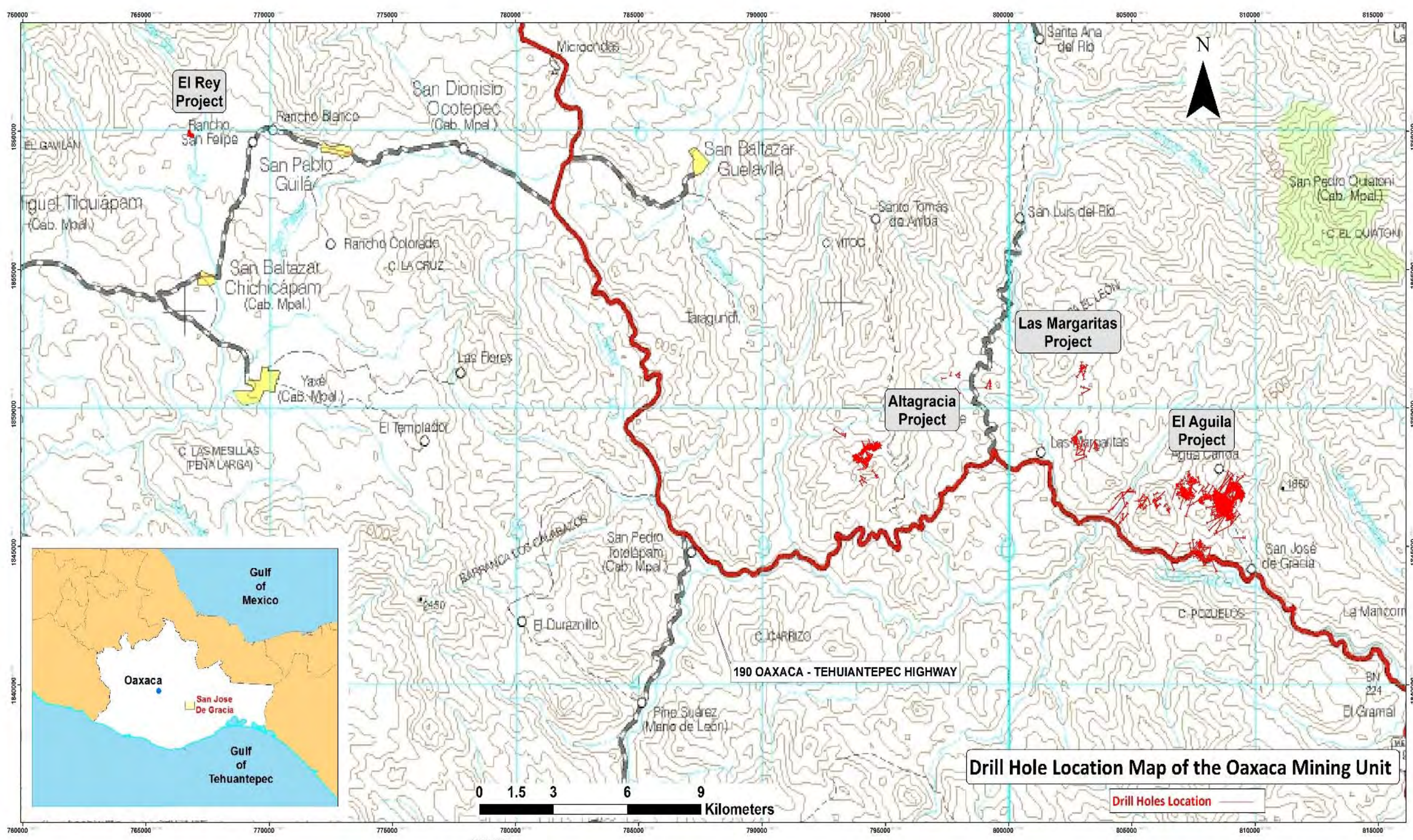

Figure 9.1 Surface Drill Hole Location Map of the Oaxaca Mining Unit (completed drill hole traces shown in red).

9.1 Exploration Programs

9.1.1 Previous Exploration Programs

DDGM has carried out a continuous drilling program since 2003 when the company took control of the Aguila Project mining concessions which are now part of DDGM's Oaxaca Mining Unit. DDGM continues development of an aggressive exploration program that includes underground mine development, such as access ramps drifts and crosscuts into the Arista, Baja and Switchback vein deposits.

For more details on previous exploration programs, the reader is referred to earlier reports on mineral resources and reserves for the Oaxaca Mining Unit (Brown et al., 2018).

9.1.2 2019 Exploration Programs

Exploration activities during 2019 mainly focused on underground exploration drilling at the Arista and Switchback vein systems in the Arista Mine and surface exploration drilling at Alta Gracia. The Switchback drilling program at the Arista Mine continued to target further expansion and delineation of the multiple high-grade parallel veins for reserve definition, expansion and mine plan optimization. The Switchback vein system extends for over one kmand remains open on strike and vertical extent. The 2019 Alta Gracia surface drill campaign focused primarily on expanding the high-grade oreshoot identified on the Independencia vein.

9.1.2.1 Aguila

Underground drilling during 2019 continued to expand the ore zones in the Arista mine, mainly on the Baja, Santiago and Splay 31 veins of the Arista vein system currently in production, and two new veins, Sadie and Sasha, discovered in the Switchback vein system. Thirty-four underground diamond drill holes totaling 11,795 meters were completed at the Aguila project during 2019. Surface geologic mapping and rock chip sampling was also conducted in the vicinity of the Arista mine, the Aguila open pit and other prospects of the Aguila project.

9.1.2.2 Alta Gracia

The goal of the 2019 drill campaign was to test the extensions of the high-grade ore shoot previously identified on the Independencia vein. In 2019, 18 step-out and in-fill diamond drill holes were completed totaling 2,327 meters at Alta Gracia. Surface and underground geological mapping and sampling along with detailed topographic surveying also continued in the historic mining areas at Alta Gracia, mainly at the Aguacatillo prospect. A surface geochemical soil sampling program was also carried out to the west, along the projected extension of the Independencia vein. The new information was used for estimation of reserves and mineralized material and to guide future follow-up drilling programs. To date, over 49 veins have been identified and modelled at the Alta Gracia Project at or near its Mirador Mine

9.1.2.3 Margaritas

In 2019, results were reviewed from previous surface drilling and detailed geological mapping and rock chip channel sampling for the Margaritas property. Additional rock chip channel sampling of historic workings and expansion of the soil and rock geochemical program was also carried out in the Trenes mineralized zone. This included identification of significant historic small-scale mine workings called "Chileños" in the Trenes area. A future follow-up surface diamond drilling program is targeted for Trenes.

9.2 Other Exploration Activities

Regional and local detailed geological studies including geochemical and geophysical examinations were the focus of past exploration programs on the Oaxaca Mining Unit. The results of these studies currently serve as the basis for four main exploration target areas including Aguila, Alta Gracia, Margaritas and Rey.

The reader is referred to earlier versions of Oaxaca Mining Unit resource and reserve reports which describe in more detail geochemical, geophysical and other exploration activities including surface and underground channel sampling of historic mine workings (Brown et al., 2018).

10 DRILLING

Exploration drilling has been performed by the several contracting firms (e.g. GeoDrill, Major, Maza, Alta Drilling etc.). These companies operate from bases in various localities throughout México. During 2019, DDGM used one diamond drill provided by a contractor for both underground and surface drilling.

The samples used in the mineral reserve estimates include both diamond drill core and underground chip channel samples. Routine samples at the Aguila Project also include process and tailings samples and concentrate samples. Aside from their functions in maintaining good operations performance, these samples are important for reserve validation and reconciliation of production to reserves.

DDGM also utilizes smaller diamond drills mainly for underground development drilling, mainly test holes and definition holes. This equipment is either compressed-air powered or electric-hydraulic (eg. Termite, Ingetrol) which yields small diameter core used only for short term planning. Core samples from these machines are prepared and assayed at the Aguila Project laboratory.

The core from the ongoing surface and underground drilling is logged, sampled and stored at the same core facility. Core from diamond drilling is placed in boxes and drill contractor personnel transport the core to the central core facility. Sample handling at the core facility follows a standard industry accepted procedure, during which depth markers are checked and confirmed; the outside of the boxes are labeled with interval information; core is washed and photographed; and the recovery and rock quality designation (RQD) are logged for each drill hole.

The geology of the core is logged, and the geologist marks potential mineralized zones for sampling. Sample lengths are determined, where possible, by mineralogical or lithological characteristics. Samples are taken where the geologists believe there is a reasonable chance of obtaining significant results and where sampling is required for continuity of assay data. The core generally is not sampled over the entire length of the drill hole. The sampling crew then splits the core with a diamond saw, as indicated by the geologist, and one half of the core is placed in a numbered bag and sent to the laboratory for analysis. The other half of the core is returned to the core boxes for storage. Generally, the samples represent core lengths of less than 1.50 m. Sample tags are stapled inside the boxes.

Bulk density measurements are routinely determined on whole drill core samples for each potentially mineralized vein. Measurements are performed at the DDGM on-site analytical laboratory utilizing precision instruments. Selection of the particular samples is performed by geologists as part of the routine logging procedure.

The management, monitoring, surveying, and logging of surface exploration holes are carried out under the supervision of the Oaxaca Mining Unit exploration staff. Production and other underground exploration holes are managed by the mine geological staff. All of DDGM’s surface and underground exploration samples are processed at the Oaxaca Mining Unit Exploration office and core processing facility.

11 SAMPLE PREPARATION, ANALYSIS AND SECURITY

11.1 Surface Exploration Samples

All of DDGM's surface exploration samples of rock and soil and surface and underground exploration drill core were bagged and tagged at the Oaxaca Mining Unit core facility and shipped to the ALS-Chemex (ALS) preparation facility in Guadalajara, Mexico. After preparation, the samples were shipped to the ALS laboratory in Vancouver, Canada, for analysis. At the ALS preparation facility in Guadalajara, samples were dried and jaw crushed to 70 percent -10 mesh. A subsample of 250 grams was pulverized with a ring pulverizer and then sent to ALS in Vancouver for assaying. Preparation (crush) duplicates and analytical (pulp) duplicates were split from the samples at crushing and pulverization phases of sample preparation, respectively. Certified reference materials (standards) were inserted into the sample stream prior to submittal and the laboratory was asked to analyze the samples in the sequence submitted.

In Vancouver, ALS analyzed the samples for gold using a 30-gram fire assay digestion with an atomic absorption finish (Method Au-AA23). Silver was analyzed by three methods depending upon the grade of the sample. All samples were analyzed for silver using an aqua regia digestion of 0.5 g sample with an ICP-OES finish (Method ME-ICP41). Any sample exceeding 100 ppm Ag, was reanalyzed using an aqua regia digestion on 0.4 g of sample followed with an ICP-AES finish (Method Ag-OG-46). Any samples exceeding 1,500 ppm Ag were reanalyzed using a 30-gram fire assay with a gravimetric finish (Method Ag-GRA21). All of the samples were analyzed for copper, lead and zinc using an aqua regia digestion of a 0.5 g sample with an ICP-OES finish (Method ME-ICP41). Any sample with copper, lead or zinc concentrations exceeding 10,000 ppm was reanalyzed using an aqua regia digestion of a 0.4 g sample followed by an ICP-AES finish (Method OG46). Samples with Pb concentrations exceeding 20,000 ppm and zinc concentrations exceeding 30,000 ppm were reanalyzed using a 4-acid digestion with a titrated end point to determine Pb and Zn concentrations.

Underground development drill core samples are sent to DDGM's in-house laboratory at the Aguila Project. Check assaying of underground channel samples was done by ALS.

11.2 Chip Channel Sampling

The chip channel sampling process is managed by the mine geologists. Underground channel samples are taken by the geologists from mineralized zones, hanging wall and footwall in the faces after blasting each round.

Chip channel sampling is conducted along the sub-level drifts in the mineralized zones. Channel samples are the primary means of sampling in the mine and are taken perpendicular to the vein structures, across the back of the drift and across the faces of drifts and other workings. While facing the heading sampling is generally from the left side of the drift towards the right side of the drift, consisting of multiple samples across the mineralized zones and one sample into the footwall and an additional sample into the hanging wall.

Sampling crews typically take channel samples at regular intervals of 4 to 5 m along the working, depending on daily mine development, with five to eight samples along every sample channel on new openings (drifts, crosscuts, ramps, stopes, etc.). Channel samples are taken in consecutive lengths of less than 1.50 m along the channel, depending on geologic features such as wall rock type, mineralization type and intensity, quartz characteristics, silicification, veinlets, stockwork zones, and other features. The channel sample assays are composited to determine the average grade of each channel.

Channel samples are taken with chisel and hammer, collected in a canvas tarp and deposited in numbered bags for transportation to the laboratory. Currently there are multiple underground openings along the Arista, Baja, Alta and other subsidiary veins. About 15 to 20 samples are taken per day from mine development and stoping areas in the Arista underground mine. The samples are sealed in plastic bags with a string before being sent to the company laboratory.

A channel "line" typically consists of three to five or more individual samples taken to reflect changes in geology and/or mineralogy across the structural zone. If there is more than one vein present, or it is divided by waste rock, then each of the divisions is sampled separately. Each sample weighs approximately 3 kg. All channels for sampling are painted by the geologist and numbered on the drift's walls for proper orientation and identification.

Sample locations are subsequently surveyed by underground surveyors. The start and end point for each sample is surveyed and then presented a single string of samples, like a drill hole, in the database. Sample locations are plotted on stope plans using various software applications. The sample numbers and location data are recorded in the database. Upon receipt of assays, technicians and geologists produce reports used for day-to-day monitoring and grade control.

11.3 Mill Sampling

DDGM maintains sample preparation and laboratory facilities at the Aguila plant for process samples, concentrate, mine production samples, chip samples, and core from underground exploration drilling. The Aguila assay laboratory is set up in one building, located near the plant. The facilities are located within the plant compound and guarded 24 hours per day.

11.4 Quality Assurance Quality Control Procedures

A quality assurance/quality control (QA/QC) program has been established for exploration programs conducted at the Oaxaca Mining Unit. Drill core sampling is subject to a QAQC program administered by the company which includes submission of blind blank samples, duplicate split samples of quarter core, duplicate pulp splits, Certified Reference Material (CRM) standards and analysis of check samples. Additionally, internal laboratory reporting of quality control and assurance sampling is monitored by mine staff on an on-going basis. The primary independent assay laboratory used is ALS Chemex Labs, S.A. De C.V. in Guadalajara, Mexico. Certified Reference Material standards and blanks are obtained from CDN Resource Laboratories Ltd. of Langley, British Columbia, Canada. CRM standards are received in individually vacuum sealed tin-top kraft bags containing 60 g of pulverized blended material.

All exploration core is subject to data verification procedures through the sequential insertion of duplicate and control samples introduced into the sample stream at a targeted rate of one duplicate, one CRM standard, one blank, one coarse reject, and one pulp sample for every fifty regular samples. A total of 8,818 drillhole core samples were analyzed at ALS Chemex in support of the 2017 drill program. During the same period, 322 analyses were performed on CRM standards and 451 analyses were performed on blanks. Additional QAQC samples were submitted in support of underground channel sampling carried out by the exploration department at Alta Gracia.

For the Oaxaca Mining Unit drilling program, sample reproducibility is measured with analyses of quarter split-core sample duplicates. Preparation reproducibility was measured with duplicate crush splits collected after crushing the sample. Analytical reproducibility was measured by analysis of duplicate pulp splits collected after pulverizing the sample.

The quarter core duplicate core samples were taken by DDGM crew from the remaining half of the core, by re-splitting the core to a one quarter size. Therefore, one quarter of the core still remains in the box for future reference.

The Aguila laboratory's quality controls include the use of a primary or secondary standard sample which is certified for analysis in fire assay, atomic absorption and X-ray fluorescence. These standard samples are analyzed at the end of each month, evaluating the assay results. This determines the quality control of the Aguila lab's analysis. Some duplicate samples are sent to ALS for lab quality controls.

11.5 Opinion on Adequacy

DDGM considers that the drilling and chip channel sampling programs meet industry standards and have been reviewed and confirmed in sufficient detail to permit inclusion of the information in the Oaxaca Mining Unit database.

12 DATA VERIFICATION

12.1 Procedures

The DDGM staff follow a stringent set of procedures for data storage and validation, performing verification of data on an on-going basis. The operation employs a Database Manager who is responsible for overseeing data entry, verification and database maintenance.

Data used for Mineral Resource estimation are stored in one database relating to the mine, mainly channel samples, and diamond drilling results, both exploration and in-mine in-fill drilling. The database is in a SQL database format.

Preliminary validation of the database was performed by the database manager in January 2019. The on-site database has a series of automated import, export, and validation tools to minimize potential errors. Any inconsistencies were corrected during the analysis with the databases being handed over for final review and validation by Mr. Fred Brown, P. Geo. The data verification procedures involved the following:

- Inspection of selected drill core to assess the nature of the mineralization and to confirm geological descriptions
- Inspection of geology and mineralization in underground workings of the Arista, Switchback and Mirador veins
- Verification that collar coordinates coincide with underground workings or the topographic surface
- Verification that downhole survey bearing and inclination values display consistency
- Evaluation of minimum and maximum grade values
- Investigation of minimum and maximum sample lengths
- Randomly selecting assay data from the databases and comparing the stored grades to the original assay certificates
- Assessing for inconsistences in spelling or coding (typographic and case sensitivity errors)
- Ensuring full data entry and that a specific data type (collar, survey, lithology, and assay) is not missing
- Assessing for sample gaps or overlaps

Any and all inconsistencies were subsequently corrected.

12.2 Opinion on Data Adequacy

Investigations of all aspects of current and historical data quality indicates that the quality of the information is suitable for Mineral Resource and Mineral Reserve estimation.

13 MINERAL PROCESSING AND METALLURGICAL TESTING

13.1 Summary of Mineral Processing and Metallurgical Testing

Mineralization processed from the Arista underground mine consists entirely of sulfides. The principal economic components are gold, silver and zinc; however, the ores also contain economically significant amounts of copper and lead. The main metallurgical recovery method selected for processing the Arista sulfide mineralization is differential flotation. The flotation circuit designed GRC's Aguila plant produces three concentrates for sale: a copper concentrate with gold-silver, a lead concentrate with gold-silver, and zinc concentrate with gold-silver. All concentrates are sold to a broker in Mexico.

A separate agitated leach circuit with its own grinding circuit was also installed at the Aguila plant. Gold-rich or silver-rich deposits with little or no base metal components, or a combination of these, are currently being processed in the agitated-leach circuit. This includes ore produced from the Aguila open pit and the veins being mined by underground methods at Alta Gracia.

For more details on previous mineral processing and metallurgical testing programs, the reader is referred to earlier reports on mineral resources and reserves for the Oaxaca Mining Unit (Brown et al., 2018).

14 MINERAL RESOURCE ESTIMATE

14.1 Introduction

On October 31, 2018, the SEC announced that it was adopting amendments to modernize the property disclosure requirements for mining registrants, and related guidance, under the Securities Act of 1933 and the Securities Exchange Act of 1934 (SEC, 2018a, 2018b). Under the New Rules, a registrant with material mining operations must disclose specified information in Securities Act and Exchange Act filings concerning its Mineral Resources, in addition to its Mineral Reserves. The New Rules provide a two-year transition period so that a registrant will not be required to begin to comply with the new rules until its first fiscal year beginning on or after January 1, 2021. The SEC states that a registrant may voluntarily comply with the new rules prior to the compliance date, subject to the SEC's completion of necessary EDGAR reprogramming changes. DDGM has decided not to adopt the New Rules for SEC reporting purposes until the required 2021 compliance date.

The modeling and estimation of Mineral Resources presented herein is based on technical data and information available as of December 31, 2019. DDGM models and estimates Mineral Resources from available technical information prior to the generation of Mineral Reserves.

The modeling and Mineral Resource estimation work reported herein was mainly carried out by Fred H. Brown, P.Geo., a QP by reason of education, affiliation with a professional association and past relevant work experience as described in Section 2.2. Mr. Brown is employed as a Senior Resource Geologist by GRCN, a wholly-owned Nevada subsidiary of GRC, and is not independent of DDGM.

Modeling and estimation of mineral resources were carried out using the commercially available Maptek Vulcan software program, version 12.

Any statements and opinions expressed in this document are given in good faith and in the belief that such statements and opinions are not false and misleading as of the effective date of this report.

14.2 Mineral Resource Definitions

The SEC is adopting the Combined Reserves International Reporting Standards Committee (CRIRSCO) framework for reporting Mineral Resources (Miskelly, 2003).

According to CRIRSCO, a Mineral Resource is a concentration or occurrence of material of intrinsic economic interest in or on the Earth's crust (a deposit) in such form, grade or quality, and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade, geological characteristics and continuity of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge. Mineral Resources are sub-divided, in order of increasing geological confidence, into Inferred, Indicated and Measured categories. Portions of a deposit that do not have reasonable prospects for eventual economic extraction must not be included in a Mineral Resource.

14.2.1 Inferred Mineral Resource

An Inferred Mineral Resource is that part of a Mineral Resource for which tonnage, grade and mineral content can be estimated with a low level of confidence. It is inferred from geological evidence and assumed but not verified geological and/or grade continuity. It is based on information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes which is limited or of uncertain quality and/or reliability. An Inferred Mineral Resource has a lower level of confidence than that applying to an Indicated Mineral Resource.

14.2.2 Indicated Mineral Resource

An Indicated Mineral Resource is that part of a Mineral Resource for which tonnage, densities, shape, physical characteristics, grade and mineral content can be estimated with a reasonable level of confidence. It is based on exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings, and drill holes. The locations are too widely or inappropriately spaced to confirm geological continuity and/or grade continuity but are spaced closely enough for continuity to be assumed. An Indicated Mineral Resource has a lower level of confidence than that applying to a Measured Mineral Resource but has a higher level of confidence than that applying to an Inferred Mineral Resource.

14.2.3 Measured Mineral Resource

A Measured Mineral Resource is that part of a Mineral Resource for which tonnage, densities, shape, physical characteristics, grade and mineral content can be estimated with a high level of confidence. It is based on detailed and reliable exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings, and drill holes. The locations are spaced closely enough to confirm geological and/or grade continuity.

14.3 Database

Mineral Resources described in this report are gold, silver and base metal-bearing material that has been physically delineated by one or more of a number of methods including drilling and surface mapping and other types of sampling. This material has been found to contain a sufficient amount of mineralization of an average grade to have potential that warrants further exploration evaluation. This material is reported as Mineral Resources only if the potential exists for reclassification into the Mineral Reserves category. Mineral Resources cannot be classified in the mineral reserves category until technical, economic and legal factors have been evaluated.

The modeling and estimation reported herein utilized the drill hole database compiled by DDGM. Drill holes with assay samples within the immediate project area were imported into a Maptek Vulcan database. The extracted drill hole database contains 19,824 unique collar records (Fig. 14.1) and 155,813 assay records, broken down by sample type as:

- Drill Holes: 91,164 drill hole samples for 85,590.5 m, and
- Channel Samples: 64,649 channel and trench samples for 60,061.7 m.

Industry standard validation checks of the database were carried out with minor corrections made where necessary. The database was interrogated for inconsistencies in naming conventions or analytical units, duplicate entries, interval, length or distance values less than or equal to zero, blank or zero-value assay results, out-of-sequence intervals, intervals or distances greater than the reported drill hole length, inappropriate collar locations, and missing interval and coordinate fields. No significant discrepancies with the data were noted.

14.3.1 Drill Data

DDGM staff has compiled a master database at the mine site in Microsoft SQL Server. Drill data mainly consists of drill hole collar coordinates, down hole surveys, QAQC results, lithology data and assays. Assay data used for reserve reporting include gold, silver, copper, lead and zinc. Summary assay statistics were tabulated for the assay data (Table 14.1).

Underground chip channel sampling data accounts for a large proportion of the reserve database. Samplers, under the supervision of the geologists, collect the chip samples and record the sample numbers and location information in sample ticket books. These are returned to the mine office for processing by the geologists and data entry clerks.

Chip samples are collected along channels in the underground workings. These channel samples are surveyed and entered into the database as a data string and treated as a drill hole.

The coordinate datum used is Universal Transverse Mercator (UTM)-Zone 14N, WGS 84. The reserve models have been constructed in metric units (meters, metric tonnes, etc.). Gold and silver grades are in grams of metal per metric tonne. Copper, zinc, and lead grades are expressed in percent metal.

All data is centrally stored on the Aguila Project server, which is backed-up every night at 3:00 am.

Table 14.1 Summary Assay Statistics

Assays	Alta Gracia	Arista	Switchback	Total
Count	20,541	101,518	33,754	155,813
Ag Avg	70.01	109.89	40.30	89.56
Ag Count	20,541	101,518	33,750	155,809
Au Average	0.19	1.16	0.84	0.97
Au Count	20,541	101,516	33,753	155,810
Cu Average	0.007	0.171	0.228	0.162
Cu Count	20,519	101,394	33,754	155,667
Pb Average	0.04	0.61	0.82	0.58
Pb Count	20,520	101,395	33,754	155,669
Zn Average	0.08	1.61	2.47	1.59
Zn Count	20,541	101,395	33,754	155,690

14.4 Bulk Density

DDGM has periodically performed bulk density determinations, which is used for converting volumes to tonnes for reserve estimates. The bulk density of a material is defined as its mass per unit volume. The bulk density is expressed in grams per mL (g/mL) or tonnes per cubic meter (t/m^3) although the international unit is kilograms per cubic meter (1 g/mL = 1000 kg/m^3 or 1 tonne/m^3).

For the Arista and Switchback veins, the Oaxaca Mining Unit staff currently applies a factor of 2.79 tonnes/m^3 to convert volumes to tonnes for reserve and Mineral Resources estimates. For the Alta Gracia and Margaritas veins, a factor of 2.59 is used. A factor of 2.50 tonnes/m^3 is used to convert volumes to tonnes for wall rock dilution applied to reserve and Mineral Resources estimates. This factor is based on bulk density measurements on vein samples by water immersion methods. DDGM density determinations are performed on 10 cm portions of selected whole drill core from mineralized zones, dried naturally in air; in the Aguila Project lab the weight is recorded, after immersion in calibrated water filled cylinder yield volume is determined by displacement, and the final density is calculated with the simple formula: mass/volume.

14.5 Wire-frame Modeling

Three-dimensional models were constructed by DDGM staff as triangulated, irregular network wire-frames defining the extent of underground workings and mineralized structures and incorporates all significant vein systems identified to-date (Table 14.2). Vulcan mine planning software was used for construction of the wire-frames.

Wire-frames were developed using successive polylines constructed in cross-section and oriented perpendicular to the overall trend of the mineralization. The outlines of the polylines were determined by the defined economic cutoff with demonstrated continuity between sections and include low-grade material where necessary to maintain continuity. All polyline vertices were snapped directly to drillhole assay intervals in order to generate a true three-dimensional representation of the extent of the mineralization and minimize undesired dilution from lower-grade assays. Where underground channel sampling is present, the channel samples were treated as a drillhole. A total of 43 individual wireframes were modeled for the Arista system, 27 for the Switchback system, 14 for the Alta Gracia system and one for Margaritas (Table 14.2; Appendices 1 & 2). The resulting wireframes were used for rock coding, statistical analysis and compositing limits. Figure 14.1 illustrates a vertical section of the Arista and Switchback veins, and Figure 14.2 illustrates the corresponding plan view. Figure 14.3 is a three-dimensional view of the wire frame solids of the veins modeled for the Alta Gracia Vein System.

For the Arista and Switchback vein systems, mineralized zones were defined based on a nominal drill-hole intercept of a composited 1.5-meter of assay length that had a minimum average grade above US$ 76 per tonne NSR using gold, silver, copper, lead and zinc metal prices to calculate the NSR value. For the Alta Gracia and Margaritas vein systems, mineralized zones were defined based on a composited drill hole intercept that had a minimum gold-equivalent grade of 2.5 g/t. Gold and silver vein mineralization identified to date at Alta Gracia and Margaritas is not associated with any appreciable base metals, so only gold and silver are used to calculate gold equivalencies.

NSR values are determined by the three-year trailing average price for gold, silver, copper, lead and zinc. Gold-equivalent grades were calculated using the three-year trailing average price for gold and silver.

Individual long section plots of the modeled veins highlighting search areas for Proven and Probable mineral reserves and Measured, Indicated and Inferred mineral resources and the corresponding distribution of NSR values for the Arista and Switchback veins and AuEq grades for the Alta Gracia and Margaritas veins are shown in Appendices 1 and 2.

Table 14.2 Description of Vein Structures Modeled at the Oaxaca Mining Unit

Vein	Description
Arista Mine	
Aire	Minor Vein southwest of Arista
Alta	Minor Vein northeast of Arista
Arista	Major Vein
Chuy 1	Minor Vein – probable extensions of Arista Vein at depth on Chuy Fault
Chuy 2	Minor Vein – probable extensions of Arista Vein at depth on Chuy Fault
Baja	Major Vein parallel to Arista
Baja_rm1	Minor Splay of Baja
Berenice	Minor Vein east of Baja
Vein 3	Major Vein east of Arista
Splay 66	Major Splay parallel to Baja and Arista
Splay 66 RM1	Minor Splay of Splay 66
Luz	Major Vein southwest of Baja
Candelaria	Major Vein southwest of Luz
Gisela	Minor Vein of Baja
Santiago	Major Vein - probable extension Vein 1 (100^0 trend)
Santiago-R1	Minor Splay of Santiago

Splay 5	Major Vein southwest of Candelaria
Splay 5 RM1	Minor Splay of Splay 5
Splay 6	Minor Vein, parallel to Aire Vein, west of Arista
Splay 6 - SUR	Minor Splay, probable southern extension of Splay 6
Santa Lucia	Minor Vein – parallel and east of Arista
Este-Norte	Minor Vein northeast of Baja
Esten-rm1	Minor Splay of Este-Norte
Este-Sur	Minor Vein southeast of Baja
Estes-rm1	Minor Splay of Este-Sur
Splay 31	Major Vein north of Arista
Splay 31_r1	Minor Splay of Splay 31
Splay 31_r2	Minor Splay of Splay 31
Splay 31_r3	Minor Splay of Splay 31
Splay 31_r4	Minor Splay of Splay 31
Marena	Minor vein northeast of Arista
Mercedes	Minor vein east of Baja
Santa Cecilia	Minor Vein northeast of Splay 31
Santa Clara	Minor Vein northeast of Santa Lucia
Santa Helena	Minor Vein northeast of Arista
Viridiana	Major Vein east of Arista
Viri-rm1	Major Splay of Viridiana
Viri-rm2	Major Splay of Viridiana
Switchback	
Soledad	Major Vein in Switchback Vein System
Soledad_R1	Minor Splay of Soledad
Soledad_R2	Minor Splay of Soledad
Soledad_R3	Minor Splay of Soledad
Soledad_R4	Minor Splay of Soledad
Soledad_R5	Minor Splay of Soledad
Sadie 1	Major Vein in Switchback Vein System
Sadie 2	Major Vein in Switchback Vein System
Sasha 1	Major Vein in Switchback Vein System
Sofia	Minor Vein in Switchback Vein System
Silvia	Major Vein in Switchback Vein System
Sagrario	Major Vein in Switchback Vein System
Sagrario_rm1	Minor Splay of Sagrario
Selene	Minor Vein in Switchback Vein System
Selene RM1	Minor Splay of Selene
Samantha1	Minor Vein of Switchback Vein System
Samantha2	Minor Vein of Switchback Vein System
Sara	Minor Vein in Switchback Vein System
Sonya	Minor Vein in Switchback Vein System
Susana_N	Major Vein in Switchback Vein System
Susana_S	Major Vein in Switchback Vein System
SB-N1	Minor Vein in Switchback Vein System, possible extension of Susana Vein
SB-N2	Minor Vein in Switchback Vein System, possible extension of Susana Vein
Alta Gracia	
Mirador	Major Vein at Alta Gracia
Huaje 1_RM1	Minor Vein at Alta Gracia
Huaje 1_hw	Major Vein at Alta Gracia
Huaje 2	Major Vein at Alta Gracia
Indep-W	Major Vein at Alta Gracia
Ind M1	Minor Splay of Independencia Vein
Ind M2	Minor Splay of Independencia Vein
Ind-S-RM1	Minor Splay of Independencia Vein
Jarillas 1	Major Vein at Alta Gracia
San Juan NW 11	Major Vein at Alta Gracia
San Juan	Major Vein at Alta Gracia
San Juan_fw	Minor Splay of San Juan
Victoria 1	Major Vein at Alta Gracia
Victoria NE	Major Vein at Alta Gracia
Margaritas	
Tapada	Major Vein at Margaritas

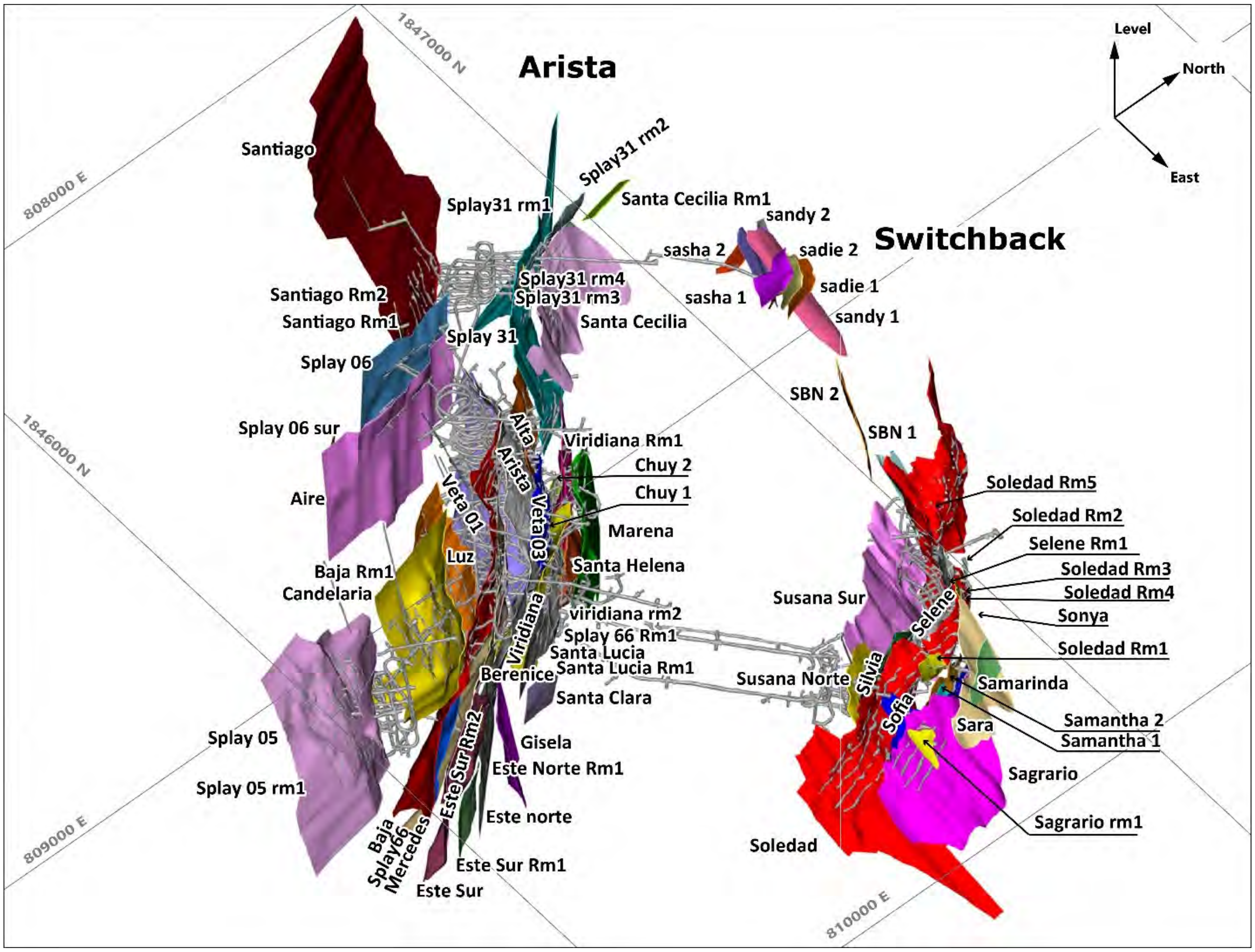

Figure 14.1 Vertical Section of Arista and Switchback Modeled Veins; view north, elevations are above sea level.

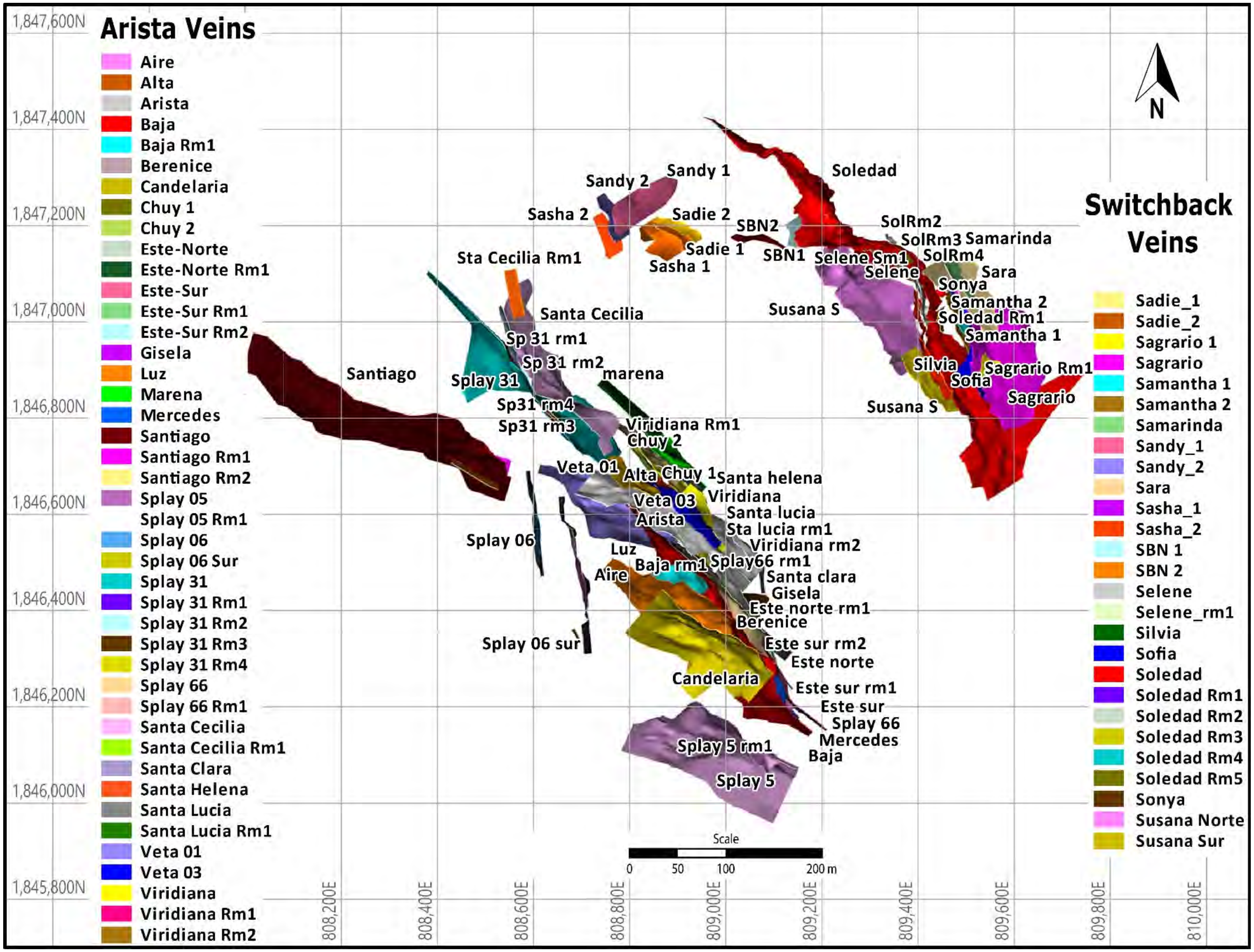

Figure 14.2 Plan View Map of Wire Frame Solids of the Veins Modeled for the Arista and Switchback Vein Systems

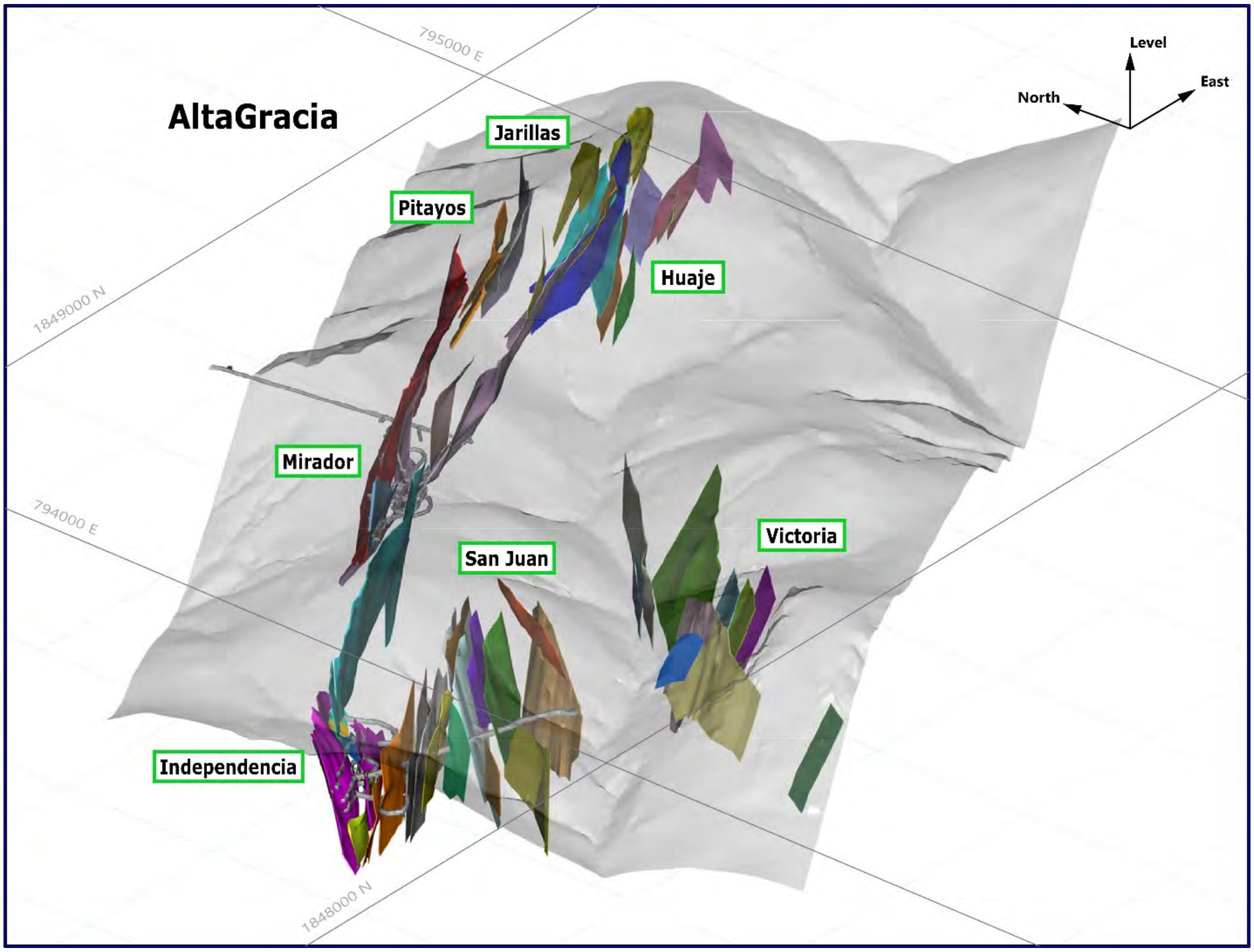

Figure 14.3 Three-Dimensional View Map of Wire Frame Solids of the Veins Modeled for the Alta Gracia Vein System

14.6 Compositing and Capping

Length-weighted composites for drill holes and channel samples were calculated within each modeled vein. The compositing process started at the first point of intersection between the drillhole and the vein intersected and halted upon exit from the vein wire-frame. The wire-frames that represent the modeled veins were also used to back-tag a rock code field into the drillhole workspace. A nominal value of 0.0001 was used to populate a small number of un-sampled intervals. Composites that were less than one-half of the compositing length were merged with the prior composite interval.

For Arista, Switchback and Margaritas, the compositing interval selected was 1.00m. Due to the narrow nature of the individual veins at Alta Gracia, a compositing interval of 0.50 m was used for Alta Gracia.

DDGM developed basic statistical parameters for gold, silver, copper, lead and zinc values from final composites. The statistics indicated that data are positively skewed and it is necessary to limit the influence of high-grade outlier samples. To determine the appropriate capping thresholds, composite sample population statistics, lognormal probability plots and cumulative frequency plots were examined for each modeled vein. Capping thresholds were generally selected based on disintegration of the upper tail of the cumulative distribution (Table 14.3). Composite samples above this threshold were capped prior to estimation. In addition, the influence of capped composite samples was restricted to 60 m.

Table 14.3 Composite Capping Values Inside Wire-Framed Veins of the Oaxaca Mining Unit

System	Vein	Ag g/t	Au g/t	Cu %	Pb %	Zn %
Arista	aire	800	5	0.4	3	6
Arista	alta	2000	70	3	20	30
Arista	arista	7000	60	4	20	20
Arista	baja	7000	70	8	15	30
Arista	baja_rm1	1100	20	2	13	30
Arista	berenice	100	20	1	1.2	2.6
Arista	candelaria	3000	40	3	12	8
Arista	chuy1	2500	70	4	15	30
Arista	chuy2	400	10	1	7	20
Arista	este_nor	360	7	2	3	20
Arista	este_nor_rm1	160	1	0.4	4	12
Arista	este_sur	3600	7	3	5	20
Arista	este_sur_rm1	200	7	1	5	9
Arista	este_sur_rm2	100	1	1	5	9
Arista	gisela	1000	0.3	0.6	10	15
Arista	luz	4200	30	2	8	12
Arista	marena	1500	15	4	5	20
Arista	mercedes	600	4	2	3	5
Arista	santiago	300	30	2	20	20
Arista	santiago_rm1	25	0.04	0.4	5	9
Arista	santiago_rm2	30	0.2	0.2	2	4
Arista	splay05	6500	40	4	20	16
Arista	splay05_rm1	1700	10	0.6	10	16
Arista	splay06	1100	5	0.6	6	10
Arista	splay06_sur	700	3	0.1	0.15	4
Arista	splay31	7000	100	8	16	20
Arista	splay31_rm1	700	4	1	5	16
Arista	splay31_rm2	1000	10	0.8	10	7
Arista	splay31_rm3	1000	10	1	4	4
Arista	splay31_rm4	2000	2	0.5	1	2
Arista	splay66	4000	40	4	12	40
Arista	splay66_rm1	2400	20	2	10	30
Arista	stcecilia	300	11	1.5	10	16
Arista	stcecilia_rm1	na	na	na	na	na
Arista	stclara	600	1	2.5	12	15
Arista	sthelena	900	30	4	12	20
Arista	stlucia	2000	40	2.4	9	10
Arista	stlucia_rm1	30	1	1	2	7
Arista	veta01	2500	100	2	9	23
Arista	veta03	2700	60	4	17	42
Arista	viridiana	2100	50	4	15	34
Arista	viridiana_r1	2000	60	7	12	10
Arista	viridiana_r2	300	25	1.5	5	30
Switchback	sadie_1	380	4	0.5	1	5
Switchback	sadie_2	1280	4	0.5	1	5
Switchback	sagram1	70	2	1	6	5
Switchback	sagrario	1000	30	3	20	12
Switchback	sam1	35	3	1	11	10
Switchback	sam2	900	8	2	6	6
Switchback	samarinda	100	0.5	0.2	4	4
Switchback	sandy_1	130	0.4	0.5	1	5
Switchback	sandy_2	300	3	0.5	1	5
Switchback	sara	600	14	1.1	6	20
Switchback	sasha_1	1300	2.8	0.5	1	5
Switchback	sasha_2	7	0.1	0.5	1	5

Switchback	sbn1	450	9	2.2	10	7
Switchback	sbn2	450	9	2.2	10	7
Switchback	selene	40	9	0.5	3	4
Switchback	selene_rm1	40	9	0.5	3	4
Switchback	silvia	600	12	1	9	17
Switchback	sofia	500	30	2.7	10	12
Switchback	soledad	1100	20	4	17	34
Switchback	solram1	1000	20	1	5	15
Switchback	solram2	100	3	1	3	8
Switchback	solram3	600	9	0.7	6	10
Switchback	solram4	100	1	1.8	6	15
Switchback	solram5	300	14	1.8	6	15
Switchback	sonya	100	5	2.7	10	12
Switchback	susana_n	300	3	0.5	1	5
Switchback	susana_s	600	50	1	14	15
Altagracia	huaje1_fw	1700	4			
Altagracia	huaje1_hw	800	3			
Altagracia	huaje2	1700	4			
Altagracia	ind_m1	300	0.3			
Altagracia	ind_m2	300	0.3			
Altagracia	ind_s_rm1	600	3			
Altagracia	ind_w	1700	2			
Altagracia	jarillas1	1700	10			
Altagracia	mirador	1700	4			
Altagracia	sanjuan	900	2			
Altagracia	sanjuan_fw	1700	4			
Altagracia	sanjuan_nw11	1800	1			
Altagracia	victoria_ne	1700	4			
Altagracia	victoria1	1700	4			
Margaritas	Tapada	700	1			

14.7 Block Models

Three-dimensional block models were used to facilitate the modeling of veins as longitudinal-view sections oriented parallel to the main strike direction for each vein system and/or deposit. Rotated block models were established across the modeled mineralization for each system, with the block model limits selected so as to cover the extent of the mineralized systems and the block size reflecting the generally narrow widths of the individual veins. Generally, the model blocks are fixed in size at 1.0 meter vertically and 1.0 meter horizontally, parallel to the average strike of the vein system. Perpendicular to strike the thickness is determined by the actual width of the individual vein, and block resolution was set to 0.1 meter in the cross-strike direction.

Block models consist of separate variables for estimated grades, vein codes, vein widths, density and classification attributes. The sub-celled block model accurately represents the volume and tonnage contained within the constraining wire-frame. Block model size and rotation parameters are shown for Vulcan model structures of the Arista, Switchback, Alta Gracia and Margaritas vein systems (Table 14.4).

Table 14.4 Block Model Specifications – Arista, Switchback, Alta Gracia and Margaritas Vein Systems

Arista	Origin	Offset (m)	Block Size (m)
X	807938.283	1500	1.0
Y	1846913.636	600	Variable
Z	150.0	800	1.0
Rotation	135 degrees		
Switchback	Origin	Offset (m)	Block Size (m)
X	808900.0	900	1.0
Y	1847170.0	500	Variable
Z	1000.0	600	1.0
Rotation	135 degrees		
Alta Gracia	Origin	Offset (m)	Block Size (m)
X	793960.0	1300	1.0
Y	1847700.0	750	Variable
Z	1200.0	500	1.0
Rotation	65 degrees		
Margaritas	Origin	Offset (m)	Block Size (m)
X	803500.0	1500	1.0
Y	1847700.0	1500	1.0
Z	400.0	900	1.0
Rotation	30 degrees		

The block model limits are shown relative to drilling, underground workings, and mineralized vein zones at the Arista underground mine in Figure 14.4. Figure 14.5 illustrates a NSR plan view of the veins. Figure 14.6 shows corresponding view of the Alta Gracia veins. Figure 14.7 shows corresponding view of the Tapada vein of the Margaritas project.

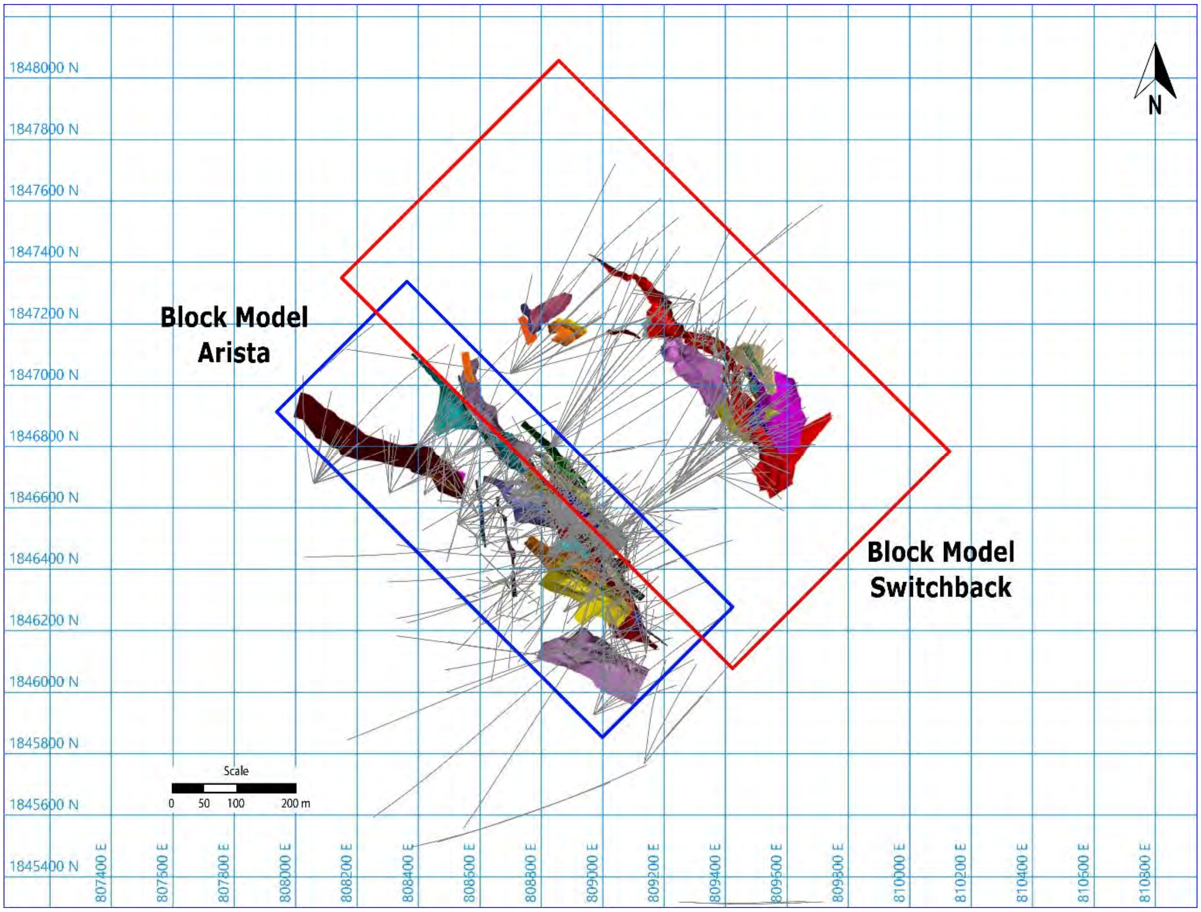

Figure 14.4 Block Model Location and Size Parameters for the Arista and Switchback Vein Systems at the Arista Underground Mine

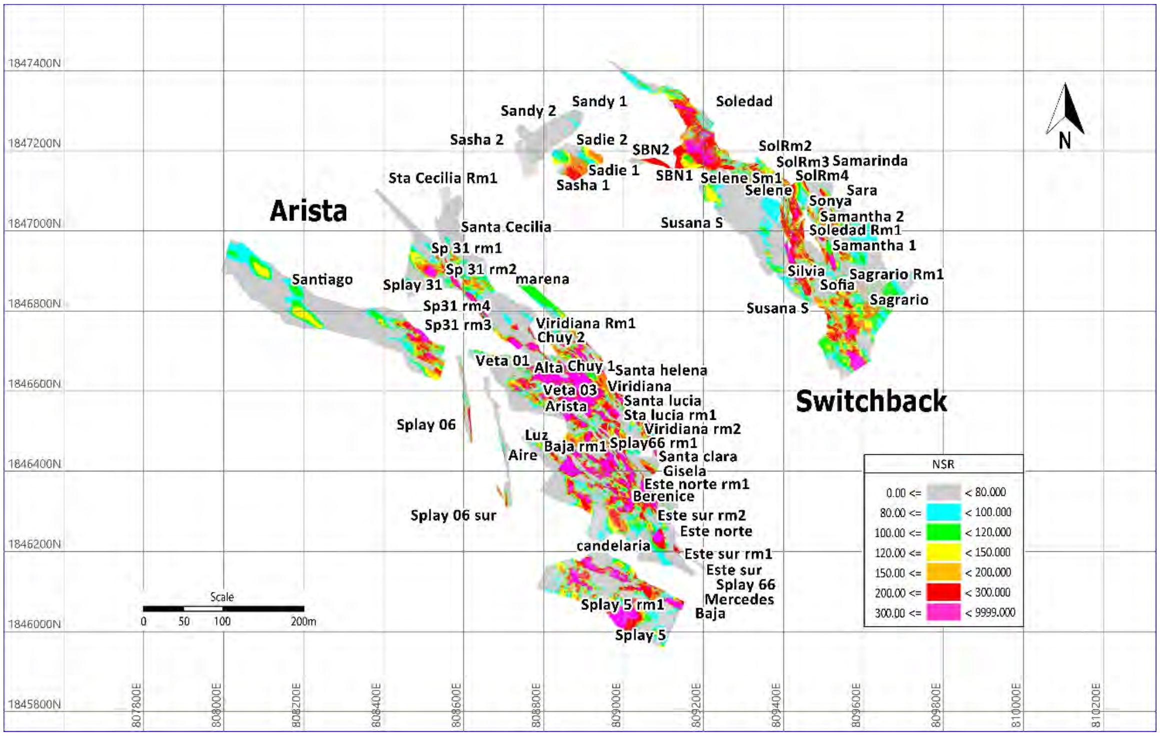

Figure 14.5 Plan View of Modeled Veins in the Arista Underground Mine Showing Distribution of Corresponding NSR values.

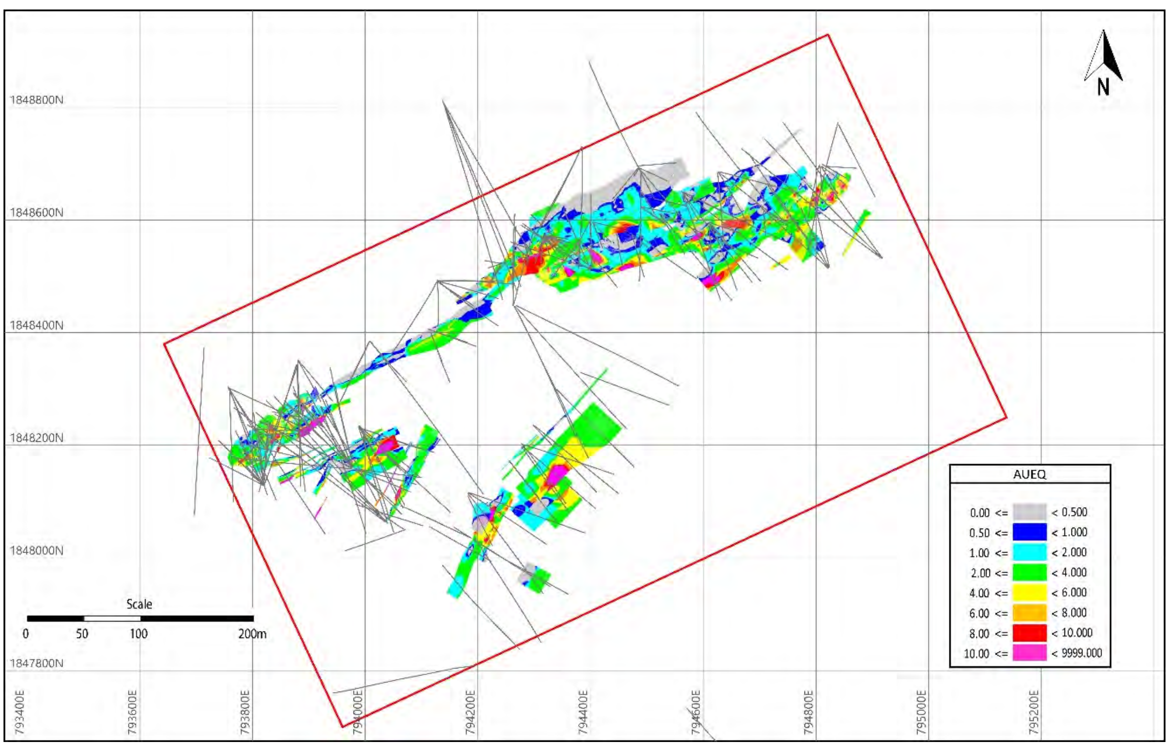

Figure 14.6 Plan View of Modeled Veins at the Alta Gracia Project, including Mirador Underground Mine, Showing Block Model Location and Distribution of Corresponding AuEq Values

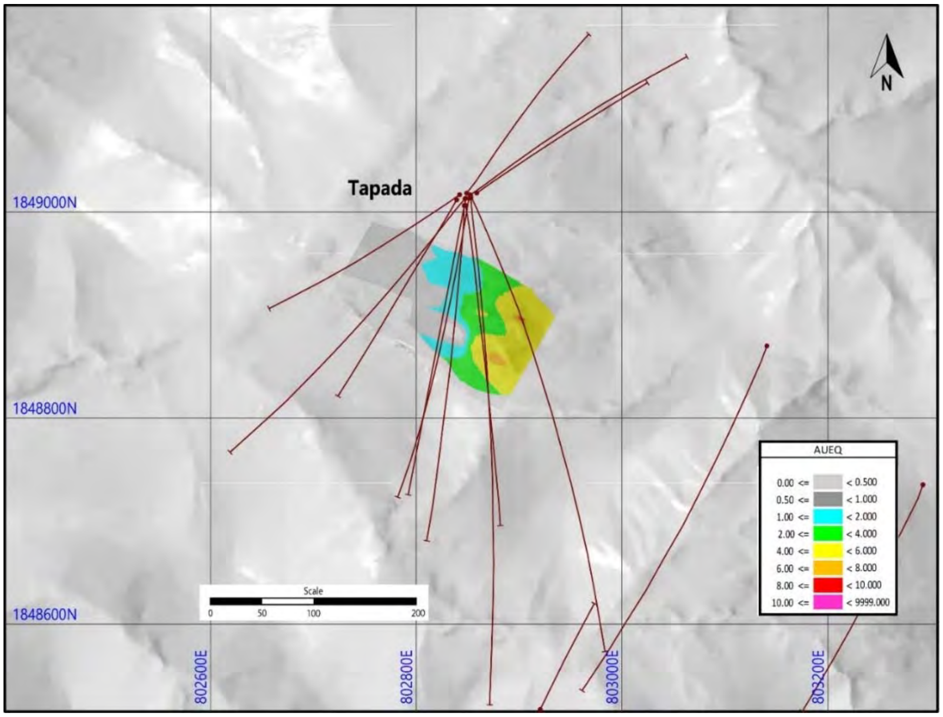

Figure 14.7 Plan View of Modeled Tapada Vein at the Margaritas Project, Showing Block Model Location and Distribution of Corresponding AuEq Values

14.8 Estimation and Classification

Anisotropic inverse distance cubed (ID3) linear weighting of capped composite values was used for the estimation of Au and Ag block grades, with the anisotropy defined by the axes of the search ellipsoid. Anisotropic inverse distance squared (ID2) linear weighting of capped composite values was used for the estimation of Cu, Pb and Zn block grades, with the anisotropy defined by the axes of the search ellipsoid.

A three-pass series of expanding search ellipsoids were used for sample selection, grade estimation and classification. Composite data used during grade estimation were restricted to samples located within their respective vein. Spatial grade continuity and grade trends were modeled using the overall best fit strike and dip of the individual vein, variography, historical stoping, trend analysis and global estimation plots. The modeled continuity was used to define the overall orientation of the search ellipsoid for each individual vein (Table 14.5).

During the first pass, three to fifteen composites from drillholes or channel samples within a rotated search ellipsoid were selected for estimation. The length of the major axis was set at 30 m, the semi-major axis was set at 20 m, and the minor axis was set at 15 m. Blocks estimated during the first pass were classified as Measured Mineral Resources.

During the second pass, three to fifteen composites from drillholes or channel samples within a rotated search ellipsoid were selected for estimation. The length of the major axis was set at 90 m, the semi-major axis was set at 60 m, and the minor axis was set at 45 m. Blocks estimated during the second pass were classified as Indicated Mineral Resources.

During the third pass, three to fifteen composites from drillholes or channel samples within a rotated search ellipsoid were selected for estimation. The length of the major axis was set at 300 m, the semi-major axis was set at 200 m, and the minor axis was set at 150 m. Blocks estimated during the third pass were classified as Inferred Mineral Resources.

For each vein silver, gold, copper, lead and zinc block grades were estimated. Individual block grades were then used to calculate an NSR value and a AuEq grade. Nearest Neighbor (NN) block grades were also assigned for validation and comparative purposes using the same search parameters.

Table 14.5 Grade Estimation Search Parameters

System	Vein	Bearing	Plunge	Dip	System	Vein	Bearing	Plunge	Dip
Arista	aire	164	82	-50	Switchback	sadie_1	120	0	20
Arista	alta	120	80	-25	Switchback	sadie_2	120	0	20
Arista	arista	110	-25	-50	Switchback	sagram1	131	-50	-41
Arista	baja	145	90	-65	Switchback	sagrario	131	-50	-41
Arista	baja_rm1	176	133	-52	Switchback	sam1	129	-24	-44
Arista	berenice	220	-80	0	Switchback	sam2	129	-24	-44
Arista	candelaria	159	144	-58	Switchback	samarinda	129	-24	-44
Arista	chuy1	145	10	-60	Switchback	sandy_1	120	0	-20
Arista	chuy2	145	10	-60	Switchback	sandy_2	120	0	-20
Arista	este_nor	130	90	-55	Switchback	sara	110	-45	-44
Arista	este_nor_rm1	140	90	-45	Switchback	sasha_1	120	0	30
Arista	este_sur	150	90	-45	Switchback	sasha_2	135	-45	-40
Arista	este_sur_rm1	150	90	-45	Switchback	sbn1	85	-15	-45
Arista	este_sur_rm2	150	90	-45	Switchback	sbn2	85	-15	-45
Arista	gisela	-40	-80	0	Switchback	selene	124	-50	-43
Arista	luz	135	25	-50	Switchback	selene_rm1	120	0	0
Arista	marena	137	84	-35	Switchback	silvia	120	-29	-41
Arista	mercedes	200	0	-65	Switchback	sofia	124	-40	-43
Arista	santiago	127	113	-48	Switchback	soledad	124	-50	-43
Arista	santiago_rm1	150	-25	-45	Switchback	solram1	170	0	-90
Arista	santiago_rm2	150	-45	-25	Switchback	solram2	170	0	-90
Arista	splay05	195	0	-70	Switchback	solram3	170	0	-90
Arista	splay05_rm1	172	160	-63	Switchback	solram4	170	0	-90
Arista	splay06	175	90	-30	Switchback	solram5	170	0	-90
Arista	splay06_sur	180	15	-45	Switchback	sonya	170	0	-90
Arista	splay31	127	0	70	Switchback	susana_n	135	-40	-45
Arista	splay31_rm1	127	75	-30	Switchback	susana_s	110	-45	-45
Arista	splay31_rm2	127	75	-30	Altagracia	huaje1_fw	230	55	0
Arista	splay31_rm3	160	-80	-50	Altagracia	huaje1_hw	240	55	0
Arista	splay31_rm4	160	-80	-50	Altagracia	huaje2	235	55	0
Arista	splay66	156	98	-50	Altagracia	ind_m1	60	0	-45
Arista	splay66_rm1	130	90	-50	Altagracia	ind_m2	60	0	-45
Arista	stcecilia	131	63	-42	Altagracia	ind_s_rm1	60	0	-90
Arista	stcecilia_rm1	260	-60	0	Altagracia	ind_w	60	63	0
Arista	stclara	175	90	-75	Altagracia	jarillas1	240	60	0
Arista	sthelena	136	83	-40	Altagracia	mirador	240	70	0
Arista	stlucia	149	117	-42	Altagracia	sanjuan	250	85	0
Arista	stlucia_rm1	149	117	-42	Altagracia	sanjuan_fw	210	90	0
Arista	veta01	121	120	-50	Altagracia	sanjuan_nw11	210	0	-90
Arista	veta03	125	90	-60	Altagracia	victoria_ne	220	0	-65
Arista	viridiana	137	84	-30	Altagracia	victoria1	210	-70	0
Arista	viridiana_r1	137	67	-28					
Arista	viridiana_r2	170	-58	-50	Vulcan Rotation Convention Used				

14.9 Mineral Resource Estimate

A Measured Mineral Resource is that part of a mineral resource for which quantity and grade or quality are estimated on the basis of conclusive geological evidence and sampling. The level of geological certainty associated with a Measured Mineral Resource is sufficient to allow a QP to apply modifying factors in sufficient detail to support detailed mine planning and final evaluation of the economic viability of the deposit. A Measured Mineral Resource has a higher level of confidence than the level of confidence of either an Indicated Mineral Resource or an Inferred Mineral Resource. It may be converted to a Proven Mineral Reserve or to a Probable Mineral Reserve.

An Indicated Mineral Resource is that part of a mineral resource for which quantity and grade or quality are estimated on the basis of adequate geological evidence and sampling. The level of geological certainty associated with an Indicated Mineral Resource is sufficient to allow a QP to apply modifying factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit. An Indicated Mineral Resource has a lower level of confidence than the level of confidence of a Measured Mineral Resource and may only be converted to a Probable Mineral Reserve.

An Inferred Mineral Resource is that part of a mineral resource for which quantity and grade or quality are estimated on the basis of limited geological evidence and sampling. The level of geological uncertainty associated with an Inferred Mineral Resource is too high to apply relevant technical and economic factors likely to influence the prospects of economic extraction in a manner useful for evaluation of economic viability. An Inferred Mineral Resource has the lowest level of geological confidence of all mineral resources, which prevents the application of the modifying factors in a manner useful for evaluation of economic viability. An Inferred Mineral Resource, therefore, may not be converted to a mineral reserve.

Mineral resources are not mineral reserves and do not have demonstrated economic viability. There is no guarantee that all or any part of the mineral resource will be converted into mineral reserve. Confidence in the estimate of Inferred Mineral Resources is insufficient to allow the meaningful application of technical and economic parameters.

Measured, Indicated and Inferred Mineral Resources inclusive of Mineral Resources and Mineralized Material reported for the Oaxaca Mining Unit as of December 31, 2019 are summarized in Table 14.6, and by particular vein systems in Tables 14.7, 14.8 and 14.9.

Table 14.6 Mineral Resources (Inclusive of Mineral Reserves and Mineralized Material) for the Oaxaca Mining Unit as of December 31, 2019*

Vein System	Description	Cutoff	Tonnes	Au g/t	Ag g/t	Cu %	Pb %	Zn %
Arista	Measured	$76	1,483,700	2.09	185	0.28	1.46	4.19
	Indicated	$76	968,400	1.40	182	0.18	1.38	4.04
	Meas+Ind	$76	2,452,500	1.82	184	0.24	1.43	4.13
	Inferred	$76	95,100	0.59	64	0.22	0.96	3.79
Switchback	Measured	$76	2,344,700	2.07	93	0.46	1.90	5.55
	Indicated	$76	469,400	1.50	107	0.43	1.30	3.81
	Meas+Ind	$76	2,814,400	1.97	95	0.46	1.80	5.26
	Inferred	$76	90,200	1.42	106	0.49	0.94	2.74
Altagracia	Measured	2.50 g/t	156,800	0.91	443			
	Indicated	2.50 g/t	73,700	0.83	398			
	Meas+Ind	2.50 g/t	230,500	0.88	428			
	Inferred	2.50 g/t	27,300	0.56	310			
Margaritas (Tapada Vein)	Measured	2.50 g/t	0	0	0			
	Indicated	2.50 g/t	23,100	0.53	274			
	Meas+Ind	2.50 g/t	23,100	0.53	274			
	Inferred	2.50 g/t	36,100	0.53	308			
OAXACA MINING UNIT TOTAL	Measured	NA	3,985,200	2.03	141			
	Indicated	NA	1,534,600	1.39	171			
	Meas+Ind	NA	5,520,500	1.85	149			
	Inferred	NA	248,700	0.88	142			

Table 14.7 Mineral Resources (Inclusive of Mineral Reserves and Mineralized Material) by Vein for the Arista Vein System of the Oaxaca Mining Unit as of December 31, 2019*

Description	Vein	Cutoff US$	Tonnes	Au g/t	Ag g/t	Cu %	Pb %	Zn %
Measured	aire	$76	8,200	2.01	239	0.11	0.46	0.73
	alta	$76	39,300	2.72	119	0.38	1.71	4.31
	arista	$76	63,700	1.76	118	0.27	1.15	3.40
	baja	$76	144,700	2.65	236	0.26	1.12	3.91
	baja_rm1	$76	38,400	1.73	93	0.26	3.54	6.75
	berenice	$76	5,600	8.19	40	0.29	0.63	0.94
	candelaria	$76	93,800	3.70	466	0.24	0.67	1.40
	chuy1	$76	17,700	1.65	88	0.23	1.45	5.43
	chuy2	$76	7,000	1.57	38	0.13	1.01	4.80
	este_nor_rm1	$76	16,900	0.10	80	0.19	2.45	6.48
	este_norte	$76	33,000	0.70	74	0.25	1.42	4.93
	este_sur	$76	41,600	1.60	232	0.42	2.06	5.14
	este_sur_rm1	$76	12,100	1.68	73	0.20	1.66	3.78
	este_sur_rm2	$76	-	0.00	0	0.00	0.00	0.00
	gisela	$76	23,800	0.04	192	0.07	3.20	5.96
	luz	$76	36,500	2.60	308	0.30	0.64	1.27
	marena	$76	68,200	1.19	77	0.20	1.68	5.99
	mercedes	$76	7,900	0.96	176	0.13	1.15	2.16
	santiago	$76	103,900	1.27	60	0.28	2.06	4.90
	santiago_rm1	$76	5,300	0.02	21	0.28	2.61	5.68
	splay05	$76	118,200	2.27	400	0.20	1.42	2.32
	splay05_rm1	$76	10,900	1.80	307	0.15	0.96	2.11
	splay06	$76	20,300	1.35	308	0.24	0.46	0.76
	splay06_sur	$76	2,300	1.30	301	0.02	0.06	0.09
	splay31	$76	100,600	1.19	128	0.24	1.62	5.01
	splay31_rm1	$76	13,800	0.60	54	0.33	1.85	7.77
	splay31_rm2	$76	2,300	1.74	146	0.25	2.10	2.30
	splay31_rm3	$76	6,200	2.37	359	0.33	0.76	1.09
	splay31_rm4	$76	400	0.60	556	0.20	0.41	0.79
	splay66	$76	56,700	3.13	300	0.39	0.85	4.58

	splay66_rm1	$76	10,800	2.41	132	0.28	0.85	2.12
	sta_cecilia	$76	63,400	0.65	50	0.34	1.45	4.12
	sta_clara	$76	23,200	0.51	254	0.81	2.88	5.24
	sta_helena	$76	47,500	2.12	89	0.31	2.47	7.91
	sta_lucia	$76	9,200	1.66	97	0.44	0.83	1.88
	sta_lucia_r1	$76	-	0.01	6	0.36	1.23	5.00
	veta01	$76	12,300	0.99	51	0.19	1.23	3.52
	veta03	$76	37,400	4.95	173	0.47	1.58	6.91
	viridiana	$76	140,300	2.88	104	0.21	1.03	4.51
	viridiana_r1	$76	29,200	3.43	160	0.52	0.75	1.71
	viridiana_r2	$76	11,100	1.61	118	0.07	0.91	6.95
	TOTAL	$76	1,483,700	2.09	185	0.28	1.46	4.20
Indicated	aire	$76	4,200	1.36	160	0.09	0.33	0.48
	alta	$76	500	2.94	92	0.27	0.48	0.89
	arista	$76	8,300	1.72	119	0.24	0.97	3.29
	baja	$76	85,700	2.71	136	0.13	0.84	4.42
	baja_rm1	$76	20,200	0.70	70	0.18	3.17	6.06
	berenice	$76	3,400	4.00	25	0.14	0.43	0.85
	candelaria	$76	50,900	2.54	424	0.20	0.56	1.27
	chuy1	$76	400	5.24	134	0.50	2.00	7.29
	chuy2	$76	100	1.49	18	0.13	1.06	3.29
	este_nor_rm1	$76	8,500	0.11	52	0.13	2.01	5.95
	este_norte	$76	44,600	0.18	114	0.11	1.67	6.40
	este_sur	$76	80,700	0.44	114	0.25	2.43	7.48
	este_sur_rm1	$76	16,300	1.02	70	0.13	1.17	2.97
	este_sur_rm2	$76	-	0.94	68	0.25	1.01	1.08
	gisela	$76	21,500	0.05	184	0.05	1.44	3.46
	luz	$76	18,800	1.76	258	0.22	0.46	1.31
	marena	$76	125,800	0.16	50	0.04	1.49	5.79
	mercedes	$76	17,600	1.37	198	0.14	0.67	1.21
	santiago	$76	109,000	1.01	101	0.19	1.26	2.14
	santiago_rm1	$76	1,700	0.02	19	0.24	2.17	4.68
	splay05	$76	84,500	1.78	367	0.19	2.09	2.29
	splay05_rm1	$76	600	0.51	204	0.09	0.28	0.42
	splay06	$76	11,300	1.25	398	0.16	0.22	0.47
	splay06_sur	$76	700	1.23	288	0.02	0.06	0.11
	splay31	$76	66,300	0.94	134	0.19	1.20	4.22
	splay31_rm1	$76	3,400	0.45	36	0.20	1.11	4.53
	splay31_rm2	$76	1,100	1.20	46	0.18	0.85	1.92
	splay31_rm3	$76	1,400	3.58	464	0.47	0.99	1.42
	splay31_rm4	$76	1,000	0.42	353	0.15	0.48	0.56
	splay66	$76	53,800	2.54	699	0.47	0.67	2.63
	splay66_rm1	$76	2,800	1.47	111	0.31	0.55	1.15
	sta_cecilia	$76	18,800	0.66	64	0.35	1.24	3.40
	sta_clara	$76	2,400	0.32	190	0.60	2.30	3.66
	sta_helena	$76	52,400	2.19	68	0.14	1.86	7.06
	sta_lucia	$76	1,800	1.67	50	0.36	0.71	1.43
	sta_lucia_r1	$76	-	0.00	0	0.00	0.00	0.00
	veta01	$76	700	1.26	62	0.20	1.26	3.11
	veta03	$76	700	4.15	119	0.37	1.19	6.46
	viridiana	$76	40,500	3.90	114	0.20	0.85	2.93
	viridiana_r1	$76	4,800	5.01	180	0.62	0.76	1.63
	viridiana_r2	$76	1,200	0.53	69	0.03	0.59	4.80
	TOTAL	$76	968,400	1.40	182	0.18	1.38	4.04
Mea+Ind	aire	$76	12,400	1.79	212	0.10	0.42	0.65
	alta	$76	39,800	2.72	118	0.38	1.69	4.27
	arista	$76	72,000	1.76	118	0.27	1.13	3.39
	baja	$76	230,400	2.68	198	0.21	1.02	4.10
	baja_rm1	$76	58,600	1.37	85	0.23	3.41	6.51
	berenice	$76	9,000	6.61	35	0.23	0.56	0.90
	candelaria	$76	144,700	3.29	451	0.23	0.63	1.36
	chuy1	$76	18,100	1.73	89	0.23	1.46	5.47
	chuy2	$76	7,100	1.57	38	0.13	1.01	4.78

	este_nor_rm1	$76	25,500	0.11	70	0.17	2.30	6.30
	este_norte	$76	77,600	0.40	97	0.17	1.56	5.77
	este_sur	$76	122,400	0.84	155	0.31	2.31	6.69
	este_sur_rm1	$76	28,300	1.30	71	0.16	1.38	3.32
	este_sur_rm2	$76	-	0.94	68	0.25	1.01	1.08
	gisela	$76	45,400	0.04	188	0.06	2.36	4.77
	luz	$76	55,300	2.32	291	0.27	0.58	1.28
	marena	$76	194,000	0.52	59	0.10	1.56	5.86
	mercedes	$76	25,500	1.25	191	0.14	0.82	1.51
	santiago	$76	212,900	1.14	81	0.23	1.65	3.49
	santiago_rm1	$76	7,000	0.02	20	0.27	2.50	5.43
	splay05	$76	202,700	2.07	386	0.19	1.70	2.31
	splay05_rm1	$76	11,500	1.74	302	0.15	0.93	2.03
	splay06	$76	31,600	1.31	341	0.21	0.37	0.66
	splay06_sur	$76	3,000	1.28	298	0.02	0.06	0.09
	splay31	$76	167,000	1.09	130	0.22	1.45	4.69
	splay31_rm1	$76	17,200	0.57	50	0.31	1.71	7.13
	splay31_rm2	$76	3,400	1.57	114	0.23	1.70	2.18
	splay31_rm3	$76	7,600	2.60	379	0.36	0.81	1.15
	splay31_rm4	$76	1,400	0.48	413	0.17	0.46	0.63
	splay66	$76	110,500	2.84	494	0.43	0.76	3.63
	splay66_rm1	$76	13,500	2.22	127	0.29	0.79	1.92
	sta_cecilia	$76	82,300	0.65	53	0.34	1.40	3.96
	sta_clara	$76	25,600	0.49	248	0.79	2.82	5.10
	sta_helena	$76	99,900	2.16	78	0.22	2.15	7.47
	sta_lucia	$76	11,100	1.66	89	0.42	0.81	1.80
	sta_lucia_r1	$76	-	0.01	6	0.36	1.23	5.00
	veta01	$76	13,000	1.00	52	0.19	1.23	3.50
	veta03	$76	38,000	4.94	172	0.47	1.57	6.90
	viridiana	$76	180,800	3.11	106	0.21	0.99	4.15
	viridiana_r1	$76	34,000	3.65	163	0.54	0.75	1.70
	viridiana_r2	$76	12,400	1.50	113	0.06	0.88	6.73
	TOTAL	$76	2,452,500	1.82	184	0.24	1.43	4.13
Inferred	baja	$76	1,000	0.26	44	0.07	0.46	6.28
	candelaria	$76	1,000	1.05	89	0.11	0.69	2.24
	este_norte	$76	1,900	0.20	81	0.13	0.67	4.57
	este_sur	$76	16,600	0.06	45	0.08	1.52	5.07
	marena	$76	40,800	0.03	66	0.01	1.23	5.70
	santiago	$76	30,500	1.61	62	0.61	0.34	0.68
	splay05	$76	1,700	0.70	69	0.08	1.82	2.53
	splay06	$76	1,200	1.11	259	0.12	0.16	0.35
	splay31	$76	300	1.16	189	0.25	0.93	2.68
	sta_helena	$76	100	0.40	47	0.16	1.50	6.95
	TOTAL	$76	95,100	0.59	64.15	0.22	0.96	3.79

Table 14.8 Mineral Resources (Inclusive of Mineral Reserves and Mineralized Material) by Vein for the Switchback Vein System of the Oaxaca Mining Unit as of December 31, 2019*

Description	Vein	Cutoff g/t	Tonnes	Au g/t	Ag g/t	Cu %	Pb %	Zn %
Measured	sadie_1	$76	20,200	0.90	182	0.12	0.37	1.50
	sadie_2	$76	18,400	0.74	342	0.09	0.28	0.51
	sagram1	$76	2,200	0.93	40	0.64	1.84	2.76
	sagrario	$76	101,400	1.98	68	0.56	1.57	3.09
	sam1	$76	-	0.00	0	0.00	0.00	0.00
	sam2	$76	28,300	1.92	102	0.70	1.95	3.22
	samarinda	$76	1,000	0.44	35	0.19	2.63	2.02
	sandy_1	$76	10,700	0.15	27	0.46	0.83	3.96
	sara	$76	18,200	3.87	41	0.64	2.11	6.80
	sasha_1	$76	35,800	0.93	487	0.10	0.28	0.81
	sbn1	$76	32,300	3.63	117	0.68	2.69	4.29

	sbn2	$76	-	0.00	0	0.00	0.00	0.00
	selene	$76	97,400	3.05	24	0.28	1.08	2.66
	selene_rm1	$76	1,500	3.06	5	0.08	0.40	1.62
	silvia	$76	101,600	3.90	84	0.44	2.56	7.72
	sofia	$76	69,000	4.34	32	0.65	1.58	3.65
	soledad	$76	1,590,000	1.91	91	0.48	2.11	6.31
	solram1	$76	-	0.00	0	0.00	0.00	0.00
	solram2	$76	5,400	1.12	42	0.50	1.21	3.80
	solram3	$76	6,300	0.91	98	0.34	1.24	3.82
	solram4	$76	2,200	0.35	45	0.78	2.85	11.07
	solram5	$76	67,500	2.53	61	0.48	1.44	5.18
	sonya	$76	1,000	1.22	46	0.52	1.46	2.71
	susana_n	$76	96,100	0.59	91	0.36	0.69	3.34
	susana_s	$76	38,200	1.43	87	0.27	1.54	4.14
	TOTAL	$76	2,344,700	2.07	93	0.46	1.90	5.55
Indicated	sadie_1	$76	18,100	0.91	158	0.10	0.34	0.99
	sadie_2	$76	9,300	0.34	319	0.04	0.06	0.15
	sagram1	$76	400	0.60	37	0.47	1.50	2.24
	sagrario	$76	58,000	0.70	52	0.63	1.03	2.99
	sam1	$76	2,300	2.14	24	0.77	4.45	6.83
	sam2	$76	8,100	1.41	59	0.49	1.27	2.23
	samarinda	$76	100	0.43	34	0.19	2.34	1.95
	sandy_1	$76	9,000	0.19	27	0.43	0.81	3.83
	sara	$76	51,600	3.42	127	0.32	1.13	3.62
	sasha_1	$76	13,800	0.87	386	0.09	0.24	0.67
	sbn1	$76	16,400	2.92	109	0.65	2.21	3.23
	sbn2	$76	2,900	5.13	227	0.23	0.48	0.40
	selene	$76	3,300	2.25	23	0.27	0.94	2.53
	selene_rm1	$76	-	2.89	5	0.08	0.38	1.51
	silvia	$76	1,500	3.27	73	0.39	2.61	6.86
	sofia	$76	17,800	1.70	29	0.49	0.72	2.36
	soledad	$76	200,100	1.37	98	0.49	1.70	5.02
	solram1	$76	14,900	2.05	79	0.48	1.76	6.00
	solram2	$76	-	0.00	0	0.00	0.00	0.00
	solram3	$76	-	0.97	123	0.30	0.71	3.26
	solram4	$76	-	0.00	0	0.00	0.00	0.00
	solram5	$76	-	1.79	53	0.55	0.61	2.78
	sonya	$76	-	0.00	0	0.00	0.00	0.00
	susana_n	$76	40,100	0.58	115	0.25	0.65	2.88
	susana_s	$76	1,700	0.87	48	0.23	1.78	2.82
	TOTAL	$76	469,400	1.50	107	0.43	1.30	3.81
Mea+Ind	sadie_1	$76	38,300	0.91	171	0.11	0.36	1.26
	sadie_2	$76	27,800	0.60	334	0.07	0.21	0.39
	sagram1	$76	2,600	0.87	39	0.61	1.78	2.67
	sagrario	$76	159,400	1.51	62	0.58	1.37	3.05
	sam1	$76	2,300	2.14	24	0.77	4.45	6.83
	sam2	$76	36,400	1.80	93	0.65	1.80	3.00
	samarinda	$76	1,200	0.44	35	0.19	2.60	2.01
	sandy_1	$76	19,700	0.17	27	0.45	0.82	3.90
	sara	$76	69,800	3.53	105	0.40	1.39	4.45
	sasha_1	$76	49,600	0.92	459	0.10	0.27	0.77
	sbn1	$76	48,800	3.39	114	0.67	2.53	3.93
	sbn2	$76	2,900	5.13	227	0.23	0.48	0.40
	selene	$76	100,700	3.02	24	0.28	1.08	2.66
	selene_rm1	$76	1,500	3.06	5	0.08	0.40	1.61
	silvia	$76	103,100	3.89	84	0.44	2.56	7.71
	sofia	$76	86,800	3.80	31	0.62	1.40	3.38
	soledad	$76	1,790,100	1.85	92	0.48	2.07	6.16
	solram1	$76	14,900	2.05	79	0.48	1.76	6.00
	solram2	$76	5,400	1.12	42	0.50	1.21	3.80
	solram3	$76	6,300	0.91	98	0.34	1.24	3.82
	solram4	$76	2,200	0.35	45	0.78	2.85	11.07
	solram5	$76	67,500	2.53	61	0.48	1.44	5.18

	sonya	$76	1,000	1.22	46	0.52	1.46	2.71
	susana_n	$76	136,200	0.58	98	0.33	0.68	3.21
	susana_s	$76	39,900	1.41	85	0.26	1.55	4.09
	TOTAL	$76	2,814,400	1.97	95	0.46	1.80	5.26
Inferred	sagrario	$76	23,300	0.75	56	0.54	0.76	2.49
	sara	$76	100	0.91	10	0.52	0.42	2.76
	sbn2	$76	11,900	6.19	275	0.28	0.58	0.47
	sofia	$76	2,400	1.11	43	0.50	0.64	2.07
	soledad	$76	52,100	0.65	93	0.52	1.12	3.41
	susana_n	$76	400	0.16	140	0.20	0.43	1.67
	TOTAL	$76	90,200	1.42	106	0.49	0.94	2.74

Table 14.9 Mineral Resources (Inclusive of Mineral Reserves and Mineralized Material) by Vein for the Alta Gracia Vein System of the Oaxaca Mining Unit as of December 31, 2019*

Description	Vein	Cutoff g/t	Tonnes	Au g/t	Ag g/t
Measured	huaje1_hw	2.50 g/t	8,900	0.71	486
	huaje1_rm1	2.50 g/t	-	0.34	472
	huaje2	2.50 g/t	3,100	0.65	287
	ind_m1	2.50 g/t	4,700	0.62	481
	ind_m2	2.50 g/t	1,300	0.33	313
	ind_s_rm1	2.50 g/t	900	1.19	188
	ind_w	2.50 g/t	68,800	0.79	432
	jarillas1	2.50 g/t	15,800	1.11	339
	mirador	2.50 g/t	29,600	1.17	467
	san_juan	2.50 g/t	5,400	1.00	428
	sanjuan_fw	2.50 g/t	900	0.65	327
	sanjuan_nw11	2.50 g/t	2,400	0.89	1450
	victoria_ne	2.50 g/t	11,000	1.21	492
	victoria1	2.50 g/t	4,100	0.41	266
	TOTAL	2.50 g/t	156,800	0.91	443
Indicated	huaje1_hw	2.50 g/t	7,100	0.55	326
	huaje1_rm1	2.50 g/t	3,500	0.32	441
	ind_w	2.50 g/t	13,800	0.93	334
	jarillas1	2.50 g/t	8,100	1.13	299
	mirador	2.50 g/t	13,800	0.97	467
	san_juan	2.50 g/t	2,300	0.74	322
	sanjuan_fw	2.50 g/t	4,300	1.01	503
	sanjuan_nw11	2.50 g/t	3,000	0.74	1125
	victoria_ne	2.50 g/t	14,300	0.68	319
	victoria1	2.50 g/t	3,600	0.69	340
	TOTAL	2.50 g/t	73,700	0.83	398
Mea + Ind	huaje1_hw	2.50 g/t	16,000	0.64	415
	huaje1_rm1	2.50 g/t	3,500	0.32	441
	huaje2	2.50 g/t	3,100	0.65	287
	ind_m1	2.50 g/t	4,700	0.62	481
	ind_m2	2.50 g/t	1,300	0.33	313
	ind_s_rm1	2.50 g/t	900	1.19	188
	ind_w	2.50 g/t	82,600	0.81	416
	jarillas1	2.50 g/t	23,900	1.12	325
	mirador	2.50 g/t	43,400	1.10	466
	san_juan	2.50 g/t	7,700	0.92	398
	sanjuan_fw	2.50 g/t	5,200	0.95	473
	sanjuan_nw11	2.50 g/t	5,400	0.80	1258
	victoria_ne	2.50 g/t	25,300	0.91	393
	victoria1	2.50 g/t	7,700	0.54	299
	TOTAL	2.50 g/t	230,500	0.88	428
Inferred	huaje1_hw	2.50 g/t	300	0.38	184
	huaje1_rm1	2.50 g/t	5,400	0.32	440
	jarillas1	2.50 g/t	3,100	0.44	204

	mirador	2.50 g/t	13,200	0.70	323
	sanjuan_fw	2.50 g/t	300	0.67	291
	sanjuan_nw11	2.50 g/t	100	0.30	389
	victoria_ne	2.50 g/t	4,300	0.52	189
	victoria1	2.50 g/t	500	0.63	291
	TOTAL	2.50 g/t	27,300	0.56	310

*Notes on Mineral Resources in Tables 14.6 through 14.9:

1. Mineral Resources are as defined by new guidelines proposed by the SEC and CRIRSCO definitions for Mineral Resources.
2. Mineral Resources are estimated as of December 31, 2019 and take into account production-related depletion through December 31, 2019.
3. Mineral Resources reported herein are inclusive of Mineral Reserves and Mineralized Material.
4. Metal prices used for Mineral Resources were $1,306 per ounce of gold, $16.32 per ounce of silver, $2.83 per pound of copper, $0.99 per pound of lead and $1.27 per pound of zinc. These prices reflect the three-year trailing average prices for gold, silver, copper, lead and zinc.
5. A breakeven NSR cutoff grade of $76 per tonne was used for estimations of Mineral Resources. The term "cutoff grade" means the lowest NSR value considered economic to process.
6. No appreciable amounts of base metals are present in the veins identified to-date at the Alta Gracia Project including the Mirador Underground Mine, and the Margaritas Project. A breakeven cutoff grade of 2.5 g/tAuEq was used for Mineral Resources at the Alta Gracia and Margaritas Projects using gold and silver only to calculate gold equivalencies.
7. Minimum mining width for Mineral Resources is 1.5 meters.
8. Arista Mine metallurgical recovery assumptions used were 78% for gold, 91% for silver, 78% for copper, 78% for lead and 81% for zinc. Alta Gracia and Margaritas projects metallurgical recovery assumptions used were 87% for gold and 80% for silver. These recoveries reflect 2019 actual average recoveries for the Aguila and Alta Gracia Projects.
9. Minimum mining width for Mineral Resources is 1.5 meters.
10. Figures in tables are rounded to reflect estimate precision and small differences generated by rounding are not material to estimates.

14.10 Mineral Resource Estimate Sensitivity

The sensitivity of the mineral resources inventory to changes in cutoff grade was also examined by summarizing tonnes and grade at varying cutoff grades for Measured and Indicated mineral resources inclusive of mineral reserves (Table 14.10). The results suggest that the mineral resource estimate is relatively insensitive to changes in cutoff grade.

Table 14.10 Cutoff Grade Sensitivity for the Measured and Indicated Mineral Resources (inclusive of Mineral Reserves) as of December 31, 2019

Vein System	Cutoff	Tonnes	Au g/t	Ag g/t	Cu %	Pb %	Zn %
	$105	1,619,500	2.42	242	0.28	1.66	4.63
	$90	2,039,600	2.05	208	0.25	1.55	4.41
Arista	$76	2,452,600	1.82	184	0.24	1.43	4.13
	$60	2,997,000	1.59	160	0.22	1.29	3.79
	$45	3,505,400	1.43	143	0.21	1.17	3.48
	$105	2,133,700	2.38	105	0.49	2.12	6.00
	$90	2,501,400	2.14	101	0.47	1.94	5.58
Switchback	$76	2,814,400	1.97	95	0.46	1.80	5.26
	$60	3,125,200	1.83	89	0.45	1.68	4.96
	$45	3,376,400	1.72	85	0.43	1.59	4.72
	3.5	175,800	1.00	500			
	3.0	201,000	0.94	465			
Altagracia	2.5	230,500	0.88	428			
	2.0	268,100	0.82	389			
	1.5	323,200	0.75	340			

14.11 Opinion on Adequacy

DDGM considers that drilling program results meet industry standards for drilling and QA/QC measures. DDGM also considers that drilling results have been reviewed and confirmed in sufficient detail to permit the generation of Measured and Indicated mineral resource estimates, and that sufficient technical information is available to convert mineral resources to Proven and Probable mineral reserves.

14.12 Validation

The undiluted block models were validated visually by the inspection of successive section lines in order to confirm that the block models correctly reflect the distribution of high-grade and low-grade assay values. Longitudinal sections showing block grade distribution and classification of Mineral Resources are in Appendix B.

The undiluted block model estimates were checked for global bias by comparing the average metal grades to nearest neighbor model means for Measured and Indicated mineral resources (Table 14.11). A nearest neighbor estimator produces a theoretically unbiased estimate of the average value when no cutoff grade is imposed and is a reasonable basis for checking the performance of different estimation methods (typically the target comparison should be less than 5%).

Table 14.11 Measured and Indicated Nearest Neighbor Comparison

Domain	Ag Block Average	Ag NN Average	Au Block Average	Au NN Average	Ag Ratio	Au Ratio
Altagracia	225	220	0.48	0.47	98%	98%
Arista	129	137	1.44	1.43	106%	99%
Switchback	77	72	1.42	1.26	94%	89%
Tapada	129	137	0.27	0.25	94%	108%

14.13 Risk Factors

Relevant factors which may affect the estimation of mineral resources include changes to the geological, geotechnical and geometallurgical models, infill drilling to convert material to a higher classification, drilling to test for extensions to known mineral resources, collection of additional bulk density data and significant changes to commodity prices. It should be noted that these and other factors pose potential risks and opportunities, of greater or lesser degree, to the estimate as the model is based on currently available data. Risks associated with key estimation parameters include the following:

- Survey errors associated with channel samples may locate some assay results outside the modeled vein structures;
- Complex structural geology can make it difficult to assign high-grade drillhole samples to the correct vein;
- The changing orientations of the veins over short distances are difficult to model in terms of their local anisotropy;
- High variance in on-site assay results may artificially bias local estimates.

15 MINERAL RESERVE ESTIMATE

15.1 Introduction

The Mineral Reserve estimates presented herein were prepared according to the requirements for calculation of Mineral Reserves as contained in Guide 7 (SEC, 2018 a, b).

The mineral reserve estimate for the Arista and Mirador Underground Mines is based on technical data and information available, mainly results of underground chip channel and drill hole sampling, as of December 31, 2019. The current mineral reserve estimate was prepared by the QPs described in Section 2.2.

15.2 Mineral Reserve Definitions

The SEC is adopting the Combined Reserves International Reporting Standards Committee (CRIRSCO) framework of applying modifying factors to indicated or measured mineral resources in order to convert them to mineral reserves.

According to CRIRSCO, a Mineral Reserve is the economically mineable part of a Measured or Indicated Mineral Resource. It includes diluting materials and allowances for losses which may occur when the material is mined. Appropriate assessments, which may include feasibility studies, have been carried out and include consideration of and modification by realistically assumed mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors. These assessments demonstrate at the time of reporting that extraction is reasonably justified. Mineral Reserves are subdivided in order of increasing confidence into Probable Mineral Reserves and Proven Mineral Reserves.

15.2.1 Probable Mineral Reserve

A Probable Mineral Reserve is the economically mineable part of an Indicated and, in some circumstances, Measured Mineral Resource. It includes diluting materials and allowances for losses which may occur when the material is mined. Appropriate assessments, which may include feasibility studies, have been carried out and include consideration of and modification by realistically assumed mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors. These assessments demonstrate at the time of reporting that extraction is reasonably justified. A Probable Mineral Reserve has a lower level of confidence than a Proven Mineral Reserve

15.2.2 Proven Mineral Reserve

A Proven Mineral Reserve is the economically mineable part of a Measured Mineral Resource. It includes diluting materials and allowances for losses which may occur when the material is mined. Appropriate assessments, which may include feasibility studies, have been carried out and include consideration of and modification by realistically assumed mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors. These assessments demonstrate at the time of reporting that extraction is reasonably justified.

15.3 Previous Mineral Reserve Estimates

A previous estimate of Proven and Probable Mineral Reserves was released by DDGM with an effective date of December 31, 2018 (Tables 15.1 and 15.2).

Table 15.1 Proven and Probable Mineral Reserves for the Oaxaca Mining Unit as of December 31, 2018*

Description	Tonnes	Au g/t	Ag g/t	AuEq g/t	Au oz	Ag oz	AuEq oz	Cu %	Pb %	Zn %
OAXACA MINING UNIT										
Arista Mine										
Proven	2,669,000	1.87	112	3.35	160,500	9,574,900	287,000	0.36	1.52	4.55
Probable	279,900	1.88	115	3.40	17,000	1,032,400	30,600	0.32	1.30	3.73
Arista Mine Total	**2,948,900**	**1.87**	**112**	**3.35**	**177,500**	**10,607,300**	**317,600**	**0.36**	**1.50**	**4.47**
Mirador Mine										
Proven	107,000	0.69	495	7.23	2,400	1,704,000	24,900			
Probable	21,300	0.62	409	6.03	400	280,000	4,100			
Mirador Mine Total	**128,300**	**0.68**	**481**	**7.03**	**2,800**	**1,984,000**	**29,000**			
OAXACA MINING UNIT TOTAL	**3,077,200**	**1.82**	**127**	**3.50**	**180,300**	**12,591,300**	**346,600**			

Table 15.2 Proven and Probable Mineral Reserves by Vein for the Oaxaca Mining Unit as of December 31, 2018*

Description	Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
Arista Mine											
Arista Veins											
Proven	SPLAY-06	15,100	1.03	288	4.83	500	139,500	2,300	0.20	0.37	0.63
	ARISTAV	48,400	1.47	104	2.84	2,300	161,400	4,400	0.24	0.99	3.11
	BAJA	141,200	2.26	199	4.90	10,300	904,800	22,200	0.23	0.97	2.86
	BAJA-RM1	32,500	1.29	75	2.28	1,300	78,600	2,400	0.21	2.92	5.59
	SPLAY-31	98,300	1.91	108	3.33	6,000	339,700	10,500	0.26	1.32	4.13
	SANTIAGO	66,600	2.25	44	2.82	4,800	93,300	6,000	0.26	2.07	4.24
	SPLAY-66	62,200	2.67	281	6.38	5,300	561,800	12,800	0.33	0.67	2.83
	SPLY-66RM1	14,000	2.67	154	4.70	1,200	69,400	2,100	0.29	0.76	1.85
	SPLAY-05	82,400	1.31	242	4.51	3,500	641,500	11,900	0.12	0.84	1.64
	VETA-03	38,400	3.47	149	5.43	4,300	183,500	6,700	0.42	1.35	6.06
	ALTA	31,400	2.39	106	3.79	2,400	106,700	3,800	0.33	1.46	3.62
	CANDELARIA	66,400	2.53	251	5.84	5,400	535,900	12,500	0.17	0.48	1.00
	ESTE-SUR	36,100	1.96	393	7.15	2,300	456,300	8,300	0.42	0.93	1.67
	LUZ	35,600	1.84	232	4.90	2,100	265,100	5,600	0.21	0.33	0.60
	ESTE-NORTE	5,600	1.12	76	2.12	200	13,800	400	0.38	0.90	2.60

	MARENA	21,700	2.16	90	3.35	1,500	62,900	2,300	0.35	1.10	2.66
	STA-HELENA	31,500	1.85	63	2.68	1,900	63,600	2,700	0.46	2.09	6.06
	VIRIDIANA	144,100	1.83	108	3.25	8,500	498,400	15,100	0.23	1.31	5.05
	STA-CECILIA	119,200	0.82	40	1.34	3,100	151,800	5,200	0.25	1.49	4.16
	STA-CLARA	23,600	0.44	210	3.21	300	159,300	2,400	0.66	2.44	4.45
	SPLY5RM1	9,000	1.32	234	4.42	400	67,300	1,300	0.13	0.85	1.90
	VIRI-RM1	45,000	3.50	122	5.11	5,000	177,000	7,400	0.49	0.70	1.37
	CHUY1	31,600	2.23	134	4.00	2,300	136,000	4,100	0.31	1.31	3.92
	CHUY2										
	SPLAY-31R1	8,100	0.61	67	1.50	200	17,400	400	0.32	1.42	6.48
	SPLAY-31R4	5,200	0.53	495	7.07	100	83,500	1,200	0.16	0.31	0.66
	VIRI-RM2	6,900	0.53	81	1.60	100	18,000	400	0.03	0.64	5.68
	TOTAL	**1,220,100**	**1.92**	**153**	**3.94**	**75,300**	**5,986,500**	**154,400**	**0.27**	**1.20**	**3.40**
Probable	SPLAY-06	2,500	0.82	276	4.46	100	22,500	400	0.11	0.17	0.34
	ARISTAV	4,500	1.04	98	2.33	200	14,200	300	0.18	0.74	2.44
	BAJA	8,100	1.08	65	1.95	300	17,000	500	0.12	0.73	3.44
	BAJA-RM1	7,400	1.51	77	2.52	400	18,300	600	0.19	2.14	4.90
	SPLAY-31	24,600	1.80	194	4.36	1,400	153,500	3,500	0.15	0.67	2.43
	SANTIAGO	24,400	1.64	34	2.09	1,300	26,800	1,600	0.29	1.24	3.63
	SPLAY-66	6,300	1.98	187	4.45	400	37,800	900	0.25	0.86	2.87
	SPLY-66RM1	500	1.25	112	2.73		1,700	100	0.31	0.34	0.56
	SPLAY-05	3,100	0.72	125	2.37	100	12,300	200	0.11	0.51	1.03
	VETA-03										
	ALTA	200	2.09	175	4.41		1,200		0.26	0.93	1.59
	CANDELARIA	4,400	1.49	391	6.65	200	55,400	1,000	0.22	0.41	0.95
	ESTE-SUR	21,500	1.62	366	6.46	1,100	253,500	4,500	0.38	0.84	1.51
	LUZ	5,200	1.40	231	4.44	200	38,300	700	0.15	0.26	0.76
	ESTE-NORTE										
	MARENA	13,300	1.30	24	1.62	600	10,300	700	0.25	1.47	3.69
	STA-HELENA	9,100	8.54	39	9.05	2,500	11,400	2,700	0.16	0.89	4.08
	VIRIDIANA	1,500	1.91	81	2.97	100	3,900	100	0.22	0.42	1.35
	STA-CECILIA	3,900	0.78	24	1.10	100	3,000	100	0.17	1.27	3.03
	STA-CLARA	1,100	0.34	201	2.99		7,100	100	0.55	1.77	3.11
	SPLY5RM1	700	0.49	193	3.05		4,100	100	0.05	0.21	0.30
	VIRI-RM1	1,600	2.92	81	3.99	100	4,000	200	0.42	0.59	1.16
	CHUY1										
	SPLAY-31R1										
	SPLAY-31R4										
	VIRI-RM2										
	TOTAL	**143,900**	**1.96**	**150**	**3.94**	**9,100**	**696,300**	**18,300**	**0.23**	**0.95**	**2.73**
Proven & Probable	SPLAY-06	17,600	1.00	286	4.78	600	162,100	2,700	0.19	0.34	0.59
	ARISTAV	52,900	1.43	103	2.79	2,400	175,600	4,700	0.23	0.97	3.06
	BAJA	149,300	2.20	192	4.74	10,600	921,700	22,700	0.22	0.95	2.89
	BAJA-RM1	39,900	1.33	76	2.33	1,700	96,900	3,000	0.21	2.78	5.46
	SPLAY-31	122,900	1.89	125	3.54	7,500	493,100	14,000	0.24	1.19	3.79
	SANTIAGO	91,000	2.08	41	2.63	6,100	120,100	7,700	0.27	1.85	4.08
	SPLAY-66	68,500	2.61	272	6.21	5,700	599,600	13,700	0.32	0.69	2.83
	SPLY-66RM1	14,500	2.62	152	4.64	1,200	71,100	2,200	0.29	0.75	1.81
	SPLAY-05	85,500	1.29	238	4.43	3,500	653,800	12,200	0.12	0.83	1.62
	VETA-03	38,400	3.47	149	5.43	4,300	183,500	6,700	0.42	1.35	6.06
	ALTA	31,600	2.39	106	3.79	2,400	107,900	3,800	0.33	1.45	3.60
	CANDELARIA	70,800	2.47	260	5.89	5,600	591,300	13,400	0.17	0.48	1.00
	ESTE-SUR	57,700	1.83	383	6.89	3,400	709,800	12,800	0.40	0.90	1.61
	LUZ	40,800	1.78	231	4.84	2,300	303,400	6,300	0.20	0.32	0.62
	ESTE-NORTE	5,600	1.12	76	2.12	200	13,800	400	0.38	0.90	2.60
	MARENA	35,100	1.84	65	2.69	2,100	73,100	3,000	0.31	1.24	3.05
	STA-HELENA	40,700	3.35	57	4.11	4,400	75,100	5,400	0.39	1.82	5.61
	VIRIDIANA	145,500	1.83	107	3.25	8,600	502,300	15,200	0.23	1.30	5.01
	STA-CECILIA	123,100	0.82	39	1.34	3,200	154,800	5,300	0.24	1.49	4.13
	STA-CLARA	24,700	0.44	209	3.20	300	166,500	2,500	0.66	2.41	4.39
	SPLY5RM1	9,600	1.27	231	4.32	400	71,400	1,300	0.12	0.80	1.79
	VIRI-RM1	46,500	3.48	121	5.08	5,200	181,000	7,600	0.48	0.69	1.36
	CHUY1	31,600	2.23	134	4.00	2,300	136,000	4,100	0.31	1.31	3.92

	SPLAY-31R1	8,100	0.61	67	1.50	200	17,400	400	0.32	1.42	6.48
	SPLAY-31R4	5,200	0.53	495	7.07	100	83,500	1,200	0.16	0.31	0.66
	VIRI-RM2	6,900	0.53	81	1.60	100	18,000	400	0.03	0.64	5.68
	TOTAL	**1,364,000**	**1.92**	**152**	**3.94**	**84,400**	**6,682,800**	**172,600**	**0.27**	**1.18**	**3.33**
Switchback Veins											
Proven	SILVIA	28,900	4.30	158	6.39	4,000	146,800	5,900	0.48	2.22	6.84
	SOLEDAD	1,136,300	1.72	80	2.77	62,800	2,910,100	101,300	0.44	1.93	5.99
	SAGRARIO	62,900	2.26	66	3.14	4,600	134,400	6,300	0.47	1.44	2.43
	SABRINA	50,500	1.85	61	2.66	3,000	99,400	4,300	0.42	1.02	5.29
	SELENE	5,800	3.00	18	3.24	600	3,500	600	0.24	0.80	1.97
	SOFIA	50,300	4.10	26	4.45	6,600	42,000	7,200	0.53	1.40	3.21
	SOLEDAD-R1										
	SOLEDAD-R3	2,200	0.81	85	1.94		6,000	100	0.27	0.91	3.02
	SUSANA-N	54,300	0.46	78	1.49	800	135,700	2,600	0.34	0.62	2.91
	SUSANA-S	29,800	1.52	75	2.51	1,500	72,100	2,400	0.16	1.58	3.22
	SOLEDAD-R2	2,100	0.89	27	1.25		1,800	100	0.37	1.00	3.13
	SOLEDAD-R5	13,400	2.30	46	2.90	1,000	19,700	1,300	0.44	1.45	5.06
	SOLEDAD-R4	1,100	0.28	34	0.73		1,100		0.66	2.26	9.23
	SOLEDAD-R6	11,300	0.77	43	1.34	300	15,800	500	0.41	1.17	4.43
	TOTAL	**1,448,900**	**1.83**	**77**	**2.85**	**85,200**	**3,588,400**	**132,600**	**0.44**	**1.79**	**5.52**
Probable	SILVIA										
	SOLEDAD	75,000	2.40	89	3.57	5,800	213,900	8,600	0.49	2.26	6.05
	SAGRARIO	15,600	0.75	43	1.31	400	21,400	700	0.36	0.90	2.00
	SABRINA	9,600	2.01	61	2.82	600	19,000	900	0.40	1.07	6.12
	SELENE	1,100	2.75	19	3.01	100	700	100	0.29	0.58	1.89
	SOFIA	9,600	1.22	35	1.68	400	10,800	500	0.40	0.79	2.38
	SOLEDAD-R1	10,300	1.55	54	2.26	500	17,800	800	0.40	1.56	5.34
	SOLEDAD-R3										
	SUSANA-N	14,800	0.22	110	1.68	100	52,500	800	0.18	0.51	1.83
	SUSANA-S										
	SOLEDAD-R2										
	SOLEDAD-R5										
	SOLEDAD-R4										
	SOLEDAD-R6										
	TOTAL	**136,000**	**1.80**	**77**	**2.82**	**7,900**	**336,100**	**12,400**	**0.42**	**1.66**	**4.79**
Proven & Probable	SILVIA	28,900	4.30	158	6.39	4,000	146,800	5,900	0.48	2.22	6.84
	SOLEDAD	1,211,300	1.76	80	2.82	68,600	3,124,000	109,900	0.45	1.95	6.00
	SAGRARIO	78,500	1.96	62	2.77	5,000	155,800	7,000	0.44	1.33	2.34
	SABRINA	60,100	1.88	61	2.69	3,600	118,400	5,200	0.42	1.03	5.42
	SELENE	7,000	2.96	19	3.20	700	4,200	700	0.25	0.77	1.96
	SOFIA	59,900	3.64	27	4.00	7,000	52,800	7,700	0.51	1.31	3.08
	SOLEDAD-R1	10,300	1.55	54	2.26	500	17,800	800	0.40	1.56	5.34
	SOLEDAD-R3	2,200	0.81	85	1.94		6,000	100	0.27	0.91	3.02
	SUSANA-N	69,100	0.41	85	1.53	900	188,200	3,400	0.30	0.60	2.68
	SUSANA-S	29,800	1.52	75	2.51	1,500	72,100	2,400	0.16	1.58	3.22
	SOLEDAD-R2	2,100	0.89	27	1.25		1,800	100	0.37	1.00	3.13
	SOLEDAD-R5	13,400	2.30	46	2.90	1,000	19,700	1,300	0.44	1.45	5.06
	SOLEDAD-R4	1,000	0.28	34	0.73		1,100		0.66	2.26	9.23
	SOLEDAD-R6	11,300	0.77	43	1.34	300	15,800	500	0.41	1.17	4.43
	TOTAL	**1,584,900**	**1.83**	**77**	**2.84**	**93,100**	**3,924,500**	**145,000**	**0.43**	**1.78**	**5.46**
Mirador Mine											
Proven	MIRADOR	24,700	0.91	445	6.79	700	353,400	5,400			
	SJUAN	5,100	0.76	370	5.64	100	61,200	900			
	HUAJE1-HW	4,600	0.52	401	5.82	100	59,300	900			
	SJUAN-FW										
	VICTORIA1	600	0.32	194	2.88		3,500	100			
	JARILLAS1	8,100	0.89	280	4.59	300	72,900	1,200			
	INDEP-W	63,900	0.59	561	8.00	1,200	1,153,800	16,400			
	TOTAL	**107,000**	**0.69**	**495**	**7.23**	**2,400**	**1,704,100**	**24,900**			
Probable	MIRADOR	4,900	0.74	409	6.14	100	63,600	900			
	SJUAN	3,900	0.61	294	4.50	100	37,200	600			
	HUAJE1-HW	1,400	0.45	323	4.72		14,400	200			
	SJUAN-FW	1,100	0.59	303	4.59		10,500	200			

	VICTORIA1	1,700	0.50	280	4.20		15,200	200			
	JARILLAS1	600	0.97	377	5.95		7,500	100			
	INDEP-W	7,700	0.58	530	7.57	200	131,500	1,900			
	TOTAL	**21,300**	**0.62**	**409**	**6.03**	**400**	**279,900**	**4,100**			
Proven & Probable	MIRADOR	29,600	0.88	439	6.68	800	417,000	6,300			
	SJUAN	9,100	0.70	337	5.15	200	98,400	1,500			
	HUAJE1-HW	6,000	0.50	383	5.56	100	73,700	1,100			
	SJUAN-FW	1,100	0.59	303	4.59		10,500	200			
	VICTORIA1	2,200	0.46	259	3.88		18,700	300			
	JARILLAS1	8,700	0.90	287	4.69	300	80,400	1,300			
	INDEP-W	71,600	0.59	558	7.96	1,400	1,285,300	18,300			
	TOTAL	**128,300**	**0.68**	**481**	**7.03**	**2,800**	**1,984,000**	**29,000**			
OAXACA MINING UNIT TOTAL		**3,077,200**	**1.82**	**127**	**3.50**	**180,300**	**12,591,300**	**346,600**			

Notes to the above Mineral Reserves:

1. Metal prices used for P & P reserves were $1,258 per ounce of gold, $16.62 per ounce of silver, $2.65 per pound of copper, $0.97 per pound of lead and $1.20 per pound of zinc. These prices reflect the three-year trailing average prices for gold, silver, copper, lead and zinc.
2. Precious metal gold equivalent is 75.69:1 using gold and silver only to calculate gold equivalencies.
3. A breakeven NSR cutoff grade of $80 per tonne was used for estimations of P & P reserves at the Arista Underground Mine. The term "cutoff grade" means the lowest NSR value considered economic to process.
4. No appreciable amounts of base metals are present in the veins identified to-date at the Mirador Underground Mine at the Alta Gracia property. A breakeven cutoff grade of 1.98 g/t AuEq was used for proven and probable reserves at the Mirador Underground Mine using gold and silver only to calculate gold equivalencies.
5. Mining, processing, energy, administrative and smelting/refining costs were based on 2018 actual costs for the Oaxaca Mining Unit.
6. Arista Mine metallurgical recovery assumptions used were 80% for gold, 92% for silver, 80% for copper, 78% for lead and 83% for zinc. Mirador Mine metallurgical recovery assumptions used were 79% for gold and 78% for silver. These recoveries reflect 2018 actual average recoveries for the Aguila and Alta Gracia Projects.
7. P & P reserves are diluted and factored for expected mining recovery.
8. Minimum mining width for P & P reserves is 1.5 meters for the Arista and Mirador underground mines.
9. Figures in tables are rounded to reflect estimate precision and small differences generated by rounding are not material to estimates.

15.4 Mineral Reserve Confidence

Reserve classification considers a number of aspects affecting confidence in reserve estimations, such as:

• Geological continuity (including geological understanding and complexity)

• Data density and orientation

• Data accuracy and precision

• Grade continuity (including spatial continuity of mineralization)

There is substantial information to support a good understanding of the geological continuity of the primary veins at the Arista Underground Mine. Development and exploration drilling have defined the geological continuity of the primary veins currently in production, mainly the Arista, Baja, Santiago, Splay 5, Splay 31, Splay 66 and Viridiana, along strike and up and down dip.

Confidence in the geological continuity of the remaining secondary veins and splays is lower as there tend to be fewer intercepts. The uncertainty in the geology of the secondary veins has been taken into account during Mineral Reserve classification.

Understanding of the vein systems has been greatly increased by the presence of extensive underground workings allowing detailed mapping of the geology. Underground observations have increased the ability to accurately model the mineralization. The proximity of Mineral Reserves to underground workings has been taken into account during Mineral Reserve classification.

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• Data density and orientation

• Data accuracy and precision

• Grade continuity (including spatial continuity of mineralization)

There is substantial information to support a good understanding of the geological continuity of the primary veins at the Arista Underground Mine. Exploration drilling has defined the geological continuity of the primary veins, mainly the Arista, Baja, Chuy, Vein 1, Vein 3, Santiago, Splay 5 and Splay 66 along strike and down dip.

Confidence in the geological continuity of the remaining secondary veins and splays is lower as there tend to be fewer intercepts. The uncertainty in the geology of the secondary veins has been taken into account during reserve classification.

Understanding of the vein systems has greatly increased by the presence of extensive underground workings allowing detailed mapping of the geology. Underground observations have increased the ability to accurately model the mineralization. The proximity of reserves to underground workings has been taken into account during reserve classification.

15.6 Dilution and Mining Recovery

DDGM uses available information upon which to estimate actual dilution and mining recovery in the development headings, stopes, and transport system. Dilution and mining recoveries are functions of many factors including workmanship, heading design, vein width, mining method, extraction, and transport. Misclassification of economic material and waste by mine operations personnel due to a variety of factors also contributes to variations in both dilution and mining recovery. It is nearly certain that the dilution and recovery experienced in the mine is a combination of many factors and is at best valid on a global basis over relatively long-time periods.

DDGM uses different dilution and mining recovery factors depending on the underground mining method employed. These factors are estimated for the four underground mining methods employed at the Arista and Mirador mines: 1) Development Drifting (DRIFT), 2) Long Hole Open Stoping (LHOS), 3) Cut-and-Fill mining (CAF) and 4) Shrinkage Stoping (SH).

Mining methods and corresponding dilution factors are as follows:

Mining Method	Dilution (%)
Shrinkage Stoping (SH)	10
Long Hole Open Stoping (LHOS)	26
Overhand Mechanized Cut and Fill (CAF)	25
Development Drifting along Vein (DRIFT)	15
Average	**26**

Mining dilution averages 26% at zero grade; 10% for SH (up to 20%), 26% for LHOS (up to 40%), 25% for CAF (up to 66%) and 15% for DRIFT (up to 50%).

Mining dilution has been estimated by DDGM as a minimum 0.2 m of overbreak wallrock dilution for SH and a minimum operational width of 1.8 m. For LHOS, mining dilution has been estimated as a minimum 0.4 m of overbreak wallrock dilution and a minimum operational width of 1.5 m. Mining dilution applied for CAF is a minimum 0.6m of overbreak wallrock dilution and a minimum operational width of 2.5 m. Mining dilution for DRIFT is estimated to be 0.5 m of overbreak wallrock dilution and a minimum operational width of 3.0 m. Additional 0.1 m of dilution is derived from re-mucking of floor fill. Dilution applied is given a value of zero ppm.

Mine recovery factor estimation is based on the mine design and whether pillars are required in ore blocks for ground support, and ore recovery inefficiencies due to losses in stopes that can occur from inefficient drilling and blasting and remote-control mucking resulting in ore being left behind in stopes.

Mining methods and corresponding mining recovery factors of reserve blocks are as follows:

Mining Method	Mining Recovery (%)
Shrinkage Stoping (SH)	95
Long Hole Open Stoping (LHOS)	90
Overhand Mechanized Cut and Fill (CAF)	90
Development Drifting along Vein (DRIFT)	95

Remnant Blocks & Pillars (REMANENT)	60
Average	**84**

Overall mining recoveries averaged 84%, after applying 90% for LHOS and CAF stopes, 95% for SH and 95% for DRIFT. In 2015, DDGM began applying a lower, 60% recovery factor for all remnant blocks and pillars. Based on actual experience in the mine, DDGM deemed this to be a more realistic recovery factor for remnant blocks and pillars.

15.7 Cutoff Grade

Copper, lead and zinc base metal production currently contributes approximately 50% of the revenues generated from economic material extracted from the Arista underground mine. In 2014, to better represent this contribution, DDGM began using an economic breakeven NSR cutoff grade for Mineral Resources and Mineral Reserves estimations. The NSR cutoff grade calculation considers actual metal prices, total mining, milling and general administration costs, plant recoveries, smelting/refining costs and metal price participation by the smelters. NSR values are determined by using the three-year trailing average price for gold, silver, copper, lead and zinc. Current smelter contract terms and plant recoveries used are the average of actual recoveries reported by the plant during the twelve months of 2019. The cut-off grade does not include either exploration or capital costs.

The breakeven NSR cutoff grade is determined by the actual average cash operating costs for the Oaxaca Mining Unit for the twelve-month period from January through December 2019 determined by DDGM's finance department (Table 15.3).

Table 15.3 2019 Mine Site Cash Operating Costs Used for Breakeven NSR Cutoff Grade Calculations

Description (Units)	Value US$ per tonne milled
Mining Cost	37
Plant & Energy Cost	27
General & Administration Cost	12
Total Mine Site Operating Cash Cost	**76**

The average cash operating cost for 2019 was US$ 76 per tonne milled. All material with a NSR greater than this value is regarded as having the potential for economic extraction. The breakeven NSR cutoff grade is applied to the estimated Proven and Probable reserve blocks, and those that exceed the breakeven NSR cutoff grade are considered for inclusion in the mine plan and for reporting as reserves. The breakeven NSR cutoff grade for the Arista Underground Mine is US$ 76 per tonne. Parameters used for estimation of the economic breakeven NSR cutoff grade are in Table 15.4.

The NSR multiplier values calculated for each element which takes into consideration the commercial terms for 2019 are detailed in Table 15.5. For each reserve block, gold, silver, copper, lead and zinc grades are multiplied by their respective NSR multiplier value and then summed together to determine the total

NSR value for the block. If the total NSR value (diluted) is above the breakeven NSR cutoff grade of US$ 76/tonne, then the reserve block is further evaluated for economic extraction.

The same breakeven NSR cutoff grade of US$76/tonne was applied to Mineral Resources at the Arista Underground Mine (including the Switchback Veins). These mineral resources, however, are excluded from reported Mineral Reserves.

No appreciable amounts of base metals are present in the veins identified to-date at the Alta Gracia and Margaritas properties. Therefore, a breakeven cutoff grade using gold and silver only was used for these properties. Gold equivalencies are determined by taking the three-year trailing average price for gold and silver and converting them to gold equivalent ounces using the gold to silver average price ratio for the period.

The breakeven cutoff grade used for the Alta Gracia Project, including the Mirador Underground Mine, and the Margaritas Project Mineral Reserves and Mineral Resources was 2.5 g/t AuEq using gold and silver only to calculate gold equivalencies.

Table 15.4 Parameters Used for Breakeven NSR Cutoff Grade Calculations (**All amounts in US Dollars)*

Item	Unit	Value		Unit	Value	Source / Comments
Metal Prices						
Copper	$/lb	2.83	`	$/t	6,231	3 year trailing average
Zinc	$/lb	1.27		$/t	2,789	3 year trailing average
Lead	$/lb	0.99		$/t	2,186	3 year trailing average
Silver	$/oz	16.32		$/g	0.52	3 year trailing average
Gold	$/oz	1306		$/g	42.00	3 year trailing average
Item	**Unit**	**Cu Concentrate**	**Zn Concentrate**	**Pb Concentrate**	**Knelson Concentrate**	**Source / Comments**
Flotation Recovery						
Ag	%	44.1%	4.4%	41.5%	1.1%	2019 Met Balance FINAL
Au	%	42.6%	7.6%	16.6%	10.8%	2019 Met Balance FINAL
Cu	%	77.6%	4.1%	9.2%	1.2%	2019 Met Balance FINAL
Pb	%	9.6%	4.8%	77.8%	0.5%	2019 Met Balance FINAL
Zn	%	1.1%	81.1%	5.8%	0.1%	2019 Met Balance FINAL
Concentrate Grade						
Ag	g/t	2829.06	53.11	1187.58	1561.79	2019 Met Balance FINAL
Au	g/t	57.20	1.90	9.96	316.13	2019 Met Balance FINAL
Cu	%	23.01	0.23	1.22	7.77	2019 Met Balance FINAL
Pb	%	14.12	1.30	50.86	16.02	2019 Met Balance FINAL
Zn	%	4.07	54.65	9.44	5.57	2019 Met Balance FINAL
Moisture content						
	%	6.3%	9.9%	7.1%	0%	2019 Metal Sales
Smelter Payables						
Ag payable	%	92.0%	70%	95%	99.250%	2020 contract terms
Au payable	%	97.5%	70%	95%	99.925%	2020 contract terms
Cu payable	%	96.5%				2020 contract terms
Pb payable	%			95%		2020 contract terms
Zn payable	%		85%			2020 contract terms
Minimum Deductions						
Ag	g/t in conc		93.3	50.0		2020 contract terms
Au	g/t in conc		1.0	1.0		2020 contract terms
Cu	% dry net weight of con	1%				2020 contract terms
Pb	% dry net weight of con			3%		2020 contract terms
Zn	% dry net weight of con		8%			2020 contract terms
Treatment Charges/Refining Charges						
Base Treatment Charge	$/dmt conc or oz metal received	132.0	388.0	189.0	0.3	2020 contract terms
Ag	$/pay oz	0.75		1.60		2020 contract terms
Au	$/pay oz	7.5		15.0	0.32	2020 contract terms
Cu	$/lb	0.132				2020 contract terms
Pb	$/lb					2020 contract terms
Zn	$/lb					2020 contract terms
Deleterious Element Penalties						
2019 Conc Produced	dmt conc					
Se penalty	$/dmt conc			17.25		2019 actual & contract
Pb+Zn penalty	$/dmt conc	30.00				2019 actual & contract
Sb Penalty		3.00				2019 actual & contract
As Penalty	$/dmt conc	15.00				2020 actual & contract
Hg + Se Penalty	$/dmt conc		2.00			2019 actual & contract
SiO2 Penalty	$/dmt conc		3.00			2019 actual & contract
Cd Penalty	$/dmt conc		2.25			2019 actual & contract
F + CL Penalty	$/dmt conc		20.00	4.88		2019 actual & contract
Total Penalty Unit Cost	$/dmt conc	48.00	27.25	22.13		2019 actual & contract
Transport Costs						
Transport to smelter	$/wmt	169.43	169.43	169.43		Contract cost $3,303.81 MXN
Dore fixed transport fee	$/bar				1500.00	ASAHI contract
Dore incremental transport fee	$/thousand dollars in value				0.30	ASAHI contract
Dore bar weight	kg				19.50	USD / MXN 19.5
Dore bars shipped per shipment	units per shipment				1	
Royalties						
Royalty	%NSR	5%	5%	5%	4%	
Zn Price Participation - Zn Con						
Zn Base Treatment Charge	$/dmt Zn Conc	388				
Base Price	$/dmt Zn	2,400				
First price escalation	$/$1.0 increase in Zn price above 2,400	0.220				
Escalator Price	$/dmt Zn	2,400				
First Zn Treatment Escalation	$/dmt Zn Conc	0.00				
Second price escalation	None	0.00				

Second Zn Treatment Escalation	$/dmt Zn Conc	0.00
Zn Treatment Charge w/ Participation	$/dmt Zn Conc	388.00
Pb Price Participation - Pb Con		
Pb Base Treatment Charge	$/dmt Pb Conc	189
Base Price	$/dmt Pb	2,000
First price escalation	$/$1.0 increase in Pb price above 2,000	0.220
Escalator Price	$/dmt Pb	2,000
First Pb Treatment Escalation	$/dmt Pb Conc	0.00
Second price escalation	none	0.00
Second Pb Treatment Escalation	$/dmt Pb Conc	0.00
Pb Treatment Charge w/ Participation	$/dmt Pb Conc	189.00
Cu Price Participation -Cu Con		
Cu Base Treatment Charge	$/dmtCu Conc	132
Base Price	$/dmt Cu	6,400
First price escalation	$/$1.0 increase in Cu price above 6,400	0.100
Escalator Price	$/dmt Cu	6,400
First Cu Treatment Escalation	$/dmt Cu Conc	0.00
Second price escalation	$/$1.0 increase in Cu price above 6,700	0.20
Second Cu Treatment Escalation	$/dmt Cu Conc	0.00
Cu Treatment Charge w/ Participation	$/dmt Cu Conc	132.00

Table 15.5 NSR and AuEq Multiplier Values used for Breakeven Cutoff Grade Calculations

Metal (Units)	NSR Multiplier Value Arista & Switchback	Gold-Equivalent Factors Alta Gracia/Margaritas
Gold (US$ /g)	25.15	1.00
Silver (US$ /g)	0.32	80.03
Copper (US$ /%)	38.80	na
Lead (US$ /%)	12.24	na
Zinc (US$ /%)	10.03	na

15.8 Reserve Estimation Methodology

The following describes DDGM's Mineral Reserve estimation methodology conducted during January and February 2020 based on mineral zone block models created as of December 31, 2018. Reserves reported reflect mining depletion as of December 31, 2019. The flow chart for the Mineral Reserve estimation process at the Arista and Mirador Underground Mines is shown in Figure 15.1 and described below.

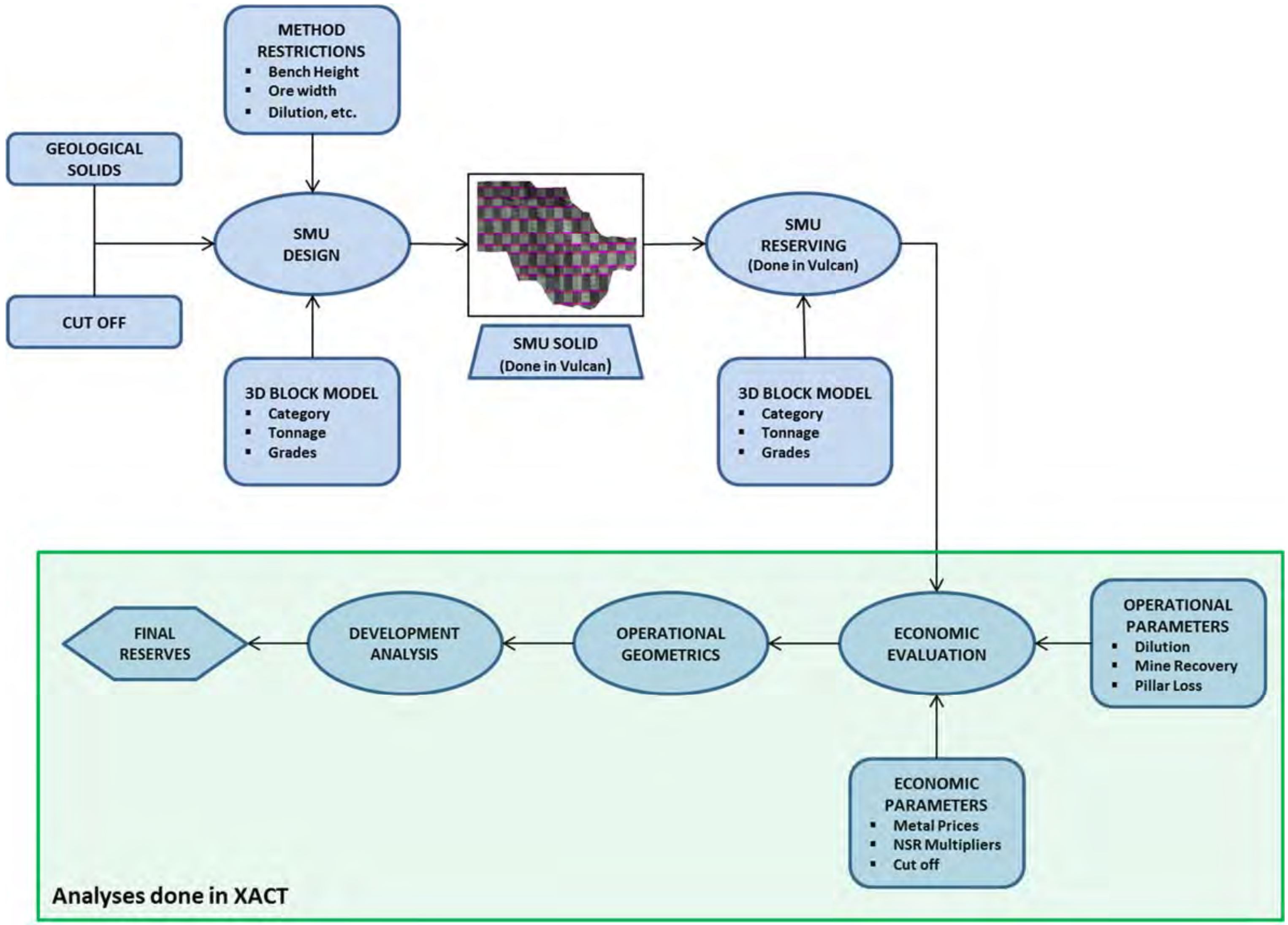


Figure 15.1 DDGM’s Flow Chart for the Mineral Reserve Estimation Process at the Arista and Mirador Underground Mines

15.8.1 Selective Mining Unit (SMU)

The Mineral Reserve estimation process for the Arista and Mirador Underground Mines first involves a review of Mineral Resource block models created from the 3D vein wire-framed solids.

Block models are mainly reviewed to confirm that estimation of reserve and Mineral Resources blocks was done correctly and to validate the various fields in the model (e.g. Class, Tonnage, Grades, Width, in-situ NSR, etc.).

A Selective Mining Unit (SMU) is then designed based on the 3D vein wire-framed solids and other factors including hydraulic radius, ore width, potential dilution, nearby development etc.

The hydraulic radius (HR) is the area of a stope divided by its perimeter. For example, a stope having a strike length of 20 meters by a 25-meter level height has a HR of 500/90 equal to 5.5 meters in comparison to a stope that has dimensions of 50 meters of strike length by a 25-meter level height which has a larger HR of 1250/150 equal to 8.3 meters. The chart shown in Figure 15.2 shows that a lower HR is more stable as indicated by its modified stability number (N).

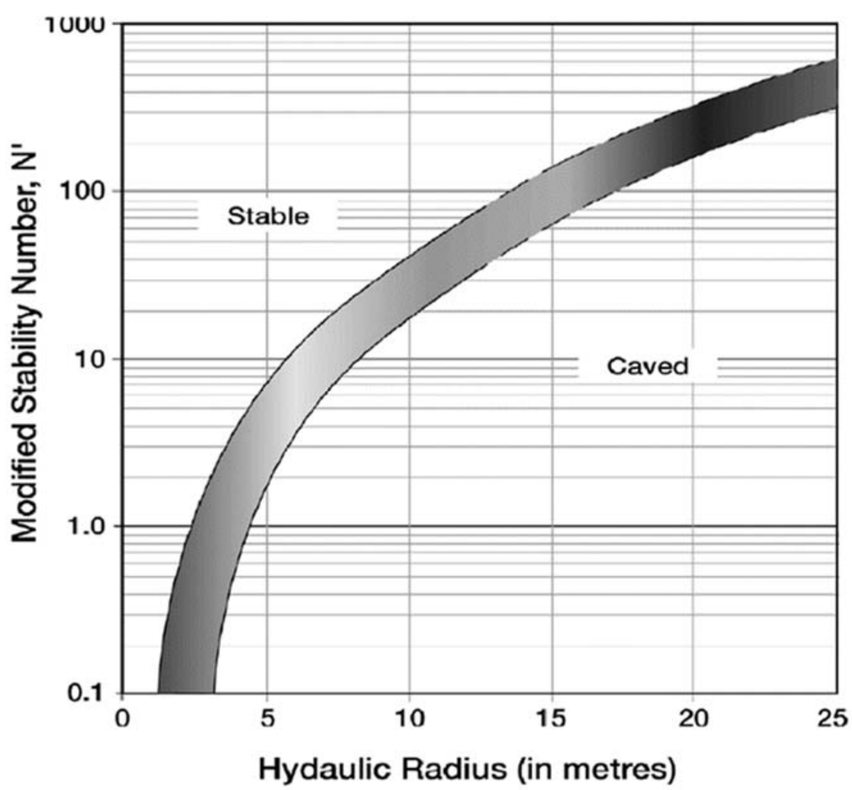


Figure 15.2 Chart of Hydraulic Radius (in meters) versus Modified Stability Number (N).

The design and evaluation of the SMU solids is currently done in Maptek Vulcan. The vein solids are cut into benches and drifts and then subdivided into stopes (SMU), which are usually 15 meters along the strike direction of the vein. Typically, especially in new mining areas, heights are 4 meters high for drifts and 16 meters high for benches. Examples of specific SMU solids are shown in Figure 15.3.

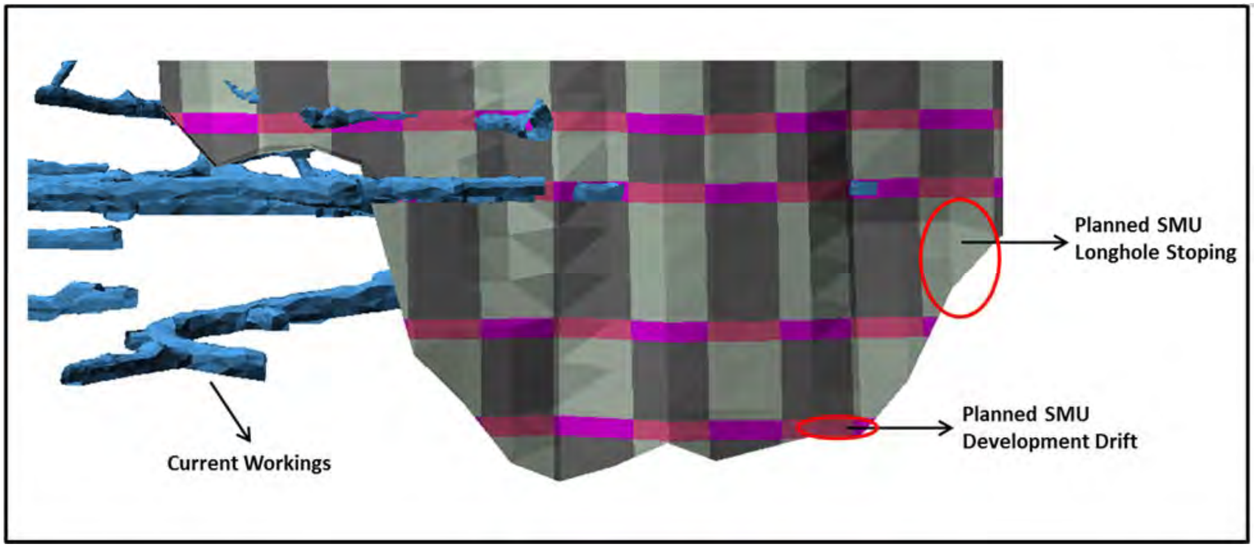
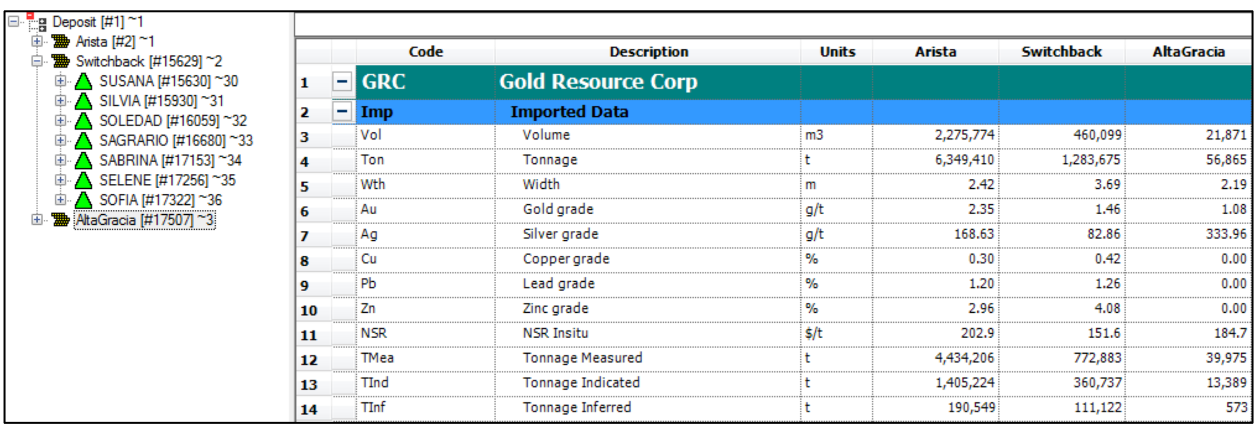


Figure 15.3 Example of Vein Divided into Selective Mining Units (SMU)

Vulcan reserve routines are run on the SMU solids to create a TXT file that can be imported into XACT (Reserving and Mine Scheduling software designed by RPM Global). XACT is a mining software that makes use of spreadsheet and database functionalities to facilitate reserve calculations and their subsequent mine scheduling.

Figure 15.4 is a screen capture of the imported data section of the Main Database within XACT.



Deposit [#1] ~1
Arista [#2] ~1
Switchback [#15629] ~2
SUSANA [#15630] ~30
SILVIA [#15930] ~31
SOLEDAD [#16059] ~32
SAGRARIO [#16680] ~33
SABRINA [#17153] ~34
SELENE [#17256] ~35
SOFIA [#17322] ~36
AltaGracia [#17507] ~3

	Code	Description	Units	Arista	Switchback	AltaGracia
1	GRC	Gold Resource Corp				
2	Imp	Imported Data				
3	Vol	Volume	m3	2,275,774	460,099	21,871
4	Ton	Tonnage	t	6,349,410	1,283,675	56,865
5	Wth	Width	m	2.42	3.69	2.19
6	Au	Gold grade	g/t	2.35	1.46	1.08
7	Ag	Silver grade	g/t	168.63	82.86	333.96
8	Cu	Copper grade	%	0.30	0.42	0.00
9	Pb	Lead grade	%	1.20	1.26	0.00
10	Zn	Zinc grade	%	2.96	4.08	0.00
11	NSR	NSR Insitu	$/t	202.9	151.6	184.7
12	TMea	Tonnage Measured	t	4,434,206	772,883	39,975
13	TInd	Tonnage Indicated	t	1,405,224	360,737	13,389
14	TInf	Tonnage Inferred	t	190,549	111,122	573

Figure 15.4 XACT´s Main Database

The SMU is given a classification of Measured, Indicated or Inferred based on the predominant Mineral Resource class tonnage within it. Figure 15.5 presents a vein with SMUs classified by class.

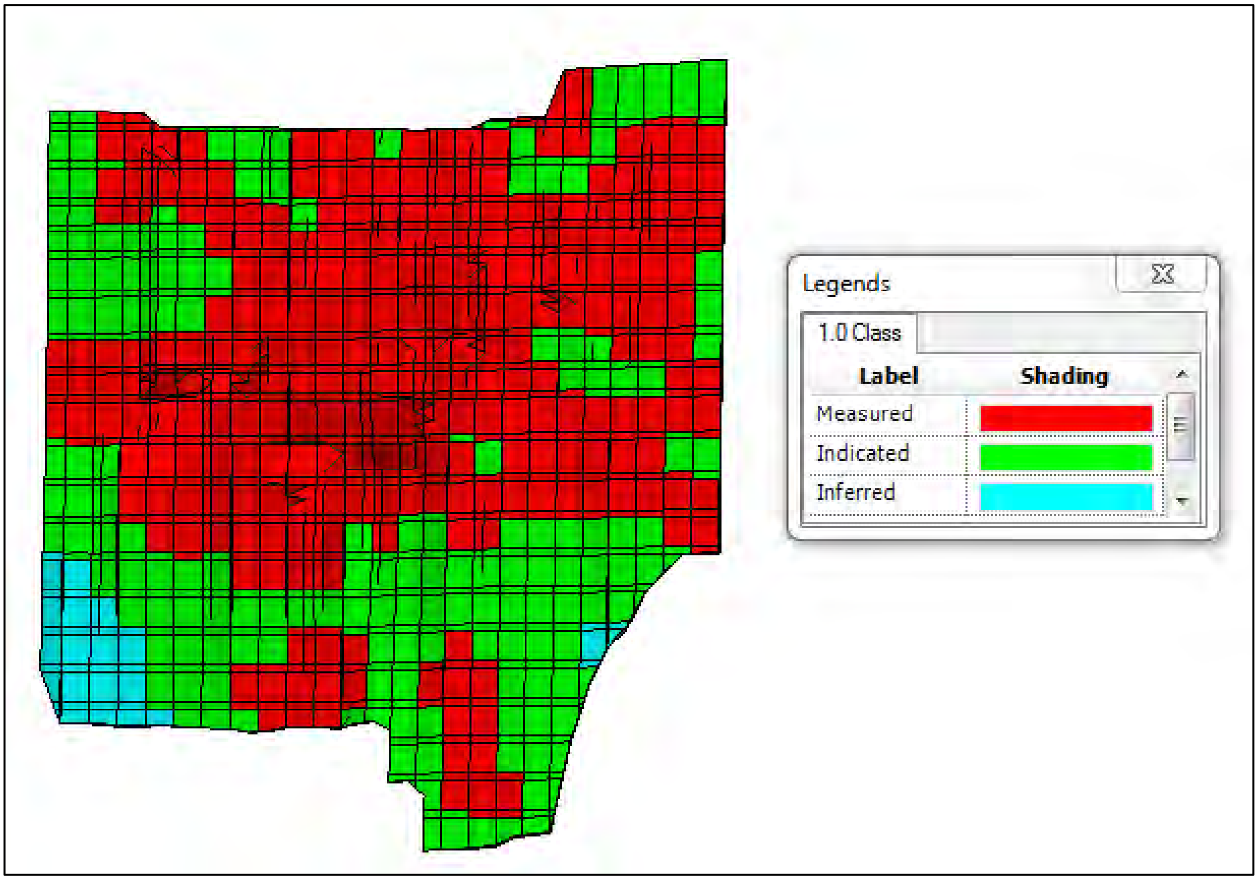


Figure 15.5 Vein Resource Classification (XACT)

Other databases are also setup in XACT to store operational and economic parameters. These parameters include minimum mining widths, dilution, recoveries, metal prices, NSR multipliers and breakeven cut-offs.

The imported data from the Main Database in XACT are processed using auditable and easy to read formulas or expressions that link these data to the economic and operational parameters mentioned above.

15.8.2 Dilution and Minimum Mining Widths

Dilution and minimum mining width assumptions are made for tonnes and grades based on factors estimated by DDGM's geology and mine planning departments. Three sources of dilution are usually considered: mining (planned), extraction (unplanned) and loading (mucking) dilution. Figure 15.6 illustrates the basic components of the applied dilution in an underground mine (loading dilution not shown on this illustration).

The dilution for the economic evaluation is determined by the mineralized zone modeled by the geologists, the dip of the vein and the average width of the SMU. During the mine design, the material that is outside of the economic limits is incorporated as applied dilution. Waste material is considered to contain no mineralization, with gold, silver and base metal grades set at a zero value.

In the Arista and Mirador underground mines different dilution factors are applied to each vein and operating mining method (e.g. Longhole Stoping, development Drift, cut-and-fill) as part of the evaluation process.

For example, in a particular longhole stope, where 0.20 meters of dilution is applied to each side of a 2-meter wide vein, the percentage dilution can then be calculated as follows:

$$\% \text{ Applied Dilution} = \frac{0.4 \text{ m} * 100}{2.0 \text{ m}} = 20\%$$

Loading (mucking) dilution is usually based on the underground surveys of the stopes and estimates of the amount of back fill extracted during mucking. In the Arista and Mirador underground mines, 0.1 meter of floor dilution is applied to drifts and cut-and-fill stopes. Back fill is considered to contain no mineralization with gold, silver and base metal grades set at a zero value.

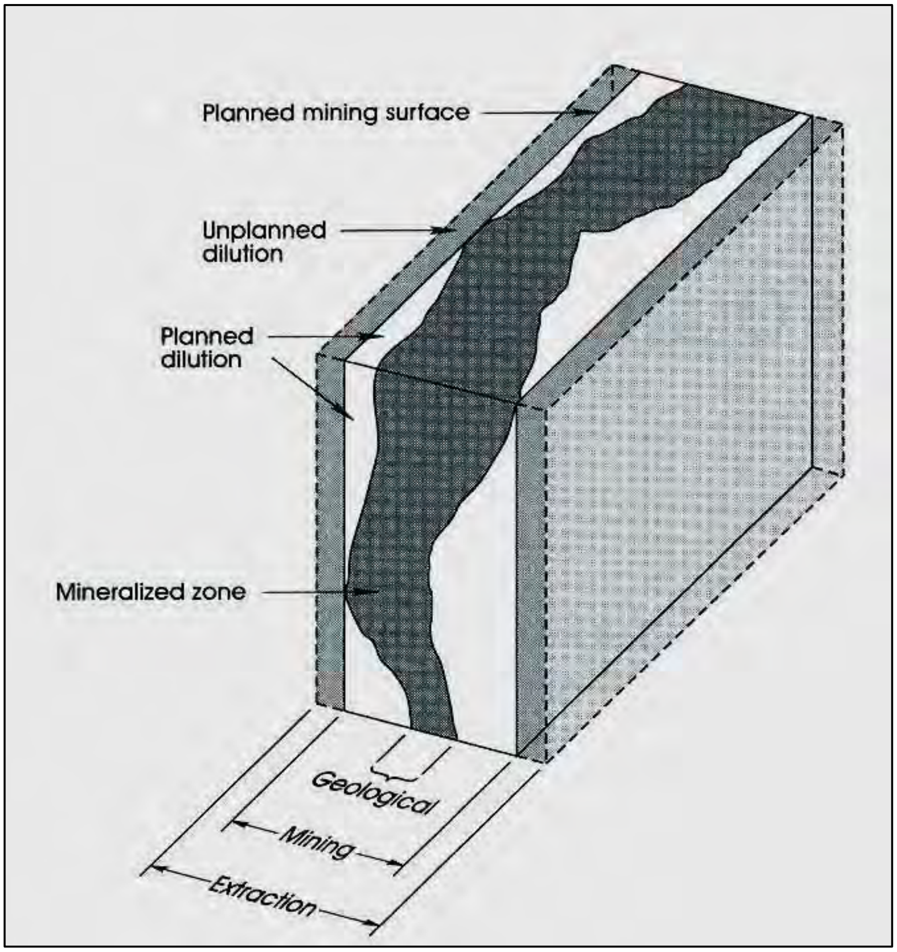
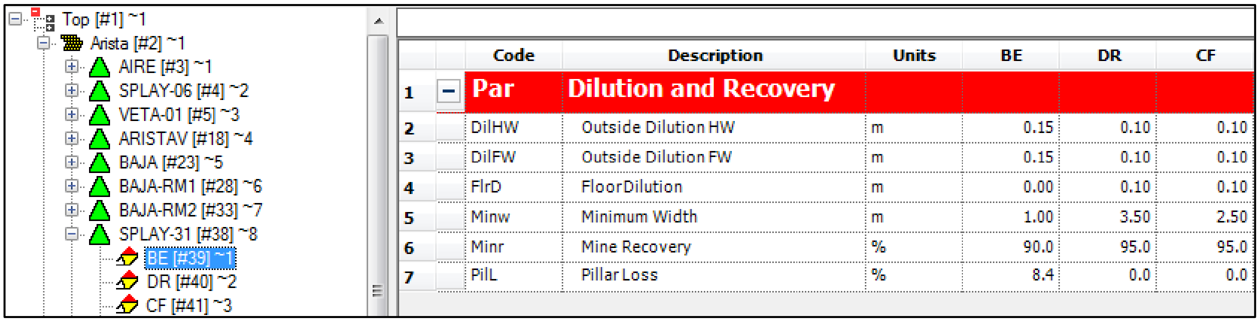


Figure 15.6 Conceptual Model Illustrating the Basic Contributing Components of the Applied Dilution in an Underground Mine

15.8.3 Mining Recovery and Pillar Losses

Different mine recovery factors are applied to each vein, and associated operating mining method, based on field experience and geological characterization of the ore bodies. Figure 15.7 is an example of the dilution and recovery factors loaded into a database in XACT.

Additional pillar losses of up to 8.4% are applied to Longhole Stoping benches based on geotechnical studies developed at the Arista underground mine.



	Code	Description	Units	BE	DR	CF
1	Par	Dilution and Recovery				
2	DilHW	Outside Dilution HW	m	0.15	0.10	0.10
3	DilFW	Outside Dilution FW	m	0.15	0.10	0.10
4	FlrD	FloorDilution	m	0.00	0.10	0.10
5	Minw	Minimum Width	m	1.00	3.50	2.50
6	Minr	Mine Recovery	%	90.0	95.0	95.0
7	PilL	Pillar Loss	%	8.4	0.0	0.0

Figure 15.7 XACT´s Dilution and Recovery Factors Database

15.8.4 Mineral Reserve Estimation

After applying dilution, mining recovery and pillar losses, the value per tonne of each SMU is determined based on metal prices and metallurgical recoveries for each metal, which is accounted for in the NSR multipliers.

An economic evaluation of the SMUs is then undertaken using established economic parameters (Table 15.6).

Table 15.6 Economic Parameters used for Economic Evaluation

Description	Units	Arista	Switchback	AltaGracia
Mine Parameters				
Grams in Troy Ounce	g	31.10	31.10	31.10
Pounds in Kilogram	lb	2.20	2.20	2.20
NSR Factors				
Gold	$/gr.	25.15	25.15	39.88
Silver	$/gr.	0.32	0.32	0.50
Copper	$/%	38.80	38.80	0.00
Lead	$/%	12.24	12.24	0.00
Zinc	$/%	10.03	10.03	0.00
Metal Prices				
Gold	$/oz.	1,306	1,306	1,306
Silver	$/oz.	16.32	16.32	16.32
Copper	$/lb.	2.83	2.83	0.00
Lead	$/lb.	0.99	0.99	0
Zinc	$/lb.	1.27	1.27	0
Gold Equivalent Factors				
Gold	$/gr.	1.00	1.00	1.00
Silver	$/gr.	80.03	80.03	80.03
Copper	$/%	0.67	0.67	0.00
Lead	$/%	1.92	1.92	0.00
Zinc	$/%	1.50	1.50	0.00
Density				
Waste density	t/m3	2.50	2.50	2.50
Mineral density	t/m3	2.79	2.79	2.59
Cutoff				
Bench	$/t	76.00	76.00	105.00
Drift	$/t	76.00	76.00	105.00
Cut and Fill	$/t	76.00	76.00	105.00
Ramp	$/t	10.00	10.00	10.00

The breakeven cut-off grade is determined based on operational costs of production, processing, energy and general administration (total operating cost in US$ /t). If the NSR (or AuEq for Alta Gracia) of a SMU is higher than the breakeven cut-off grade, and the resource class is either measured or indicated, the SMU has the potential to be considered as part of the Mineral Reserves. Final checks are required to give the SMU a reserve status.

15.8.5 Operational Geometrics and Development Analysis

After the economic evaluation, an analysis is conducted on the operational geometrics of each vein in XACT. This mainly involves:

- Identification of accessible blocks using current mining practices including stope design
- Removal of block models from the mined-out areas within the vein wire-frames
- Separation of any structural lineaments/features
- Checking and cleaning of SMU's and filter of infrastructure

For this operational analysis, current working outlines are brought from Vulcan into XACT. The objective is to flag the SMU´s that have been mined-out, so they are excluded from the reported Reserves.

An infrastructure filter is also undertaken. This mainly consists of discarding any SMU solids of satellite bodies which are too far from the primary infrastructure and economic development is not justified to access them.

Figure 15.8 outlines the SMU operational classification for reserve reporting of a particular vein after the final checks have conducted on it.

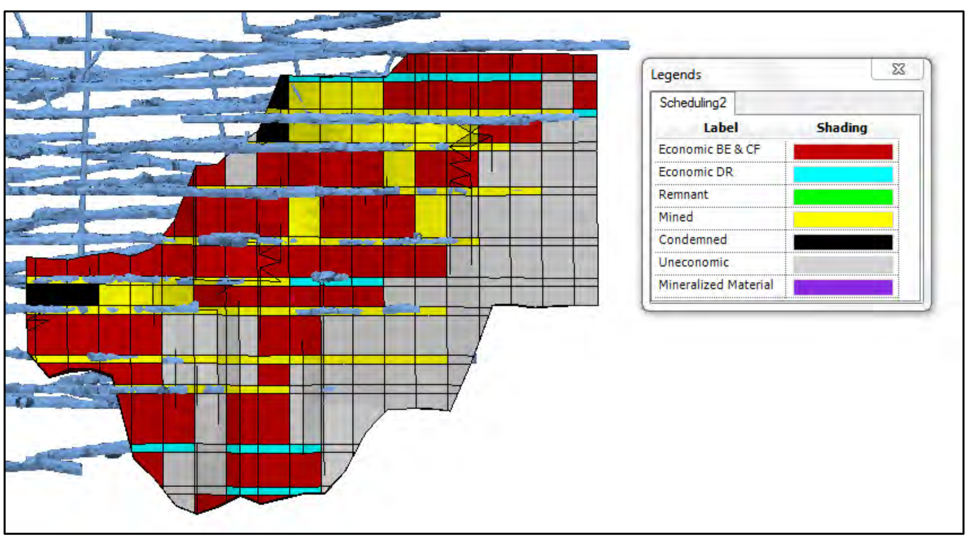


Figure 15.8 Vein Operational Classification (XACT)

15.8.6 Mineral Reserve Estimation

The final step of the mineral reserve estimation process is to deliver the mineral reserve values in a reportable format. XACT with its reporting capabilities is suited for this task. The reports are populated automatically from the economic evaluation and checks previously performed. The process maintains records of the formulas and expressions used and thus allowing monitoring and validation of such.

The final Mineral Reserve tabulation and reporting is effective as of December 31, 2019.

15.9 Mineral Reserve Statement

The Mineral Reserve for the Arista and Mirador Underground Mines complies with new guidelines proposed by the SEC and CRIRSCO definitions of Proven and Probable Mineral Reserves. Mineral Reserve blocks that meet dilution and cutoff grade requirements, and that are deemed feasible and economic for extraction in a life-of-reserve mine plan, are classified as Proven and Probable Mineral Reserves, respectively, after further adjustment of tonnage for expected mining recovery.

Measured, Indicated and Inferred Mineral Resources are used to describe mineralization in mineral deposits that do not constitute Mineral Reserves under proposed SEC guidelines. Mineral Resources exclusive of Mineral Reserves reported herein by DDGM meet the same dilution, expected mine recovery and cutoff grade requirements as Mineral Reserves but do not have demonstrated economic viability.

The estimation of Mineral Resources involves greater uncertainty as to their existence and economic feasibility than the estimation of Mineral Reserves. Therefore, one cannot assume that all or any part of Mineral Resources will be converted into SEC compliant Mineral Reserves.

Calculations required during the Mineral Reserve estimating process arrive at totals and weighted averages with some variability in precision. Rounding to normalize to significant digits has resulted in minor apparent discrepancies in some tables, and these discrepancies are not material in the opinion of the QPs.

15.9.1 Proven and Probable Reserves

During 2019, DDGM's exploration and development programs targeted replacement of mined-out Mineral Reserves at its Oaxaca Mining Unit.

As of December 31, 2019, Mineral Reserves for the Arista Underground Mine totaled 2,755,400 tonnes grading 2.00 g/t Au, 115 g/t Ag, 0.42 % Cu, 1.65 % Pb and 4.83 % Zn. Contained ounces of proven and probable reserves totaled approximately 177,400 gold ounces and 10,202,300 silver ounces. A total of 304,900 gold equivalent ounces were estimated for the Arista Underground Mine using only gold and silver in the calculation of gold equivalencies.

As of December 31, 2019, Mineral Reserves for the Mirador Underground Mine at the Alta Gracia Project totaled 76,200 tonnes grading 0.76 g/t Au and 365 g/t Ag. Contained ounces of proven and probable reserves totaled approximately 1,900 gold ounces and 894,100 silver ounces. A total of 13,000 gold equivalent ounces were estimated for the Mirador Underground Mine using only gold and silver in the calculation of gold equivalencies.

Proven and Probable reserves for the Arista and Mirador Underground Mines as of December 31, 2019 are summarized in Table 15.7, and by particular vein in Table 15.8.

Table 15.7 Mineral Reserves for the Oaxaca Mining Unit as of December 31, 2019*

Decription	Tonnes	Au	Ag	AuEq	Au	Ag	AuEq	Cu	Pb	Zn
		g/t	g/t	g/t	oz	oz	oz	%	%	%
Arista Mine										
Proven	2,591,700	2.04	112	3.43	169,600	9,295,900	285,900	0.42	1.68	4.88
Probable	163,700	1.47	172	3.62	7,800	906,400	19,000	0.34	1.25	4.01
Arista Mine Total	**2,755,400**	**2.00**	**115**	**3.44**	**177,400**	**10,202,300**	**304,900**	**0.42**	**1.65**	**4.83**
Mirador Mine										
Proven	75,500	0.75	365	5.31	1,800	885,700	12,900			
Probable	700	1.33	393	6.25	100	8,400	100			
Mirador Mine Total	**76,200**	**0.76**	**365**	**5.32**	**1,900**	**894,100**	**13,000**			
Oaxaca Mining Unit Total	**2,831,600**	**1.97**	**122**	**3.58**	**179,300**	**11,096,400**	**317,900**			

Table 15.8 Mineral Reserves by Vein for the Oaxaca Mining Unit as of December 31, 2019*

Description	Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
Arista Mine											
Arista Veins											
	ALTA	32,400	2.27	108	3.62	2,400	112,300	3,800	0.36	1.62	4.16
	ARISTA	37,000	1.55	123	3.09	1,800	146,400	3,700	0.26	1.13	3.59
	BAJA	110,100	2.09	227	4.92	7,400	802,000	17,400	0.23	0.89	3.03
	BAJA-RM1	36,400	1.48	81	2.50	1,700	94,600	2,900	0.23	3.08	5.94
	CANDELARIA	78,500	3.10	367	7.69	7,800	927,000	19,400	0.18	0.50	1.07
	ESTE-SUR	20,900	2.22	308	6.07	1,500	207,300	4,100	0.49	1.02	1.79
	LUZ	21,300	2.15	276	5.60	1,500	188,900	3,800	0.25	0.37	0.62
	MARENA	27,900	1.95	80	2.96	1,700	72,200	2,700	0.33	1.66	4.26
	SANTIAGO	55,300	1.51	32	1.91	2,700	57,400	3,400	0.29	1.88	4.58
	SPLAY05	78,300	1.59	295	5.27	4,000	742,900	13,300	0.14	0.74	1.36
	SPLAY05-RM1	5,500	1.92	283	5.45	300	50,000	1,000	0.16	1.12	2.62
Proven	SPLAY06	11,700	1.04	258	4.26	400	97,100	1,600	0.20	0.37	0.66
	SPLAY31	61,700	0.89	110	2.27	1,800	218,100	4,500	0.22	1.61	5.06
	SPLAY31-RM3	2,300	2.50	314	6.42	200	23,600	500	0.29	0.66	0.88
	SPLAY66	41,900	2.87	282	6.39	3,900	380,200	8,600	0.35	0.83	2.93
	STA-CECILIA	37,600	0.60	51	1.23	700	61,500	1,500	0.31	1.48	4.09
	STA-CLARA	21,400	0.45	224	3.25	300	154,400	2,200	0.71	2.59	4.68
	STA-HELENA	36,000	1.22	88	2.32	1,400	102,400	2,700	0.31	2.42	7.76
	VETA03	27,500	5.26	172	7.42	4,600	152,200	6,500	0.47	1.51	6.20
	VIRIDIANA	78,200	2.46	89	3.57	6,200	223,200	9,000	0.15	0.89	4.08
	VIRIDIANA-R1	13,000	5.42	184	7.72	2,300	77,200	3,200	0.63	0.60	1.03
	VIRIDIANA-R2	9,700	1.52	97	2.73	500	30,000	800	0.06	0.70	5.06
	TOTAL	**844,600**	**2.03**	**181**	**4.30**	**55,100**	**4,920,900**	**116,600**	**0.27**	**1.24**	**3.52**
	ALTA										
	ARISTA	4,400	2.45	149	4.31	300	21,100	600	0.22	0.87	2.82
	BAJA	4,900	1.41	88	2.51	200	14,000	400	0.14	0.93	3.69
Probable	BAJA-RM1	7,800	1.55	76	2.50	400	19,100	600	0.19	2.15	5.03
	CANDELARIA	8,400	4.51	806	14.59	1,200	216,500	3,900	0.17	0.34	0.74
	ESTE-SUR	9,800	2.07	437	7.52	600	137,000	2,400	0.60	1.15	2.16
	LUZ	500	3.26	174	5.43	100	2,600	100	0.21	0.16	0.37

	MARENA	7,800	0.77	22	1.04	200	5,400	300	0.17	1.31	4.92
	SANTIAGO	6,500	0.49	29	0.85	100	6,000	200	0.20	2.18	5.06
	SPLAY05										
	SPLAY05-RM1										
	SPLAY06	2,100	0.86	282	4.38	100	19,400	300	0.12	0.17	0.35
	SPLAY31	10,900	0.41	60	1.17	100	21,000	400	0.21	1.78	6.26
	SPLAY31-RM3										
	SPLAY66	10,200	2.48	737	11.69	800	242,300	3,800	0.45	0.67	1.66
	STA-CECILIA	7,100	1.05	48	1.65	200	11,000	400	0.23	1.53	3.80
	STA-CLARA	900	0.42	255	3.61	100	7,300	100	0.71	2.35	4.05
	STA-HELENA	6,700	0.65	69	1.51	100	14,700	300	0.15	1.79	5.66
	VETA03										
	VIRIDIANA	7,100	4.26	39	4.75	1,000	8,900	1,100	0.12	0.66	1.79
	VIRIDIANA-R1	1,500	3.97	89	5.08	200	4,400	200	0.46	0.65	1.27
	VIRIDIANA-R2										
	TOTAL	**96,600**	**1.85**	**242**	**4.87**	**5,700**	**750,700**	**15,100**	**0.26**	**1.25**	**3.49**
	ALTA	32,400	2.27	108	3.62	2,400	112,300	3,800	0.36	1.62	4.16
	ARISTA	41,400	1.65	126	3.22	2,200	167,500	4,300	0.26	1.10	3.51
	BAJA	115,000	2.06	221	4.81	7,600	816,000	17,800	0.23	0.89	3.06
	BAJA-RM1	44,200	1.50	80	2.50	2,100	113,700	3,500	0.22	2.91	5.78
	CANDELARIA	86,900	3.24	409	8.35	9,000	1,143,600	23,300	0.18	0.49	1.04
	ESTE-SUR	30,700	2.17	349	6.54	2,100	344,400	6,400	0.53	1.06	1.90
	LUZ	21,700	2.18	274	5.60	1,500	191,500	3,900	0.25	0.37	0.61
	MARENA	35,800	1.70	68	2.54	2,000	77,700	2,900	0.29	1.58	4.40
	SANTIAGO	61,800	1.40	32	1.80	2,800	63,400	3,600	0.28	1.91	4.63
	SPLAY05	78,300	1.59	295	5.27	4,000	742,900	13,300	0.14	0.74	1.36
	SPLAY05-RM1	5,500	1.92	283	5.45	300	50,000	1,000	0.16	1.12	2.62
Proven & Probable	SPLAY06	13,800	1.01	262	4.28	400	116,500	1,900	0.19	0.34	0.61
	SPLAY31	72,600	0.82	103	2.10	1,900	239,200	4,900	0.22	1.64	5.24
	SPLAY31-RM3	2,300	2.50	314	6.42	200	23,600	500	0.29	0.66	0.88
	SPLAY66	52,200	2.79	371	7.43	4,700	622,500	12,500	0.37	0.80	2.68
	STA-CECILIA	44,600	0.67	50	1.30	1,000	72,400	1,900	0.30	1.49	4.04
	STA-CLARA	22,300	0.45	226	3.27	300	161,700	2,300	0.71	2.58	4.66
	STA-HELENA	42,700	1.13	85	2.19	1,600	117,000	3,000	0.28	2.33	7.44
	VETA03	27,400	5.26	172	7.42	4,600	152,200	6,500	0.47	1.51	6.20
	VIRIDIANA	85,300	2.61	85	3.67	7,200	232,000	10,100	0.15	0.87	3.89
	VIRIDIANA-R1	14,600	5.27	174	7.45	2,500	81,500	3,500	0.62	0.60	1.06
	VIRIDIANA-R2	9,700	1.52	97	2.73	500	30,000	900	0.06	0.70	5.06
	TOTAL	**941,200**	**2.01**	**187**	**4.35**	**60,900**	**5,671,600**	**131,800**	**0.27**	**1.24**	**3.52**
Switchback Veins											
	SAGRARIO	60,900	2.27	66	3.09	4,400	128,700	6,100	0.42	1.28	2.21
	SAM2	16,800	1.76	28	2.11	900	15,400	1,100	0.67	1.66	3.05
	SBN1	11,200	3.03	115	4.46	1,100	41,100	1,600	0.50	2.67	3.68
	SELENE	71,900	2.86	23	3.15	6,600	53,000	7,300	0.26	1.03	2.50
	SILVIA	94,700	3.47	75	4.41	10,600	227,200	13,400	0.40	2.29	6.91
	SOFIA	56,900	4.03	27	4.37	7,400	49,800	8,000	0.55	1.40	3.15
	SOLEDAD	1,291,400	1.84	86	2.91	76,200	3,565,700	120,800	0.46	2.04	6.09
Proven	SOLRAM1										
	SOLRAM2	2,500	1.10	43	1.63	100	3,500	100	0.50	1.08	3.52
	SOLRAM3	5,100	0.79	84	1.83	100	13,800	300	0.30	1.12	3.40
	SOLRAM4	1,100	0.30	37	0.76		1,300		0.71	2.43	9.95
	SOLRAM5	58,100	2.41	58	3.14	4,500	109,000	5,900	0.46	1.38	5.01
	SUSANA-N	52,800	0.86	61	1.62	1,500	103,100	2,700	1.94	0.63	3.01
	SUSANA-S	23,700	1.43	83	2.47	1,100	63,400	1,900	0.18	1.49	3.23
	TOTAL	**1,747,100**	**2.04**	**78**	**3.01**	**114,500**	**4,375,000**	**169,200**	**0.49**	**1.89**	**5.53**
	SAGRARIO										
	SAM2										
	SBN1										
	SELENE										
	SILVIA	1,100	2.62	62	3.40	100	2,200	100	0.31	2.27	5.16
	SOFIA										
Probable	SOLEDAD	42,900	0.65	74	1.57	900	101,300	2,200	0.51	1.28	4.90
	SOLRAM1	12,300	1.93	76	2.88	800	30,200	1,100	0.44	1.64	5.60
	SOLRAM2										
	SOLRAM3										
	SOLRAM4										
	SOLRAM5										

	SUSANA-N	10,800	0.68	63	1.46	200	22,000	500	0.33	0.63	3.17
	SUSANA-S										
	TOTAL	**67,100**	**0.93**	**72**	**1.83**	**2,000**	**155,700**	**3,900**	**0.46**	**1.26**	**4.75**
Proven & Probable	SAGRARIO	60,900	2.27	66	3.09	4,400	128,700	6,100	0.42	1.28	2.21
	SAM2	16,800	1.76	28	2.11	900	15,400	1,100	0.67	1.66	3.05
	SBN1	11,200	3.03	115	4.46	1,100	41,100	1,600	0.50	2.67	3.68
	SELENE	71,900	2.86	23	3.15	6,600	53,000	7,300	0.26	1.03	2.50
	SILVIA	95,800	3.46	74	4.39	10,700	229,400	13,500	0.40	2.29	6.89
	SOFIA	56,900	4.03	27	4.37	7,400	49,800	8,000	0.55	1.40	3.15
	SOLEDAD	1,334,300	1.80	85	2.87	77,100	3,667,000	123,000	0.46	2.01	6.05
	SOLRAM1	12,300	1.93	76	2.88	800	30,200	1,100	0.44	1.64	5.60
	SOLRAM2	2,500	1.10	43	1.63	100	3,500	100	0.50	1.08	3.52
	SOLRAM3	5,100	0.79	84	1.83	100	13,800	300	0.30	1.12	3.40
	SOLRAM4	1,100	0.30	37	0.76		1,300		0.71	2.43	9.95
	SOLRAM5	58,100	2.41	58	3.14	4,500	109,000	5,900	0.46	1.38	5.01
	SUSANA-N	63,700	0.83	61	1.59	1,700	125,100	3,200	1.67	0.63	3.04
	SUSANA-S	23,600	1.43	83	2.47	1,100	63,400	1,900	0.18	1.49	3.23
	TOTAL	**1,814,200**	**2.00**	**78**	**2.97**	**116,500**	**4,530,700**	**173,100**	**0.49**	**1.86**	**5.50**
Mirador Mine											
Proven	IND-M1	4,600	0.55	428	5.90	100	63,800	900			
	IND-M2	1,300	0.29	271	3.67		11,500	200			
	IND-S-RM1	1,100	1.17	167	3.26		5,900	100			
	IND-W	34,500	0.54	374	5.22	600	415,600	5,800			
	JARILLAS1	8,600	1.20	263	4.48	300	72,400	1,200			
	MIRADOR	21,800	0.97	409	6.08	700	286,500	4,300			
	SAN-JUAN	3,600	0.71	260	3.95	100	30,000	400			
	TOTAL	**75,500**	**0.75**	**365**	**5.31**	**1,800**	**885,700**	**12,900**			
Probable	IND-M1										
	IND-M2										
	IND-S-RM1										
	IND-W										
	JARILLAS1	700	1.33	393	6.25		8,400	100			
	MIRADOR										
	SAN-JUAN										
	TOTAL	**700**	**1.33**	**393**	**6.25**		**8,400**	**100**			
Proven & Probable	IND-M1	4,600	0.55	428	5.90	100	63,800	900			
	IND-M2	1,300	0.29	271	3.67		11,500	100			
	IND-S-RM1	1,100	1.17	167	3.26		5,900	100			
	IND-W	34,500	0.54	374	5.22	600	415,600	5,800			
	JARILLAS1	9,300	1.21	272	4.61	400	80,900	1,400			
	MIRADOR	21,800	0.97	409	6.08	700	286,500	4,300			
	SAN-JUAN	3,600	0.71	260	3.95	100	29,900	400			
	TOTAL	**76,200**	**0.76**	**365**	**5.32**	**1,900**	**894,100**	**13,000**			
Oaxaca Mining Unit Total		**2,831,600**	**1.97**	**122**	**3.58**	**179,300**	**11,096,400**	**317,900**			

Notes on Mineral Reserves in Tables 15.7 and 15.8:

1. Metal prices used for P & P reserves were $1,306 per ounce of gold, $16.32 per ounce of silver, $2.83 per pound of copper, $0.99 per pound of lead and $1.27 per pound of zinc. These prices reflect the three-year trailing average prices for gold, silver, copper, lead and zinc.
2. Precious metal gold equivalent is 80.03:1 using gold and silver only to calculate gold equivalencies.
3. A breakeven NSR cutoff grade of $76 per tonne was used for estimations of P & P reserves at the Arista Underground Mine. The term "cutoff grade" means the lowest NSR value considered economic to process.
4. No appreciable amounts of base metals are present in the veins identified to-date at the Mirador Underground Mine at the Alta Gracia property. A breakeven cutoff grade of 2.5 g/t AuEq was used for proven and probable reserves at the Mirador Underground Mine using gold and silver only to calculate gold equivalencies.
5. Mining, processing, energy, administrative and smelting/refining costs were based on 2019 actual costs for the Oaxaca Mining Unit.
6. Arista Mine metallurgical recovery assumptions used were 78% for gold,91% for silver, 78% for copper, 78% for lead and 81% for zinc. Mirador Mine metallurgical recovery assumptions used were 87% for gold and 80% for silver. These recoveries reflect 2019 actual average recoveries for the Aguila and Alta Gracia Projects.
7. P & P reserves are diluted and factored for expected mining recovery.
8. Minimum mining width for P & P reserves is 1.5 meters for the Arista and Mirador underground mines.
9. Figures in tables are rounded to reflect estimate precision and small differences generated by rounding are not material to estimates.

15.9.2 Mineralized Material (Exclusive of Mineral Reserves)

GRC uses the term "Mineralized Material" to describe mineralization in the Oaxaca Mining Unit mineral deposits that do not constitute "Mineral Reserves" under current U.S. reporting requirements as governed by SEC Industry Guide 7. Mineralized Material is used to describe a mineralized body that has been delineated by appropriate drilling and/or underground sampling to establish continuity and support an estimate of tonnage and an average grade of the selected metal(s). Mineralized material does not have demonstrated economic viability. The SEC only permits issuers to report mineralized material in tonnage and average grade without reference to contained ounces or quantities of other metals.

For Mineralized Material, DDGM applies the same US$ 76 per tonne NSR breakeven cutoff grade for the Arista Mine and the breakeven cutoff grade of 2.5 g/t AuEq for the Alta Gracia Project, including the Mirador Mine, and Margaritas Project. Gold and silver only are used to calculate gold equivalencies. Mineralized Material meets the same dilution, expected mine recovery and cutoff grade requirements as Mineral Reserves but does not have demonstrated economic viability. Mineralized Material is in addition to Proven and Probable Reserves.

Mineral Reserve blocks not in the life-of-reserve mine plan are classified by DDGM as Mineralized Material and excluded from the Mineral Reserves tabulation. Mineralized Material is used by DDGM for mine planning and exploration purposes only.

Mineralized Material for the Oaxaca Mining Unit as of December 31, 2019 is summarized in Table 15.9.

Table 15.9 Mineralized Material (Exclusive of Mineral Reserves) for the Oaxaca Mining Unit as of December 31, 2019*

Description	Tonnes	Au	Ag	Cu	Pb	Zn
		g/t	g/t	%	%	%
OAXACA MINING UNIT						
Arista Mine	**1,574,700**	**1.46**	**141**	**0.23**	**1.21**	**3.44**
Alta Gracia Project (inc. Mirador Mine)	**170,400**	**0.77**	**376**			
Margaritas Project	**26,000**	**0.51**	**260**			
OAXACA MINING UNIT TOTAL	**1,771,100**					

Notes on Mineralized Material in Table 15.9:

1. Mineralized Material is exclusive of Mineral Reserves
2. Metal prices used for Mineralized Material were $1,306 per ounce of gold, $16.32 per ounce of silver, $2.83 per pound of copper, $0.99 per pound of lead and $1.27per pound of zinc. These prices reflect the three-year trailing average prices for gold, silver, copper, lead and zinc.
3. A breakeven NSR cutoff grade of $76 per tonne was used for estimations of Mineralized Material at the Arista mine. The term "cutoff grade" means the lowest NSR value considered economic to process.
4. No appreciable amounts of base metals are present in the veins identified to-date at the Alta Gracia Project including the Mirador Underground Mine, and the Margaritas Project. A breakeven cutoff grade of 2.5 g/t AuEq was used for Mineralized Material at the Alta Gracia and Margaritas Projects using gold and silver only to calculate gold equivalencies at a ratio of 80.03:1.
5. Arista Mine metallurgical recovery assumptions used were 78% for gold, 91% for silver, 78% for copper, 78% for lead and 81% for zinc. Alta Gracia and Margaritas projects metallurgical recovery assumptions used were 87% for gold and 80% for silver. These recoveries reflect 2019 actual average recoveries for the Aguila and Alta Gracia Projects.
6. Mineralized Material are diluted and factored for expected mining recovery.
7. Minimum mining width for Mineralized Material is 1.5 meters for the Arista and Mirador underground mines.
8. Figures in tables are rounded to reflect estimate precision and small differences generated by rounding are not material to estimates.

15.9.3 Mineral Resources (Exclusive of Mineral Reserves and Mineralized Material)

DDGM also reports Mineral Resources for the Oaxaca Mining Unit that do not qualify neither as Mineral Reserves nor Mineralized Material. Mineral Resources exclusive of Mineral Reserves and Mineralized Material, as of December 31, 2019, are summarized in Table 15.10.

Table 15.10 Mineral Resources (Exclusive of Mineral Reserves and Mineralized Material) for the Oaxaca Mining Unit as of December 31, 2019

Project	Class	Cutoff	Tonnes	Au g/t	Ag g/t	Cu %	Pb %	Zn %
Arista	Measured	$76	367,300	1.09	91	0.19	0.99	3.00
	Indicated	$76	358,400	0.68	86	0.15	1.04	3.24
	Meas+Ind	$76	725,700	0.89	88	0.17	1.01	3.12
	Inferred	$76	91,800	0.59	63	0.22	0.95	3.76
Switchback	Measured	$76	187,300	0.81	65	0.37	0.83	2.88
	Indicated	$76	131,800	0.66	86	0.39	0.72	2.48
	Meas+Ind	$76	319,100	0.75	74	0.38	0.79	2.72
	Inferred	$76	82,400	1.43	108	0.49	0.87	2.58
Altagracia	Measured	2.50 g/t	41,400	0.54	263			
	Indicated	2.50 g/t	14,300	0.57	272			
	Meas+Ind	2.50 g/t	55,600	0.55	265			
	Inferred	2.50 g/t	25,500	0.52	271			
Margaritas	Measured	2.50 g/t	0	0	0			
	Indicated	2.50 g/t	23,100	0.53	274			
	Meas+Ind	2.50 g/t	23,100	0.53	274			
	Inferred	2.50 g/t	36,100	0.53	308			
OAXACA MINING UNIT TOTAL	Measured	NA	595,900	0.97	95			
	Indicated	NA	527,700	0.66	99			
	Meas+Ind	NA	1,123,500	0.82	97			
	Inferred	NA	235,800	0.87	139			

Mineral Resources reported by DDGM exclusive of Mineral Reserves and Mineralized Material and do not have demonstrated economic viability. The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.

15.10 Production Reconciliation

Production reconciliation is the process of comparing, balancing and adjusting production estimates between mine and plant for consistency in reporting. Reserve models are also used for short and long-term mine planning, mining selectivity, dilution, losses and ore allocation records, stockpile records, plant feed records and production results. A comparison can then be made of what is planned versus what is actually mined. GRC currently maintains records of reserves, mine production and plant processing for tonnage and grade reconciliation.

15.10.1 Mine Production and Plant Processing versus Block Model

During the past 12 months, (January 2019 through December 2019), DDGM has kept a record of the material mined from underground at Arista and haulage by trucks to the plant (Aguila mill as described in Section 17) for processing.

For the period, January 2019 through December 2019, a total of 651,690 tonnes of sulfide ore was mined from Arista and shipped to the flotation circuit of the Aguila plant (Table 15.11). The grades of mined material averaged 1.61 g/t gold, 77 g/t silver, 0.36% copper, 1.69% lead and 4.97% zinc.

For the same period, January 2019 through December 2019, the flotation circuit of the Aguila plant processed a total of 629,868 tonnes with average grades of 1.73 g/t gold, 82 g/t silver, 0.38% copper, 1.88% lead and 4.64% zinc (Table 15.12). The excess tonnes mined were stockpiled at the plant for processing during 2019.

For the same period, January 2019 through December 2019, a total of 743,390 tonnes was planned to be mined from the 2018 Arista block model and shipped to the plant (Table 15.13). The average grades of the material planned to be mined from the block model were 2.04 g/t gold, 84 g/t silver, 0.39% copper, 1.82% lead and 5.33% zinc.

Table 15.11 2019 Mine Production for the Arista Underground Mine*

MONTH	DRY TONNES	Gold g/t	Silver g/t	Copper %	Lead %	Zinc %	Gold oz	Silver oz
JANUARY	43,500	1.27	75	0.33	1.50	5.27	1,769	105,410
FEBRUARY	49,479	1.41	58	0.32	1.41	4.39	2,246	92,084
MARCH	54,716	1.69	91	0.43	2.06	5.40	2,969	159,502
APRIL	44,548	1.89	94	0.39	2.02	6.12	2,706	134,088
MAY	55,953	1.43	63	0.34	1.60	4.50	2,569	112,730
JUNE	53,871	1.83	79	0.35	1.77	5.41	3,162	136,300
JULY	60,900	2.53	106	0.40	2.19	6.32	4,960	208,166
AUGUST	56,302	1.11	80	0.34	1.75	4.22	2,018	145,197
SEPTEMBER	62,034	0.98	46	0.41	1.30	4.02	1,955	91,239
OCTOBER	65,437	1.50	82	0.31	1.39	4.71	3,154	173,019
NOVEMBER	55,352	1.99	65	0.37	1.81	4.97	3,542	115,214
DECEMBER	49,599	1.71	84	0.36	1.56	4.51	2,720	133,623
TOTALS	**651,690**	**1.61**	**77**	**0.36**	**1.69**	**4.97**	**33,769**	**1,606,573**

* *Production from the Aguila Open Pit and Mirador Underground mines excluded*

Table 15.12 2019 Plant Production for the Arista Underground Mine*

MONTH	DRY TONNES	Gold g/t	Silver g/t	Copper %	Lead %	Zinc %	Gold oz	Silver oz
JANUARY	50,616	1.65	66	0.35	1.78	4.49	2,677	106,626
FEBRUARY	47,527	1.19	56	0.35	1.44	4.09	1,819	85,909
MARCH	51,919	1.67	97	0.38	2.31	5.38	2,795	162,448
APRIL	52,191	1.78	82	0.42	2.00	5.09	2,985	137,331
MAY	53,210	1.73	95	0.38	1.87	4.47	2,964	162,337
JUNE	50,447	2.12	99	0.40	2.01	4.77	3,434	160,363
JULY	54,414	2.50	106	0.42	2.31	5.46	4,368	186,121
AUGUST	53,934	1.50	88	0.39	1.82	4.43	2,597	152,358
SEPTEMBER	54,911	1.27	62	0.36	1.62	4.20	2,249	110,278
OCTOBER	57,542	1.53	77	0.36	1.64	4.36	2,839	142,958
NOVEMBER	53,569	2.07	71	0.36	2.00	4.50	3,570	122,947
DECEMBER	49,590	1.72	85	0.39	1.74	4.36	2,737	136,250
TOTALS	**629,868**	**1.73**	**82**	**0.38**	**1.88**	**4.64**	**35,034**	**1,665,925**

* *Production from the Aguila Open Pit and Mirador Underground mines excluded*

Table 15.13 2019 Planned Production (Block Model) for the Arista Underground Mine

MONTH	DRY TONNES	Gold g/t	Silver g/t	Copper %	Lead %	Zinc %	Gold oz	Silver oz
JANUARY	54,090	2.02	49	0.32	1.47	4.72	3,515	86,065
FEBRUARY	65,368	1.83	58	0.34	1.44	4.25	3,843	122,098
MARCH	67,659	2.02	95	0.45	2.25	6.16	4,387	207,678
APRIL	60,739	2.03	89	0.42	2.06	5.91	3,970	172,828
MAY	72,180	1.89	83	0.38	1.74	4.72	4,392	192,916
JUNE	68,232	1.94	85	0.37	1.86	5.27	4,265	186,942
JULY	60,374	2.11	116	0.41	2.02	5.89	4,090	224,222
AUGUST	55,866	1.55	88	0.39	1.62	5.23	2,791	158,434
SEPTEMBER	61,033	2.26	70	0.41	1.63	4.79	4,442	138,115
OCTOBER	71,900	2.35	110	0.43	1.93	6.19	5,429	255,423
NOVEMBER	62,567	1.91	78	0.39	1.94	5.48	3,847	157,034
DECEMBER	43,382	2.76	74	0.41	1.75	5.21	3,853	103,742
TOTALS	**743,390**	**2.04**	**84**	**0.39**	**1.82**	**5.33**	**48,824**	**2,005,495**

The mine monitors model performance using key reconciliation parameters. Mine reconciliation parameters compare the grade and tonnage of material processed by the mill with the grade and tonnage predicted by the reserve model. Reconciliation performance is then analyzed by "factors", which the mine has defined as follows:

- The ratio between tonnage and grade for the short-range estimate and the planning model is used to develop the F1 Factor:

  F1 = mine production / planned production

- The ratio between tonnage and grade received at the mill and delivered to the mill is used to develop the F2 factor:

F2 = mine production / mill production

- The ratio between the F1 and F2 factors examines reconciliation between the mill and the long-range model:

F3 = mill production / planned production

The F1 Factor therefore provides information on the performance of grade control estimates and the reserve model (short-range reconciliation). The 2019 ratios between mined and planned tonnes and grade (F1 Factors) for the Arista underground mine are shown in Table 15.14. The average 2019 monthly F1 Factors for silver, copper, lead and zinc are within the annual reconciliation target of 10%. However, the average monthly F1 Factors for tonnes, gold grade and contained gold and silver ounces are outside of the annual reconciliation target of 10%, ranging from 12% for tonnes to 31% for contained gold ounces.

Possible sources of error for the tonnage F1 factor are wide-spaced drilling and incorporation of too much dilution. A likely source of error for the gold grade F1 factor is over-projection of higher grades into sparsely drilled areas. The source of error for contained gold F1 factor is then related to overestimation of tonnage and gold grade. Closer-spaced drilling is likely needed to upgrade orebody knowledge and possibly utilizing a revision to the inverse distance method for estimating block grades.

Table 15.14 2019 Monthly Ratios between Mine Production and Planned Production (F1 Factors) for the Arista Underground Mine

F1 FACTORS								
MONTH	**DRY**	**Gold**	**Silver**	**Copper**	**Lead**	**Zinc**	**Gold**	**Silver**
	TONNES	**g/t**	**g/t**	**%**	**%**	**%**	**oz**	**oz**
JANUARY	0.80	0.63	1.52	1.02	1.02	1.12	0.50	1.22
FEBRUARY	0.76	0.77	1.00	0.95	0.98	1.03	0.58	0.75
MARCH	0.81	0.84	0.95	0.94	0.91	0.88	0.68	0.77
APRIL	0.73	0.93	1.06	0.95	0.98	1.04	0.68	0.78
MAY	0.78	0.75	0.75	0.89	0.92	0.95	0.58	0.58
JUNE	0.79	0.94	0.92	0.95	0.95	1.03	0.74	0.73
JULY	1.01	1.20	0.92	0.99	1.09	1.07	1.21	0.93
AUGUST	1.01	0.72	0.91	0.87	1.08	0.81	0.72	0.92
SEPTEMBER	1.02	0.43	0.65	0.99	0.80	0.84	0.44	0.66
OCTOBER	0.91	0.64	0.74	0.72	0.72	0.76	0.58	0.68
NOVEMBER	0.88	1.04	0.83	0.93	0.93	0.91	0.92	0.73
DECEMBER	1.14	0.62	1.13	0.89	0.89	0.87	0.71	1.29
AVERAGE	**0.88**	**0.79**	**0.91**	**0.92**	**0.93**	**0.93**	**0.69**	**0.80**

The F2 Factor provides information on the grade control estimate as a predictor of the metallurgical grade, which also impacts on daily decisions made as to whether the material is ore grade, waste or stockpile grade (grade control reconciliation). The 2019 ratios between milled and mined tonnes and grade (F2 Factors) for the Arista underground mine are shown in Table 15.15. The average 2019 monthly F2 Factors for all metals are within the annual reconciliation target of 10%. The excess 21,822 tonnes mined were stockpiled at the plant for processing in 2020.

Table 15.15 2019 Monthly Ratios between Mine Production and Mill Processing (F2 Factors) for the Arista Underground Mine

F2 FACTORS								
MONTH	DRY	Gold	Silver	Copper	Lead	Zinc	Gold	Silver
	TONNES	g/t	g/t	%	%	%	oz	oz
JANUARY	0.86	0.77	1.15	0.93	0.84	1.18	0.66	0.99
FEBRUARY	1.04	1.19	1.03	0.94	0.98	1.07	1.23	1.07
MARCH	1.05	1.01	0.93	1.13	0.89	1.00	1.06	0.98
APRIL	0.85	1.06	1.14	0.94	1.01	1.20	0.91	0.98
MAY	1.05	0.82	0.66	0.89	0.86	1.01	0.87	0.69
JUNE	1.07	0.86	0.80	0.87	0.88	1.13	0.92	0.85
JULY	1.12	1.01	1.00	0.97	0.95	1.16	1.14	1.12
AUGUST	1.04	0.74	0.91	0.88	0.96	0.95	0.78	0.95
SEPTEMBER	1.13	0.77	0.73	1.13	0.80	0.96	0.87	0.83
OCTOBER	1.14	0.98	1.06	0.86	0.84	1.08	1.11	1.21
NOVEMBER	1.03	0.96	0.91	1.02	0.91	1.10	0.99	0.94
DECEMBER	1.00	0.99	0.98	0.92	0.90	1.03	0.99	0.98
AVERAGE	**1.03**	**0.93**	**0.93**	**0.96**	**0.90**	**1.07**	**0.96**	**0.96**

The F3 Factor provides information on the reserve model as a predictor of the metallurgical grade (long-range reconciliation). Because the planned grade is derived in part from the block model, the F3 factor also provides an indication as to the performance of the underlying model assumptions. The 2019 ratios between milled and planned tonnes and grade (F3 Factors) for the Arista underground mine are shown in Table 15.16.

The average 2019 monthly F3 Factors for silver, copper and lead are within the annual reconciliation target of 10%. However, the average monthly F3 Factors for tonnes, gold and zinc grades and contained gold and silver ounces are outside of the annual reconciliation target of 10%, ranging from 13% for zinc to 28% for contained gold ounces.

Possible sources of error for the tonnage, gold and zinc grades and contained gold and silver F3 factors are like the same as those for F1 factors

Table 15.16 2019 Monthly Ratios between Mill Processing and Planned Production (F3 Factors) for the Arista Underground Mine

F3 FACTORS								
MONTH	DRY	Gold	Silver	Copper	Lead	Zinc	Gold	Silver
	TONNES	g/t	g/t	%	%	%	oz	oz
JANUARY	0.94	0.81	1.32	1.10	1.21	0.95	0.76	1.24
FEBRUARY	0.73	0.65	0.97	1.01	1.00	0.96	0.47	0.70
MARCH	0.77	0.83	1.02	0.84	1.03	0.87	0.64	0.78
APRIL	0.86	0.88	0.92	1.01	0.97	0.86	0.75	0.79
MAY	0.74	0.92	1.14	1.00	1.07	0.95	0.67	0.84
JUNE	0.74	1.09	1.16	1.09	1.08	0.91	0.81	0.86
JULY	0.90	1.18	0.92	1.02	1.15	0.93	1.07	0.83
AUGUST	0.97	0.96	1.00	0.99	1.12	0.85	0.93	0.96
SEPTEMBER	0.90	0.56	0.89	0.88	0.99	0.88	0.51	0.80

OCTOBER	0.80	0.65	0.70	0.84	0.85	0.70	0.52	0.56
NOVEMBER	0.86	1.08	0.91	0.92	1.03	0.82	0.93	0.78
DECEMBER	1.14	0.62	1.15	0.96	0.99	0.84	0.71	1.31
AVERAGE	**0.85**	**0.85**	**0.98**	**0.96**	**1.03**	**0.87**	**0.72**	**0.83**

Reconciliation plots for tonnes, grade and contained gold and silver ounces for 2019 production are shown in Figures 15.9 through 15.16.

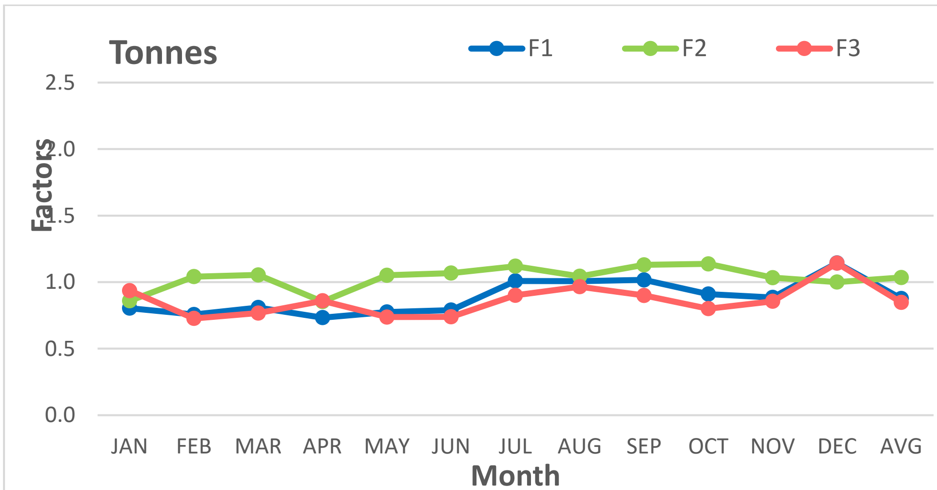


Figure 15.9 Tonnage Reconciliation Plot for 2019

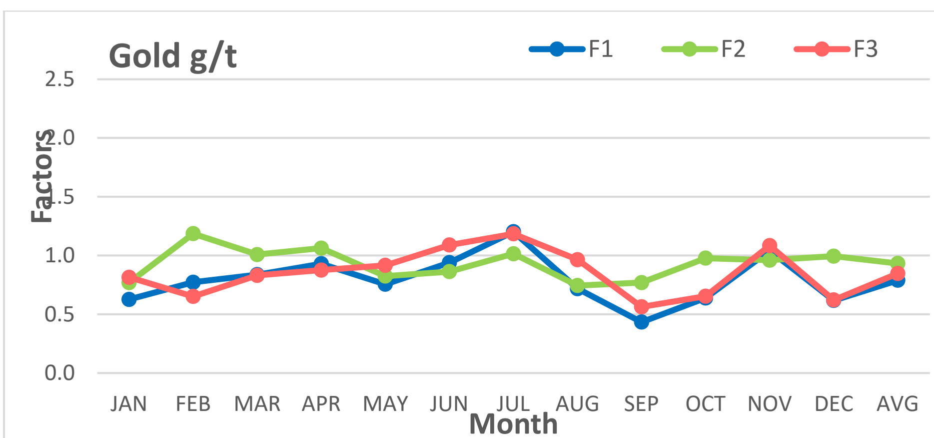


Figure 15.10 Gold Grade Reconciliation Plot for 2019

Eval_Economic in US$

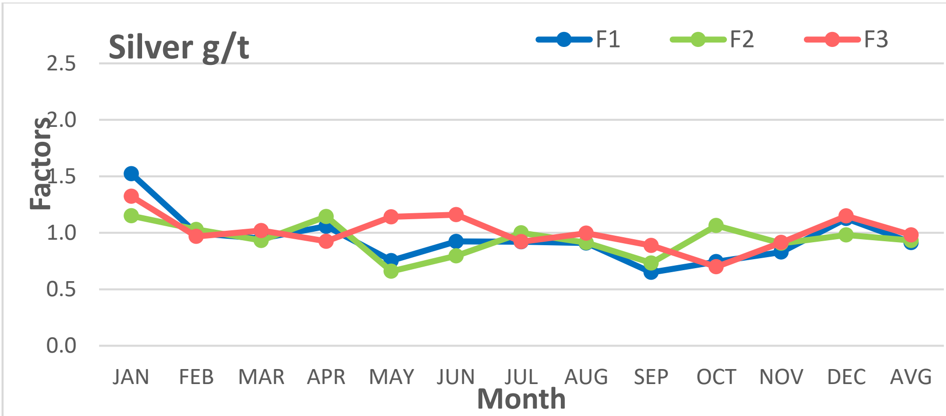


Figure 15.11 Silver Grade Reconciliation Plot for 2019

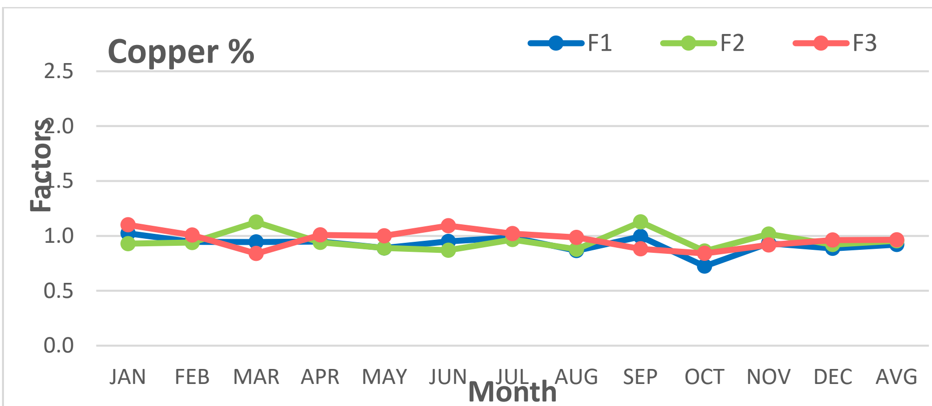


Figure 15.12 Copper Grade Reconciliation Plot for 2019

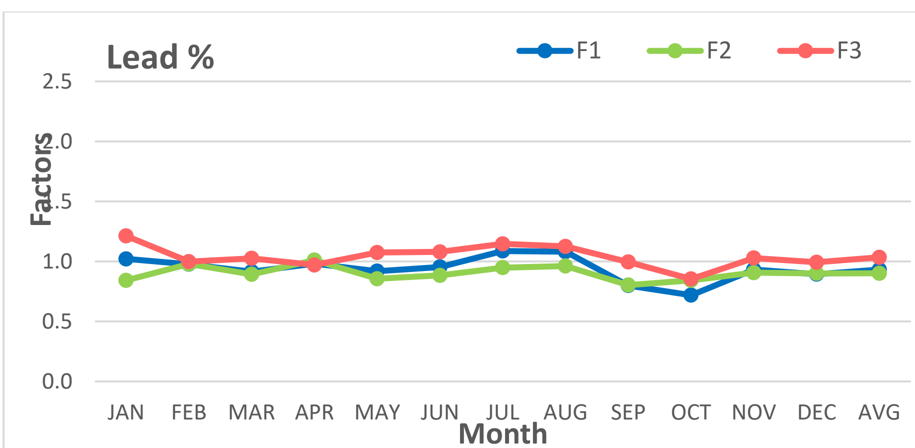


Figure 15.13 Lead Grade Reconciliation Plot for 2019

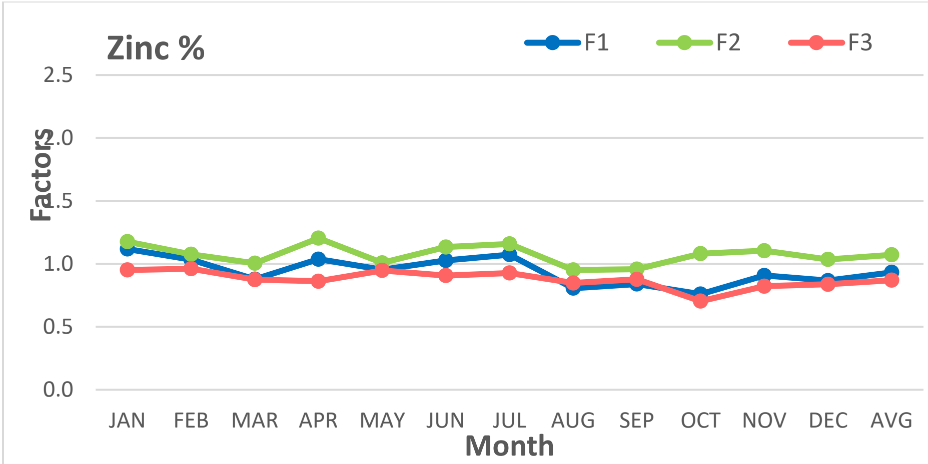


Figure 15.14 Zinc Grade Reconciliation Plot for 2019

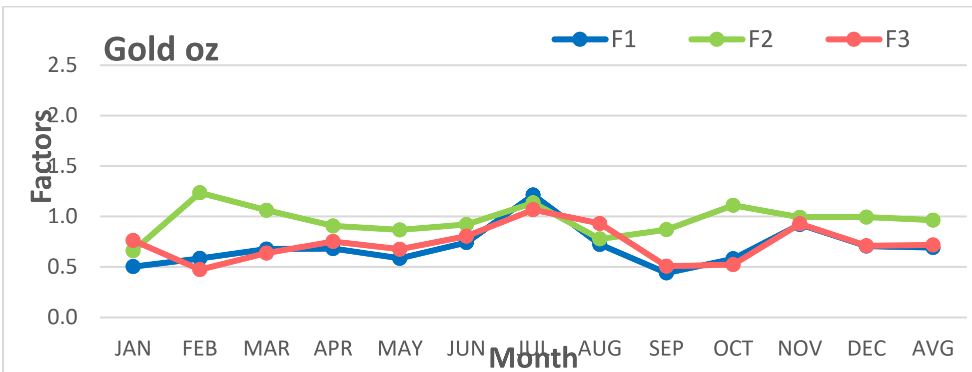


Figure 15.15 Contained Gold Reconciliation Plot for 2019

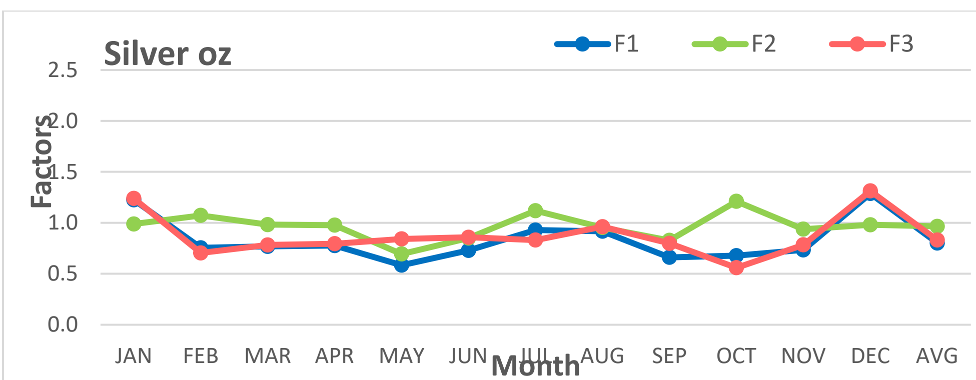


Figure 15.16 Contained Silver Reconciliation Plot for 2019

15.10.2 Block Model Reconciliation

The ultimate validation of the block model is to compare actual grades to predicted grades using the established estimation parameters. This is typically done by evaluating reserve blocks identified as being above cut-off mainly from grade control chip channel sampling.

All underground development and stopes are regularly surveyed using Total Station and Electronic Scanner methods at the Arista Underground Mine as a component of monitoring the underground workings. The survey information is imported into Vulcan and used to generate 3D solids defining the extracted regions of the mine.

Mine geologists and computer technicians subsequently combine the geology reported with the surveyed outlines to create three-dimensional models of the mining areas. These three dimensional "solids" or wireframes represent the production volume for a given vein during a given month. It has been found that this type of wireframe model accurately approximates the true volume of excavated rock.

Over-estimations of tonnes and grade, mainly gold, silver and zinc, shall be further evaluated to provide a better understanding of the model and the reconciliation process. Possible sources of grade differences include one or more of the following: 1) the dilution factors at zero grade applied to the resource blocks are too low, 2) the width of the vein in the models is too narrow, and 3) capping levels are too high, resulting in higher average grades gold and silver and too low for copper, lead and zinc.

Mine geology staff shall also continue to review grade control data to better estimate the grades of ore hauled to the plant.

15.11 Risk Factors

During the reserve estimation process, potential risk factors were identified:

- Although care was taken to snap the interpreted vein strings to drill holes, the positional accuracy of the veins is poor unless underground workings are available to correct for inaccuracies in down-hole surveys. This problem is particularly evident when drill holes intersect veins at oblique angles, and where drill holes are widely spaced.
- There were some difficulties in determining which intervals in different drill holes represent the same vein owing to multiple closely-spaced mineralized structures. This problem is very difficult to solve when drill holes are widely spaced, and some of the apparently continuous veins may be broken up by faulting and/or the continuity may not be verified by more detailed drilling.
- Some of these veins are simple splays from the Arista-Baja vein system and so represent relatively low tonnage and strike length.

- Removal of extracted material often results in remnant resource blocks being left in the model that will likely never be exploited. These represent inevitable components of mining such as pillars and sills, or lower grade peripheral material that was left behind.
- In many cases, negative mine-mill reconciliations may be handled by application of mine call factors (MCF) to provide realistic forecasts of expected tonnage and grade. However, it is always important to understand whether the MCF is due to sampling, reserves, operational constraints, or poor performance, otherwise it can simply mask these problems and lower expectations more than necessary. Reserves should reflect expectations of performance over the life of the mine. DDGM currently does not apply a MCF to its reserves. Further evaluation by DDGM may be required to determine whether that is appropriate going forward.

16 MINING METHODS

16.1 Surface Mining

DDGM declared commercial production at the Aguila Project on July 1, 2010. Mineral production during 2010 consisted of processing Mineral Resources from the Aguila open pit located approximately 0.5 km from the mill (Fig. 16.1).

DDGM developed and mined the shallow-dipping accessible portion of the Aguila vein (manto) by open pit methods, while the projection of the vein to depth may indicate additional underground mine potential. Initial, tonnes and grade mined from the Aguila vein (manto) has been estimated at 345,000 tonnes at an average grade of 4.4 g/t Au and 43 g/t Ag.

Initial mining of the open pit Mineral Resource was essentially completed in 2010. A low-grade stockpile of open pit material estimated at approximately 60,000 tonnes grading 1.4 g/t Au and 19 g/t Ag was processed through the Agitated Leach circuit at the Aguila plant during 2016 and 2017. Open pit mining resumed on the Aguila vein (manto) in 2017. Through 2019, approximately 106,300 tonnes of Mineral Resource grading 1.8 g/t Au and 42 g/t Ag was processed through the Aguila's plant agitated leach circuit.

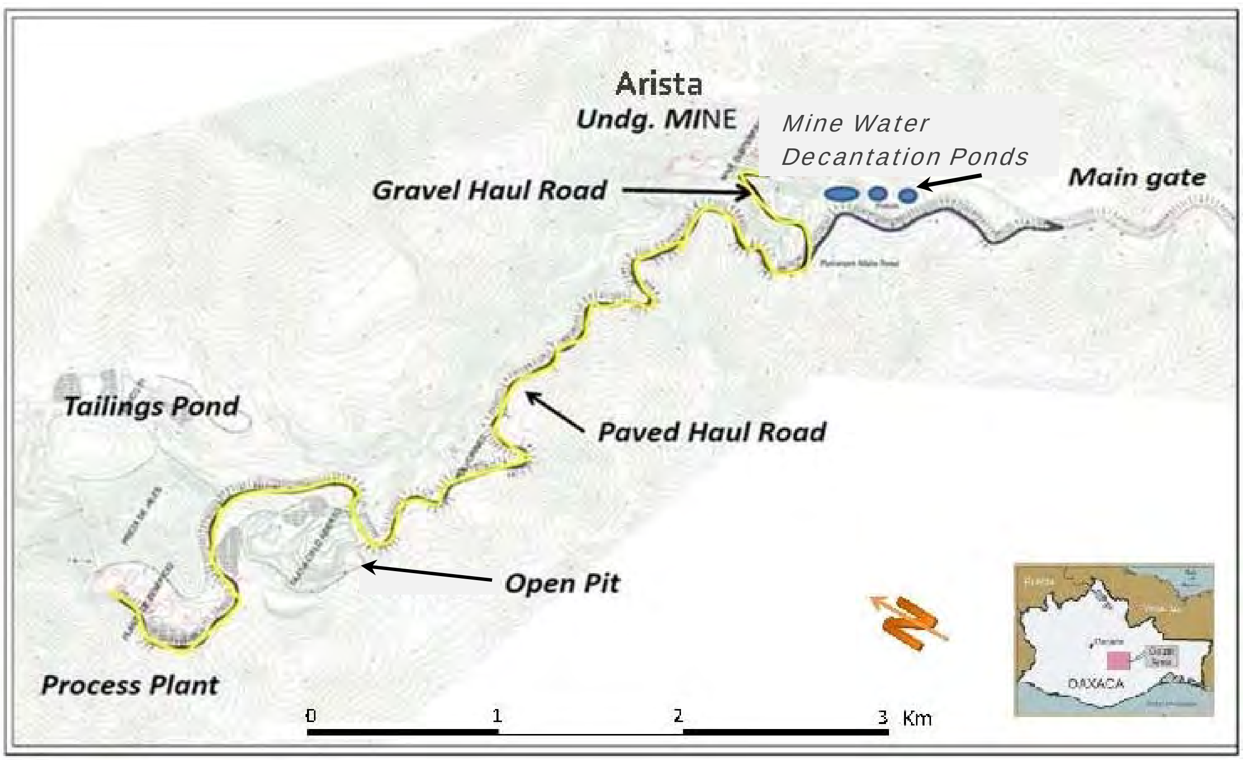


Figure 16.1 Surface Layout Map for Underground and Open Pit Mines, Process Plant and Tailings Pond of DDGM's Aguila Project

16.2 Underground Mining

Substantial development was undertaken from 2010-2011 to access the Mineral Resources of the Arista vein system and to provide ancillary access for further exploration and development. In addition, a significant amount of mining on the Arista vein system was achieved to determine the "mineability" of the orebody and to optimize an extraction method(s) for mining the mineralized zones. The principal exploration access and haulage decline ramp was opened at surface positioned along Aire Creek. The portal opening is located at an elevation at 902 (masl) accessing the mineralized area of the Arista vein system. The decline was driven as a spiral with a minus 10 percent grade in the footwall of the mineralized area. Current underground mine planning and exploitation is based on a typical vertical separation of mine levels of approximately 18m. DDGM has advanced the primary decline ramp down to Level 27, approximately 4,200 meters ramp distance from the mine portal. DDGM has also constructed a safety/ventilation decline ramp in conjunction with the primary decline ramp along with various drifts, raises and stopes encompassing approximately 500 m vertically and 1,300 m along strike length.

In 2017, in addition to the Arista underground mine, DDGM completed development of the Mirador Mine at the Alta Gracia Project and began delivering development ore to the Aguila processing facility. Two mine portals were developed to provide access to the Mirador vein. Mine site offices and mobile equipment maintenance facilities were established adjacent to the mine portals. Additionally, a diesel power generation plant, compressed air and a mine water pumping stations were developed.

The reader is referred to earlier reports on mineral resources and reserves for a more detailed description of the underground mining methods employed at the Oaxaca Mining Unit (Brown et al., 2018). Specific topics covered in earlier reports include:

- Underground Mining Methods
    - Overhand Mechanized Cut and Fill (CAF)
    - Long Hole Open Stoping (LHOS)
    - Shrinkage Stoping (SH)
- Underground Mine Equipment
- Geotechnical Factors
- Ventilation
- Ore Stockpiles

17 RECOVERY METHODS

17.1 Process Description Summary - Aguila Plant

DDGM currently mills and processes the Arista underground mine ore through the flotation circuit at the Aguila Plant (Fig. 17.1). The plant was built near the mine site and consists of both a differential flotation circuit and an agitated leach (oxide) circuit (Figs. 17.2 & 17.3). Late in 2013, as part of the flotation plant expansion from 850 tpd to a nominal 1,500 tpd, two Knelson gravity concentrators were installed. In 2014, a Gekko Intensive Leach Reactor and Electrowinning Circuit was installed to upgrade the gravity concentrate to doré.

In 2016, the agitated leach circuit was put into operation to process low-grade stockpile ore from the Aguila open pit and ore from the Mirador underground mine.

The crushing, milling and processing plant was placed into service in late 2009. During 2010 and the first two months of 2011, most milling and processing was on Aguila open pit mineralization. During February 2011, milling and processing of underground mineralization from the Arista vein system commenced.

The products from the flotation circuit in the plant are four types of high-grade concentrates: copper concentrate with gold-silver; lead concentrate with gold-silver; zinc concentrate with gold-silver and high-grade gravity concentrate which is subsequently smelted and poured into gold-silver bullion (doré) bars. Concentrates are sold to various concentrate buyers located in Mexico. DDGM sells its doré to various precious metals refiners and mints, currently Asahi Refining USA, Inc.

In summary, the principal stages of the Aguila Plant are as follows:

Flotation Circuit	Agitated Leach Circuit
Crushing and Milling	Crushing and Milling
Differential Flotation	Leaching
Thickening, filtering and shipping	Counter Current Decantation (CCD)
	Merrill Crowe Zinc Precipitation
	Bullion Furnace/Doré

In 2019, metallurgical recoveries at the Aguila plant for ore produced from the Arista mine averaged 78 percent for gold, 91ercent for silver, 78 percent for copper, 78 percent for lead and 81 percent for zinc. Recoveries for ore produced from the Mirador mine average 87 percent for gold and 80 percent for silver.

For 2019, the average production rate of the Aguila plant was 1,980 tpd, up substantially from the 2018 average of 1,764 tpd. The capacity of the Aguila milling and flotation circuit is currently about 1,800 tpd owing to a mill expansion completed in 2013. The agitated leach section of the plant is currently processing about 180 tpd but the grinding section of this circuit can handle up to 300 tpd.

The reader is referred to earlier reports on mineral resources and reserves for a more detailed description of the recovery methods employed at the Oaxaca Mining Unit (Brown et al., 2018). Specific topics covered in earlier reports include:

- Crushing and Milling
- Differential Flotation
- Agitated Leaching
- Tailings and Water Management
- Laboratory Facilities
    - Sample Preparation
    - Fire Assaying
    - X-Ray Fluorescence Analysis
    - Atomic Adsorption Spectroscopy
    - Metallurgical Testing
    - Laboratory Quality Assurance/Quality Control
    - Laboratory Equipment

Figure 17.1 The Aguila Processing Plant

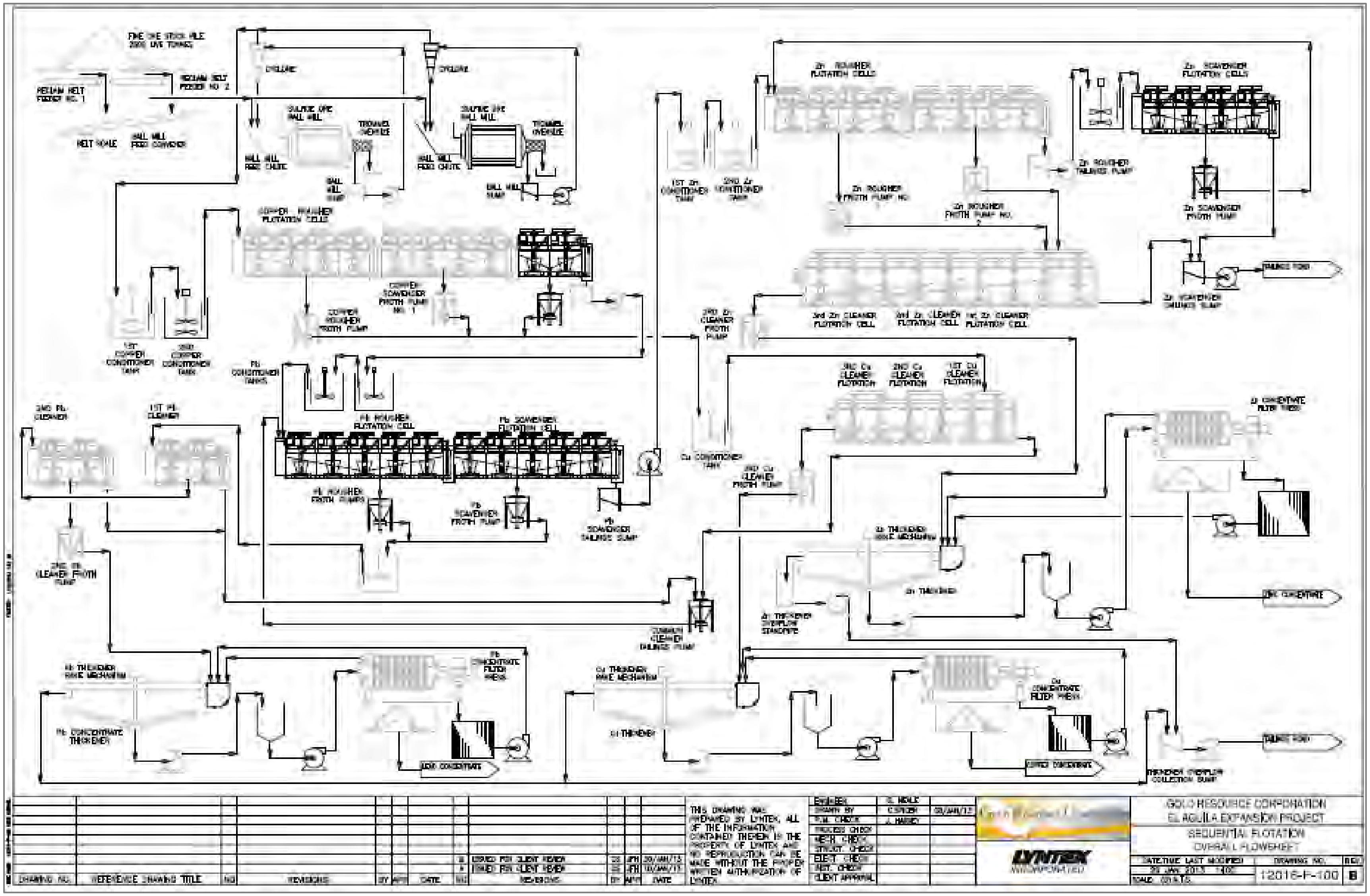


Figure 17.2 Schematic Flow Sheet for the Differential Flotation Circuit at the Aguila Processing Plant

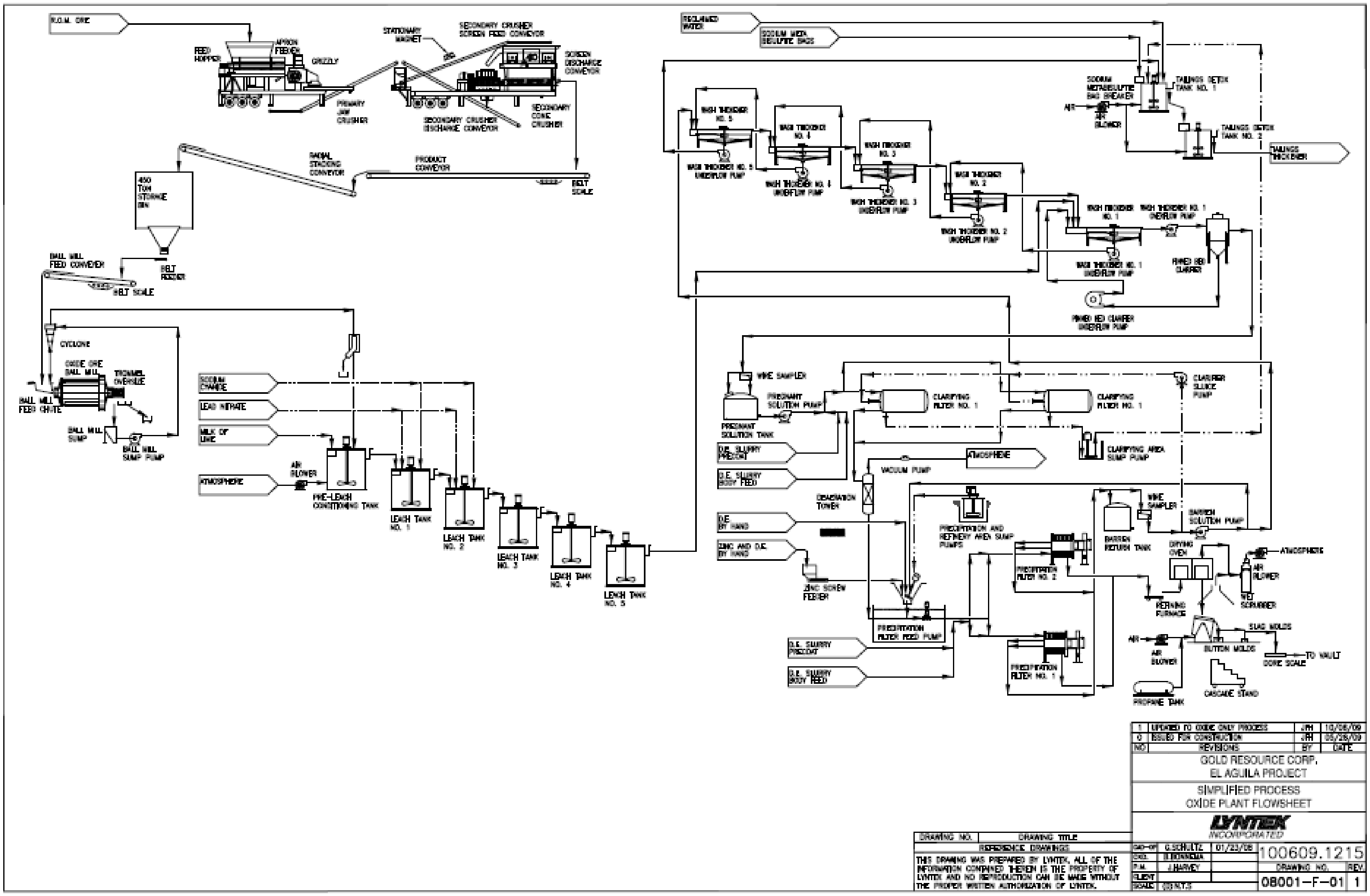


Figure 17.3 Schematic Flow Sheet for the Agitated Leach (Oxide) Circuit Processing Plant

18 PROJECT INFRASTRUCTURE

The reader is referred to earlier reports on mineral resources and reserves for a more detailed description of the existing infrastructure at the Oaxaca Mining Unit (Brown et al., 2018). A brief description of some key infrastructure items are described below.

18.1 Roads and Transportation

The Aguila Project is on paved Mexican Federal Highway No. 190, 115 km from the capital city of Oaxaca. The highway, which is a leg of the Pan American Highway system, runs through the nearby village of San José de Gracía. The distances from San José de Gracía to the mine and plant sites are 4.0 km and 6.0 km respectively.

As the final products consist of metal concentrates and bullion (doré), and because the property and facilities are easily connected to the paved Pan American highway (and from there to major cities by means of the national paved road system), there is no need for construction of new external processing facilities.

Tractor trailers that can transport two 26-tonne trailers each are used to transport concentrate. The containers must be made of stainless steel. Each container is registered and weighed at the mine scales before the loading, sampling and weighing process is performed of the concentrate prior to the unit being sealed and registered. The concentrate is then transported by road to a port in Mexico for subsequent shipping to purchasers in 400, 600 and 1,200 tonne lots for copper, lead and zinc concentrates, respectively. Concentrate trucks are formed into convoys and escorted by contracted security personnel during the entire trip to the purchaser's warehouse.

18.2 Electrical Power

The Aguila Project area is remote, so the Mexican national power company, Comisión Federal de Electricidad (CFE), provides only limited 500 Kilowatt (Kw) electrical power to the community of San José de Gracia and DDGM's mine and camp.

Up until 2018, power for the Aguila Project was mainly provided by diesel generators at the site. In 2019, DDGM successfully connected a power line to its Aguila project from the CFE power grid. Prior to this connection, the Aguila project operated 100% from electricity generated from more expensive and higher emission diesel fuel.

18.3 Water

DDGM has a permit granted by the Mexican federal water authority, Comisión Nacional del Agua (CONAGUA) for the usage of 150,000 cubic meters annually. Mine service and potable water are pumped up to the underground mine and mill sites from a pump station on a well that has been constructed on the edge of the Rio Grande River, located a short distance south of the community of San José de Gracia. Water is pumped to the sites via a 6-in. dia. steel pipeline to holding tanks at both locations. The approximate pumping head to the mill site tanks is 400 meters.

The majority of process water for the operation of the plant, however, is recycled water from the tailings pond. Only a small amount of fresh water is pumped from the well near the Rio Grande River to account for water lost to evaporation.

18.4 Offices and Buildings

DDGM has constructed substantial infrastructure to support the Aguila Project operations. The main administration and offices are located in the vicinity of the Aguila Plant. The mine office is located 2 km to the southeast, near the entrance to the Arista underground mine ramp. Nearly all the administrative personnel and activities are currently conducted from these offices.

The underground mine site has a small mobile equipment maintenance and repair shop, a parts and supply warehouse, dining hall and offices and workspace for engineering, geology, exploration and mine administration. Most building construction consists of concrete-block buildings, although the shop structures are steel frame buildings with steel sheet cladding. DDGM has also constructed exploration offices near the lower end of the open pit. These are similar block buildings with patios covered with steel structures, roofed with steel sheets.

DDGM has constructed a good quality housing, recreation and dining hall facility, called “Tres Palmas’’, in the town of San José de Gracía, which is situated in the Rio Grande River valley. Buildings are constructed of concrete blocks and all are designed for the tropical climate. This housing area is mainly for salaried employees and their families, and there are more than 50 employees housed in the facility.

Mexican government medical services (Servicios de La Secretaría de Salúd) are close by the operation in the villages of El Camerón (first aid), and Nejapa de Madero (hospitalization, surgery, etc.). DDGM has two ambulances at the mine site available to transport injured or sick employees to one of these facilities.

18.5 Core Storage Facilities

DDGM has constructed permanent core storage facilities to store the thousands of meters of diamond drill core collected during past drilling program. The core storage facility is located near the Exploration Office, above the Aguila open pit and in close proximity to the Aguila Plant.

19 MARKET STUDIES AND CONTRACTS

DDGM produces metal concentrates that contain gold, silver, copper, lead and zinc, and doré containing gold and silver from the Aguila and Alta Gracia projects of the Oaxaca Mining Unit. Shipments of concentrates and doré are sold to various customers. Sale prices are obtained based on either world spot or London Metals Exchange market pricing and are easily transacted.

19.1 Contracts and Status

A market study for the gold product was not undertaken for this study. Gold, silver and base metals are sold through commercial banks and market dealers.

20 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT

20.1 Environmental Permitting and Compliance

In connection with mining, milling and exploration activities, DDGM is subject to all Mexican federal, state and local laws and regulations governing the protection of the environment, including laws and regulations relating to protection of air and water quality, hazardous waste management and mine reclamation as well as the protection of endangered or threatened species. Potential areas of environmental consideration for mining companies, including DDGM, include but are not limited to, acid rock drainage, cyanide containment and handling, contamination of water courses, dust and noise.

All mining and environmental activities in México are regulated by the Dirección General de Minas (DGM) and by the Secretaría de Medio Ambiente y Recursos Naturales (SEMARNAT) from México City, under the corresponding laws and regulations.

Mining operations in México operate under a unique environmental license (Licencia Ambiental Unica). This environmental license is issued after approval of the Evaluación del Impacto Ambiental (EIA). As well, special permits are issued for certain new developments such as expansions, tailings dams, etc.

The Aguila Project of the Oaxaca Mining Unit is permitted according to mining, environmental, labor, tax and other Mexican regulations for the mining and metallurgical complex.

DDGM is also required to obtain various permits for surface and underground water use and discharge of waste water discharge. The permissions are granted by the Comisión Nacional del Agua (CONAGUA), the administrative, technical advisory commission of SEMARNAT. CONAGUA administers national waters, manages and controls the country's hydrological system, and promotes social development.

The Oaxaca Mining Unit currently operates under the permits and status as indicated in Table 20.1. These types of documents are based on the information contained in the document to be registered. Documents are currently handled under the codes shown in Table 20.2.

Table 20.1 Oaxaca Mining Unit Environmental Permits and Issuing Agencies

No.	Name	Unit	Permit No.	Description	Date Authorized	Validity (days)	Validity (years)	Expiry Date	Comments	Evidence of Authorization	Evidence of Study	Reports Pending
1	"Exploración minera La Tehuana"	"El Águila"	SEMARNAT-SGPA-DIRA-148-2007	Impacto ambiental	4/17/2007	-595	-1.6	8/30/2005	Vencido desde antes de la autorización	Original	Físico	Informe de cumplimiento NOM-120-SEMARNAT-2011
2	Ampliación y Apertura de brecha de acceso de la Planta de Beneficio El Águila al entronque con Carretera Federal Oaxaca-Istmo km 113+000	"El Águila"	SEMARNAT-SGPA-DIRA-049-2008	Impacto ambiental	2/26/2008	5840	16.0	2/22/2024	Vigente para la etapa operativa	Ninguna	Ninguna	Informe Anual 2019-2020
3	Ampliación y apertura de una brecha de acceso de la Planta de Beneficio "El Águila"	"El Águila"	SEMARNAT-SGPA-AR-0654-2008	Cambio de uso de suelo	3/24/2008	371	1.0	3/30/2009	Vencida, con procedimiento administrativo abierto	Original	Físico y electrónico	Informe final entregado
4	Construcción y Operación de una Planta de Beneficio de minerales denominada El Águila	"El Águila"	SEMARNAT-SGPA-DIRA-413-2008	Impacto ambiental	6/17/2008	4045	11.1	7/15/2019	Vencido con renovación de vigencia	Original	Electrónico	Informe ligado a autorización de origen
5	Construcción y Operación de la Planta de Beneficio de Minerales "El Águila", ubicada en Terrenos Ejidales de San Pedro Totolapam, Municipio del mismo nombre, Distrito de Tlacolula, Oaxaca.	"El Águila"	SEMARNAT-SGPA-AR-1246-2008	Cambio de uso de suelo	6/18/2008	365	1.0	6/18/2009	Vencida, con procedimiento administrativo abierto	Original	Físico y Electrónico	Informe final entregado
6	"Exploración minera El Pilón"	"El Águila"	SEMARNAT-SGPA-DIRA-604-2008	Impacto ambiental	12/1/2008	760	2.1	12/31/2010	Vencido	Original	Físico	Informe de cumplimiento NOM-120-SEMARNAT-2011
7	Construcción y operación de una presa de jales Correspondiente al Proyecto Denominado "El Águila"	"El Águila"	SEMARNAT-SGPA-DIRA-1010-2008	Impacto ambiental	1/8/2009	2555	7.0	1/7/2016	Vigente, se ingresó escrito de aviso de ampliación de plazos de operación de 6 a 10 años	Electrónico	Electrónico	Informes para toda la vigencia entregados
8	Construcción y Operación de un Tajo a Cielo Abierto denominado "El Águila"	"El Águila"	SEMARNAT-SGPA-AR-0390-2009	Cambio de uso de suelo	3/17/2009	184	0.5	9/17/2009	Vencido y regularizado	Original	Físico y electrónico	Informe final entregado
9	Modificación a proyectos autorizados en materia de impacto ambiental del proyecto "Construcción y operación de una planta de beneficio de minerales denominada El Águila"	"El Águila"	SEMARNAT-SGPA-DIRA-1212-2009	Impacto ambiental	7/24/2009	147	0.4	12/18/2009	Vencida, condicionantes ligadas con autorización de origen	Original	Solo se encuentra fisicamente la información adicional solicitada por SEMARNAT	Informe ligado a autorización de origen
10	Construcción y operación de un tajo a cielo abierto correspondiente al proyecto denominado "El Águila"	"El Águila"	SEMARNAT-SGPA-DIRA-1310-2009	Impacto ambiental	8/14/2009	3650	10.0	8/12/2019	Vencida, con procedimiento administrativo abierto	Original	Físico y electrónico	Informes para toda la vigencia entregados

11	"Exploración el águila"	"El Águila"	SEMARNAT-SGPA-DIRA-152-2010	Impacto ambiental	4/8/2010	NA	NA	NA	Vigente	Original	Expediente electrónico	Informe de cumplimiento NOM-120-SEMARNAT-2011
12	Construcción y operación de una rampa de acceso denominada El Águila	"El Águila"	SEMARNAT-SGPA-DIRA-858-2010	Impacto ambiental	6/2/2010	4019	11.0	6/3/2021	Vigente etapa operativa	Electrónico	Físico y electrónico	Informe Anual 2019-2020
13	Construcción y Operación de una Rampa de Acceso a la Mina Subterránea denominada La Fortuna"	"El Águila"	SEMARNAT-SGPA-AR-1825-2010	Cambio de uso de suelo	11/2/2010	59	0.2	12/31/2010	Vencida, con procedimiento administrativo abierto	Electrónico	Físico y electrónico	Informe final entregado
14	Modificación a proyectos autorizados en materia de impacto ambiental del proyecto "Construcción y Operación de una Rampa de Acceso Denominada El Águila"	"El Águila"	SEMARNAT-SGPA-DIRA-858-2010	Impacto ambiental	12/16/2010	3822	10.5	6/3/2021	Vigencia ligada a autorización de origen	Electrónico	Físico y electrónico	Informe ligado a autorización de origen
15	Ampliación de un Tajo a Cielo Abierto El Águila.	"El Águila"	SEMARNAT-SGPA-DIRA-1423-2011	Impacto ambiental	11/17/2011	730	2.0	11/16/2013	Vencido y regularizado	Original	Físico y electrónico	Informes para toda la vigencia entregados
16	Construcción de Tepetatera No. 4 de la mina subterránea La Fortuna	"El Águila"	SEMARNAT-SGPA-DIRA-035-2012	Impacto ambiental	1/30/2012	365	1.0	1/29/2013	No define vigencia para etapa operativa, solo para el CUS	Electrónico	Físico y electrónico	Informes para toda la vigencia entregados
17	Apertura del Acceso al Proyecto Las Margaritas	"Exploración Margaritas"	SEMARNAT-SGPA-DIRA-231-2012	Impacto ambiental	2/22/2012	330	0.9	1/17/2013	Vencida	Electrónico	Ninguna	Informes para toda la vigencia entregados
18	Modificación a proyectos autorizados en materia de impacto ambiental del proyecto "Construcción y operación de una planta de beneficio de minerales denominada El Águila".	"El Águila"	SEMARNAT-SGPA-DIRA-716-2012	Impacto ambiental	6/8/2012	62	0.2	8/9/2012	Vencida	Original	Físico y electrónico	Informes para toda la vigencia entregados
19	Ampliación de un Tajo a Cielo abierto denominado "El Águila"	"El Águila"	SEMARNAT-SGPA-AR-0800-2012	Cambio de uso de suelo	6/8/2012	387	1.1	6/30/2013	Vencida y regularizada	Original	Físico y electrónico	Informe final entregado
20	Construcción de la brecha de acceso de 3.5 km al área de exploración minera denominada Las Margaritas	"El Águila"	SEMARNAT-SGPA-AR-1122-2012	Cambio de uso de suelo	9/14/2012	167	0.5	2/28/2013	Vencida	Electrónico	Físico	Informe final entregado
21	Construcción de la fase tres de la presa de jales del proyecto minero "El Águila"	"El Águila"	SEMARNAT-SGPA-AR-1781-2014	Cambio de uso de suelo	10/14/2014	243	0.7	6/14/2015	Vencida, con procedimiento administrativo abierto	Original	Expediente electrónico, sin anexos	Informe final entregado
22	Construcción y Operación de la Fase 3 de la Presa de Jales del Proyecto Minero El Águila.	"El Águila"	SEMARNAT-SGPA-DIRA-1514-2014	Impacto ambiental	11/4/2014	1275	3.5	5/2/2018	Vencido	Original	Electrónico y físico	Informes para toda la vigencia entregados
23	"Construcción de la Tepetatera No. 5 y el contrapozo tipo "Robbins"	"El Águila"	SEMARNAT-SGPA-UGA-1304-2015	DTU	9/19/2015	5236	14.3	1/19/2030	Vigente etapa operativa	Original	Electrónico y físico	Informe Técnico Anual Pormenorizado 2019-2020

24	"Almacén de Núcleos para Geología"	"El Águila"	SEMARNAT-SGPA-UGA-2180-2015	Impacto ambiental	12/11/2015	NA	NA	NA	Sin vigencia	Original	Expediente electrónico	Informe Anual 2019-2020
25	Exploración y Explotación Minera Altagracia	"Altaracia"	SEMARNAT-SGPA-UGA-2411-2015	Impacto ambiental	2/15/2016	1245	3.4	7/14/2019	Vencido con renovación de vigencia	Original	Electrónico y físico	Informe ligado a autorización de origen
26	Mantenimiento y rehabilitación de Caminos para la Exploración Las Margaritas	"Exploración Margaritas"	SEMARNAT-SGPA-DIRA-0290-2016	Impacto ambiental	3/22/2016	NA	NA	NA	Sin vigencia	Original	Electrónico	Informe de cumplimiento NOM-120-SEMARNAT-2011
27	Proyecto de Exploración Minera Las Margaritas	Exploración Margaritas	SEMARNAT-SGPA-DIRA-0289-2016	Impacto ambiental	3/22/2016	NA	NA	NA	Sin vigencia	Original	Electrónico	Informe de cumplimiento NOM-120-SEMARNAT-2011
28	Antena Repetidora de Radio	"Altaracia"	SEMARNAT-SGPA-UGA-0024-2017	Impacto ambiental	2/1/2017	NA	NA	NA	Sin vigencia	Original	Electrónico y físico	Informe final entregado
29	Cambio de uso de suelo para el proyecto de exploración minera Altagracia	"Altaracia"	SEMARNAT-SGPA-AR-0682-2017	Cambio de uso de suelo	4/28/2017	365	1.0	4/28/2018	Vencida	Original	Electrónico y físico	Informe final entregado
30	"Exploración Minera Altagracia, Fase II"	"Altaracia"	SEMARNAT-SGPA-DIRA-0318-2017	Impacto ambiental	6/16/2017	NA	NA	NA	Sin vigencia	Original	Informe de cumplimiento NOM-120-SEMARNAT-2011	Informe de cumplimiento NOM-120-SEMARNAT-2011
31	"Tepetatera Alicia"	"Altaracia"	SEMARNAT-SGPA-AR-1411-2017	DTU	7/15/2017	184	0.5	1/15/2018	Vencida	Original	Electrónico y físico	Informe final entregado
32	Ampliación de la Fase 3 de la presa de jales del proyecto minero el águila	"El Águila"	SEMARNAT-SGPA-AR-1551-2017	Cambio de uso de suelo	8/15/2017	365	1.0	8/15/2018	Vencida, condicionada a permisos CONAGUA	Original	Electrónico y físico	Informe final entregado
33	"Tepetatera Altagracia"	"Altaracia"	SEMARNAT-SGPA-UGA-1419-2017	DTU	10/18/2017	2922	8.0	10/18/2025	Vigente	Original	Electrónico y físico	Informe Técnico Anual Pormenorizado 2019-2020
34	Ampliación de la Fase Tres de la Presa de Jales del Proyecto Minero El Águila.	"El Águila"	SEMARNAT-SGPA-UGA-1685-2017	Impacto ambiental	11/1/2017	2130	5.8	9/1/2023	Vigente, condicionada a permisos CONAGUA previo a inicio de cualquier obra o actividad	Original	Electrónico y físico	Informe Anual 2019-2020
35	Operación y Cierre del Tajo a Cielo Abierto El Águila.	"El Águila"	SEMARNAT-SGPA-UGA-0016-2018	Impacto ambiental	3/7/2018	2920	8.0	3/5/2026	Vigente	Original	Electrónico y físico	Informe Anual 2019-2020
36	"Exploración Minera Altagracia, Fase III"	"Altaracia"	SEMARNAT-SGPA-UGA-0484-2018	Impacto ambiental	5/31/2018	NA	NA	NA	Sin vigencia	Original	Electrónico y físico	Informe elaborado pendiente ingresar
37	"Exploración Minera Altagracia, Zona Victoria"	"Altaracia"	SEMARNAT-SGPA-UGA-0485-2018	Impacto ambiental	5/31/2018	NA	NA	NA	Sin vigencia	Original	Electrónico	Informe elaborado pendiente ingresar
38	Modificación a proyecto autorizados del proyecto "Construcción y Operación de la Fase 3 de la Presa de Jales del Proyecto Minero El Águila"	"El Águila"	SEMARNAT-SGPA-UGA-0708-2018	Impacto ambiental	7/20/2018	502	1.4	12/4/2019	Vencida, deja sin vigencia al ATRP y patio de chatarra	Original	Electrónico y físico	Informes para toda la vigencia entregados

39	"Exploración Minera Trenes, Fase I"	"El Águila"	SEMARNAT-UGA-0025-2019	Impacto ambiental	2/5/2019	NA	NA	NA	Vigente	Original	Expediente electrónico	Informe de cumplimiento NOM-120-SEMARNAT-2011
40	Exploración Minera Trenes Fase II, Barreno Capilla Altagracia.	"Altaracia"	SEMARNAT-UGA-1468-2019	Impacto ambiental	10/28/2019	NA	NA	NA	Vigente	Original	Expediente electrónico	Informe de cumplimiento NOM-120-SEMARNAT-2011
41	"Barreno de exploración Horno de cal"	"El Águila"	SEMARNAT-UGA-1469-2019	Impacto ambiental	10/28/2019	NA	NA	NA	Vigente	Original	Expediente electrónico	Informe de cumplimiento NOM-120-SEMARNAT-2011
42	"Barreno de exploración Cerro Colorado"	"El Águila"	SEMARNAT-UGA-1470-2019	Impacto ambiental	10/28/2019	NA	NA	NA	Vigente	Original	Expediente electrónico	Informe de cumplimiento NOM-120-SEMARNAT-2011
43	Modificación a plazos "Construcción y Operación de una Planta de Beneficio de minerales denominada El Águila"	"El Águila"	SEMARNAT-UGA-1312-2019	Impacto ambiental	12/6/2019	2005	5.5	12/16/2024	Vigente	Original	Expediente electrónico	Informe Anual 2019-2020
44	Modificación a plazos "Exploración y Explotación Minera Altagracia"	"Altaracia"	SEMARNAT-UGA-1313-2019	Impacto ambiental	12/6/2019	615.0	1/1/1900	3/31/2021	Vigente	Original	Expediente eléctrónico	Informe Anual 2019-2020

Table 20.2 Description of Information and Codes for DDGM's Environmental Documents

Code	Description
AIA	Environmental Impact Authorization
ACS	Land Use Change Authorization
AIP	Exploration Preventive Report Authorization
ETJ	Technical Justification Study (land use change study)
MIA	Environmental Impact Statement (study for environmental impact valuation)
IP	Preventive Reports (exploration mining claims)
ERA	Environmental Risk Valuation
PPE	Plans, Programs and Studies
PFP	PROFEPA (Documentation related to administrative records we have with Profepa)
GIR	Waste (Information related to integrated waste management)
DIV	Miscellaneous.
NRIA	No Environmental Impact Requirement
COA	Annual Operating Report
LAU	Single Environmental License
PMRP	Management plan for hazardous waste
PMRME	Management plan for special waste (scrap)
PMRM	Management plan for mining waste

20.1.1 Solid Waste Disposal

The process plant, underground mine and mine camp have individual sewage treatment plants. The treatment systems are biochemical tanks and filtration. The treated water is returned to the soil through an absorption well.

20.1.2 Water and Air Sampling

DDGM has established strict procedures of operation and monitoring water and air quality in accordance to accepted standards.

The tailing facilities require the main environmental and operation control. Water in the tailings facility is returned to the Aguila processing plant.

Some water pumped from the underground workings is discharged at the surface into decantation ponds. DDGM has the necessary permits to discharge underground mine water at the surface.

To reduce the possibility of an incident regarding any potential contamination, the following aspects are treated with special care by DDGM as they represent potential risks to the operation:

- Tests of water for pollutants into rivers near to the tailings dams.
- Tests of discharge sewage pollutants.
- Tests of running water in the intermittent streams within the property for mineral elements and contaminants.

- Tests of the combustion gases from laboratory's chimneys and foundry, and lead exposure for lab workers.

Sampling of surface waters in rivers and creeks is conducted every six months, and underground water sampling is completed every three months. The water samples are sent for analysis to an external laboratory (Laboratorios ABC, Mexico City), which has been accredited by the Entidad Mexican de Acreditación A.C. (EMA).

20.1.3 Mine Closure Plan

DDGM is required to prepare a mine closure plan for the possible future abandonment of the Aguila and Alta Gracia Projects. In compliance with environmental obligations, DDGM is required to consider two levels of care:

1. Works and actions that are specifically identified in the current environmental regulations, or in case of modifications or new regulations arising and,
2. Those particular terms and conditions listed in the permissions, registers or certificates, as established in the authorization in terms of environmental impact and land use change (CUS), and although not specifically identified in any order, are the result of case-specific analysis.

The environmental authority in all cases, however, makes it clear that individual or project specific conditions are additional to what the legislation requires. In this case, it is necessary to maintain constant reviews and updates of the information related to either new regulations or other legal instruments that affects DDGM, including that Mexican law principle is such that the lack of knowledge does not imply exemption from its obligation.

The environmental study presented here is mainly an exercise in self environmental evaluation involving monitoring and systematic review of the facilities and business processes, in terms of their environmental practices and procedures, in order to check the level of compliance with both matters governed by the laws, regulations, and existing standards, that affect the good performance and process improvement in the permits that have been granted by SEMARNAT, PROFEPA and CONAGUA.

To be compliant, any mine closure activities should broadly consist of the following:

1. Prevent erosion in all areas where authorized land use changes involve placing containment structures such as buttresses, retaining walls, rock gabions and balances. There shall be a buffer zone of native vegetation around the perimeter of polygons of various facilities such as Processing Plant, Open Pit Mine, Plant Access Road, Ramp, waste dumps (No.'s 3 & 4, etc..), at least a 4.0 meters width.

2. Consider within the main points, installing wells to monitor water quality in the pits and tailings dams, in order to analyze whether the runoff from these areas alter the quality of surface water, soil, or subsoil in the rainy season. Perform technical and environmental examinations that determined the location of these wells, likewise, attach the graphic

material showing its location relative to mine workings. Integrate the results of the trimestral monitoring of the wells in the Annual Technical Report of Environmental Monitoring, and finally, record the results of these actions in the field logbook including description of activities.

3. Determine the Ecological Restoration Program plans and actions for the conservation of soil, which must be proposed according to the parameters that the petitioner stated in Soil Management Program and considering the Ecological Restoration Program; must conform to functional and operational integration in space and time to provide continuity-discontinuity of the processes of nature and thus, improve the basic benefit-cost ratio to ensure the achievement of sustainable development.

4. Maintain the equipment use in good condition in such a way that the emissions are within permissible limits. Maintain the equipment units to prevent spills on the floor, draining or dumping into water bodies present in the area, including waste fats, oils, solvents and any substance or hazardous waste encountered at different stages of the project.

A Mine Closure Plan and Reclamation Budgets have been prepared by SRK Consulting (U.S.), Inc. (SRK). The closure cost estimate includes funds for covering the tailings ponds, waste rock stockpiles ("tepetateras"), and for securing, and cleaning up the other surface and underground mine facilities. In December 2019, SRK provided an evaluation of the closure costs liabilities that exist at the Aguila and Alta Gracia Projects as of the end-of-the-year 2019 and prepared a schedule for the direct costs of the various tasks in accordance with a mine plan provided by DDGM (Perez, 2020). The total estimated closure and reclamation cost for the Aguila Project is estimated to be 53.05 million Mexican Pesos (MXP), which is equal to about US$ 2.82 million at an exchange rate of 18.83 pesos to US $1.00, the exchange rate at the time SRK prepared their report in January 2020. The total estimated closure and reclamation cost for the Alta Gracia Project is estimated to be 11.29 million Mexican Pesos (MXP), which is equal to about US$ 599,600.

SRK Consulting's conceptual closure and reclamation cost summaries for the Aguila and Alta Gracia projects are in Tables 20.3 and 20.4.

Table 20.3 Conceptual Mine Closure and Reclamation Cost Summary for the Aguila Project

Activity	Cost 2019 (MXN)	Comments
1.0 Direct Costs		
1.1 Mine Portal and Support Facilities Area		
Dismantle and remove machinery and abandoned equipment	2,529,915	Unchanged from 2018.
Revegetate and maintain disturbed areas (assuming a period of drought)	207,415	1.38% higher than 2018.
Slope stabilization (pits, waste dumps, haulage and backfill)	2,628,028	1.38% higher than 2018.
Surface cleanup and securing portal	400,000	Unchanged from 2018.
1.1 Subtotal:	**5,765,358**	
1.2 Mineral Processing Area		
Dismantlement and removal of machinery and abandoned equipment	2,789,917	Unchanged from 2018.
Revegetation and maintenance of disturbed areas (assuming a period of drought)	295,368	Unchanged from 2018.
Phase 1 Tailings: Regrade and cover	5,612,972	Unchanged from 2018.
Phase 2 Tailings: Revegetation	140,914	Unchanged from 2018.
Phase 3 Tailings: Regrade and cover	8,995,641	Unchanged from 2018.
Phase 3 Tailings: Revegetation	225,836	Unchanged from 2018.
Slope stabilization (pits, waste dumps, haulage and backfill)	2,576,680	Unchanged from 2018.
Reclamation of another surface disturbance (1)	283,188	Unchanged from 2018.
1.2 Subtotal:	**20,920,515**	
1.3 Haul Road and Ancillary Area		
Reclaim roads	2,770,747	Unchanged from 2018.
1.3 Subtotal:	**2,770,747**	
1.0 Total:	**29,417,461**	
2.0 Indirect Costs		
1-year Owner's Supervision	3,500,000	
Contingency and Contractor Profit	2,500,000	
Permitting Support (Amendments)	3,500,000	
2.0 Total:	**9,500,000**	Unchanged from 2018.
3.0 Post-Closure		
Compensation Areas (1)	2,275,000	
Soil and Plant Surveys	2,275,000	
Erosion Control	3,250,000	
Water Quality Monitoring	1,170,000	
TSF Inspection	1,625,000	
Environmental Surveillance Reporting	3,500,000	
3.0 Total:	**14,095,000**	Unchanged from 2018.
Grand Total (MXN):	**53,051,620**	

(1) MIA documentation includes reference to additional areas outside of the current mine disturbance. This compensation is assumed to involve a limited degree of monitoring and habitat enhancement activity. El Águila staff to confirm materiality of this requirement.

Table 20.4 Conceptual Mine Closure and Reclamation Cost Summary for the Alta Gracia Project

Activity	Cost 2019 (MXN)	Comments
1.0 Direct Costs		
1.1 Support Facilities Area		
Revegetate and maintain disturbed areas (assuming a period of drought)	14,776	Considering 1 Ha as total area
Slope stabilization (pits, waste dumps, haulage and backfill)	187,222	Considering 1 Ha as total area
1.1 Total:	**201,998**	
1.2 Haul Road and Ancillary Area		
1.2 Subtotal:	**1,588,963**	Assuming 7.914 km of roads surrounding the Waste Rock Dam
1.0 Total:	**1,790,961**	
2.0 Indirect Costs		
1-year Owner's Supervision	3,500,000	
Contingency and Contractor Profit	2,500,000	
Permitting Support (Amendments)	3,500,000	
2.0 Total:	**9,500,000**	Assuming indirect costs and lump sum for one year
Grand Total (MXN):	**11,290,961**	

(1) One or more MIA approvals specifies a 5-year post-closure monitoring period. The post-closure monitoring effort for Altagracia will be covered by El Aguila

20.2 Social and Community Impact

The reader is referred to earlier reports on mineral resources and reserves for a more detailed description of the social or community impact at the Oaxaca Mining Unit (Brown et al., 2018). Specific topics covered in earlier reports include:

- Manpower
- Health and Safety
- Mine Rescue Team
- Community Relations

21 ADJACENT PROPERTIES

21.1 Owner Properties

DDGM has consolidated ownership of the area consisting of the Oaxaca Mining Unit. Concessions totaling 56,011 hectares (560 km^2) cover numerous old mine workings and exploration targets. This includes the 17 contiguous mining concessions surrounding the Aguila Project. These claims have been registered at the Dirección General de Minas under DDGM. According to the legal opinion by DDGM's legal advisers, all of these mining concessions are current in legal standing.

Many old mine workings in Oaxaca have been in operation intermittently since the seventeenth century, when many of the Mexican mining districts were discovered, such as Zacatecas, Guanajuato, Fresnillo, San Martín, Taxco, Sombrerete, Tayoltita, etc. Silver and gold production from the Aguila project area is unknown. SGM reports historical production estimated in about 300,000 ounces of gold and silver in the 1880s from the La Leona mine (located within the Aguila Project area) without specifying the amount of each metal.

Several historic mines, including: Bellavista, El Rey, La Escondida, El Aguila, El Aire, Cerro Colorado, Mirador, and other mines, are covered by mining concessions owned by DDGM.

21.2 Third-Party Properties

No adjacent operating properties exist within the immediate area surrounding the Oaxaca Mining Unit.

Other operating properties in Oaxaca include the following:

- **San José Mine:** located in the Taviche Mining District, 47 km south of the city of Oaxaca. This mine is operated by Compania Minera Cuzcatlan S.A. de C.V., a wholly-owned subsidiary of Fortuna Silver Mines Incorporated. This 100%-owned underground mine began operating in 2011 and is currently operating at a processing rate of 3,000 tonnes per day. The mining method is overhand cut-and-fill from vein deposits with gold and silver. No base metals are recovered.
- **Natividad Mine:** located 48 km northeast of the city of Oaxaca. The Natividad mine began producing gold in 1792 and has been in operation intermittently at a small-scale since that time. It represents one of the most important past-producing gold mines in southern Mexico. Recorded historical production from 1937 to 1992 was 1.95 million tonnes (Mt) at a grade of 9.51 g/t Au (960,000 oz Au) and 276 g/t Ag (23 M oz Ag). The majority of the landholdings covering the historic mining área are owned by Compania Minera Natividad y Anexas, S.A. de C.V´s The Company's land package incorporates the on-strike extension of the vein-hosting

22 OTHER DATA AND RELEVANT INFORMATION

There are no other relevant data and information or explanation necessary to make the technical report understandable and not misleading.

23 INTERPRETATION AND CONCLUSIONS

23.1 Interpretation

The Oaxaca Mining Unit owned by DDGM is in the southern state of Oaxaca in México. The main Aguila project was initiated by investigating an old mining district which held numerous mineralization exposures partially developed by mining activity through centuries by small-scale miners and prospectors. DDGM initiated modern exploration investigations with significant investments leading to important precious and base metals discoveries. DDGM acquired its first mining concessions in 2003 and has continued to acquire additional land holdings where an increasing number of exploration targets have been defined. Currently DDGM holds 55,119 hectares within 29 mining concessions registered under DDGM.

Geological regional and detailed studies, geochemical and geophysical surveying have been the basis for an intensive drilling program within three main exploration targets (Aguila, Alta Gracia and Margaritas) in addition to some regional investigations which to December 31, 2019 total 1,414 drill holes with 377,385 m drilled.

Underground exploration development has been developed to confirm mineralization indicated by drilling along the Arista and Switchback vein systems, the most promising vein deposits identified in the Aguila project. These workings confirmed the continuity of the Arista and Switchback vein systems and also led to discovery of accessory veins such as the Baja vein and numerous other vein splays or branches with economic mineralization. DDGM has all the corresponding Environmental Impact Studies and permits to continue operating in accordance with Mexican Laws and Regulations.

23.2 Conclusions

DDGM has identified a significant precious metals and base metals epithermal deposit in southern México within an old mining district that had not been explored by modern methods. The primary exploration target area, Arista, is located along a significant mineralized trend with potential extension of about 55 km in which DDGM has identified at least 15 exploration targets.

A significant exploration budget for 2020 has been allocated by DDGM to continue drilling and investigating other targets where high grade precious metals concentrations have been located.

24 RECOMMENDATIONS

Exploration in 2019 followed-up on prospective targets that were generated from previous exploration programs while generating additional targets. Field mapping, geochemical sampling and geophysical surveys have all been successful in identifying anomalous areas that appear worthy of further work including drilling.

24.1 2019 District Exploration Expenditures

An exploration budget for 2019 was allocated by DDGM to continue drilling and investigating other targets where high grade precious metals concentrations have been located. Table 26.1 and Table 26.2 show actual expenditures for surface and underground exploration at the Oaxaca Mining Unit during 2019. The program was managed by DDGM's exploration and mining geology staff with support as needed from Oaxaca Mining Unit operations.

The 2019 district exploration work program included 2,327 meters of surface diamond drilling requiring an expenditure of US$ 1.88 Million and 11,795 meters of underground diamond drilling with expenditures totaling US$ 1.90 Million. The program took place from January through December 2019, utilizing one electric-hydraulic rig for both surface and underground drilling, at an average rate of about 1,200 meters per month.

The budget accounted for costs associated with the drilling contractors, assays, personnel, field expenses, road and drill site preparation, and surface use agreements. The surface exploration budget also included property holding costs, mainly annual tax payments to the Mexican federal government. Capital was provided for exploration equipment. Other costs included mobilization, hourly charges, survey instrument rental, drilling mud, assays, core boxes, labor, miscellaneous tools and supplies and provision for database support. The targets were chosen for their immediate accessibility and favorable chances to prove additional reserves.

The 2019 exploration program covered testing of several readily accessible targets from the surface and underground. Diamond drilling at the Oaxaca Mining Unit was conducted under two general modes of operation: one by the surface exploration staff (surface exploration drilling and geological and geochemical studies) and the other by the mine exploration staff (production and underground exploration drilling). Production drilling was predominantly concerned with definition and extension of the known mineralized zones in order to guide development and mining. Exploration drilling was conducted farther from the active mining area with the goal of expanding the reserve base. Drilling results from both diamond and production programs were used in the reserve estimates presented in this report.

Table 26.1 2019 Surface Exploration Expenditures for the Oaxaca Mining Unit

Description	US$
Aguila/Arista	
Salaries	568,957
Other Administrative Contractor Services	20,840
Laboratory Assays	17,707
Maintenance Vehicles	4,565
Maintenance Machinery & Equipment	175
Transportation Other Freight	6,249
Computer Equipment (non-cap)	371
Software & Licenses (non-cap)	26,538
Professional Fees - Others	29,762
Insurance - Vehicles	2,035
Transportation	126
Consumables	834
Gasoline	12,455
Diesel	1,713
Security Equipment	2,798
Replacement Parts	3,478
Light Equipment Tires	2,545
Tools	200
Hardware, Paint & Others	17,853
Office Supplies	4,049
Education & Training	5,203
Land Rights	688,934
Allocation of Power Costs	6,181
Maintenance - Others	306
Legal Fees	5,038
Lodging	62
Electrical Materials	104
Validation Rights	553
Customs Fees	391
Credits - non-deductible	- 481
Charges - non-deductible	481
Total - El Aguila	**1,430,020**
El Rey	
Land Rights	39,995
Total - El Rey	**39,995**
Alta Gracia	
Contractors - Drilling	271,535
Laboratory Assays	72,951
Transportation Other Freight	8,541
Security Equipment	161
Explosives	5,474
Drilling Steels	282
Anchoring	1,387
Mining Concession Rights	266
Mine Services	5,027
Mine Labor Costs	12,195
Allocation of Power Costs	2,591
Mine Maintenance Equipment	5,523
Total - Alta Gracia	**385,934**
Prospects	
Easement Permits	11,474
Total - Prospects	**11,474**
Los Trenes	
Easement Permits	10,386
Laboratory Assays	340
Total - Los Trenes	**10,726**
Grand Total	**1,878,148**

Table 26.2 2019 Underground Exploration Expenditures for the Oaxaca Mining Unit

Description	US$
Arista	
Contractors - Drilling	518,017
Laboratory Assays	36,663
Explosives	7,372
Drilling Steels	1,362
Anchoring	20,074
Mine Services	19,147
Mine Labor Costs	12,773
Allocation of Power Costs	24,655
Mine Maintenance Equipment	27,406
Electrical Materials	20,592
Total - Arista	**688,061**
Switchback	
Contractors - Drilling	72,736
Laboratory Assays	7,505
Explosives	4,032
Drilling Steels	2,422
Anchoring	28,743
Mine Services	4,084
Mine Labor Costs	3,044
Allocation of Power Costs	3,458
Mine Maintenance Equipment	7,191
Gasoline	130
Total - Switchback	**133,346**
Northeast Zone	
Contractors - Drilling	907,865
Laboratory Assays	111,113
Anchoring	982
Allocation of Power Costs	6,742
Drilling Steels	8
Total – Northeast Zone	**1,026,711**
Southwest Zone	
Contractors - Drilling	37,426
Laboratory Assays	10,566
Total – Southwest Zone	**47,992**
Grand Total	**1,896,110**

24.2 Exploration Programs

In January 2019, surface drilling continued on targets within DDGM's concessions at the Oaxaca Mining Unit. The focus of the exploration program was to expand the mineralization of the mine outside of the footprint of current mine operations. The program shall continue into 2020.

Work on exploration targets also included detailed mapping and geochemical sampling, including soil geochemistry, to better define drill targets.

24.2.1 Sampling Methods and Sample Quality

The Oaxaca Mining Unit maintains the highest of industry standards, including well defined and applied QA/QC controls to determine the quality of the mineralization. DDGM plans to continue with the high-level investigations currently taking place at the Oaxaca Mining Unit.

The drill holes are generally oriented to intersect the veins at as large an angle as possible. Drill holes are typically drilled from the hanging wall, perpendicular to, and passing through the target structure into the footwall. The drilling is designed to avoid intercepts with angles less than about 35° to the target, and most are between 45° and 90°. Surface drill holes are typically HQ to NQ in size.

Drill hole spacing is variable, ranging from 20 m to greater than 50 m for underground drilling. Surface drilling programs are designed for approximately 50 m spacing.

On the drill site, the drill set-up is surveyed for azimuth, inclination and collar coordinates, with the drilling subject to daily scrutiny and coordination by DDGM's geologists. Drill holes are surveyed using a Reflex multi-shot down-hole survey instrument normally at 50 m intervals from the bottom of the hole back up to the collar. The survey data obtained from the drill holes are transferred to the databases and corrected for local magnetic declination. Information for each drill hole is stored in a Microsoft SQL Server database.

The full drill core boxes are collected daily and brought to the core storage building where the core is laid out, measured, logged for geotechnical and geological data, and marked for sampling.

When assay results are received from the laboratory, they are merged to the Microsoft SQL Server database for interpretation using various software applications. The starting and ending point of each vein and/or vein/vein breccia intercept is determined from a combination of geology notes in the logs and assay results. The center point of the intercept interval length, and gold and silver assay values are plotted on vertical longitudinal projections of each vein. These are used to guide further drilling, and to interpret potentially mineralized ore shoots.

24.2.2 Aguila Project Area

The exploration program at the Aguila Project during 2019 continued to focus on expanding known, and discovery of new mineralization on the Arista and Switchback vein systems at the Arista underground mine. Exploration and development of these vein systems remain the highest exploration priority. Through 2019, a total of 969 core holes (both surface and underground) equaling 298,219 meters and 166 reverse circulation holes equaling 14,367 meters for a total of 1,135 holes totaling 312,586 meters have been completed on the Aguila Project.

Most of the exploration work focused on an area which covers the corridor from the Arista mine, to the Aguila open pit, and the areas that are adjacent and between the two. The main objective was to find extensions to the Arista deposit and other parallel subsidiary veins that lie to the north-west and south-east of the mine.

Our exploration activities during 2019 mainly focused on underground exploration drilling at the Arista and Switchback vein systems in the Arista Mine. The Switchback drilling program continued to target further expansion and delineation of the multiple high-grade parallel veins for reserve definition, expansion and mine plan optimization. The Switchback vein system extends for over one km and remains open on strike and vertical extent.

Underground drilling during 2019 also continued to expand the ore zones in the Arista mine, mainly on the Baja, Santiago and Splay 31 veins of the Arista vein system currently in production, and two new veins, Sadie and Sasha, discovered in the Switchback vein system. Thirty-four underground diamond drill holes totaling 11,795 meters were completed at the Aguila project during 2019. Surface geologic mapping and rock chip sampling was also conducted in the vicinity of the Arista mine, the Aguila open pit and other prospects of the Aguila project.

In 2019, a total of US$ 1,430,020 was spent for exploration at Aguila, mainly for land rights (concession holding fees) and salaries.

24.2.3 Rey Property Area

No significant exploration activity was conducted on the Rey Project since 2012. In 2019, DDGM conducted the acceptable minimum amount of work required to maintain the claims.

Concession holding costs for the Rey Project totaled US$ 39,995 during 2019.

24.2.4 Alta Gracia Property Area

Alta Gracia experienced small-scale artisanal mining in the past but with only limited historical exploration. Previous surface sampling and geologic mapping at Alta Gracia has identified several structural targets containing gold and silver mineralization, including three high-grade polymetallic veins that outcrop on the surface near some historic workings. To-date, 179 exploratory core holes for a total of 38,227 meters has been completed at Alta Gracia. Initial drill results were encouraging and warrant continued drilling to test other targets generated from surface sampling and the deeper zones of veins encountered to date.

The 2019 Alta Gracia surface drill campaign focused primarily on the Independencia vein. The goal of this drill campaign was to test the extensions of the high-grade ore shoot previously identified on the Independencia vein. In 2019, 18 step-out and in-fill diamond drill holes were completed totaling 2,327 meters at Alta Gracia. Surface and underground geological mapping and sampling along with detailed topographic surveying also continued in the historic mining areas at Alta Gracia, mainly at the Aguacatillo prospect. A surface geochemical soil sampling program was also carried out to the west, along the projected extension of the Independencia vein. The new information was used for estimation of reserves and mineralized material and to guide future follow-up drilling programs. To date, over 49 veins have been identified and modelled at the Alta Gracia Project at or near its Mirador Mine.

A total of US$ 385,934 was spent for exploration at Alta Gracia in 2019, mainly for contract diamond drilling and laboratory assays on samples collected from drill holes and historic underground workings.

24.2.5 Other Areas

In 2019, a limited amount of surface mapping and sampling was conducted in other areas, mainly the Trenes prospect on the Margaritas property. Rock chip channel sampling of historic workings and expansion of the soil and rock geochemical program was carried out on the Trenes mineralized zone. This included identification of significant historic small-scale mine workings called "Chileños" at Trenes.

A total of US$ 22,200 was spent on other areas in 2019.

24.3 2020 District Exploration

DDGM's 2019 exploration program was successful warranting a similar district exploration budget of for 2020. A budget of US$ 4,165,000 has been proposed which will focus primarily deposit expansion on the Arista mine's Switchback and Alta Gracia vein systems. The primary long-term goal of this program is to expand known mineralization and discover new areas.

The exploration program shall focus on exploring the highest priority areas in order to prepare them for an updated Mineral Resource and Reserve report at year-end 2020. Oaxaca Mining Unit exploration priority targets for 2020 are listed in Table 26.3.

Exploration expenditures may vary from those listed below depending on variable including, but not limited to; metal prices, expenditures and available cash flows.

Table 26.3 Oaxaca Mining Unit Exploration Priority Targets – 2020

Description	US $
Surface Exploration	
Total - Surface El Aguila	1,744,500
Total - Surface El Rey	44,000
Total - Surface Altagracia	247,500
Total - Prospects	12,000
Total - Rio Grande	5,000
Total - Los Trenes	12,000
Summary - Surface Exploration	**2,065,000**
Surface Meter	3,000
Cost per Meter	688
Underground Exploration	
Total - Underground Arista	-
Total - Underground Switchback	-
Total - Zona NE	1,452,500
Total - Zona SE	647,500
Summary - Underground Exploration	**2,100,000**
Underground Meter	12,000
Cost per Meter	175.0
Total Exploration Cost	**4,165,000**

24.3.1 Surface Exploration Program

The 2020 surface exploration program mainly includes 3,000 meters in ten (10) surface drill holes at Aguila/Arista and Alta Gracia with a budget of US$ 2,065,000 (Table 26.4). This budget also includes administration, mainly exploration staff salaries, and concession holding costs.

Table 26.4 2020 Surface Exploration Budget for the Oaxaca Mining Unit

Description	US $
Aguila/Arista	
Contractors - Drilling	195,000
Salaries	573,000
Other Administrative Contractor Services	21,600
Laboratory Assays	21,000
Maintenance Machinery & Equipment	9,400
Transportation Other Freight	22,800
Computer Equipment (non-cap)	2,300
Software & Licenses (non-cap)	30,950
Professional Fees - Others	24,000
Insurance - Vehicles	2,400
Transportation	600
Consumables	600
Gasoline	14,400
Diesel	3,000
Security Equipment	3,600
Replacement Parts	7,250
Light Equipment Tires	1,500
Tools	300
Hardware, Paint & Others	24,000
Office Supplies	2,100
Education & Training	7,200
Land Rights	758,000
Easement Permits	1,500
Miscellaneous Expenses	300
Allocation of Power Costs	9,600
Legal Fees	6,600
Validation Rights	900
Customs Fees	600
Total - Aguila/Arista	**1,744,500**
Surface El Rey	
Land Rights	44,000
Total - El Rey	**44,000**
Surface Alta Gracia	
Contractors - Drilling	195,000
Laboratory Assays	36,000
Transportation Other Freight	15,000
Hardware, Paint & Others	1,500
Total - Alta Gracia	**247,500**
Prospects	
Easement Permits	12,000
Total - Prospects	**12,000**
Rio Grande	
Environmental Studies	2,000
Easement Permits	3,000
Total - Rio Grande	**5,000**
Los Trenes	
Easement Permits	12,000
Total - Los Trenes	**12,000**
Surface Exploration Total	**2,065,000**

24.3.2 Underground Mine Exploration Program

The main objective of the Arista underground mine exploration program is to increase reserves on known veins and discover new vein structures. A total of 12,000 meters in 25 holes is planned for 2019 with a budget of US$ 2,100,000 (Table 26.5). The drilling program will be conducted from existing underground workings in the Arista mine including new drilling stations to be constructed for drilling the Northeast and Southeast zone targets of the Switchback vein system.

Table 26.5 2020 Underground Exploration Budget for the Arista Mine at the Aguila Project

Description	US $
Arista	
Arista Total	-
Switchback	
Switchback Total	-
Northeast Zone	
Contractors - Drilling	1,203,500
Laboratory Assays	116,200
Explosives	8,300
Anchoring	29,050
Mine Services	16,600
Mine Labor Costs	12,450
Allocation of Power Costs	24,900
Mine Maintenance Equipment	24,900
Electrical Materials	16,600
Northeast Zone Total	**1,452,500**
Southeast Zone	
Contractors - Drilling	536,500
Laboratory Assays	51,800
Explosives	3,700
Anchoring	12,950
Mine Services	7,400
Mine Labor Costs	5,550
Allocation of Power Costs	11,100
Mine Maintenance Equipment	11,100
Electrical Materials	7,400
Southeast Zone Total	**647,500**
Underground Exploration Total	**2,100,000**

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26 GLOSSARY

26.1 Definition of Terms

The following terms used in this report shall have the following meanings:

Andesite:	An extrusive igneous, volcanic rock, of intermediate composition, with aphanitic to porphyritic texture characteristic of subduction zones (e.g. western margin of South America).
Doré:	Unrefined gold and silver bars usually containing more than 90% precious metal.
Epithermal:	Used to describe gold deposits found on or just below the surface close to vents or volcanoes, formed at low temperature and pressure.
Gram:	A metric unit of weight and mass, equal to 1/1000th of a kilogram. One gram equals .035 ounces. One ounce equals 31.1035 grams.
Hectare:	Another metric unit of measurement, for surface area. One hectare equals 1/200th of a square kilometer, 10,000 square meters, or 2.47 acres. A hectare is approximately the size of a soccer field.
Kilometer:	Another metric unit of measurement, for distance. The prefix “kilo” means 1000, so one kilometer equals 1,000 meters, one kilometer equals 3,280.84 feet, which equals 1,093.6 yards, which equals 0.6214 miles.
Manto:	A mineralogy term meaning a layer or stratum.
Mineralized Material:	Minerals or any mass of host rock in which minerals of potential commercial value occur.
Net Smelter Return Royalty:	A share of the net revenue generated from the sale of metal produced by the mine. Usage-based payments made by one party (the “licensee”) to another (the “licensor”) for the right to ongoing use of an asset, sometimes called an intellectual property. Typically agreed upon as a percentage of gross or net revenues derived from the use of an asset or a fixed price per unit sold.
Ore or Ore Deposit:	Rocks that contain economic amounts of minerals in them and that are expected to be profitably mined.
Portal:	The entrance to the mine at the surface.
Silicified:	Is combined or impregnated with silicon or silica.
Skarn:	A coarse-grained metamorphic rock formed by the contact metamorphism of carbonate rocks. Skarn typically contains garnet, pyroxene, epidote, and wollastonite combined or impregnated with silicon or silica. Many skarns also include ore minerals. Several productive deposits of copper or other base metals have been found in and adjacent to skarns.
Tonne:	A metric ton. One tonne equals 1000 kg. It is approximately equal to 2,204.62 pounds.
Volcanic domes:	These are mounds that form when viscous lava is erupted slowly and piles up over the vent, rather than moving away as lava flow. The sides of most domes are very steep and typically are mantled with unstable rock debris formed during or shortly after dome emplacement. Most domes are composed of silica-rich lava which may contain enough pressurized gas to cause explosions during dome extrusion.
Volcanogenic	Of volcanic origin
Vulcan^{TM}:	Maptek-Vulcan world’s premier 3D mining software; validate and transform raw mining data into dynamic 3D models, accurate mine designs and operating plans

Conversion Table

Metric System	Imperial System

1 meter (m)	3.2808 feet (ft)
1 kilometer (km)	0.6214 mile (mi)
1 square kilometer (km^2)	0.3861 square mile (mi^2)
1 square kilometer (km^2)	100 hectares (has)
1 hectare (ha)	2.471 acres (ac)
1 gram (g)	0.0322 troy ounce (oz)
1 kilogram (kg)	2.2046 pounds (lbs)
1 tonne (t)	1.1023 tons (t)
1 gram/tonne (g/t)	0.0292 ounce/ton (oz/t)

Unless stated otherwise, all measurements reported here are metric and currencies are expressed in constant U.S. dollars.

26.2 Abbreviations

Other common abbreviations encountered in the text of this report are listed below:

˚C	degree Centigrade
AA	atomic absorption
Ag	silver
Au	gold
AuEq	Precious Metal Gold Equivalent (unless otherwise noted)
cm	centimeter
Cu	copper
dmt	dry metric tonne
ft or (‘)	feet = 0.3048 meter
g/T	gram/tonne
g	1 g = 0.001 kg
GPS	Global Positioning System
ha	hectare(s)
in or (“)	inches, 2.42 cm
kg	kg, or kg/T (kilogram per tonne)
km	skarn
Ma	million years old
masl	meters above sea level
mean	arithmetic average of group of samples
mm	millimeter
Ounce	Troy ounce, or 31.1035 g
oz.	ounce
Pb	lead
ppm	parts per million = g/T
RQD	Rock Quality Designation
QA/QC	Quality Assurance/Quality Control
QP	Qualified Person
Standard	Standard Reference Material
T, tonne	metric tonne = 1.1023 short tonnes
Tpd, or tpd	tonnes per day
wt	weight
Zn	zinc

APPENDIX A: CERTIFICATES OF QUALIFIED PERSONS

FRED H. BROWN, P.GEO.

I, Fred H. Brown, do hereby certify that:

1. I have worked as a geologist continuously since my graduation from university in 1987.
2. This certificate applies to the technical report titled "Report on estimates of reserves and mineralized material at the Oaxaca Mining Unit, Oaxaca Mexico" (the "Technical Report"), with an effective date of December 31, 2018.
3. I graduated with a Bachelor of Science degree in Geology from New Mexico State University in 1987. I obtained a Graduate Diploma in Engineering (Mining) in 1997 from the University of the Witwatersrand and a Master of Science in Engineering (Civil) from the University of the Witwatersrand in 2005. I am registered with the Association of Professional Engineers and Geoscientists of British Columbia as a Professional Geoscientist (#171602) and the Society for Mining, Metallurgy and Exploration as a Registered Member (#4152172).
4. I am currently employed as Senior Resource Geologist with GRCN, a Nevada corporation, a wholly-owned subsidiary of GRC, a Colorado corporation.
5. I certify that by reason of my education, affiliation with a professional organization and past relevant work experience, I fulfill the requirements to be a "qualified person".

My relevant experience for the purpose of the Technical Report is:

Underground Mine Geologist, Freegold Mine, AAC 1987-1995
Mineral Resource Manager, Vaal Reefs Mine, Anglogold.. 1995-1997
Resident Geologist, Venetia Mine, De Beers 1997-2000
Chief Geologist, De Beers Consolidated Mines 2000-2004
Consulting Geologist 2004-2017
Senior Resource Geologist, GRCN …………………………………………………………………………………… 2017-Present

6. I am a co-author of this technical report and specifically responsible for Section 14 and parts of Sections 9, 10, 11, 12 and 15.

Effective Date: December 31, 2019

{SIGNED}
[Fred H. Brown]

____
Fred H. Brown, P.Geo

J. RICARDO GARCIA, P.ENG.

I, Ricardo Garcia, do hereby certify that:

1. I have worked as an engineer continuously since my graduation from university in 2002.
2. This certificate applies to the technical report titled “Report on estimates of reserves and mineralized material at the Oaxaca Mining Unit, Oaxaca Mexico” (the “Technical Report”), with an effective date of December 31, 2018.
3. I graduated in 2002 with a Bachelor of Engineering degree in Industrial Engineering from Universidad de Lima, Lima Peru. I obtained in 2006 a Master of Engineering degree in Mining Engineering and Mineral Economics from McGill University, Montreal Canada. I am registered with the Association of Professional Engineers and Geoscientists of British Columbia as a Professional Engineer (#152677).
4. I am currently employed as Corporate Chief Engineer with Gold Resource Corporation, a Colorado corporation.
5. I certify that by reason of my education, affiliation with a professional organization and past relevant work experience, I fulfill the requirements to be a “qualified person”.

My relevant experience for the purpose of the Technical Report is:

Business Analyst, Hochschild Mining 2002-2003
Education Assistant, Engineering and Economics, McGill University.. 2004-2006
Mining Engineer, Teck Resources 2006-2012
Senior Mining Engineer, RPM Global... 2012-2016
Corporate Chief Engineer, Gold Resource Corp.. Jan 2016-Present

6. I am a co-author of this technical report and specifically responsible for Section 15 and part of Section 16.

Effective Date: December 31, 2019

{SIGNED}
[J. Ricardo Garcia]

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J. Ricardo Garcia, P.Eng

BARRY D. DEVLIN, P.GEO.

I, Barry D. Devlin, do hereby certify that:

1. I have worked as a geologist continuously since my graduation from university in 1981.
2. This certificate applies to the technical report titled “Report on estimates of reserves and mineralized material at the Oaxaca Mining Unit, Oaxaca Mexico” (the “Technical Report”), with an effective date of December 31, 2018.
3. I graduated with a Bachelor of Science degree with honors in Geology in 1981 and a Masters in Geology, 1987, from the University of British Columbia, Vancouver Canada. I am registered with the Association of Professional Engineers and Geoscientists of British Columbia as a Professional Geoscientist (#109658).
4. I am currently employed as Vice President, Exploration with Gold Resource Corporation, a Colorado corporation.
5. I certify that by reason of my education, affiliation with a professional organization and past relevant work experience, I fulfill the requirements to be a “qualified person”.

My relevant experience for the purpose of the Technical Report is:

Project Geologist, U.S. Borax & Chemical Corp...1981-1984
Project Geologist, Derry, Michener, Booth & Wahl/Dolly Varden Minerals……………………………….1985-1986
Chief Mine Geologist, Total Erickson Resources Ltd...1987
Senior Project Geologist, Welcome North Mines Ltd...1988-1989
Chief Mine Geologist/District Geologist/Exploration Manager, Hecla Mining Company…….1990-April 2007
Vice President, Exploration, Endeavour Silver Corp.……………………………………………………May 2007-Dec2012
Vice President, Exploration, Gold Resource Corp……………………………………………………….…Jan2013-Present

6. I am lead and co-author of this technical report and specifically responsible for Sections 1, 2, 3,4, 5, 6, 13, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27 and 28 and parts of Sections 7, 8, 9, 10, 11, 12, 14, 15 and 16.

Effective Date: December 31, 2019

{SIGNED}
[Barry D. Devlin]

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Barry D. Devlin, P.Geo

JOY L. LESTER, SME-RM

I, Joy L. Lester, do hereby certify that:

1. I have worked as a geologist continuously since my graduation from university in 1996.

2. This certificate applies to the technical report titled "Report on estimates of reserves and mineralized material at the Oaxaca Mining Unit, Oaxaca Mexico" (the "Technical Report"), with an effective date of December 31, 2018.

3. I graduated with a Bachelor of Science degree in Geology from the South Dakota School of Mines and Technology in 1996. I obtained a Master of Science degree in Geology from the South Dakota School of Mines and Technology in 2004.

4. I am registered with the Society for Mining, Metallurgy and Exploration; Registered Member #4119722RM.

5. I am currently employed as Chief Geologist with Gold Resource Corporation, a Colorado corporation.

6. I certify that by reason of my education, affiliation with a professional organization, and past relevant work experience, I fulfill the requirements to be a "qualified person".

My relevant experience for the purpose of the Technical Report is:

Exploration Geologist, Gold Reserve Inc. Km 88, Venezuela, Exploration site..........................1996-1999
Exploration Geologist, Hecla Venezuela, La Camorra Mine………………………………………………….2002-2004
Exploration Geologist, Patagonia Gold S.A, Lomada Leiva and Cap Oeste Mines....................2004-2008
Senior Exploration Geologist/Project Manager Landore Resources Ltd., Ontario, Canada…….2008-2012
Consultant Geologist, Exploration, GRC and El Aguila Mine, Oaxaca Mex……………………………..2013-2014
Chief Geologist, GRC, GRCN and El Aguila Mine Oaxaca Mexico……………………………………..….2014-Present

6. I am a co-author of this technical report and specifically responsible for Sections 7, 8 and 9 and part of Section 10.

Effective Date: December 31, 2019

{SIGNED}
[Joy L. Lester]

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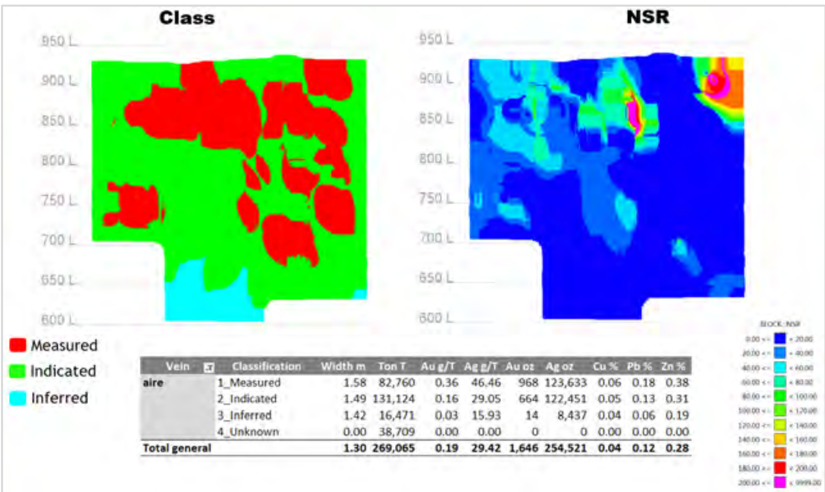
Joy Lester, P.Geo

APPENDIX B: LONGITUDINAL SECTIONS

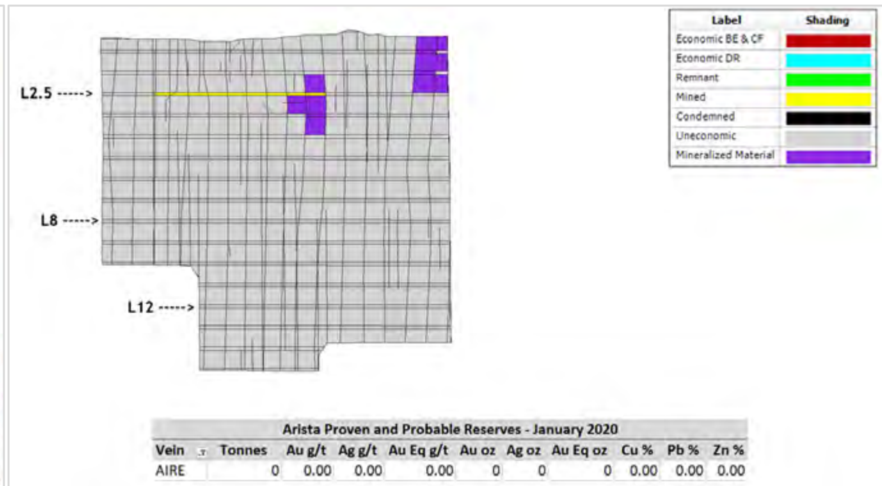
Longitudinal sections of wire-framed solids of ***Proven and Probable Reserves*** and ***Measured, Indicated and Inferred Mineral Resources*** for major veins and splays modeled for the Arista and Mirador Underground Mines and the Alta Gracia project. Corresponding Net Smelter Return (NSR) grade contours are shown for Arista and Switchback veins in the Arista Underground Mine and Gold Equivalent (AuEq) grade contours for the Alta Gracia and Margaritas projects (Views are variable, looking orthogonal to local trend of veins; grid in meters).

ARISTA MINE – ARISTA VEINS

AIRE

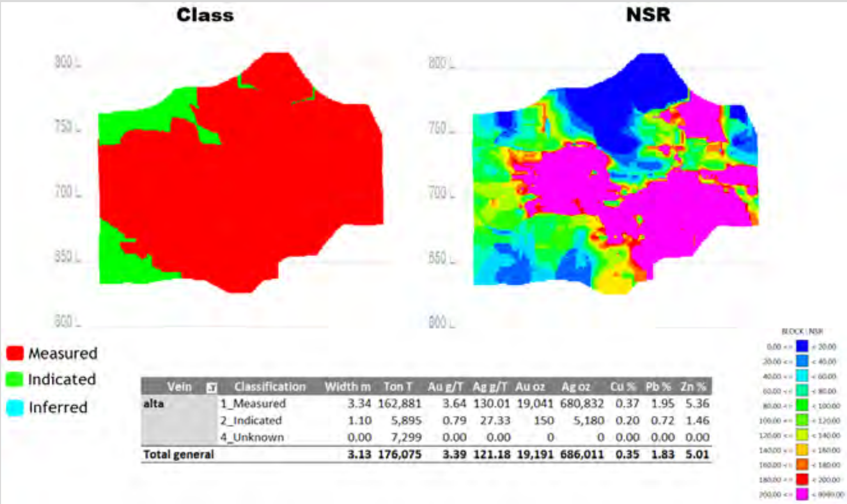


Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
aire	1_Measured	1.58	82,760	0.36	46.46	968	123,633	0.06	0.18	0.38
	2_Indicated	1.49	131,124	0.16	29.05	664	122,451	0.05	0.13	0.31
	3_Inferred	1.42	16,471	0.03	15.93	14	8,437	0.04	0.06	0.19
	4_Unknown	0.00	38,709	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**1.30**	**269,065**	**0.19**	**29.42**	**1,646**	**254,521**	**0.04**	**0.12**	**0.28**

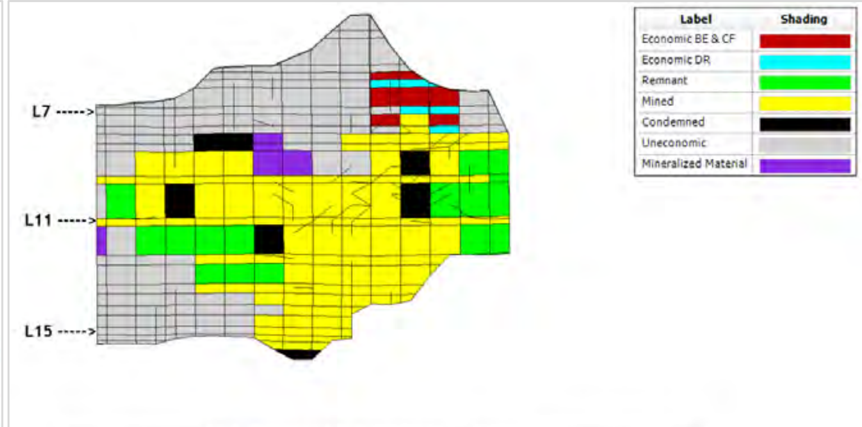


Arista Proven and Probable Reserves - January 2020										
Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
AIRE	0	0.00	0.00	0.00	0	0	0	0.00	0.00	0.00

ALTA



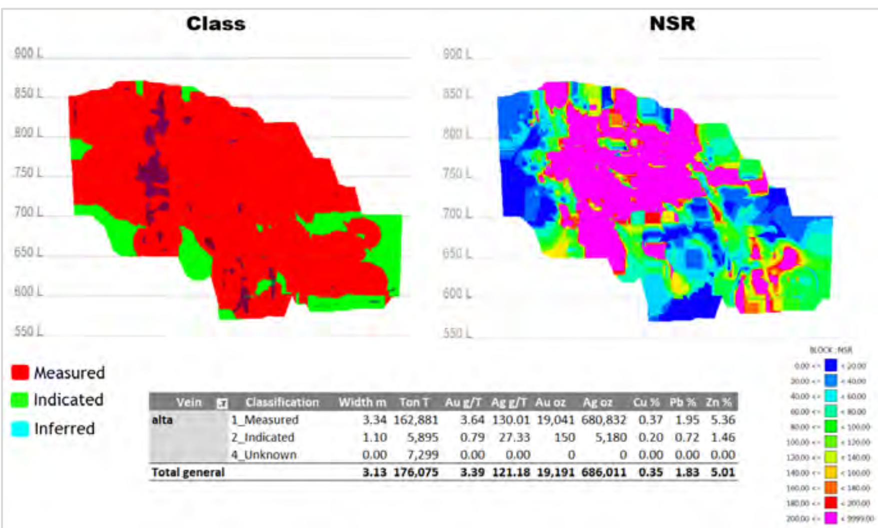
Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
alta	1_Measured	3.34	162,881	3.64	130.01	19,041	680,832	0.37	1.95	5.36
	2_Indicated	1.10	5,895	0.79	27.33	150	5,180	0.20	0.72	1.46
	4_Unknown	0.00	7,299	0.00	0.00	0	0	0.00	0.00	0.00
Total general		3.13	176,075	3.39	121.18	19,191	686,011	0.35	1.83	5.01



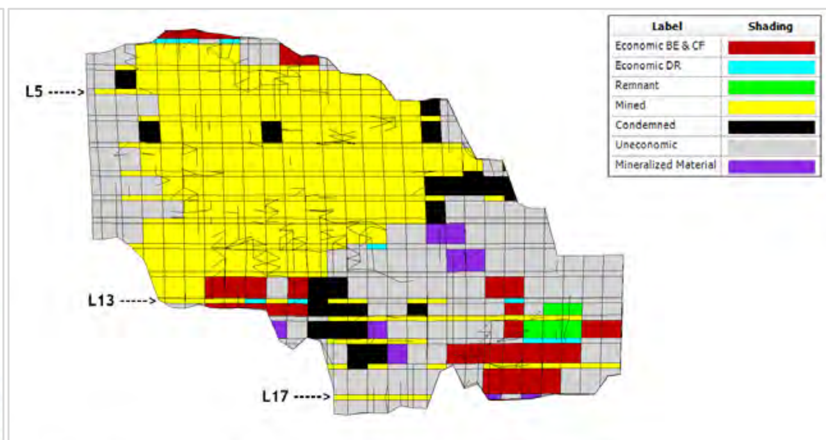
Arista Proven and Probable Reserves - January 2020

Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
ALTA	32,393	2.27	107.80	3.62	2,366	112,268	3,769	0.36	1.62	4.16

ARISTA



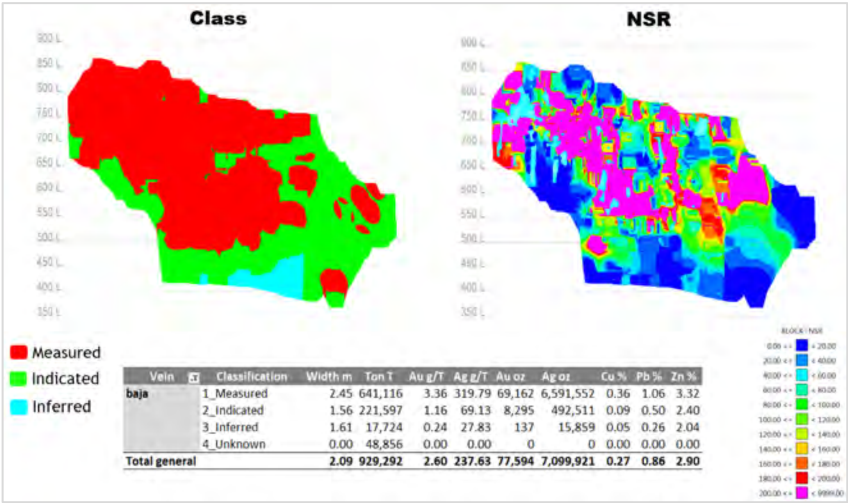
Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
alta	1_Measured	3.34	162,881	3.64	130.01	19,041	680,832	0.37	1.95	5.36
	2_Indicated	1.10	5,895	0.79	27.33	150	5,180	0.20	0.72	1.46
	4_Unknown	0.00	7,299	0.00	0.00	0	0	0.00	0.00	0.00
Total general		3.13	176,075	3.39	121.18	19,191	686,011	0.35	1.83	5.01



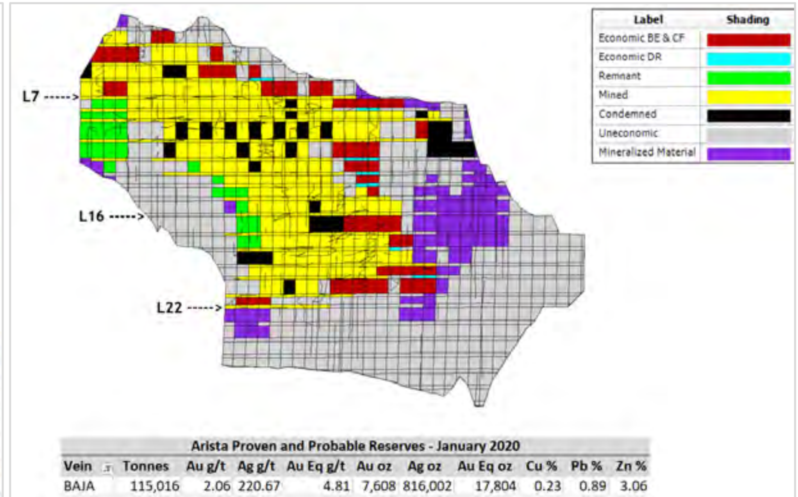
Arista Proven and Probable Reserves - January 2020

Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
ARISTA	41,371	1.65	125.94	3.22	2,195	167,509	4,288	0.26	1.10	3.51

BAJA

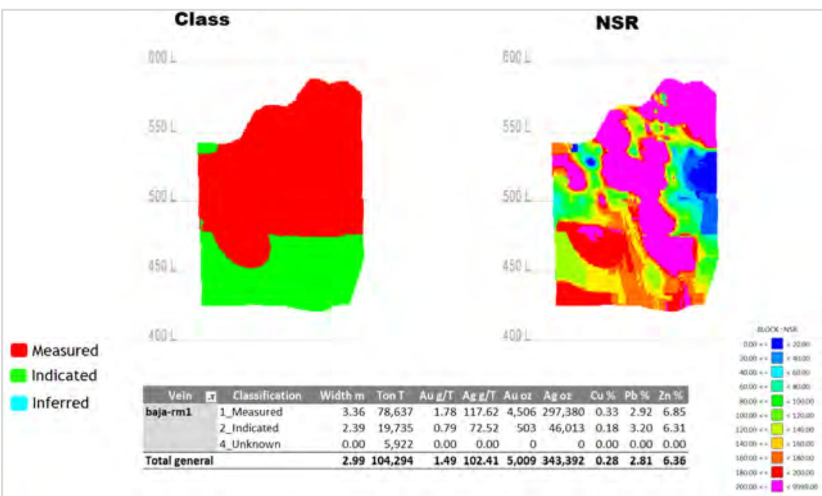


Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
baja	1_Measured	2.45	641,116	3.36	319.79	69,162	6,591,552	0.36	1.06	3.32
	2_Indicated	1.56	221,597	1.16	69.13	8,295	492,511	0.09	0.50	2.40
	3_Inferred	1.61	17,724	0.24	27.83	137	15,859	0.05	0.26	2.04
	4_Unknown	0.00	48,856	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**2.09**	**929,292**	**2.60**	**237.63**	**77,594**	**7,099,921**	**0.27**	**0.86**	**2.90**

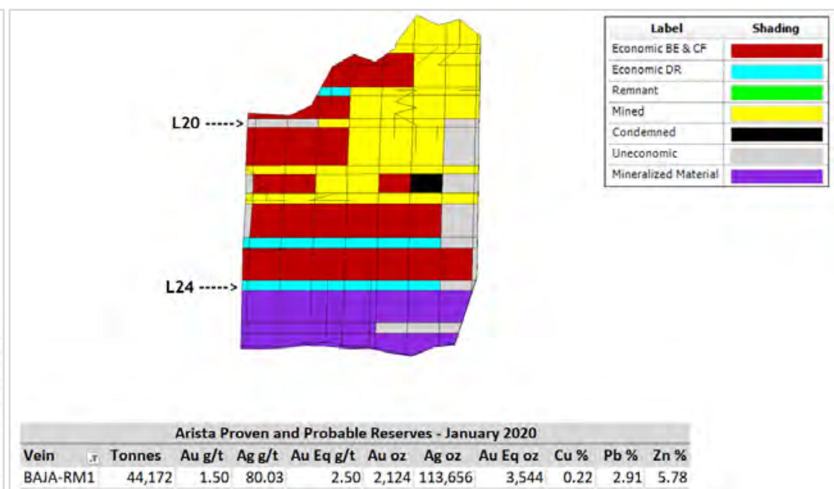


Arista Proven and Probable Reserves - January 2020										
Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
BAJA	115,016	2.06	220.67	4.81	7,608	816,002	17,804	0.23	0.89	3.06

BAJA RM1

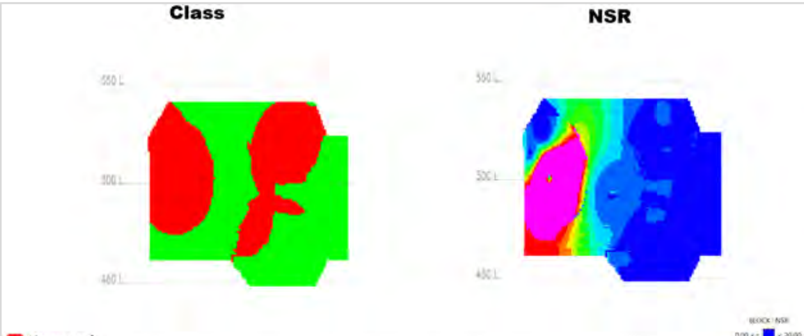


Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
baja-rm1	1_Measured	3.36	78,637	1.78	117.62	4,506	297,380	0.33	2.92	6.85
	2_Indicated	2.39	19,735	0.79	72.52	503	46,013	0.18	3.20	6.31
	4_Unknown	0.00	5,922	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**2.99**	**104,294**	**1.49**	**102.41**	**5,009**	**343,392**	**0.28**	**2.81**	**6.36**

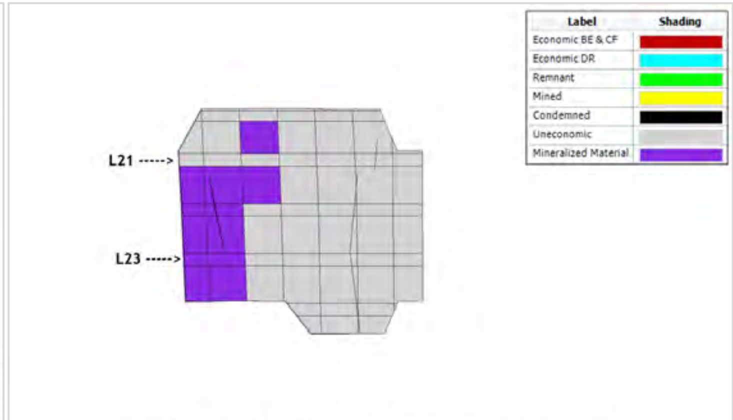


Arista Proven and Probable Reserves - January 2020										
Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
BAJA-RM1	44,172	1.50	80.03	2.50	2,124	113,656	3,544	0.22	2.91	5.78

BERENICE



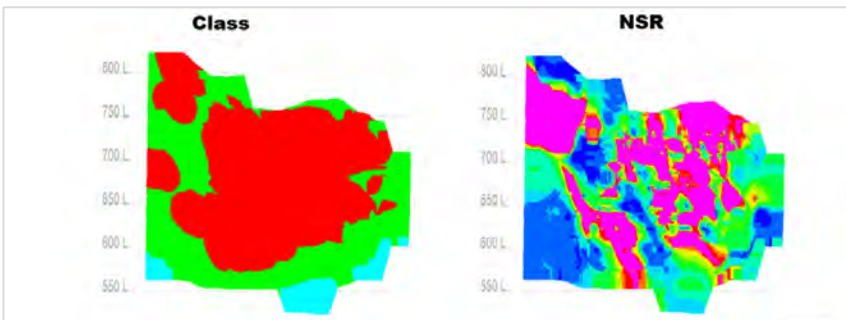
Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
berenice	1_Measured	1.53	14,189	3.23	19.66	1,472	8,970	0.13	0.38	0.90
	2_Indicated	1.48	16,316	1.09	10.30	573	5,403	0.05	0.33	0.93
	4_Unknown	0.00	1,254	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**1.44**	**31,759**	**2.00**	**14.08**	**2,045**	**14,373**	**0.08**	**0.34**	**0.88**



Arista Proven and Probable Reserves - January 2020

Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
BERENICE	0	0.00	0.00	0.00	0	0	0	0.00	0.00	0.00

CANDELARIA

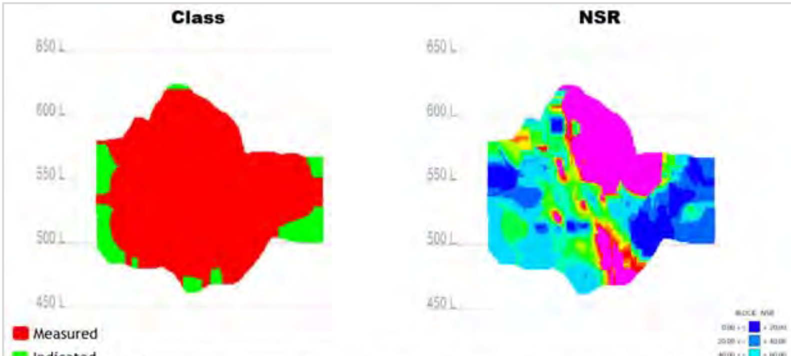


Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
candelaria	1_Measured	2.53	225,689	2.75	313.73	19,936	2,276,435	0.21	0.64	1.28
	2_Indicated	2.15	94,418	1.51	231.05	4,582	701,365	0.14	0.39	0.99
	3_Inferred	2.45	9,688	0.44	30.52	136	9,505	0.07	0.67	2.47
	4_Unknown	0.00	29,454	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**2.22**	**359,249**	**2.13**	**258.64**	**24,654**	**2,987,305**	**0.17**	**0.52**	**1.13**

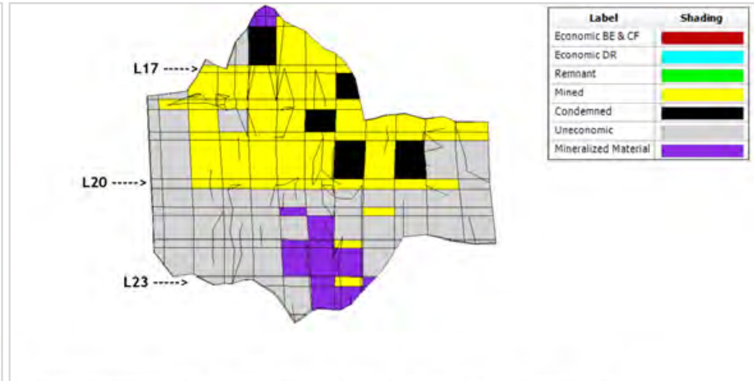
Arista Proven and Probable Reserves - January 2020

Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
CANDELARIA	86,890	3.24	409.35	8.35	9,045	1,143,556	23,334	0.18	0.49	1.04

CHUY 1

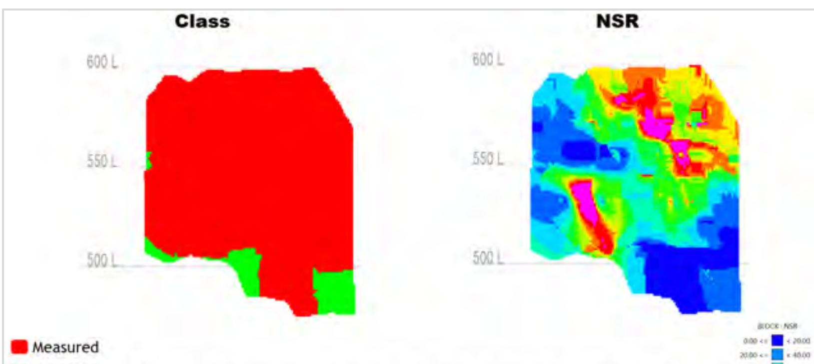


Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
chuy1	1_Measured	3.27	104,492	3.07	179.35	10,319	602,533	0.47	1.75	5.48
	2_Indicated	1.36	2,408	0.97	31.61	75	2,447	0.12	0.54	2.53
	4_Unknown	0.00	4,967	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**3.08**	**111,867**	**2.89**	**168.21**	**10,394**	**604,980**	**0.44**	**1.65**	**5.17**



Arista Proven and Probable Reserves - January 2020										
Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
CHUY1	0	0.00	0.00	0.00	0	0	0	0.00	0.00	0.00

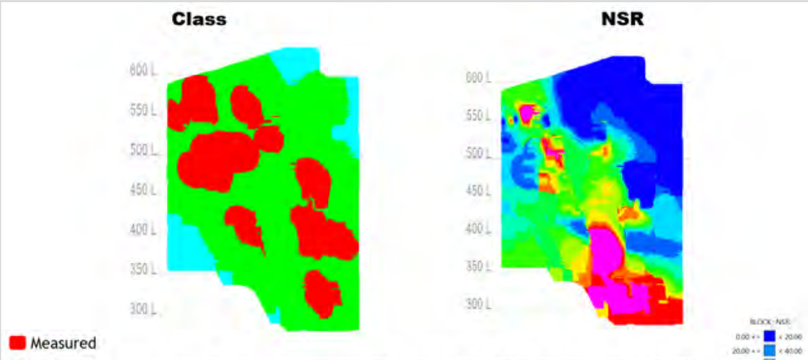
CHUY 2



Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
chuy2	1_Measured	2.27	50,298	0.84	43.34	1,363	70,090	0.10	0.80	4.00
	2_Indicated	1.53	2,084	0.46	9.96	31	667	0.06	0.57	1.64
	4_Unknown	0.00	2,207	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**2.15**	**54,589**	**0.79**	**40.32**	**1,394**	**70,757**	**0.10**	**0.76**	**3.75**

Arista Proven and Probable Reserves - January 2020										
Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
CHUY2	0	0.00	0.00	0.00	0	0	0	0.00	0.00	0.00

ESTE-NORTE

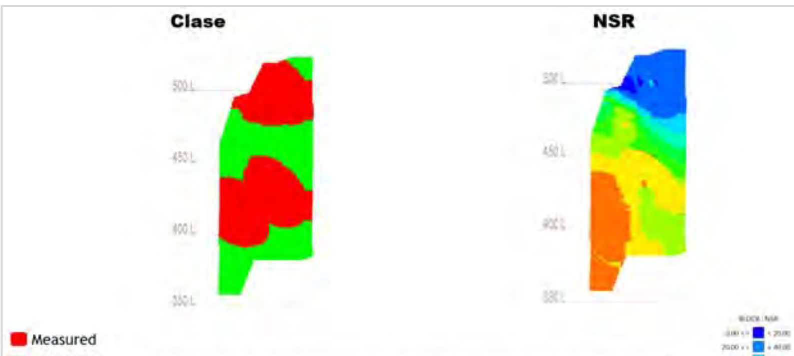


Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
este-norte	1_Measured	1.76	83,037	0.39	44.92	1,029	119,930	0.16	0.83	2.97
	2_Indicated	1.34	117,437	0.18	69.95	674	264,101	0.11	1.03	3.75
	3_Inferred	1.02	9,101	0.14	46.35	42	13,563	0.09	0.42	2.43
	4_Unknown	0.00	11,312	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**1.42**	**220,887**	**0.25**	**55.99**	**1,745**	**397,594**	**0.12**	**0.87**	**3.21**

Arista Proven and Probable Reserves - January 2020

Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
ESTE-NORTE	0	0.00	0.00	0.00	0	0	0	0.00	0.00	0.00

ESTE-NOR-RM1

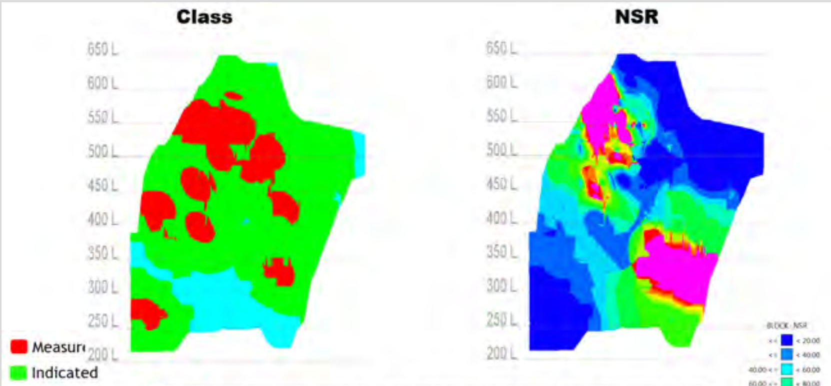


Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
este-nor-rm1	1_Measured	2.08	22,361	0.11	63.32	79	45,522	0.16	1.96	5.33
	2_Indicated	1.73	11,602	0.11	44.77	42	16,698	0.12	1.82	5.52
	4_Unknown	0.00	1,400	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**1.88**	**35,362**	**0.11**	**54.73**	**121**	**62,220**	**0.14**	**1.84**	**5.18**

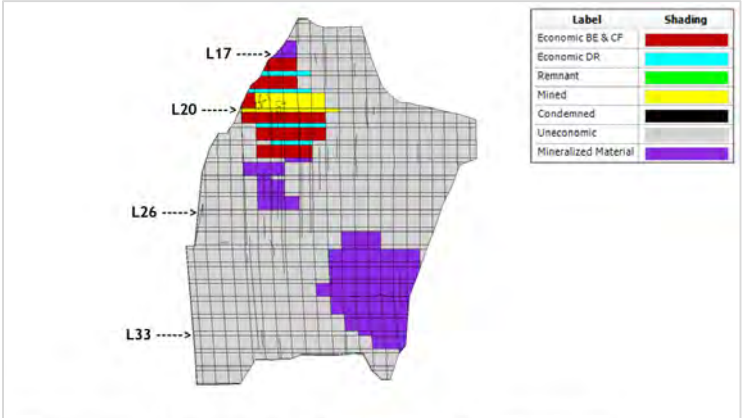
Arista Proven and Probable Reserves - January 2020

Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
ESTE-NOR-RM1	0	0.00	0.00	0.00	0	0	0	0.00	0.00	0.00

ESTE-SUR



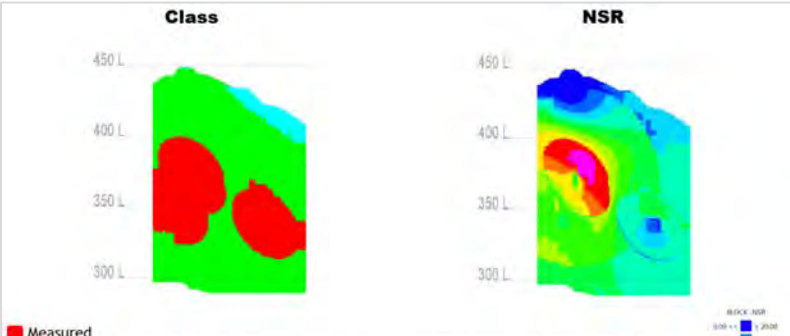
Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
este-sur	1_Measured	1.73	95,616	1.02	167.16	3,147	513,883	0.30	1.13	2.82
	2_Indicated	1.61	244,742	0.21	53.29	1,680	419,346	0.13	0.99	3.00
	3_Inferred	1.67	47,822	0.05	29.42	69	45,231	0.08	0.89	3.02
	4_Unknown	0.00	22,975	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**1.55**	**411,156**	**0.37**	**74.02**	**4,896**	**978,460**	**0.16**	**0.95**	**2.79**



Arista Proven and Probable Reserves - January 2020

Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
ESTE-SUR	30,677	2.17	349.15	6.54	2,143	344,365	6,446	0.53	1.06	1.90

ESTE-SUR-RM1

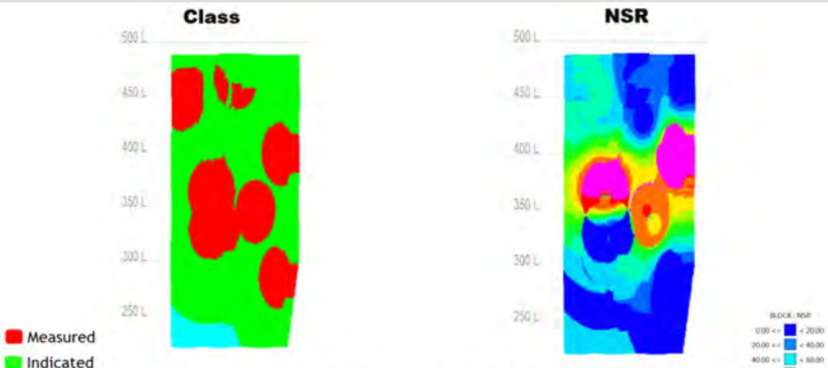


Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
este-sur-rm1	1_Measured	1.49	17,937	1.14	77.58	656	44,738	0.14	1.27	3.25
	2_Indicated	1.47	34,787	0.60	63.68	668	71,218	0.09	0.85	2.37
	3_Inferred	1.47	1,199	0.09	44.21	4	1,705	0.08	0.48	1.71
	4_Unknown	0.00	2,689	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**1.41**	**56,612**	**0.73**	**64.64**	**1,328**	**117,661**	**0.10**	**0.93**	**2.53**

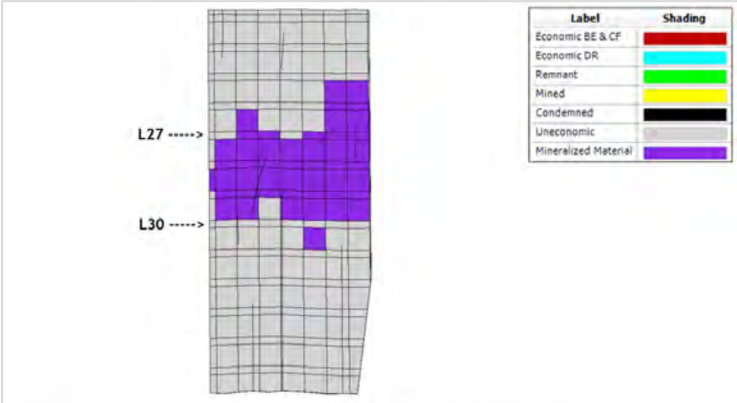
Arista Proven and Probable Reserves - January 2020

Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
ESTE-SUR-RM1	0	0.00	0.00	0.00	0	0	0	0.00	0.00	0.00

GISELA



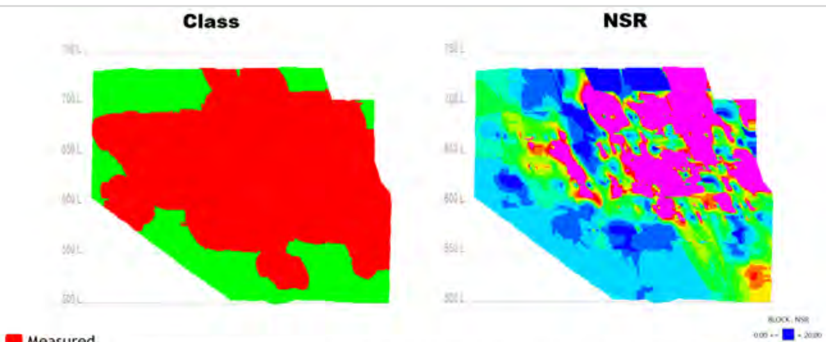
Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
gisela	1_Measured	1.68	42,981	0.05	111.48	70	154,050	0.07	1.79	3.63
	2_Indicated	1.65	72,665	0.04	75.67	101	176,788	0.05	0.71	1.76
	3_Inferred	1.41	4,900	0.03	77.26	4	12,172	0.01	0.46	1.48
	4_Unknown	0.00	7,026	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**1.56**	**127,573**	**0.04**	**83.63**	**175**	**343,011**	**0.06**	**1.02**	**2.28**



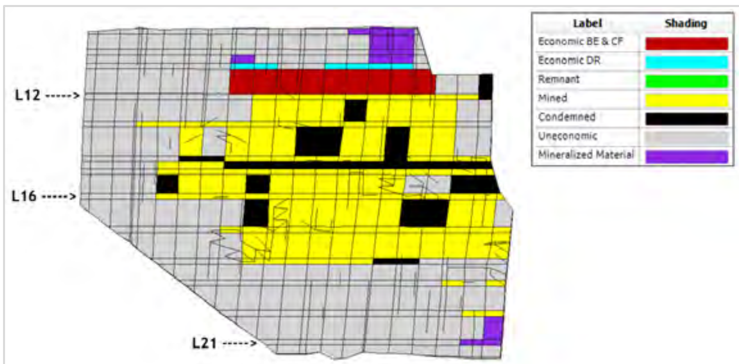
Arista Proven and Probable Reserves - January 2020

Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
GISELA	0	0.00	0.00	0.00	0	0	0	0.00	0.00	0.00

LUZ



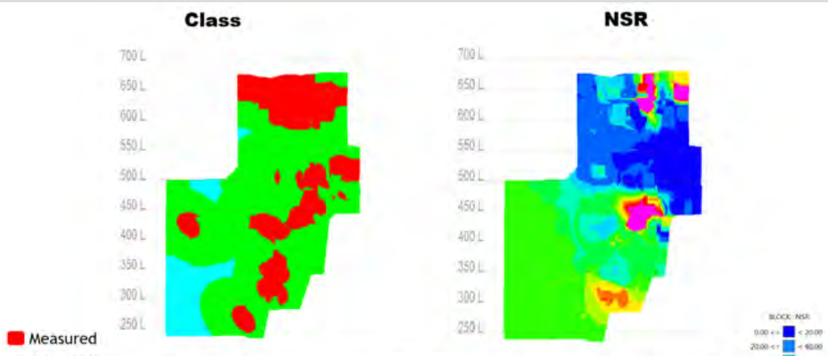
Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
luz	1_Measured	2.16	199,378	2.35	235.93	15,043	1,512,346	0.25	0.57	1.17
	2_Indicated	1.69	54,824	0.96	114.90	1,700	202,525	0.16	0.36	1.04
	4_Unknown	0.00	23,140	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**1.89**	**277,342**	**1.88**	**192.32**	**16,742**	**1,714,871**	**0.21**	**0.48**	**1.05**



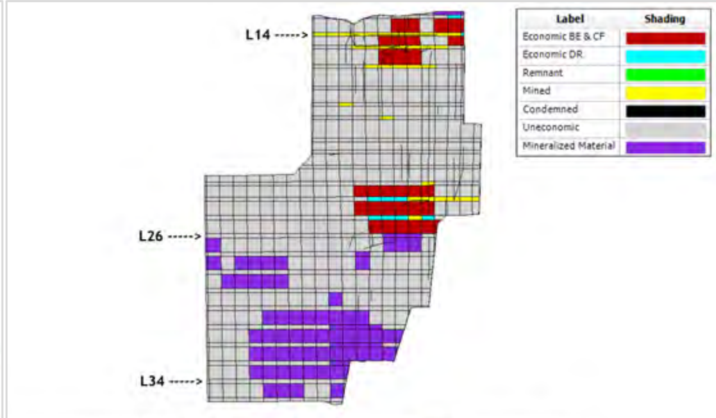
Arista Proven and Probable Reserves - January 2020

Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
LUZ	21,757	2.18	273.78	5.60	1,522	191,508	3,915	0.25	0.37	0.61

MARENA



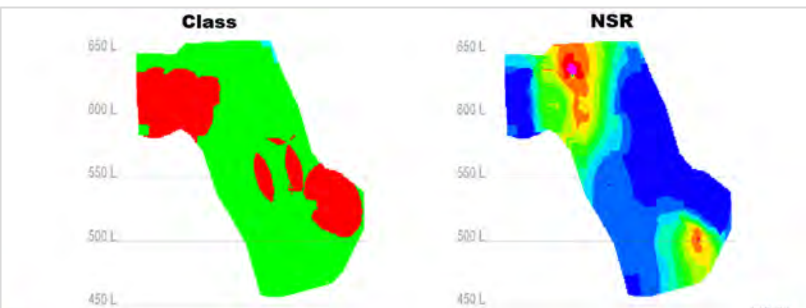
Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
marena	1_Measured	1.91	133,832	0.84	53.65	3,615	230,855	0.15	0.95	3.65
	2_Indicated	1.73	248,952	0.18	38.36	1,456	307,021	0.08	0.87	3.62
	3_Inferred	1.92	44,368	0.05	64.49	65	91,987	0.02	1.16	5.38
	4_Unknown	0.00	14,866	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**1.74**	**442,019**	**0.36**	**44.32**	**5,136**	**629,863**	**0.10**	**0.90**	**3.68**



Arista Proven and Probable Reserves - January 2020

Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
MARENA	35,763	1.70	67.54	2.54	1,949	77,661	2,920	0.29	1.58	4.40

MERCEDES

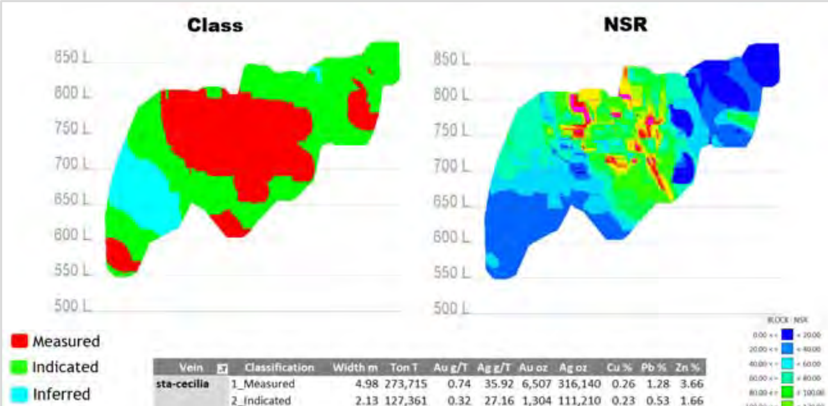


Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
mercedes	1_Measured	1.81	23,558	0.38	63.00	288	47,716	0.07	0.46	0.87
	2_Indicated	1.65	51,766	0.61	89.32	1,021	148,653	0.09	0.35	0.63
	3_Inferred	1.68	179	0.30	63.86	2	367	0.07	0.33	0.65
	4_Unknown	0.00	6,012	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**1.57**	**81,515**	**0.50**	**75.07**	**1,311**	**196,736**	**0.08**	**0.35**	**0.65**

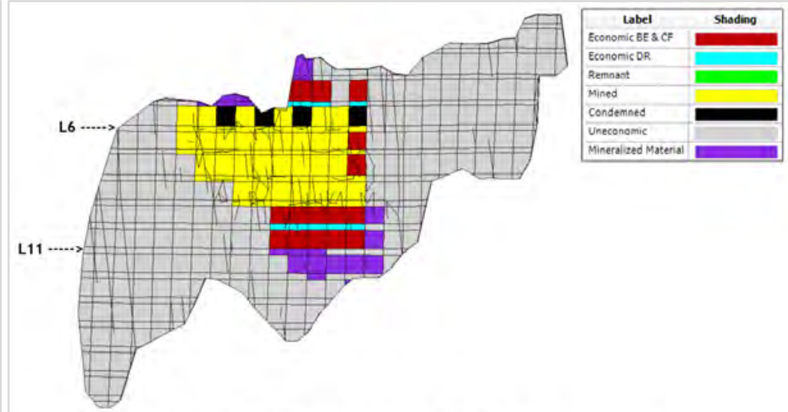
Arista Proven and Probable Reserves - January 2020

Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
MERCEDES	0	0.00	0.00	0.00	0	0	0	0.00	0.00	0.00

SANTA CECILIA

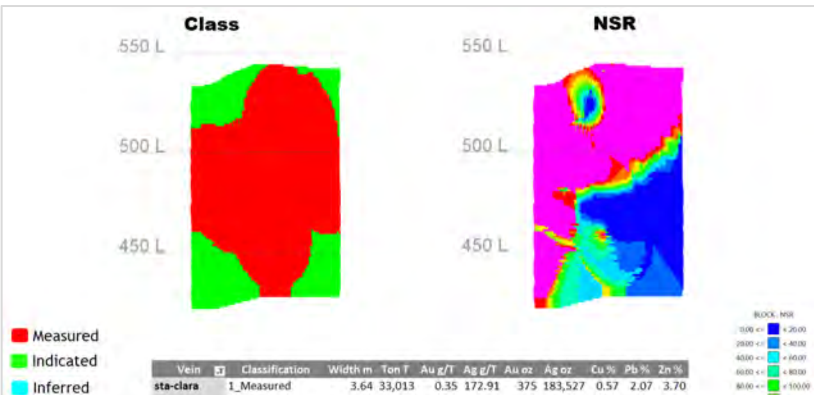


Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
sta-cecilia	1_Measured	4.98	273,715	0.74	35.92	6,507	316,140	0.26	1.28	3.66
	2_Indicated	2.13	127,361	0.32	27.16	1,304	111,210	0.23	0.53	1.66
	3_Inferred	2.67	39,087	0.27	20.20	341	25,390	0.29	0.41	1.09
	4_Unknown	0.00	21,921	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**3.76**	**462,084**	**0.55**	**30.47**	**8,152**	**452,739**	**0.25**	**0.94**	**2.72**

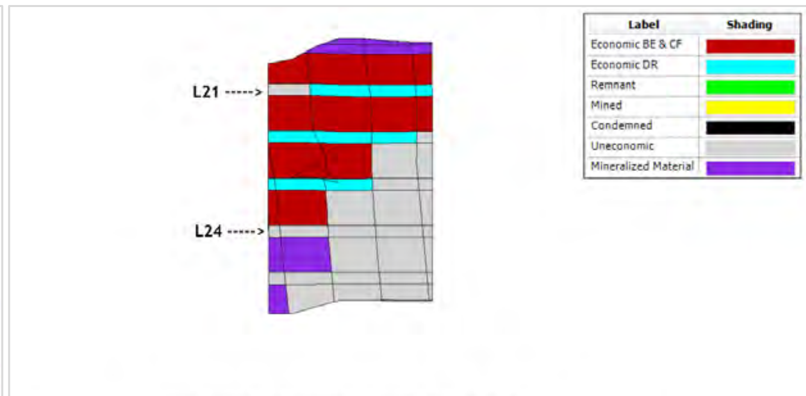


Arista Proven and Probable Reserves - January 2020											
Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
STA-CECILIA	44,640	0.67	50.45	1.30	959	72,406	1,863	0.30	1.49	4.04

SANTA CLARA

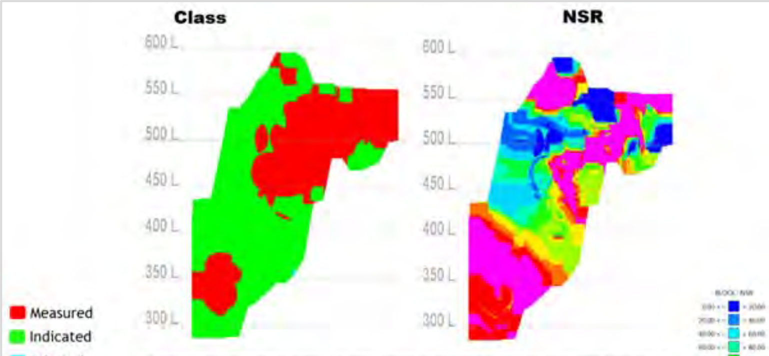


Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
sta-clara	1_Measured	3.64	33,013	0.35	172.91	375	183,527	0.57	2.07	3.70
	2_Indicated	1.50	3,975	0.20	122.79	25	15,691	0.43	1.91	2.76
	4_Unknown	0.00	3,641	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**3.11**	**40,629**	**0.31**	**152.51**	**401**	**199,218**	**0.50**	**1.87**	**3.28**

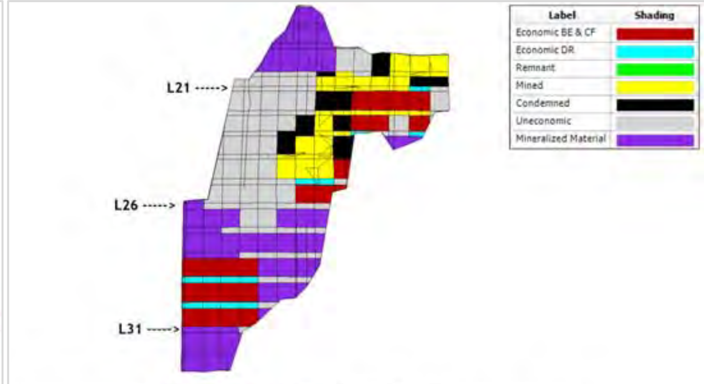


Arista Proven and Probable Reserves - January 2020										
Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
STA-CLARA	22,289	0.45	225.63	3.27	321	161,687	2,341	0.71	2.58	4.66

SANTA HELENA

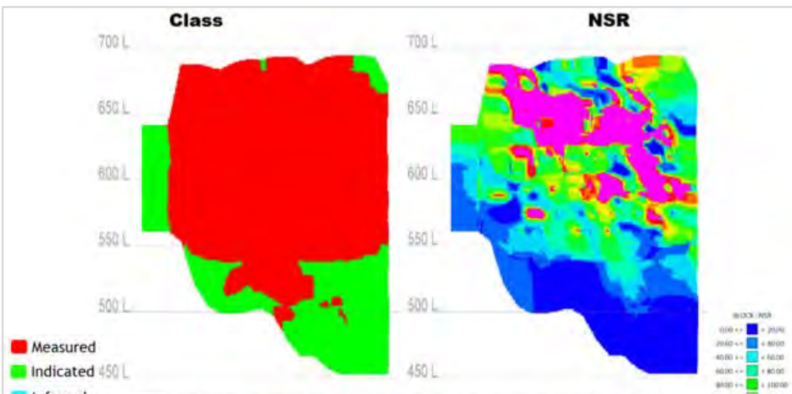


Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
sta-helena	1_Measured	3.05	112,854	1.71	77.64	6,209	281,703	0.35	2.05	6.13
	2_Indicated	1.84	68,888	1.76	53.94	3,897	119,457	0.13	1.60	5.64
	3_Inferred	1.46	79	0.41	48.42	1	123	0.17	1.54	7.15
	4_Unknown	0.00	7,636	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**2.49**	**189,456**	**1.66**	**65.88**	**10,107**	**401,283**	**0.25**	**1.80**	**5.71**

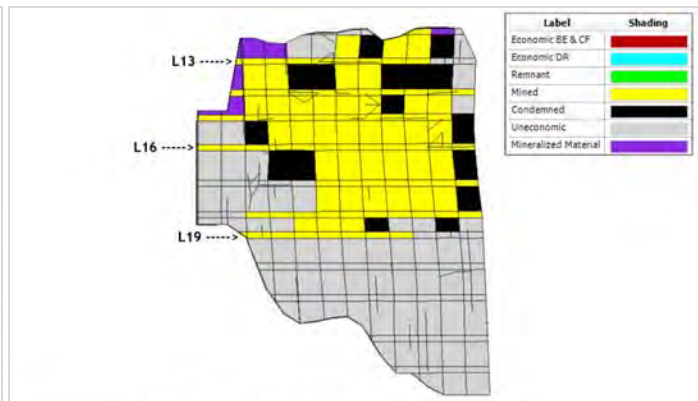


Arista Proven and Probable Reserves - January 2020										
Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
STA-HELENA	42,695	1.13	85.28	2.19	1,549	117,055	3,011	0.28	2.33	7.44

SANTA LUCIA

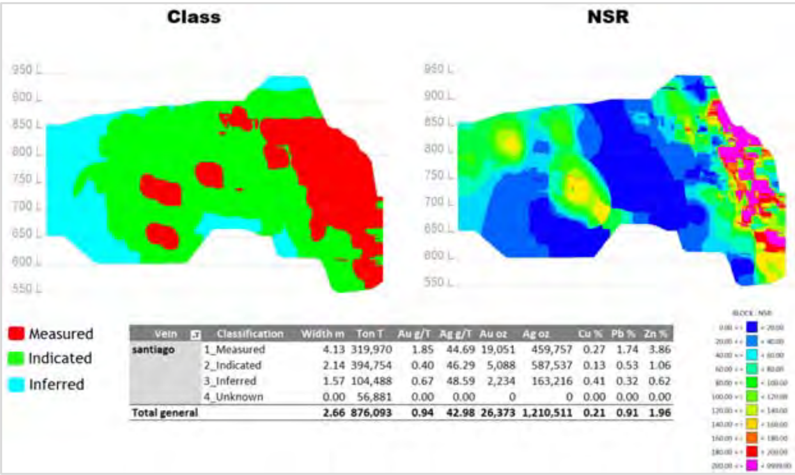


Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
sta-lucia	1_Measured	2.15	130,635	2.85	132.11	11,983	554,865	0.40	0.91	1.98
	2_Indicated	1.29	19,414	0.33	13.28	207	8,289	0.19	0.42	1.08
	4_Unknown	0.00	8,801	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**1.92**	**158,850**	**2.39**	**110.27**	**12,190**	**563,154**	**0.35**	**0.80**	**1.76**

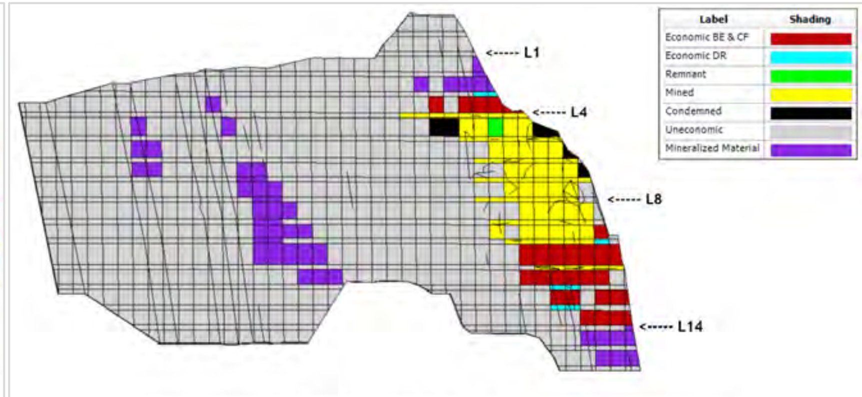


Arista Proven and Probable Reserves - January 2020										
Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
STA-LUCIA	0	0.00	0.00	0.00	0	0	0	0.00	0.00	0.00

SANTIAGO

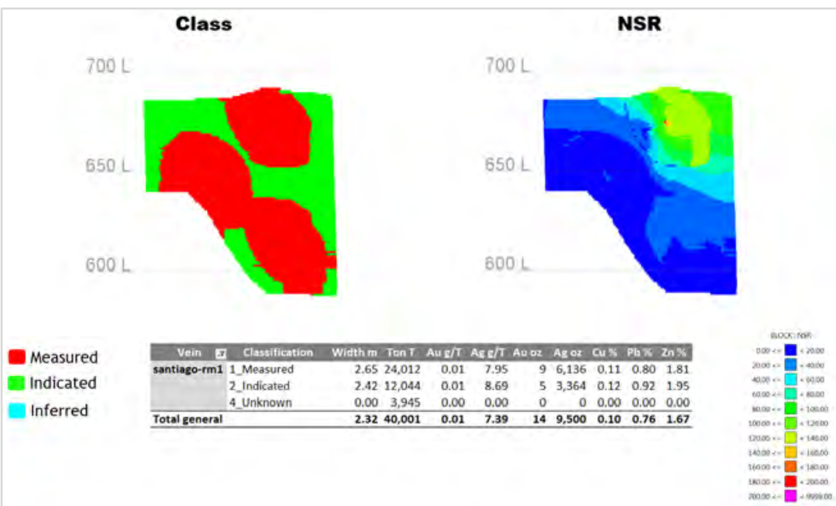


Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
santiago	1_Measured	4.13	319,970	1.85	44.69	19,051	459,757	0.27	1.74	3.86
	2_Indicated	2.14	394,754	0.40	46.29	5,088	587,537	0.13	0.53	1.06
	3_Inferred	1.57	104,488	0.67	48.59	2,234	163,216	0.41	0.32	0.62
	4_Unknown	0.00	56,881	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**2.66**	**876,093**	**0.94**	**42.98**	**26,373**	**1,210,511**	**0.21**	**0.91**	**1.96**



Arista Proven and Probable Reserves - January 2020										
Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
SANTIAGO	61,800	1.40	31.89	1.80	2,783	63,357	3,575	0.28	1.91	4.63

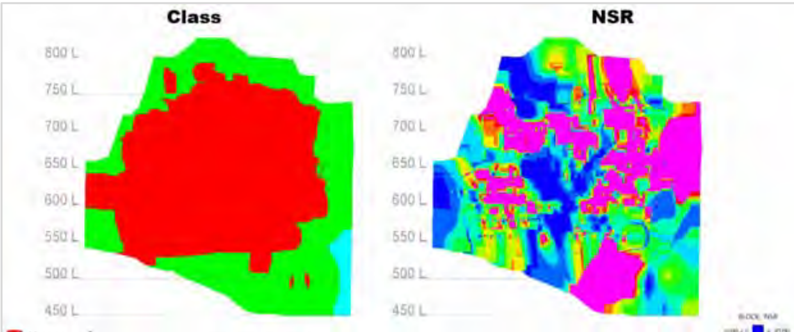
SANTIAGO-RM1



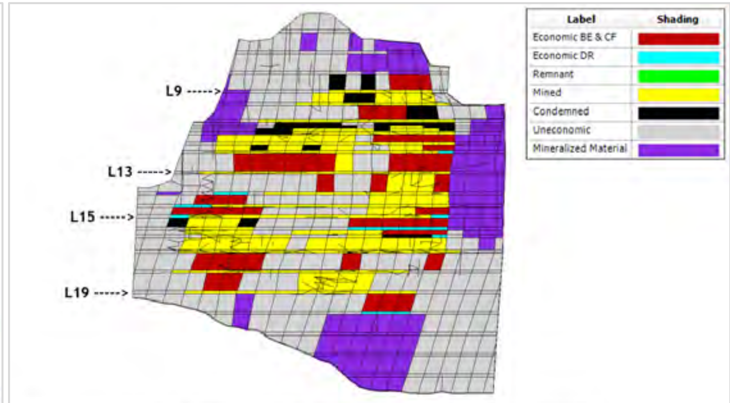
Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
santiago-rm1	1_Measured	2.65	24,012	0.01	7.95	9	6,136	0.11	0.80	1.81
	2_Indicated	2.42	12,044	0.01	8.69	5	3,364	0.12	0.92	1.95
	4_Unknown	0.00	3,945	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**2.32**	**40,001**	**0.01**	**7.39**	**14**	**9,500**	**0.10**	**0.76**	**1.67**

Arista Proven and Probable Reserves - January 2020										
Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
SANTIAGO-RM1	0	0.00	0.00	0.00	0	0	0	0.00	0.00	0.00

SPLAY 5

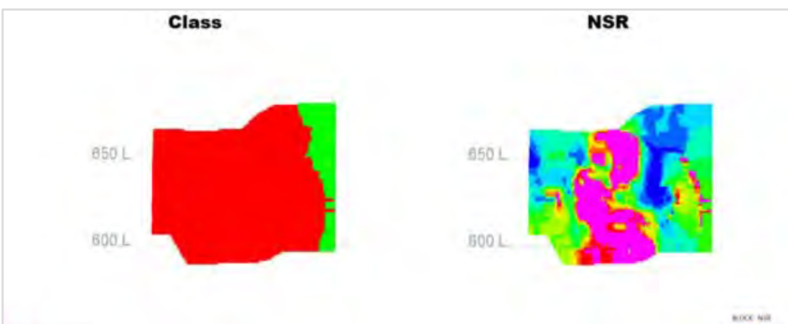


Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
splay05	1_Measured	2.53	327,710	1.97	368.16	20,759	3,878,964	0.17	0.99	1.82
	2_Indicated	1.83	125,519	1.30	248.46	5,254	1,002,674	0.15	1.50	1.79
	3_Inferred	2.07	4,519	0.70	42.03	102	6,107	0.08	1.17	1.89
	4_Unknown	0.00	45,769	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**2.12**	**503,517**	**1.61**	**301.93**	**26,115**	**4,887,745**	**0.15**	**1.03**	**1.65**

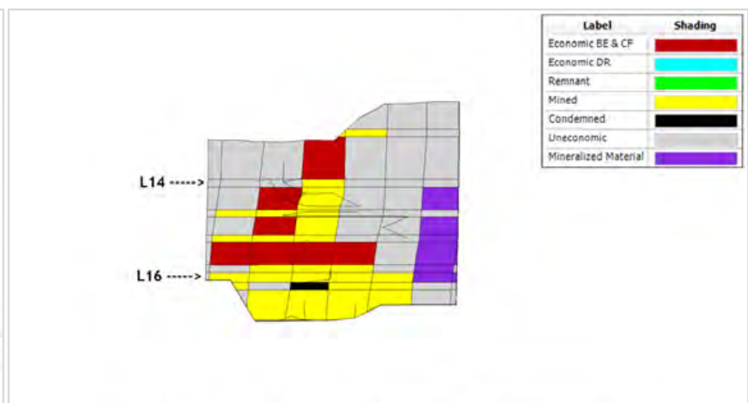


Arista Proven and Probable Reserves - January 2020										
Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
SPLAY05	78,267	1.59	295.24	5.27	3,990	742,910	13,272	0.14	0.74	1.36

SPLAY 5 – RM1

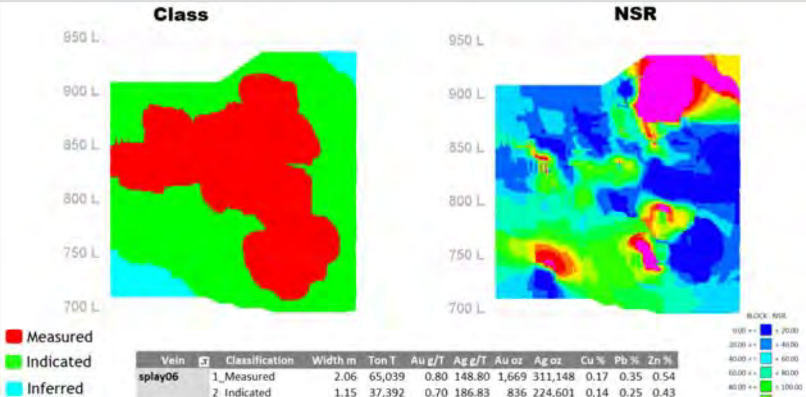


Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
splay05-rm1	1_Measured	2.08	29,432	1.34	203.23	1,266	192,306	0.13	1.07	2.04
	2_Indicated	1.91	2,847	0.43	139.33	40	12,751	0.04	0.14	0.21
	4_Unknown	0.00	2,707	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**1.91**	**34,986**	**1.16**	**182.30**	**1,306**	**205,057**	**0.12**	**0.91**	**1.73**

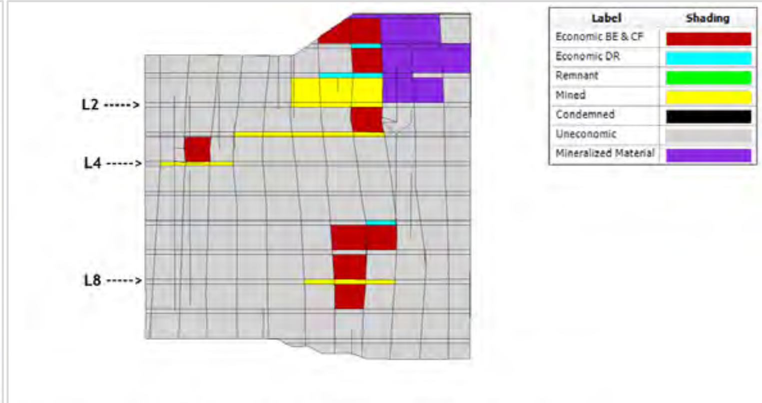


Arista Proven and Probable Reserves - January 2020										
Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
SPLAY05-RM1	5,508	1.92	282.51	5.45	341	50,025	966	0.16	1.12	2.62

SPLAY 6



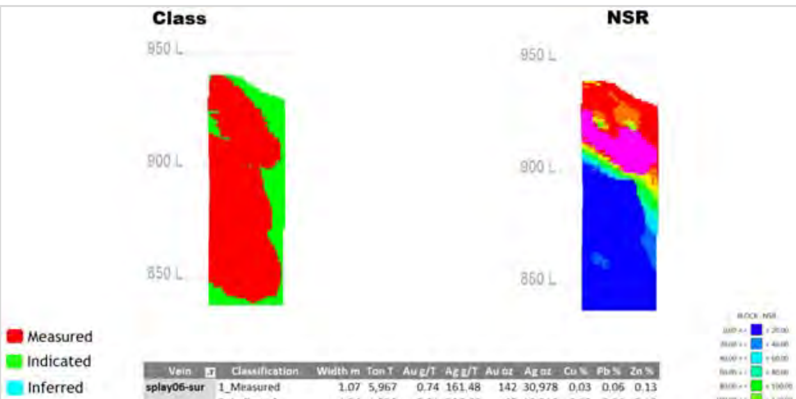
Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
splay06	1_Measured	2.06	65,039	0.80	148.80	1,669	311,148	0.17	0.35	0.54
	2_Indicated	1.15	37,392	0.70	186.83	836	224,601	0.14	0.25	0.43
	3_Inferred	0.96	3,162	0.47	179.61	48	18,261	0.08	0.13	0.23
	4_Unknown	0.00	20,073	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**1.43**	**125,666**	**0.63**	**137.12**	**2,553**	**554,010**	**0.13**	**0.26**	**0.41**



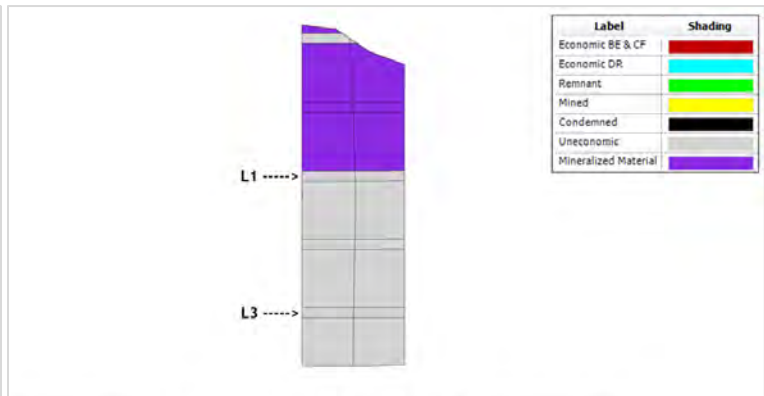
Arista Proven and Probable Reserves - January 2020

Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
SPLAY06	13,843	1.01	261.84	4.28	449	116,538	1,905	0.19	0.34	0.61

SPLAY 6 SUR



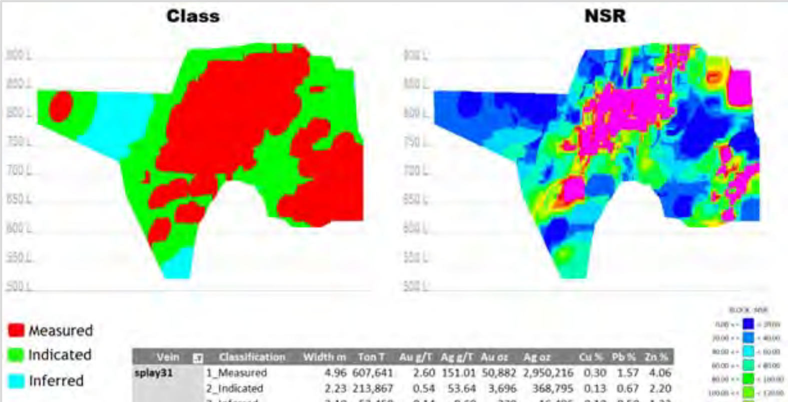
Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
splay06-sur	1_Measured	1.07	5,967	0.74	161.48	142	30,978	0.03	0.06	0.13
	2_Indicated	1.04	1,538	0.91	206.60	45	10,218	0.03	0.06	0.13
	4_Unknown	0.00	593	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**0.99**	**8,098**	**0.72**	**158.23**	**187**	**41,196**	**0.03**	**0.06**	**0.12**



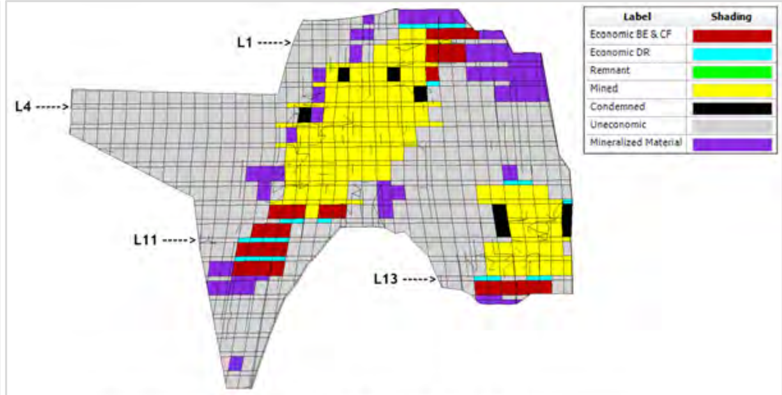
Arista Proven and Probable Reserves - January 2020

Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
SPLAY06-SUR	0	0.00	0.00	0.00	0	0	0	0.00	0.00	0.00

SPLAY 31



Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
splay31	1_Measured	4.96	607,641	2.60	151.01	50,882	2,950,216	0.30	1.57	4.06
	2_Indicated	2.23	213,867	0.54	53.64	3,696	368,795	0.13	0.67	2.20
	3_Inferred	2.10	53,458	0.14	9.60	239	16,496	0.10	0.50	1.22
	4_Unknown	0.00	30,938	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**3.98**	**905,904**	**1.88**	**114.52**	**54,818**	**3,335,507**	**0.24**	**1.24**	**3.32**

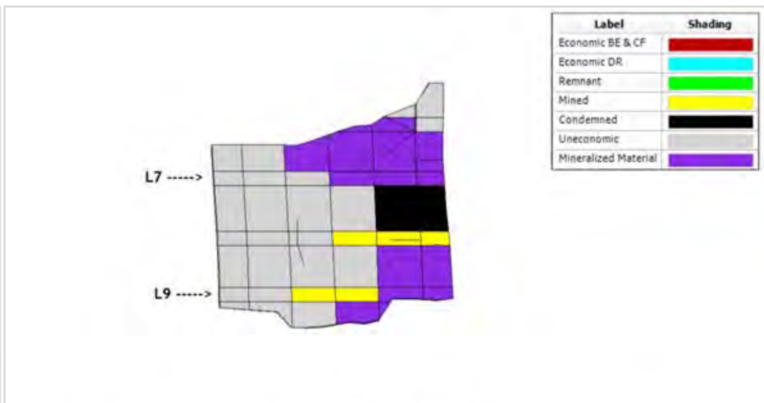


Arista Proven and Probable Reserves - January 2020

Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
SPLAY31	72,567	0.82	102.51	2.10	1,919	239,163	4,908	0.22	1.64	5.24

SPLAY 31 -RM1

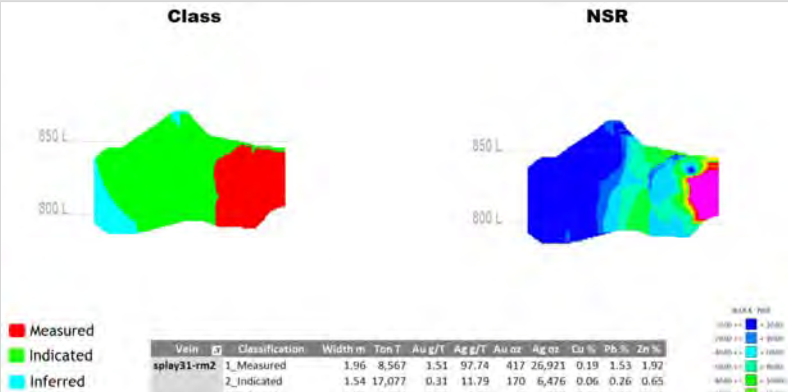
Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
splay31-rm1	1_Measured	2.40	23,876	0.56	50.74	428	38,953	0.30	1.42	6.43
	2_Indicated	1.62	4,868	0.43	35.32	68	5,528	0.19	1.03	4.24
	4_Unknown	0.00	1,609	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**2.14**	**30,353**	**0.51**	**45.58**	**495**	**44,481**	**0.27**	**1.28**	**5.74**



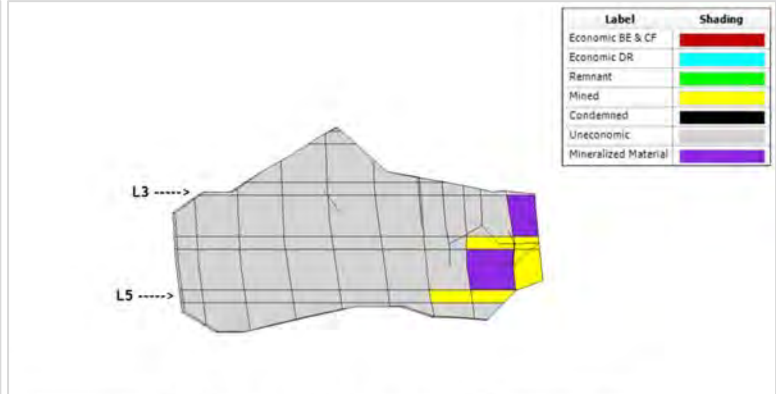
Arista Proven and Probable Reserves - January 2020

Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
SPLAY31-RM1	0	0.00	0.00	0.00	0	0	0	0.00	0.00	0.00

SPLAY 31 -RM2

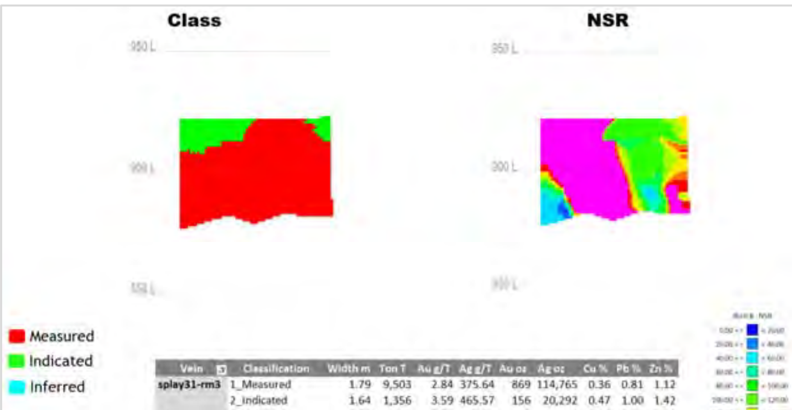


Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
splay31-rm2	1_Measured	1.96	8,567	1.51	97.74	417	26,921	0.19	1.53	1.92
	2_Indicated	1.54	17,077	0.31	11.79	170	6,476	0.06	0.26	0.65
	3_Inferred	1.83	2,454	0.09	4.16	7	328	0.03	0.15	0.44
	4_Unknown	0.00	2,954	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**1.53**	**31,053**	**0.59**	**33.78**	**594**	**33,725**	**0.09**	**0.58**	**0.92**

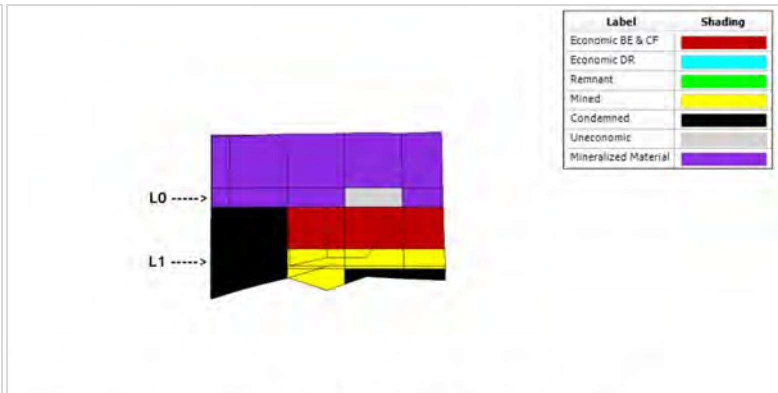


Arista Proven and Probable Reserves - January 2020										
Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
SPLAY31-RM2	0	0.00	0.00	0.00	0	0	0	0.00	0.00	0.00

SPLAY 31 -RM3

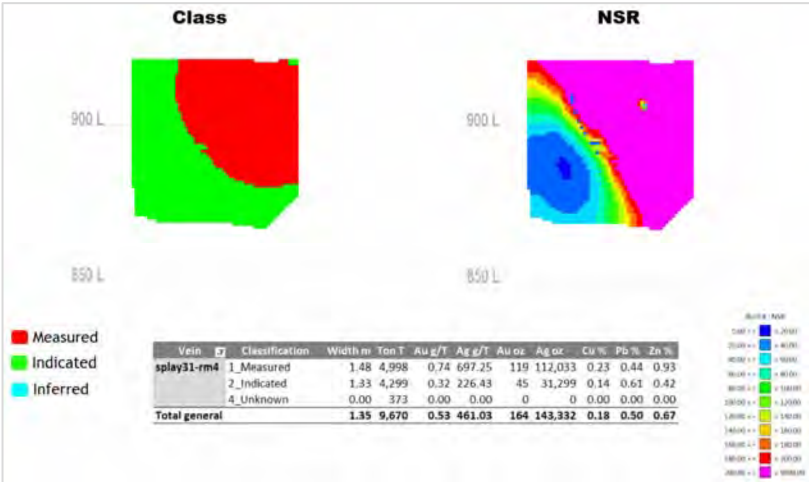


Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
splay31-rm3	1_Measured	1.79	9,503	2.84	375.64	869	114,765	0.36	0.81	1.12
	2_Indicated	1.64	1,356	3.59	465.57	156	20,292	0.47	1.00	1.42
	4_Unknown	0.00	453	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**1.70**	**11,311**	**2.82**	**371.37**	**1,025**	**135,057**	**0.36**	**0.80**	**1.11**

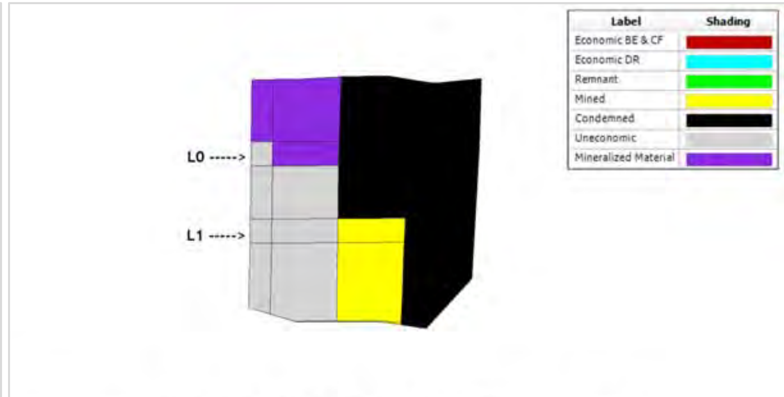


Arista Proven and Probable Reserves - January 2020										
Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
SPLAY31-RM3	2,334	2.50	313.89	6.42	188	23,557	482	0.29	0.66	0.88

SPLAY 31 -RM4

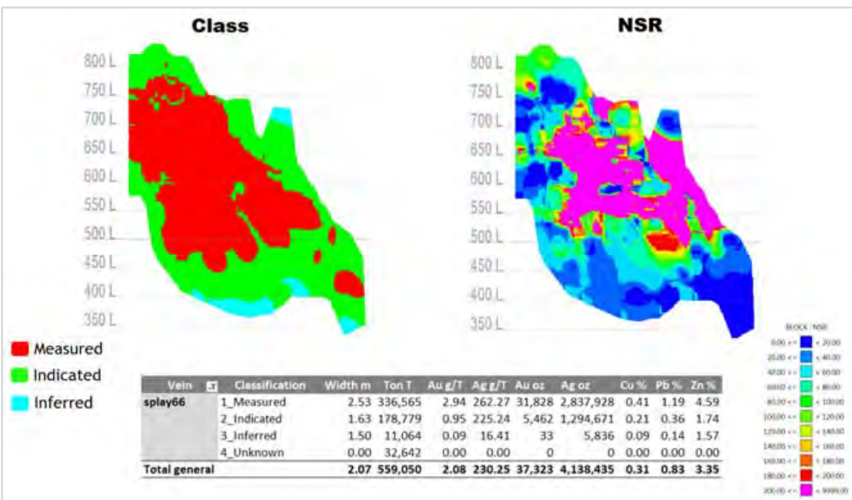


Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
splay31-rm4	1_Measured	1.48	4,998	0.74	697.25	119	112,033	0.23	0.44	0.93
	2_Indicated	1.33	4,299	0.32	226.43	45	31,299	0.14	0.61	0.42
	4_Unknown	0.00	373	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**1.35**	**9,670**	**0.53**	**461.03**	**164**	**143,332**	**0.18**	**0.50**	**0.67**

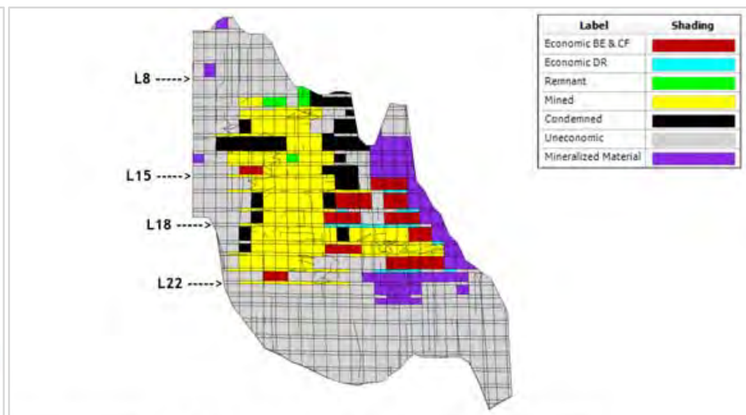


Arista Proven and Probable Reserves - January 2020										
Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
SPLAY31-RM4	0	0.00	0.00	0.00	0	0	0	0.00	0.00	0.00

SPLAY 66



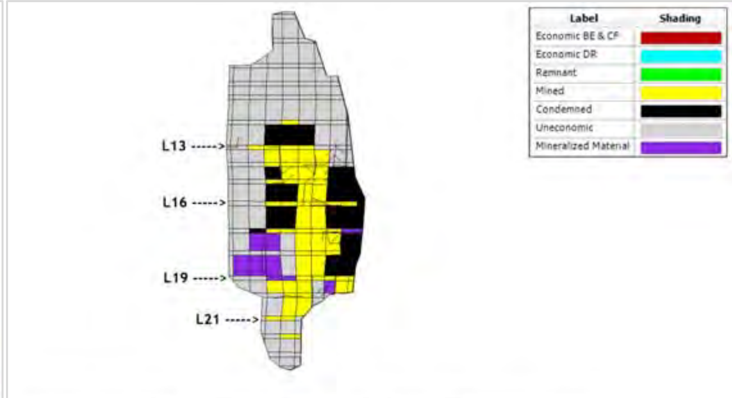
Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
splay66	1_Measured	2.53	336,565	2.94	262.27	31,828	2,837,928	0.41	1.19	4.59
	2_Indicated	1.63	178,779	0.95	225.24	5,462	1,294,671	0.21	0.36	1.74
	3_Inferred	1.50	11,064	0.09	16.41	33	5,836	0.09	0.14	1.57
	4_Unknown	0.00	32,642	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**2.07**	**559,050**	**2.08**	**230.25**	**37,323**	**4,138,435**	**0.31**	**0.83**	**3.35**



Arista Proven and Probable Reserves - January 2020										
Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
SPLAY66	52,172	2.79	371.14	7.43	4,681	622,551	12,460	0.37	0.80	2.68

SPLAY 66 – RM1

Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
splay66-rm1	1_Measured	2.06	120,111	2.44	192.67	9,404	744,013	0.37	1.33	3.85
	2_Indicated	1.28	9,811	1.25	87.03	395	27,450	0.24	0.45	1.21
	4_Unknown	0.00	5,277	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**1.93**	**135,198**	**2.25**	**177.48**	**9,799**	**771,464**	**0.35**	**1.22**	**3.51**

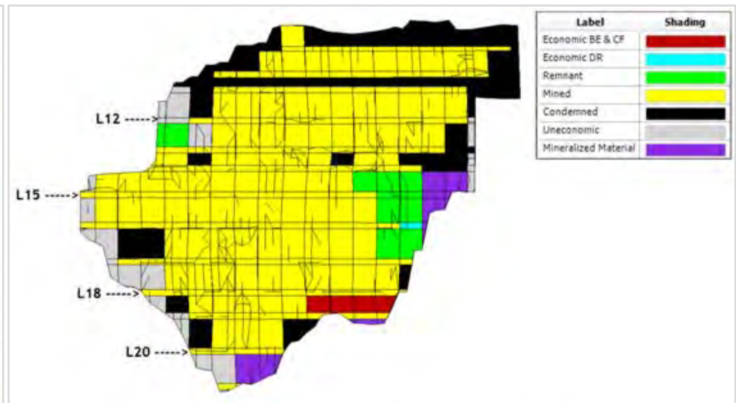


Arista Proven and Probable Reserves - January 2020

Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
SPLAY66-RM1	0	0.00	0.00	0.00	0	0	0	0.00	0.00	0.00

VEIN 3

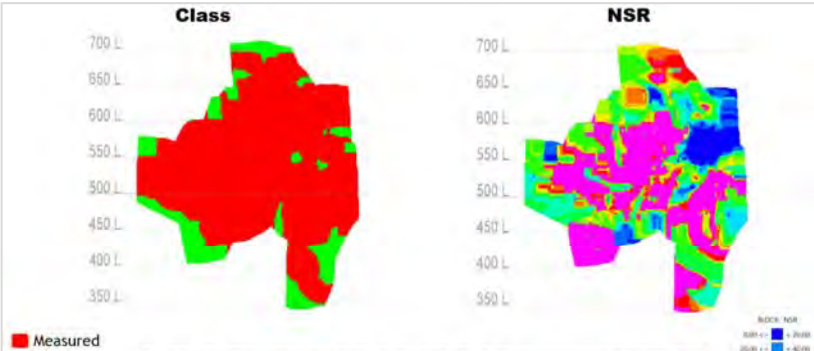
Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
veta03	1_Measured	4.86	412,477	4.22	207.00	55,910	2,745,137	0.48	2.08	7.32
	2_Indicated	1.77	3,579	6.66	304.03	767	34,985	0.55	2.42	6.83
	4_Unknown	0.00	12,044	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**4.69**	**428,100**	**4.12**	**201.99**	**56,677**	**2,780,122**	**0.47**	**2.03**	**7.11**



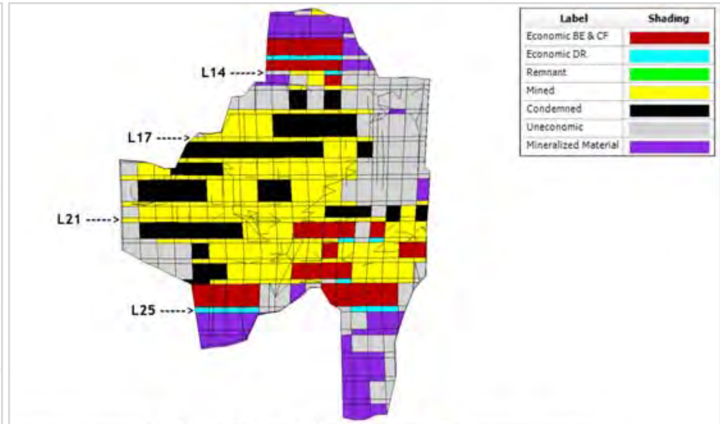
Arista Proven and Probable Reserves - January 2020

Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
VETA03	27,449	5.26	172.42	7.42	4,644	152,161	6,545	0.47	1.51	6.20

VIRIDIANA

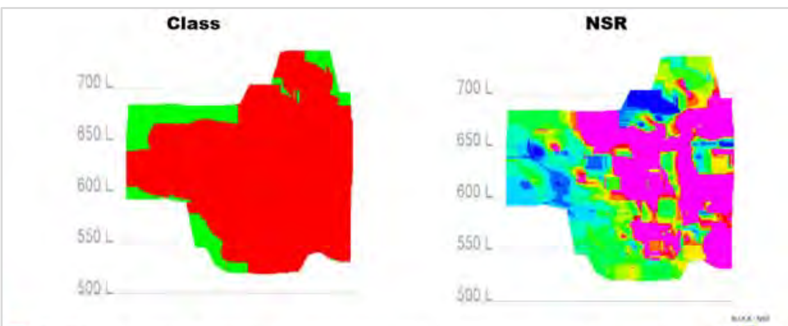


Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
viridiana	1_Measured	4.07	459,150	2.30	111.55	34,015	1,646,752	0.27	1.56	5.84
	2_Indicated	3.37	44,548	3.51	103.72	5,028	148,554	0.20	0.82	2.90
	4_Unknown	0.00	22,496	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**3.83**	**526,194**	**2.31**	**106.12**	**39,043**	**1,795,306**	**0.26**	**1.43**	**5.34**

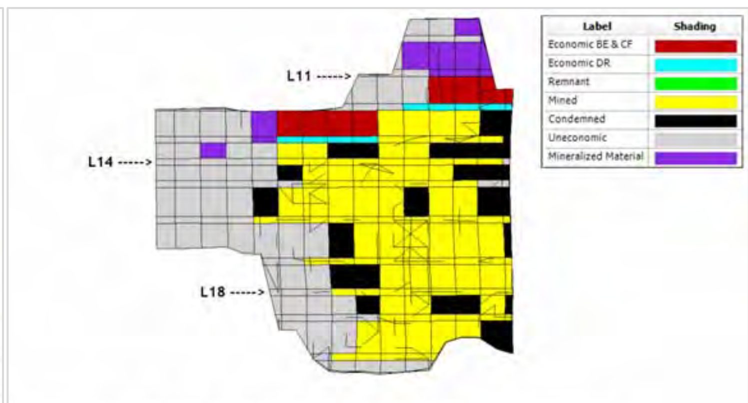


Arista Proven and Probable Reserves - January 2020										
Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
VIRIDIANA	85,309	2.61	84.61	3.67	7,172	232,059	10,072	0.15	0.87	3.89

VIRIDIANA RM1

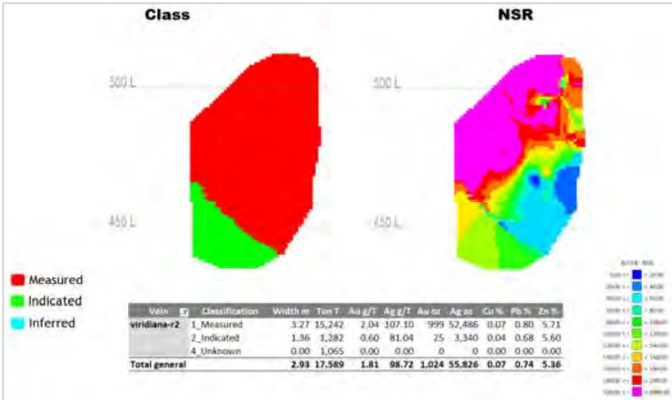


Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
viridiana-r1	1_Measured	2.87	180,874	5.54	177.04	32,210	1,029,528	0.68	1.18	2.25
	2_Indicated	1.53	8,539	2.90	123.68	797	33,956	0.47	0.77	1.74
	4_Unknown	0.00	6,322	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**2.72**	**195,735**	**5.25**	**168.99**	**33,008**	**1,063,484**	**0.65**	**1.13**	**2.16**

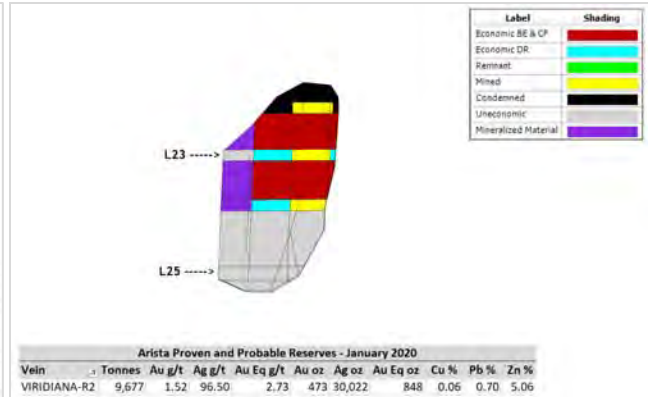


Arista Proven and Probable Reserves - January 2020										
Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
VIRIDIANA-R1	14,571	5.27	174.07	7.45	2,469	81,548	3,488	0.62	0.60	1.06

VIRIDIANA RM2



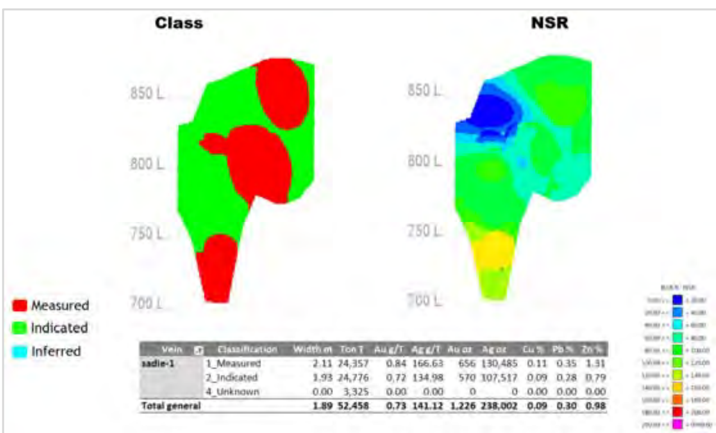
Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
viridiana-r2	1_Measured	3.27	15,242	2.04	107.10	999	52,486	0.07	0.80	5.71
	2_Indicated	1.36	1,282	0.60	81.04	25	3,340	0.04	0.68	5.60
	4_Unknown	0.00	1,065	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**2.93**	**17,589**	**1.81**	**98.72**	**1,024**	**55,826**	**0.07**	**0.74**	**5.36**



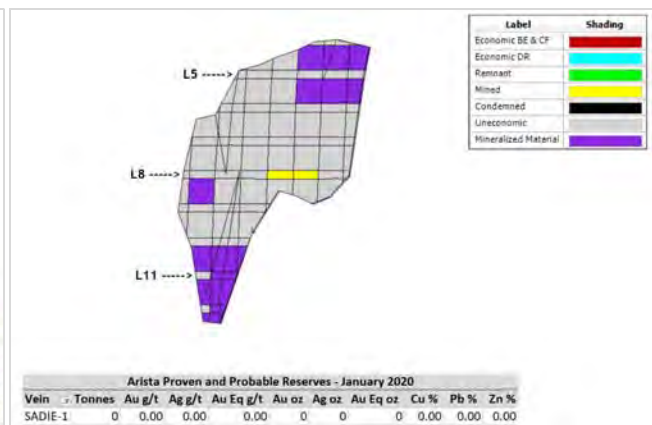
Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
VIRIDIANA-R2	9,677	1.52	96.50	2.73	473	30,022	848	0.06	0.70	5.06

ARISTA MINE – SWITCHBACK VEINS

SADIE-1

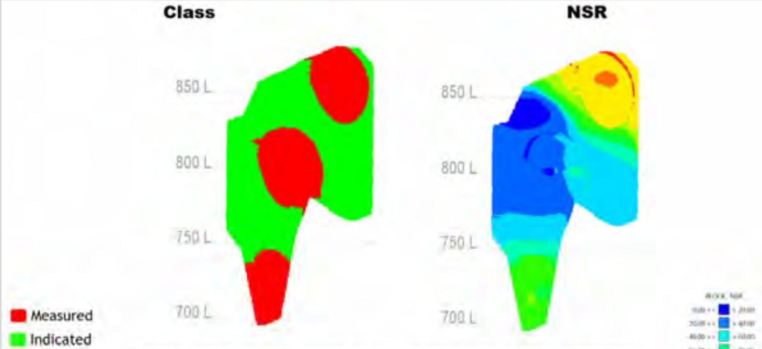


Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
sadie-1	1_Measured	2.11	24,357	0.84	166.63	656	130,485	0.11	0.35	1.31
	2_Indicated	1.93	24,776	0.72	134.98	570	107,517	0.09	0.28	0.79
	4_Unknown	0.00	3,325	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**1.89**	**52,458**	**0.73**	**141.12**	**1,226**	**238,002**	**0.09**	**0.30**	**0.98**

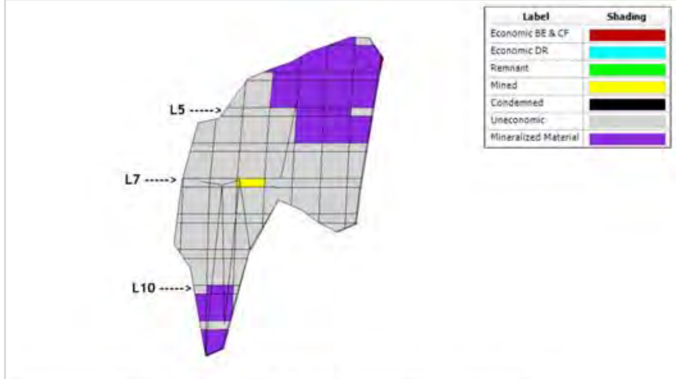


Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
SADIE-1	0	0.00	0.00	0.00	0	0	0	0.00	0.00	0.00

SADIE-2



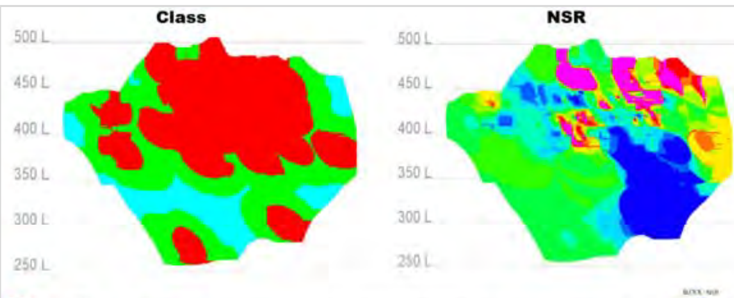
Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
sadie-2	1_Measured	2.81	26,355	0.58	256.46	489	217,305	0.07	0.20	0.38
	2_Indicated	2.18	32,257	0.34	153.70	356	159,398	0.03	0.07	0.19
	4_Unknown	0.00	3,985	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**2.30**	**62,597**	**0.42**	**187.18**	**845**	**376,703**	**0.04**	**0.12**	**0.26**



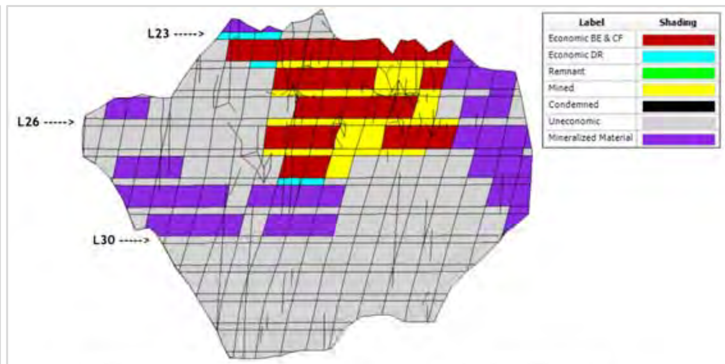
Arista Proven and Probable Reserves - January 2020

Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
SADIE-2	0	0.00	0.00	0.00	0	0	0	0.00	0.00	0.00

SAGRARIO



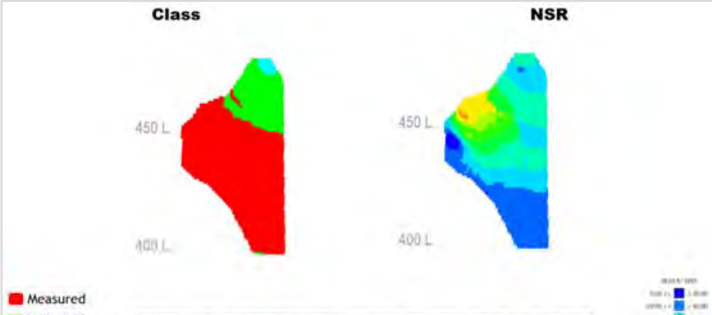
Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
sagrario	1_Measured	3.62	185,527	1.66	53.76	9,924	320,668	0.44	1.20	2.39
	2_Indicated	2.20	87,605	0.54	35.49	1,524	99,971	0.41	0.76	2.03
	3_Inferred	2.29	33,481	0.57	49.72	616	53,520	0.43	0.63	2.00
	4_Unknown	0.00	27,336	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**2.82**	**333,949**	**1.12**	**44.16**	**12,064**	**474,159**	**0.40**	**0.93**	**2.06**



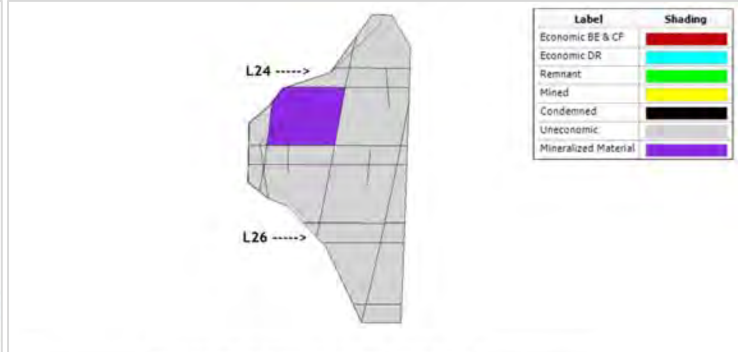
Arista Proven and Probable Reserves - January 2020

Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
SAGRARIO	60,878	2.27	65.74	3.09	4,450	128,665	6,057	0.42	1.28	2.21

SAGRARIO RM1

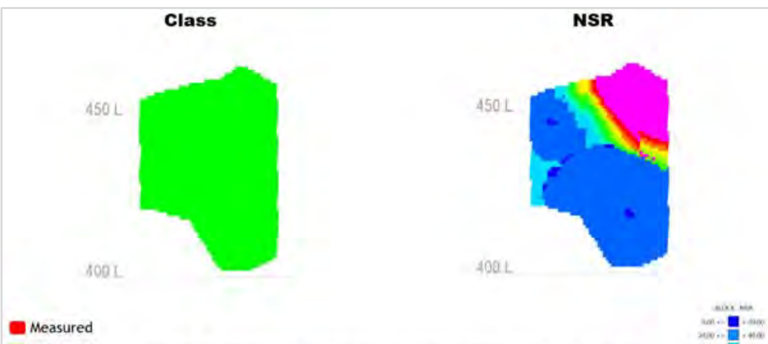


Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
sagram1	1_Measured	1.90	6,942	0.34	23.55	77	5,257	0.34	1.45	1.47
	2_Indicated	2.01	1,716	0.27	34.08	15	1,880	0.37	1.23	2.10
	3_Inferred	1.67	29	0.04	43.11	0	41	0.32	0.95	2.35
	4_Unknown	0.00	1,147	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**1.70**	**9,835**	**0.29**	**22.70**	**91**	**7,177**	**0.31**	**1.24**	**1.38**

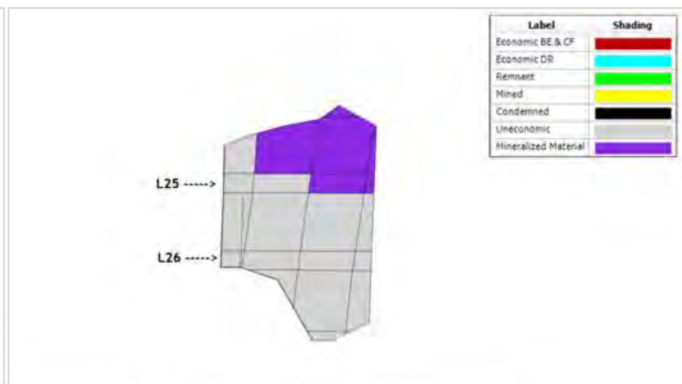


Arista Proven and Probable Reserves - January 2020										
Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
SAGRAM1	0	0.00	0.00	0.00	0	0	0	0.00	0.00	0.00

SAMANTHA1

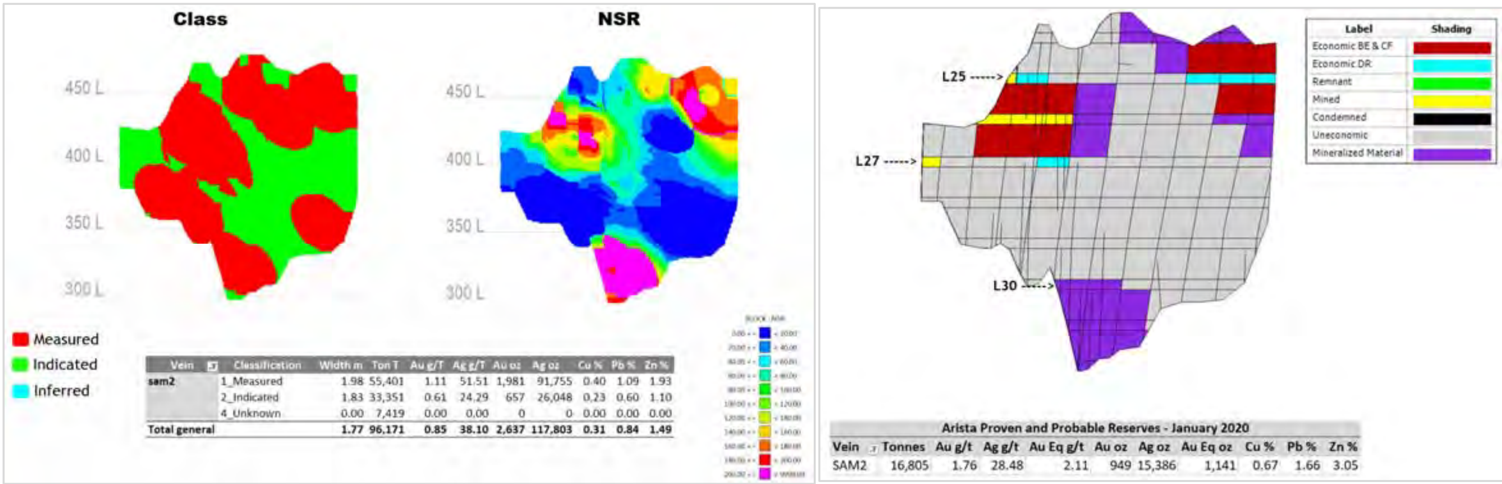


Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
sam1	2_Indicated	1.57	7,569	0.69	14.24	168	3,466	0.45	1.38	2.51
	4_Unknown	0.00	650	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**1.44**	**8,219**	**0.64**	**13.12**	**168**	**3,466**	**0.42**	**1.27**	**2.31**



Arista Proven and Probable Reserves - January 2020										
Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
SAM1	0	0.00	0.00	0.00	0	0	0	0.00	0.00	0.00

SAMANTHA2

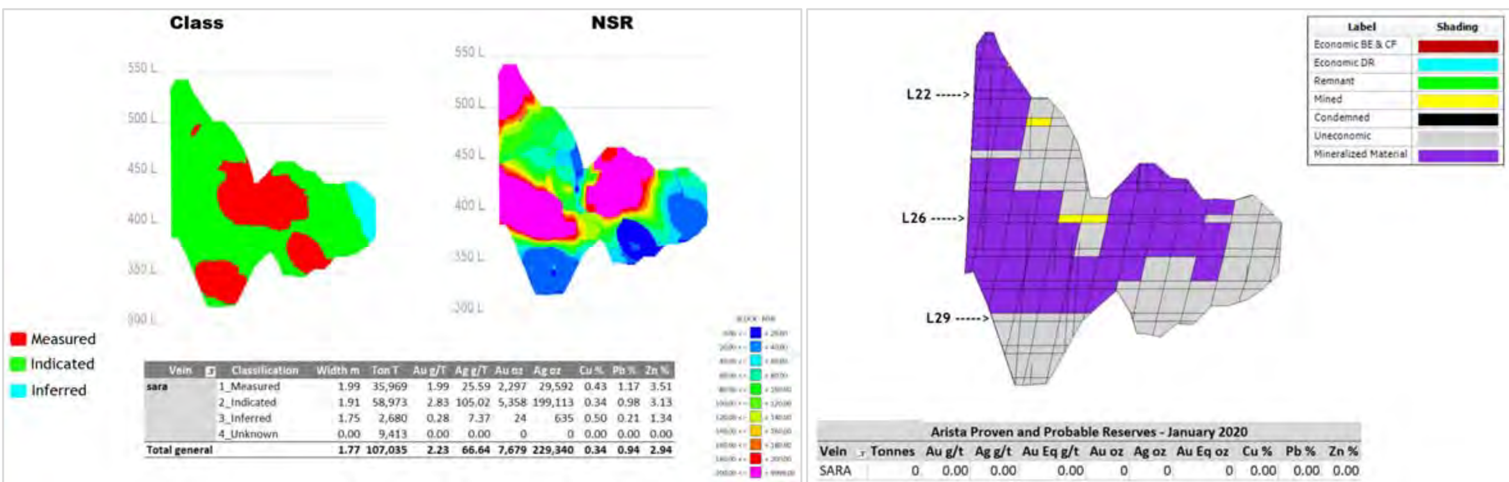


Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
sam2	1_Measured	1.98	55,401	1.11	51.51	1,981	91,755	0.40	1.09	1.93
	2_Indicated	1.83	33,351	0.61	24.29	657	26,048	0.23	0.60	1.10
	4_Unknown	0.00	7,419	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**1.77**	**96,171**	**0.85**	**38.10**	**2,637**	**117,803**	**0.31**	**0.84**	**1.49**

Arista Proven and Probable Reserves - January 2020

Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
SAM2	16,805	1.76	28.48	2.11	949	15,386	1,141	0.67	1.66	3.05

SARA

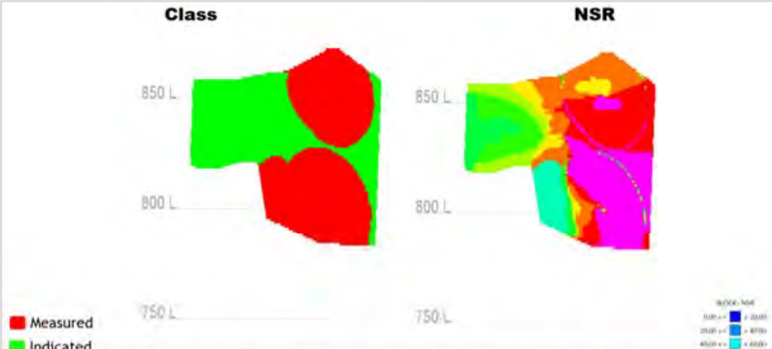


Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
sara	1_Measured	1.99	35,969	1.99	25.59	2,297	29,592	0.43	1.17	3.51
	2_Indicated	1.91	58,973	2.83	105.02	5,358	199,113	0.34	0.98	3.13
	3_Inferred	1.75	2,680	0.28	7.37	24	635	0.50	0.21	1.34
	4_Unknown	0.00	9,413	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**1.77**	**107,035**	**2.23**	**66.64**	**7,679**	**229,340**	**0.34**	**0.94**	**2.94**

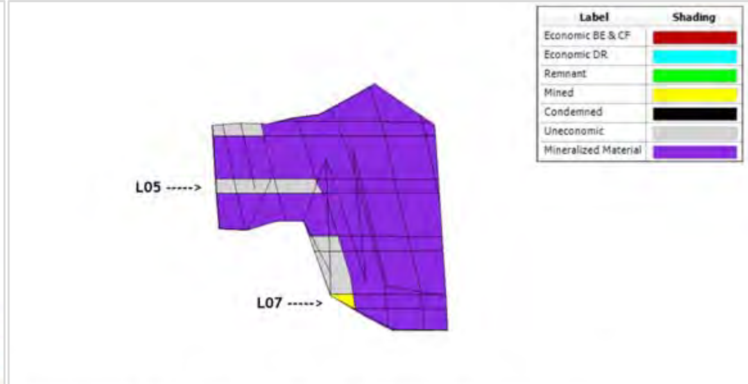
Arista Proven and Probable Reserves - January 2020

Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
SARA	0	0.00	0.00	0.00	0	0	0	0.00	0.00	0.00

SASHA-1



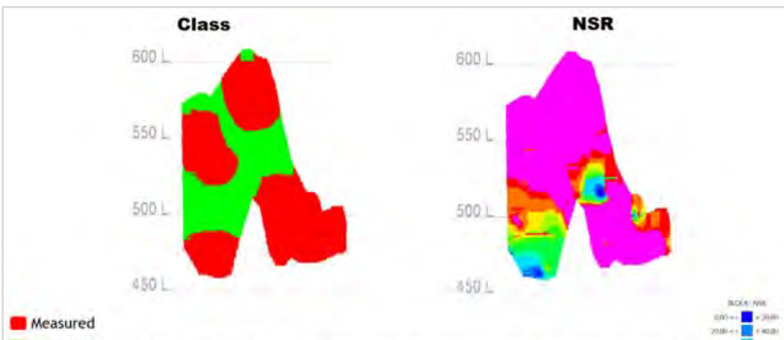
Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
sasha-1	1_Measured	5.82	35,862	0.92	472.34	1,063	544,602	0.10	0.28	0.81
	2_Indicated	2.79	12,593	0.87	389.17	354	157,561	0.09	0.24	0.68
	4_Unknown	0.00	2,923	0.00	0.00	0	0	0.00	0.00	0.00
Total general		4.75	51,378	0.86	425.08	1,417	702,163	0.09	0.26	0.73



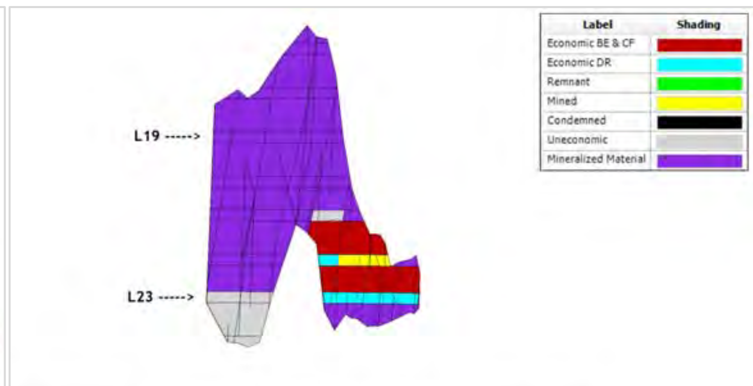
Arista Proven and Probable Reserves - January 2020

Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
SASHA-1	0	0.00	0.00	0.00	0	0	0	0.00	0.00	0.00

SBN1



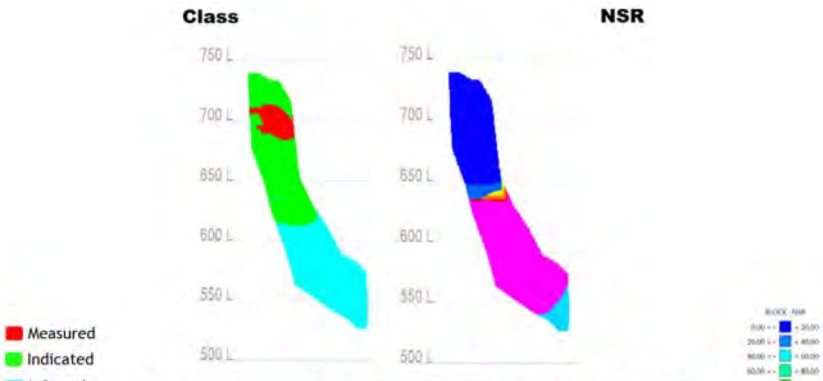
Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
sbn1	1_Measured	2.82	33,449	3.46	113.35	3,722	121,897	0.65	2.53	4.07
	2_Indicated	2.14	15,128	2.92	109.26	1,418	53,140	0.65	2.22	3.24
	4_Unknown	0.00	3,523	0.00	0.00	0	0	0.00	0.00	0.00
Total general		2.43	52,100	3.07	104.50	5,141	175,037	0.61	2.27	3.55



Arista Proven and Probable Reserves - January 2020

Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
SBN1	11,164	3.03	114.56	4.46	1,088	41,119	1,602	0.50	2.67	3.68

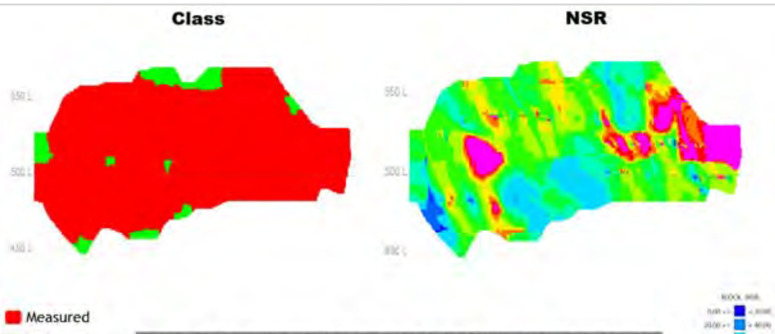
SBN2



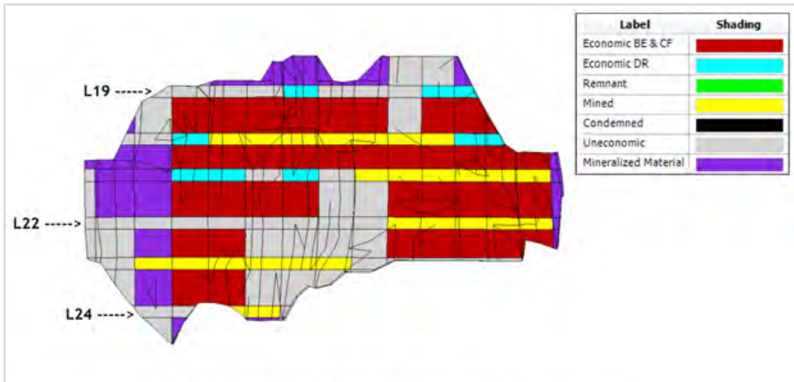
Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
sbn2	1_Measured	1.77	2,723	0.00	22.23	0	1,946	0.02	0.05	0.21
	2_Indicated	1.51	9,207	1.49	80.47	440	23,820	0.09	0.20	0.27
	3_Inferred	1.63	12,357	5.64	260.55	2,243	103,512	0.27	0.57	0.47
	4_Unknown	0.00	1,941	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**1.48**	**26,228**	**3.18**	**153.31**	**2,682**	**129,278**	**0.16**	**0.35**	**0.34**

Arista Proven and Probable Reserves - January 2020										
Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
SBN2	0	0.00	0.00	0.00	0	0	0	0.00	0.00	0.00

SELENE

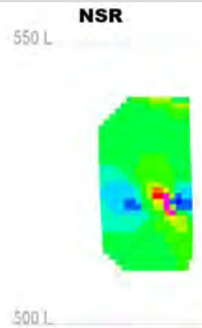


Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
selene	1_Measured	4.15	135,765	2.70	22.69	11,791	99,025	0.27	1.01	2.51
	2_Indicated	2.09	3,618	2.13	22.27	247	2,591	0.27	0.89	2.47
	4_Unknown	0.00	6,486	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**3.91**	**145,869**	**2.57**	**21.67**	**12,038**	**101,616**	**0.26**	**0.96**	**2.40**

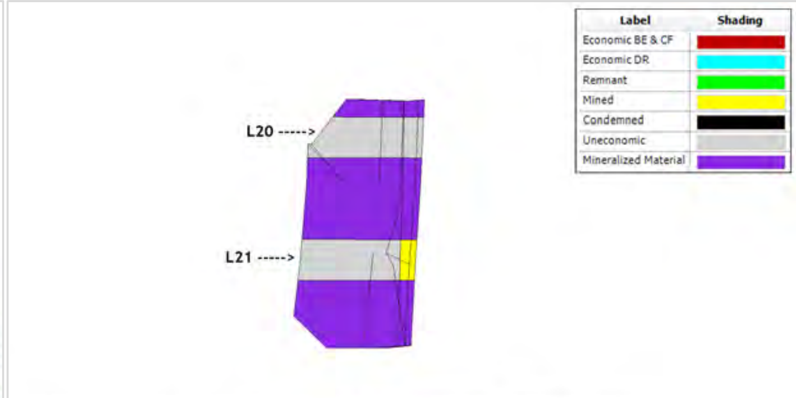


Arista Proven and Probable Reserves - January 2020										
Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
SELENE	71,897	2.86	22.95	3.15	6,620	53,040	7,283	0.26	1.03	2.50

SELENE-RM1



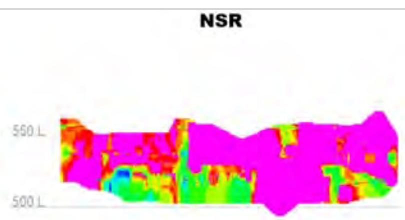
Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
selene-rm1	1_Measured	1.70	1,765	2.81	5.13	160	291	0.08	0.38	1.54
	2_Indicated	2.05	10	2.89	4.75	1	2	0.08	0.38	1.51
	4_Unknown	0.00	159	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**1.56**	**1,934**	**2.58**	**4.71**	**161**	**293**	**0.07**	**0.35**	**1.41**



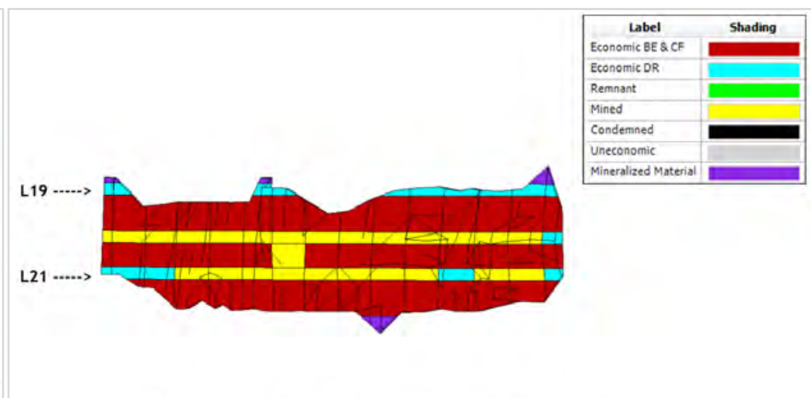
Arista Proven and Probable Reserves - January 2020

Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
SELENE-RM1	0	0.00	0.00	0.00	0	0	0	0.00	0.00	0.00

SILVIA



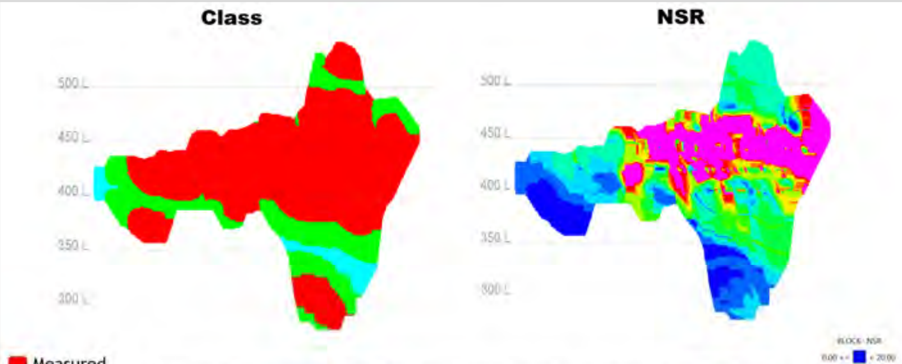
Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
silvia	1_Measured	6.18	132,432	3.93	82.98	16,750	353,291	0.44	2.59	7.73
	2_Indicated	3.04	1,307	3.27	73.86	137	3,104	0.39	2.63	6.91
	4_Unknown	0.00	5,214	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**5.92**	**138,953**	**3.78**	**79.78**	**16,887**	**356,395**	**0.43**	**2.49**	**7.44**



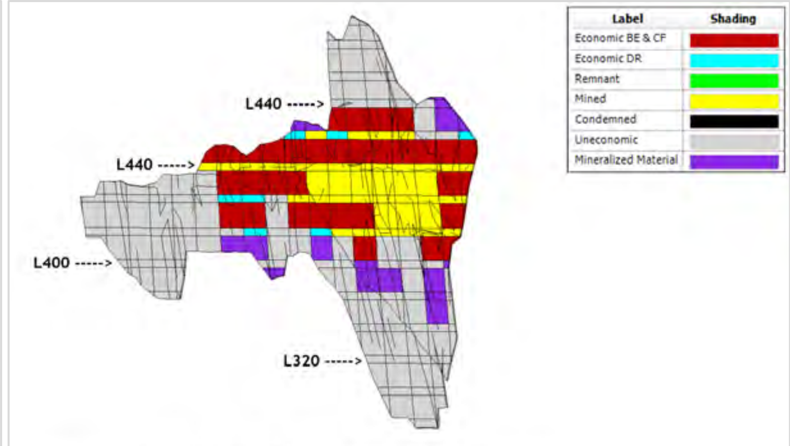
Arista Proven and Probable Reserves - January 2020

Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
SILVIA	95,846	3.46	74.45	4.39	10,675	229,423	13,541	0.40	2.29	6.89

SOFIA



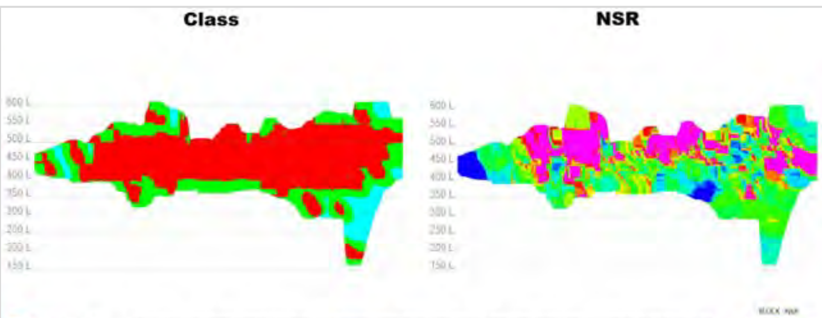
Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
sofia	1_Measured	3.19	147,257	3.69	29.12	17,481	137,870	0.56	1.29	2.94
	2_Indicated	2.22	34,671	0.95	20.49	1,055	22,836	0.38	0.48	1.55
	3_Inferred	2.26	7,624	0.67	28.52	165	6,989	0.38	0.50	1.48
	4_Unknown	0.00	15,183	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**2.76**	**204,735**	**2.84**	**25.48**	**18,701**	**167,695**	**0.48**	**1.03**	**2.43**



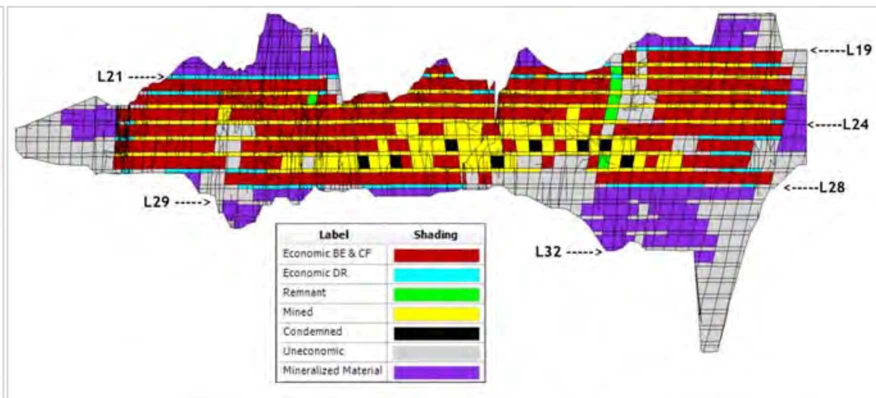
Arista Proven and Probable Reserves - January 2020

Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
SOFIA	56,899	4.03	27.19	4.37	7,369	49,748	7,990	0.55	1.40	3.15

SOLEDAD



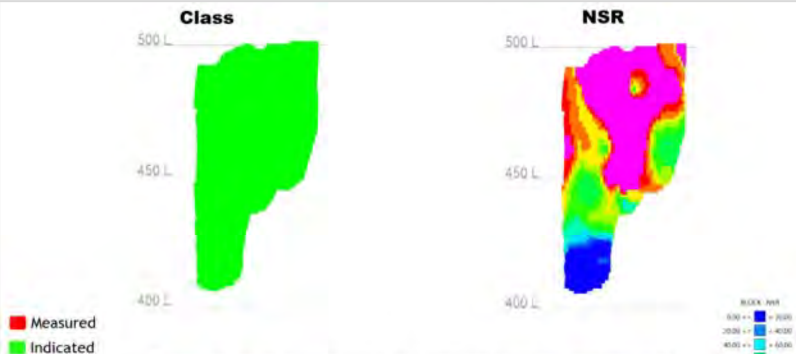
Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
soledad	1_Measured	11.25	2,610,454	1.64	79.66	137,223	6,685,445	0.43	1.83	5.64
	2_Indicated	3.72	234,806	1.14	83.49	8,625	630,281	0.44	1.43	4.36
	3_Inferred	2.41	55,160	0.62	81.92	1,092	145,286	0.50	1.06	3.30
	4_Unknown	0.00	88,198	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**10.16**	**2,988,618**	**1.53**	**77.65**	**146,940**	**7,461,012**	**0.42**	**1.73**	**5.33**



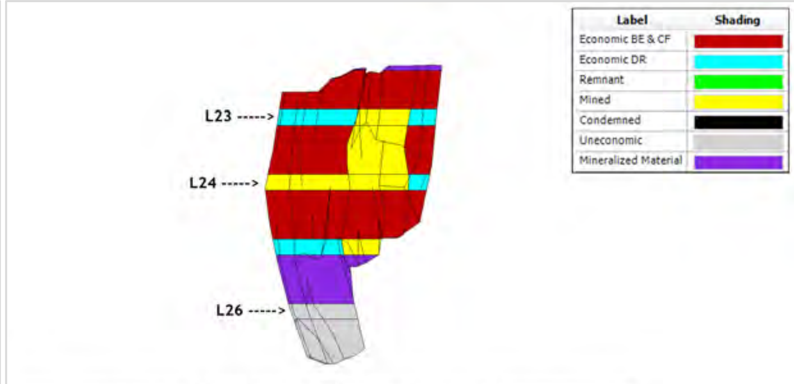
Arista Proven and Probable Reserves - January 2020

Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
SOLEDAD	1,334,270	1.80	85.48	2.87	77,123	3,667,019	122,944	0.46	2.01	6.05

SOLRAM1



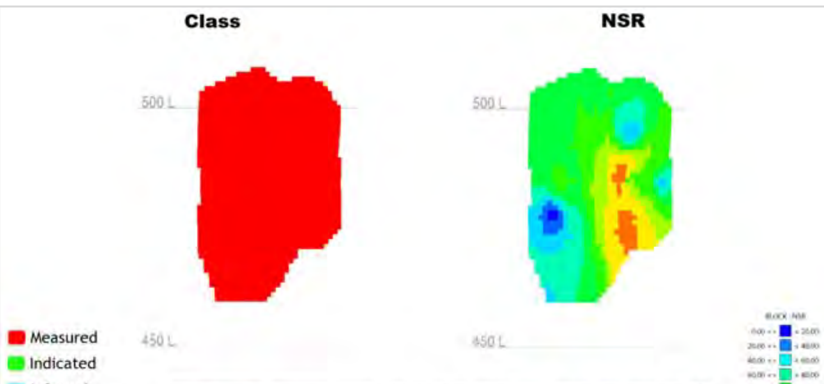
Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
solram1	2_Indicated	4.44	20,418	2.26	92.81	1,487	60,928	0.47	1.73	5.72
	4_Unknown	0.00	1,847	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**4.07**	**22,265**	**2.08**	**85.12**	**1,487**	**60,928**	**0.43**	**1.58**	**5.24**



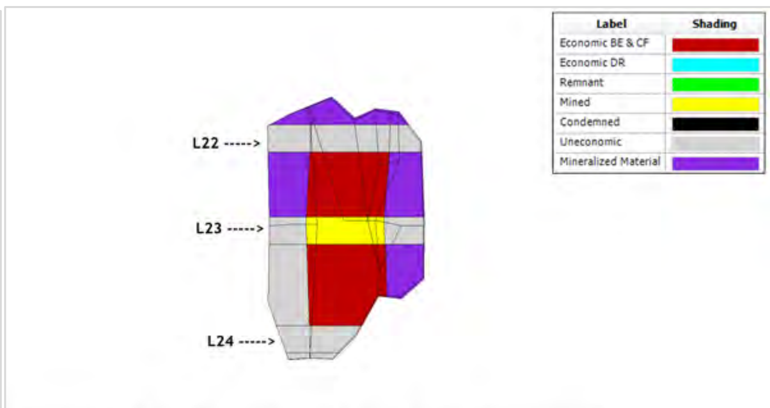
Arista Proven and Probable Reserves - January 2020

Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
SOLRAM1	12,328	1.93	76.22	2.88	766	30,213	1,143	0.44	1.64	5.60

SOLRAM2



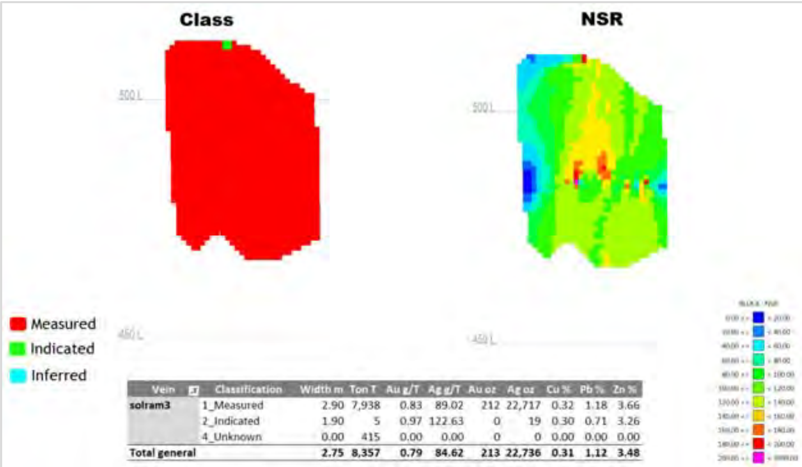
Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
solram2	1_Measured	2.55	6,951	1.06	37.90	237	8,469	0.47	1.13	3.60
	4_Unknown	0.00	451	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**2.40**	**7,401**	**1.00**	**35.59**	**237**	**8,469**	**0.44**	**1.06**	**3.38**



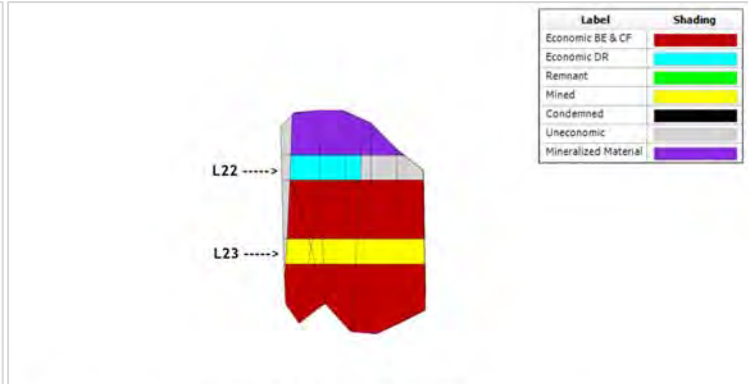
Arista Proven and Probable Reserves - January 2020

Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
SOLRAM2	2,538	1.10	42.99	1.63	90	3,509	133	0.50	1.08	3.52

SOLRAM3

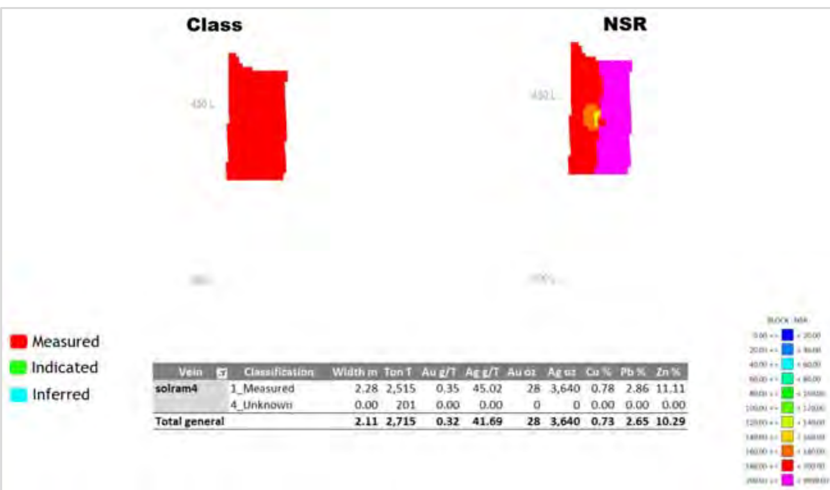


Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
solram3	1_Measured	2.90	7,938	0.83	89.02	212	22,717	0.32	1.18	3.66
	2_Indicated	1.90	5	0.97	122.63	0	19	0.30	0.71	3.26
	4_Unknown	0.00	415	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**2.75**	**8,357**	**0.79**	**84.62**	**213**	**22,736**	**0.31**	**1.12**	**3.48**

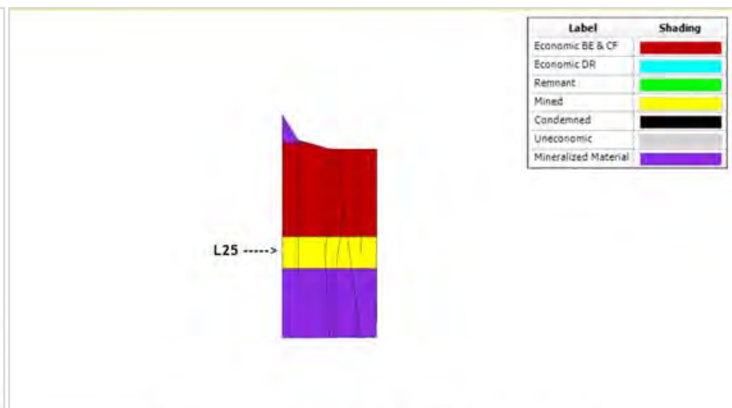


Arista Proven and Probable Reserves - January 2020										
Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
SOLRAM3	5,147	0.79	83.67	1.83	130	13,845	303	0.30	1.12	3.40

SOLRAM4

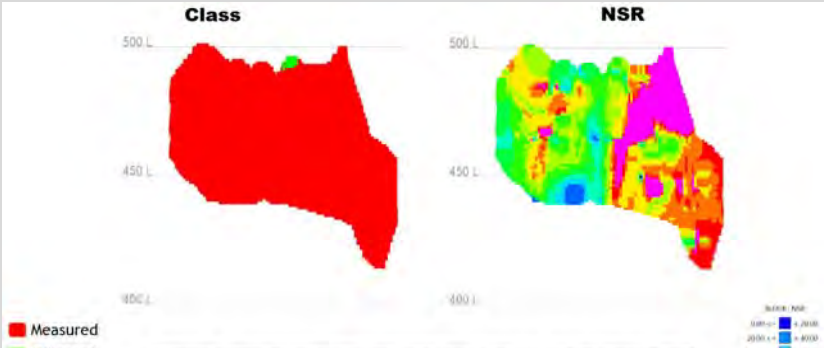


Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
solram4	1_Measured	2.28	2,515	0.35	45.02	28	3,640	0.78	2.86	11.11
	4_Unknown	0.00	201	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**2.11**	**2,715**	**0.32**	**41.69**	**28**	**3,640**	**0.73**	**2.65**	**10.29**

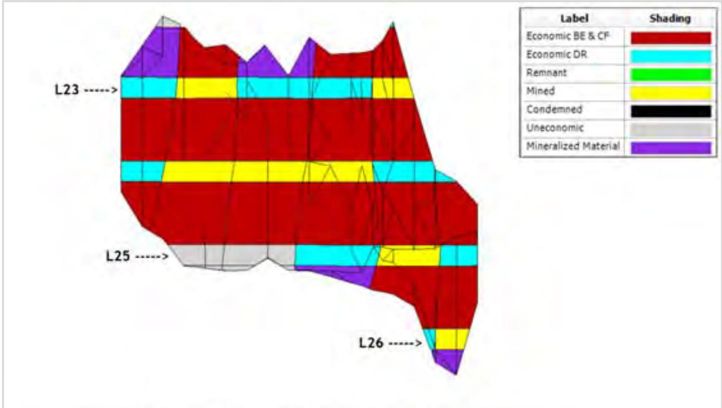


Arista Proven and Probable Reserves - January 2020										
Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
SOLRAM4	1,091	0.30	36.88	0.76	11	1,294	27	0.71	2.43	9.95

SOLRAM5



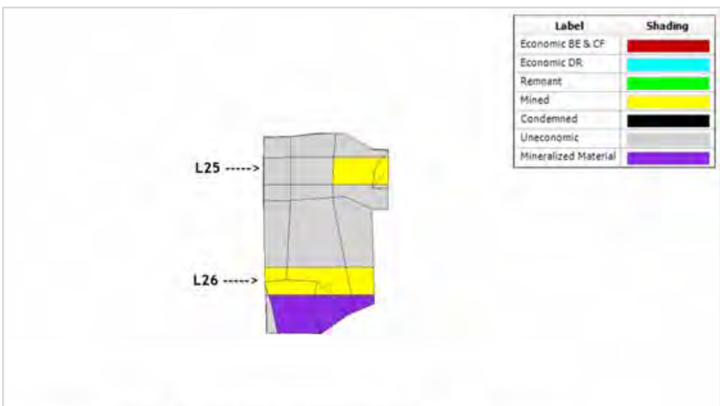
Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
solram5	1_Measured	9.39	79,140	2.54	61.87	6,454	157,422	0.48	1.42	5.11
	2_Indicated	2.42	13	1.87	55.59	1	23	0.58	0.65	2.96
	4_Unknown	0.00	2,373	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**9.12**	**81,526**	**2.46**	**60.07**	**6,454**	**157,445**	**0.46**	**1.38**	**4.96**



Arista Proven and Probable Reserves - January 2020										
Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
SOLRAM5	58,079	2.41	58.36	3.14	4,497	108,973	5,859	0.46	1.38	5.01

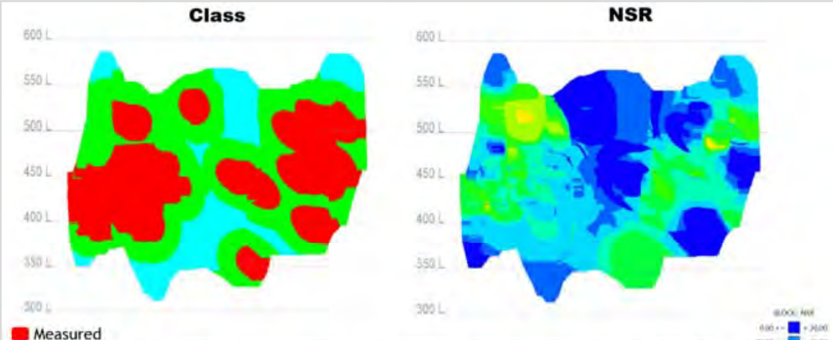
SONYA

Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
sonya	1_Measured	1.69	2,941	1.02	25.95	97	2,453	0.36	0.91	1.65
	4_Unknown	0.00	358	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**1.50**	**3,299**	**0.91**	**23.13**	**97**	**2,453**	**0.32**	**0.81**	**1.47**



Arista Proven and Probable Reserves - January 2020										
Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
SONYA	0	0.00	0.00	0.00	0	0	0	0.00	0.00	0.00

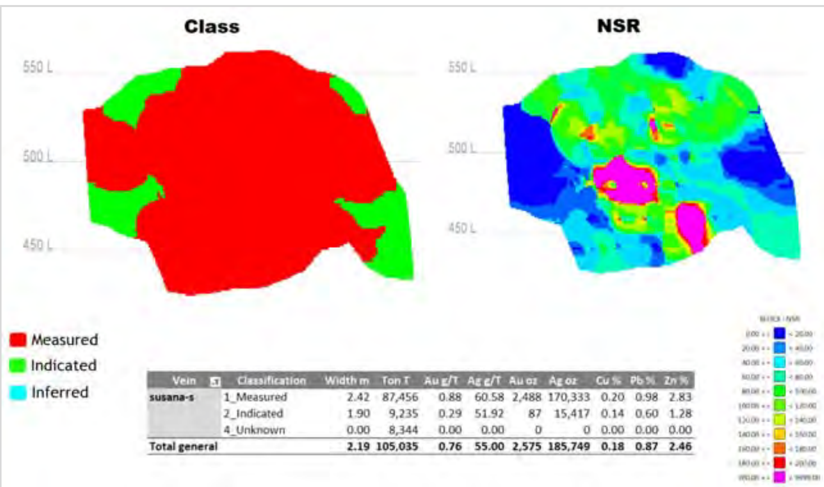
SUSANA N



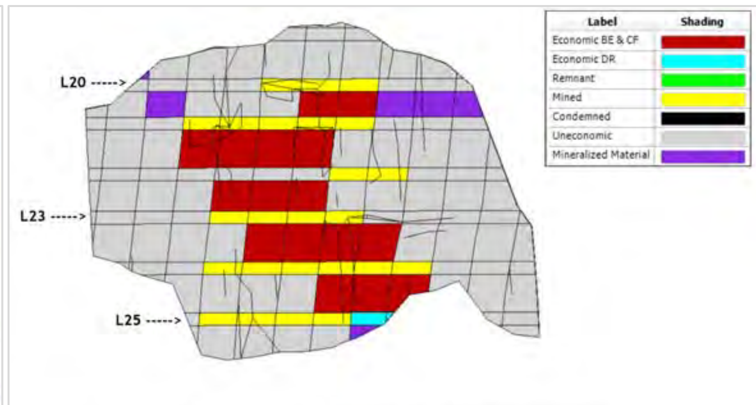
Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
susana-n	1_Measured	6.25	246,296	0.39	54.45	3,112	431,168	0.34	0.49	2.43
	2_Indicated	2.68	141,699	0.32	47.72	1,461	217,394	0.26	0.36	1.61
	3_Inferred	2.02	47,944	0.15	42.36	239	65,297	0.25	0.24	1.09
	4_Unknown	0.00	26,852	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**4.36**	**462,791**	**0.32**	**47.98**	**4,812**	**713,858**	**0.29**	**0.39**	**1.90**

Arista Proven and Probable Reserves - January 2020										
Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
SUSANA-N	63,649	0.83	61.13	1.59	1,691	125,086	3,254	1.67	0.63	3.04

SUSANA S



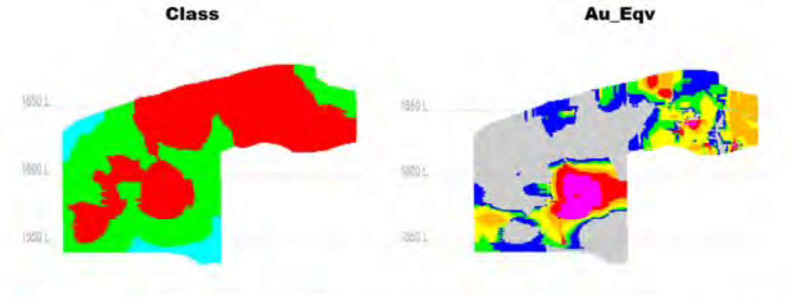
Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
susana-s	1_Measured	2.42	87,456	0.88	60.58	2,488	170,333	0.20	0.98	2.83
	2_Indicated	1.90	9,235	0.29	51.92	87	15,417	0.14	0.60	1.28
	4_Unknown	0.00	8,344	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**2.19**	**105,035**	**0.76**	**55.00**	**2,575**	**185,749**	**0.18**	**0.87**	**2.46**



Arista Proven and Probable Reserves - January 2020										
Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
SUSANA-S	23,647	1.43	83.35	2.47	1,087	63,367	1,879	0.18	1.49	3.23

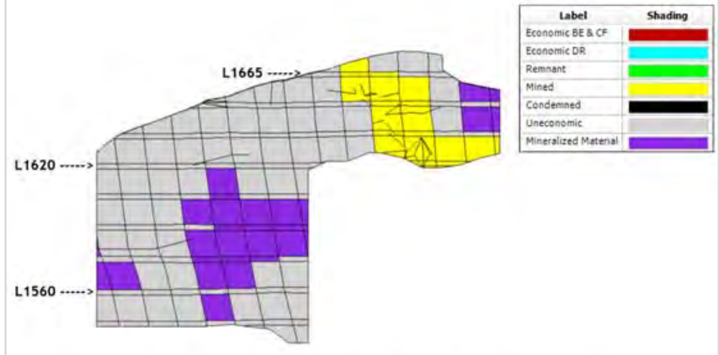
MIRADOR MINE

HUAJE 1-HW



Measured
Indicated
Inferred

Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
huaje1-hw	1_Measured	1.27	20,094	0.52	304.63	336	196,808	0.01	0.31	1.33
	2_Indicated	1.27	14,285	0.40	211.77	182	97,262	0.01	0.27	1.28
	3_Inferred	1.37	2,034	0.27	72.55	17	4,744	0.01	0.19	0.93
	4_Unknown	0.00	8,737	0.00	0.00	0	0	0.00	0.00	0.00
Total general		1.03	45,150	0.37	205.85	536	298,814	0.01	0.23	1.04

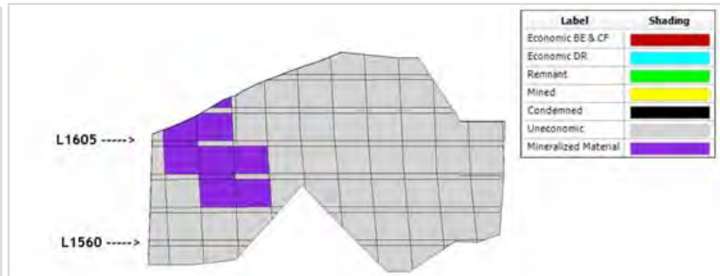


Arista Proven and Probable Reserves - January 2020										
Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
HUAJE1-HW	0	0.00	0.00	0.00	0	0	0	0.00	0.00	0.00

HUAJE-RM1

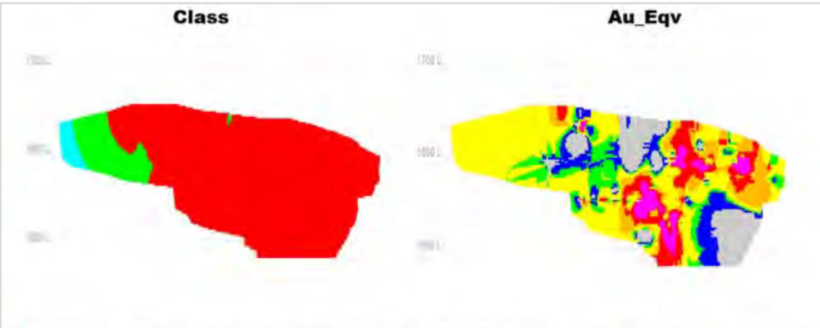
Measured
Indicated
Inferred

Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
huaje1-rm1	1_Measured	0.60	22	0.59	448.12	0	310	0.00	0.02	0.01
	2_Indicated	0.65	6,184	0.54	501.25	108	99,653	0.00	0.01	0.01
	3_Inferred	0.68	7,323	0.56	610.73	133	143,797	0.00	0.01	0.01
	4_Unknown	0.00	4,206	0.00	0.00	0	0	0.00	0.00	0.00
Total general		0.51	17,735	0.42	427.51	242	243,760	0.00	0.01	0.01

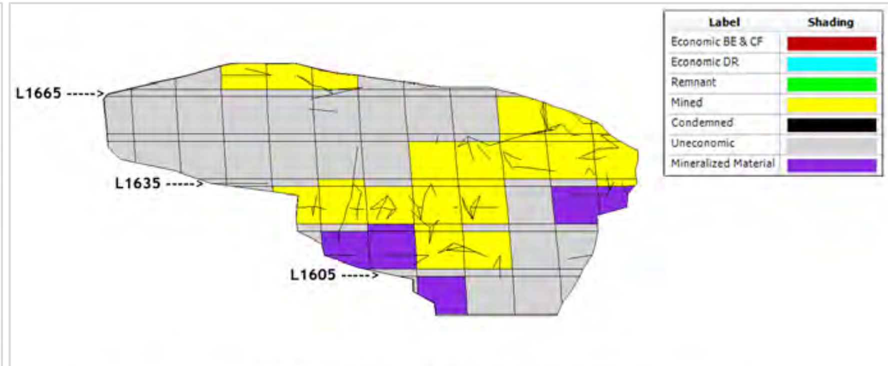


Arista Proven and Probable Reserves - January 2020										
Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
HUAJE1-RM1	0	0.00	0.00	0.00	0	0	0	0.00	0.00	0.00

HUAJE 2



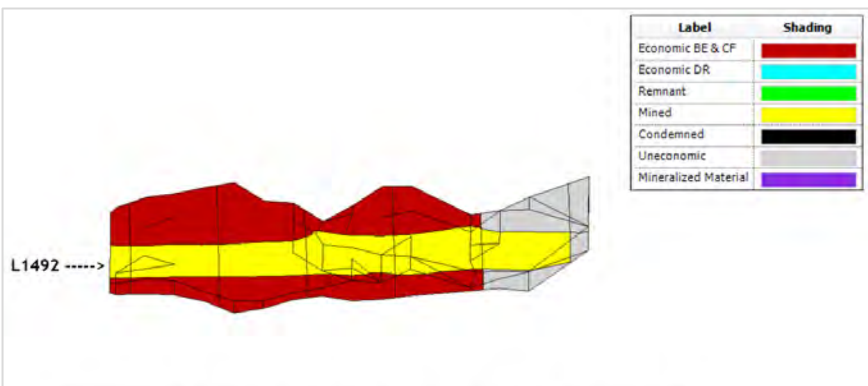
Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
huaje2	1_Measured	1.10	14,408	0.62	290.60	287	134,612	0.01	0.05	0.03
	2_Indicated	0.67	1,319	0.33	271.73	14	11,521	0.00	0.02	0.01
	3_Inferred	0.72	307	0.31	255.97	3	2,524	0.00	0.02	0.01
	4_Unknown	0.00	3,842	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**0.85**	**19,875**	**0.48**	**232.64**	**304**	**148,657**	**0.01**	**0.04**	**0.02**



Arista Proven and Probable Reserves - January 2020

Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
HUAJE2	0	0.00	0.00	0.00	0	0	0	0.00	0.00	0.00

IND-M1

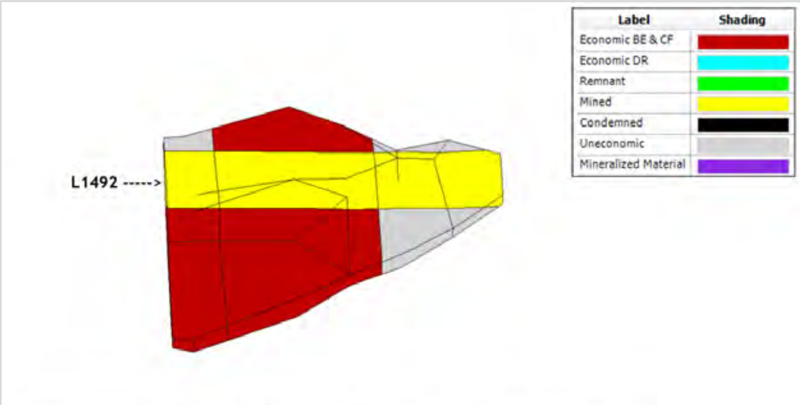


Arista Proven and Probable Reserves - January 2020

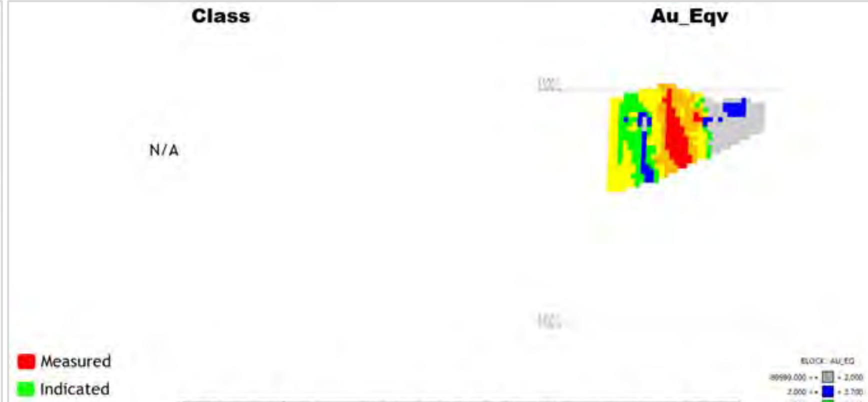
Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
IND-M1	4,639	0.55	428.04	5.90	82	63,836	880	0.00	0.05	0.01

Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
ind-m1	1_Measured	6.14	12,065	0.52	366.00	201	141,971	0.00	0.05	0.01
	2_Indicated	0.40	0	0.10	165.86	0	0	0.01	0.03	0.02
	4_Unknown	0.00	1,112	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**5.63**	**13,177**	**0.48**	**335.11**	**201**	**141,971**	**0.00**	**0.04**	**0.01**

IND-M2

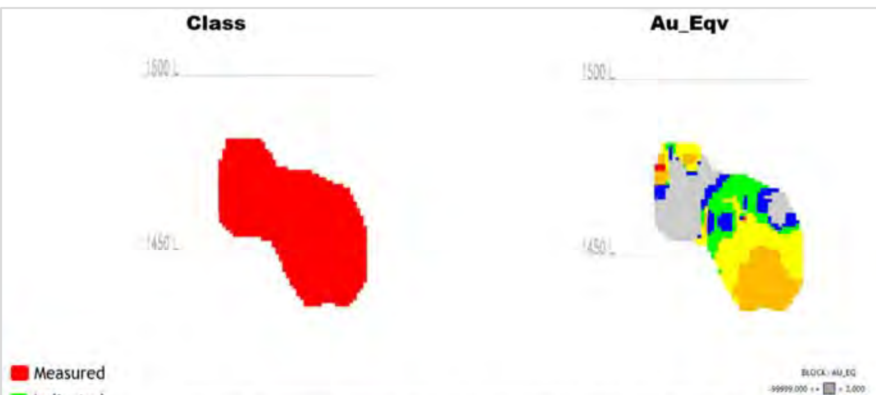


Arista Proven and Probable Reserves - January 2020										
Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
IND-M2	1,324	0.29	270.94	3.67	12	11,535	156	0.00	0.02	0.01

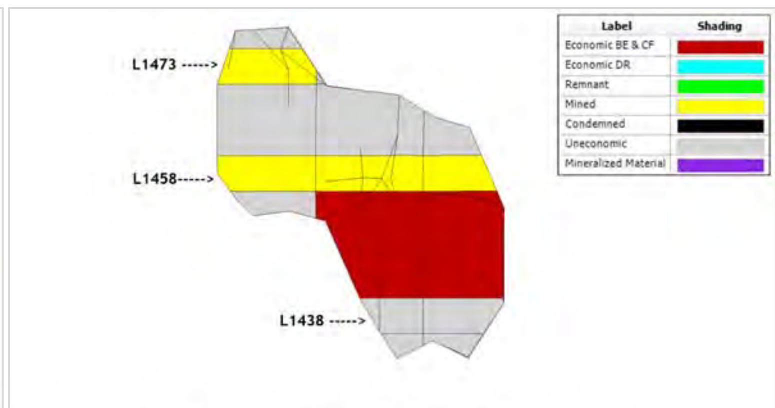


Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
ind-m2	1_Measured	3.32	2,712	0.32	280.62	28	24,468	0.00	0.02	0.01
	4_Unknown	0.00	346	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**2.95**	**3,058**	**0.29**	**248.87**	**28**	**24,468**	**0.00**	**0.02**	**0.01**

IND-S-RM1

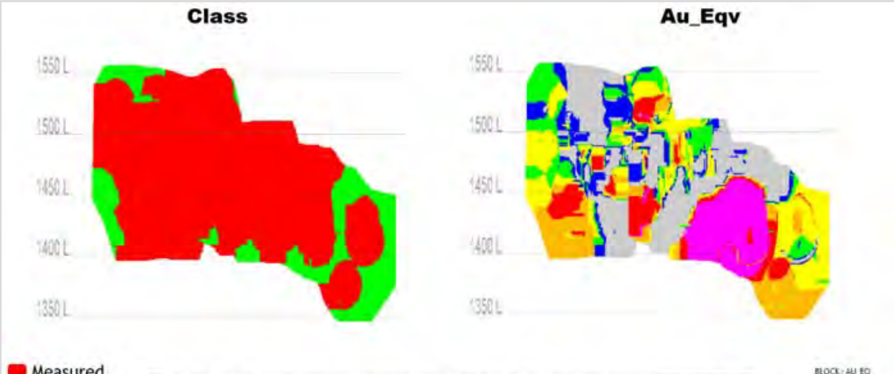


Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
ind-s-rm1	1_Measured	1.13	2,348	1.10	179.16	83	13,524	0.01	0.05	0.09
	4_Unknown	0.00	211	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**1.04**	**2,559**	**1.01**	**164.39**	**83**	**13,524**	**0.01**	**0.05**	**0.08**

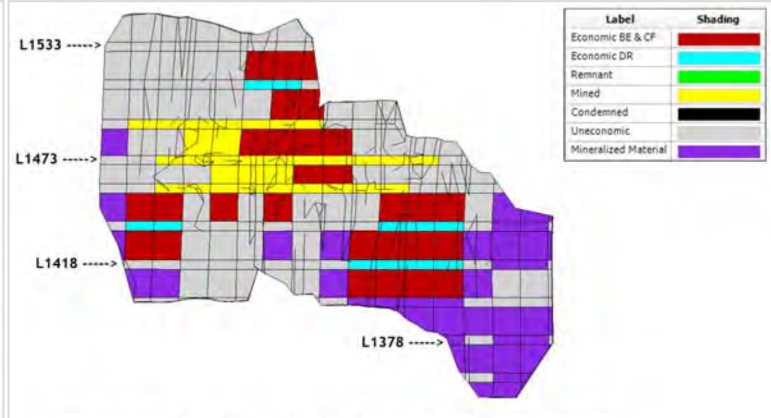


Arista Proven and Probable Reserves - January 2020										
Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
IND-S-RM1	1,089	1.17	167.32	3.26	41	5,859	114	0.01	0.06	0.11

INDEP-W

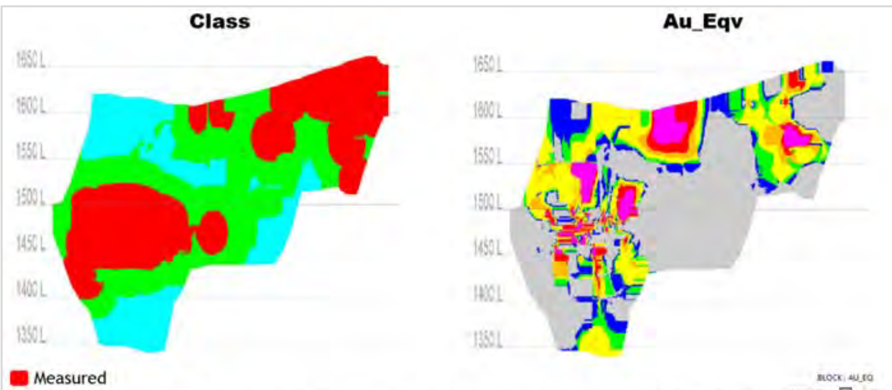


Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
ind-w	1_Measured	2.60	125,764	0.57	321.68	2,300	1,300,687	0.02	0.13	0.26
	2_Indicated	2.21	15,949	0.83	304.47	424	156,121	0.04	0.45	0.97
	4_Unknown	0.00	9,196	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**2.40**	**150,909**	**0.56**	**300.26**	**2,724**	**1,456,808**	**0.02**	**0.15**	**0.32**

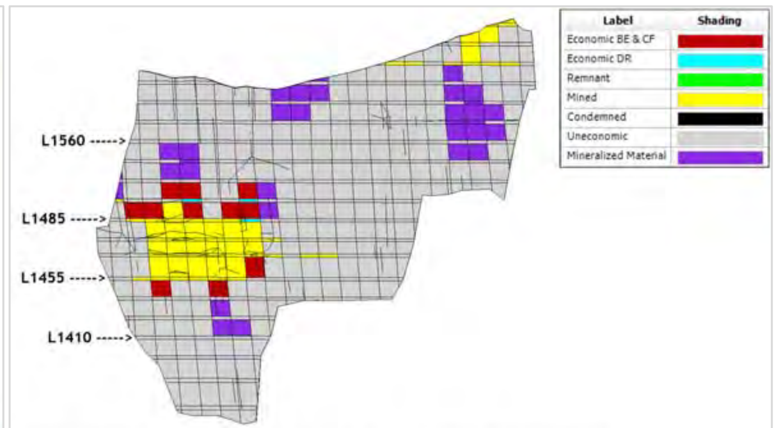


Arista Proven and Probable Reserves - January 2020										
Vein	**Tonnes**	**Au g/t**	**Ag g/t**	**Au Eq g/t**	**Au oz**	**Ag oz**	**Au Eq oz**	**Cu %**	**Pb %**	**Zn %**
IND-W	34,514	0.54	374.50	5.22	594	415,563	5,787	0.01	0.05	0.06

JARILLAS 1

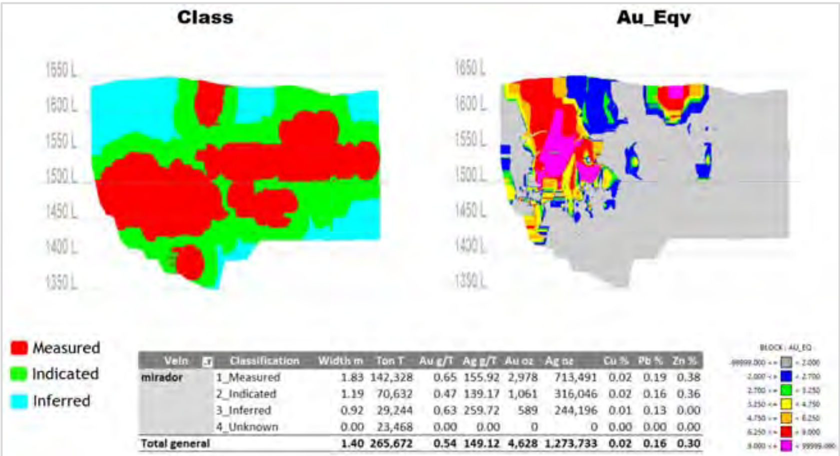


Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
jarillas1	1_Measured	1.73	69,363	0.87	206.76	1,947	461,090	0.01	0.09	0.19
	2_Indicated	0.87	29,243	0.86	183.99	809	172,980	0.01	0.08	0.15
	3_Inferred	0.82	16,226	0.51	156.90	266	81,854	0.01	0.08	0.18
	4_Unknown	0.00	23,254	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**1.15**	**138,087**	**0.68**	**161.26**	**3,022**	**715,924**	**0.01**	**0.07**	**0.15**

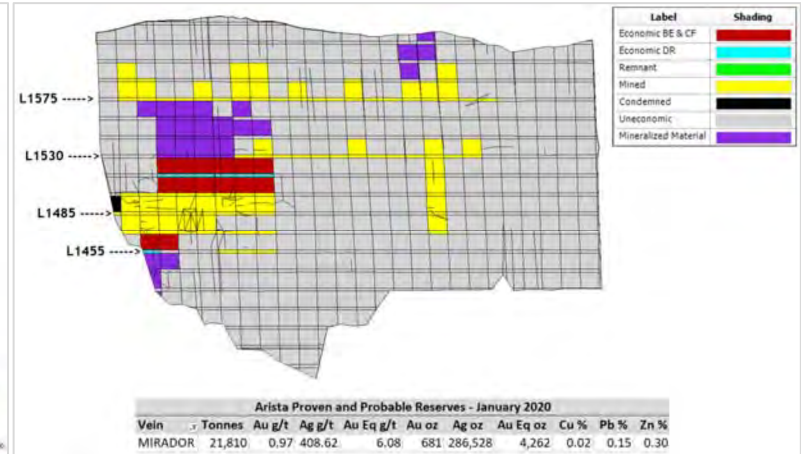


Arista Proven and Probable Reserves - January 2020										
Vein	**Tonnes**	**Au g/t**	**Ag g/t**	**Au Eq g/t**	**Au oz**	**Ag oz**	**Au Eq oz**	**Cu %**	**Pb %**	**Zn %**
JARILLAS1	9,239	1.21	272.28	4.61	359	80,878	1,369	0.01	0.12	0.25

MIRADOR

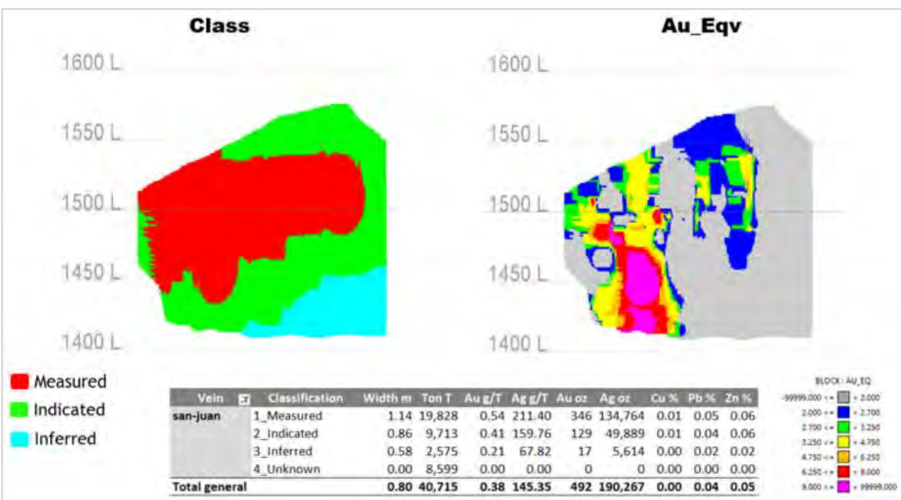


Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
mirador	1_Measured	1.83	142,328	0.65	155.92	2,978	713,491	0.02	0.19	0.38
	2_Indicated	1.19	70,632	0.47	139.17	1,061	316,046	0.02	0.16	0.36
	3_Inferred	0.92	29,244	0.63	259.72	589	244,196	0.01	0.13	0.00
	4_Unknown	0.00	23,468	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**1.40**	**265,672**	**0.54**	**149.12**	**4,628**	**1,273,733**	**0.02**	**0.16**	**0.30**

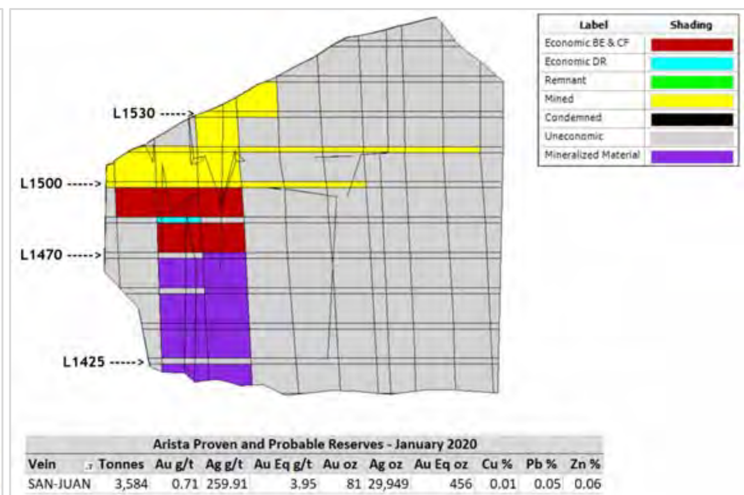


Arista Proven and Probable Reserves - January 2020										
Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
MIRADOR	21,810	0.97	408.62	6.08	681	286,528	4,262	0.02	0.15	0.30

SAN JUAN

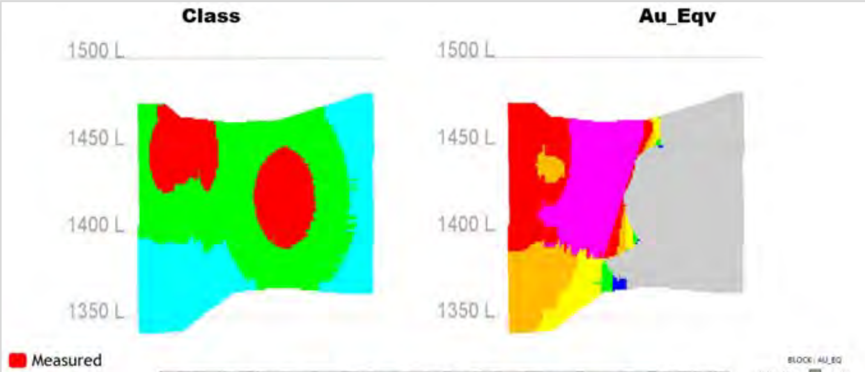


Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
san-juan	1_Measured	1.14	19,828	0.54	211.40	346	134,764	0.01	0.05	0.06
	2_Indicated	0.86	9,713	0.41	159.76	129	49,889	0.01	0.04	0.06
	3_Inferred	0.58	2,575	0.21	67.82	17	5,614	0.00	0.02	0.02
	4_Unknown	0.00	8,599	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**0.80**	**40,715**	**0.38**	**145.35**	**492**	**190,267**	**0.00**	**0.04**	**0.05**

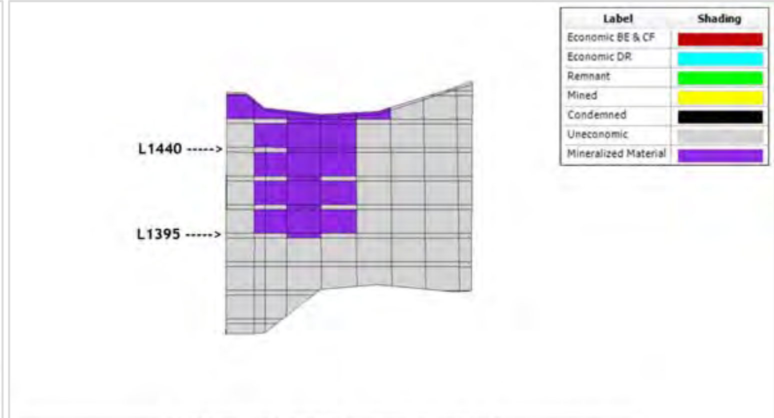


Arista Proven and Probable Reserves - January 2020										
Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
SAN-JUAN	3,584	0.71	259.91	3.95	81	29,949	456	0.01	0.05	0.06

SAN JUAN FW



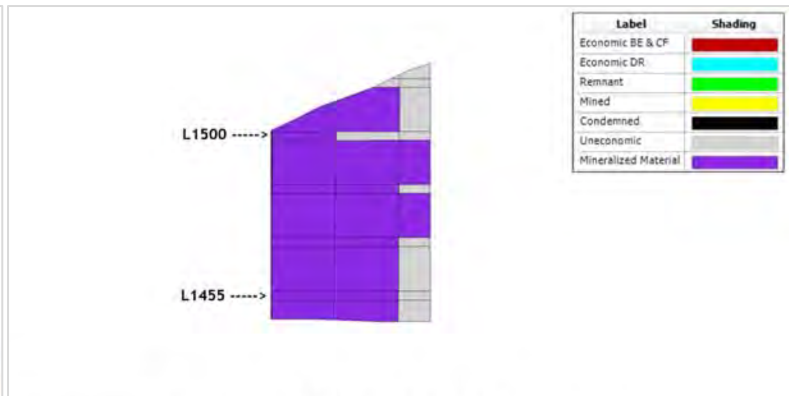
Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
sanjuan-fw	1_Measured	0.83	3,851	0.69	224.59	85	27,807	0.04	0.53	0.97
	2_Indicated	0.70	6,103	1.26	566.04	247	111,075	0.03	0.42	0.81
	3_Inferred	0.61	3,306	1.00	223.33	106	23,736	0.02	0.31	0.62
	4_Unknown	0.00	5,397	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**0.51**	**18,657**	**0.73**	**271.10**	**438**	**162,619**	**0.02**	**0.30**	**0.57**



Arista Proven and Probable Reserves - January 2020										
Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
SANJUAN-FW	0	0.00	0.00	0.00	0	0	0	0.00	0.00	0.00

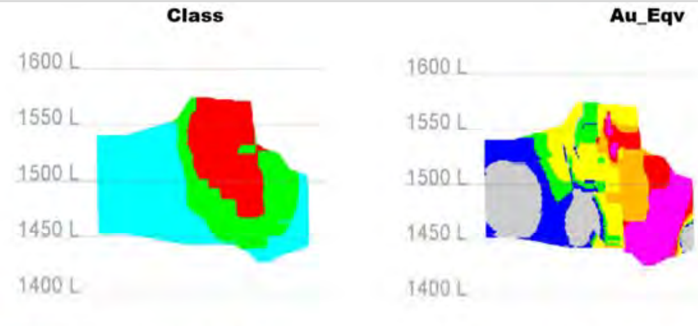
SAN JUAN-NW11

Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
sanjuan-nw11	1_Measured	1.46	2,140	0.96	1,515.33	66	104,267	0.00	0.02	0.01
	2_Indicated	1.33	2,522	0.93	1,380.21	75	111,919	0.00	0.02	0.01
	3_Inferred	0.50	135	0.86	925.39	4	4,022	0.00	0.02	0.01
	4_Unknown	0.00	1,186	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**1.09**	**5,983**	**0.75**	**1,144.71**	**145**	**220,209**	**0.00**	**0.01**	**0.01**



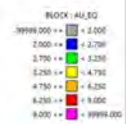
Arista Proven and Probable Reserves - January 2020										
Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
SANJUAN-NW11	0	0.00	0.00	0.00	0	0	0	0.00	0.00	0.00

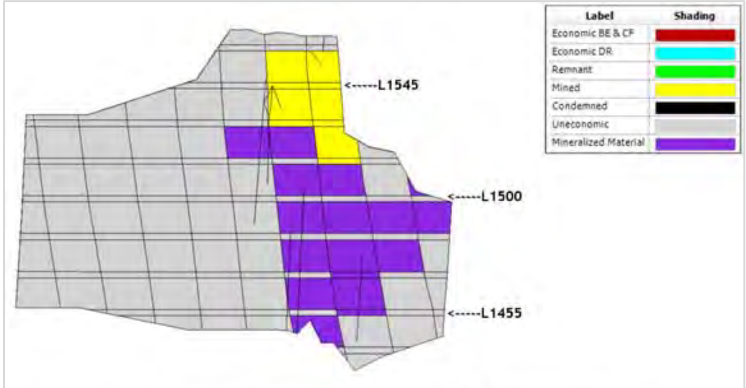
VICTORIA 1



Measured
Indicated
Inferred

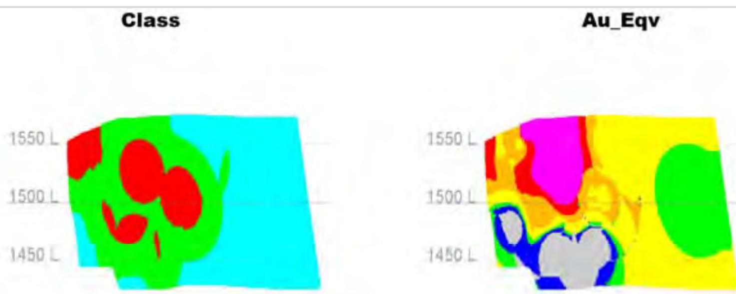
Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
victoria1	1_Measured	1.02	6,024	0.49	327.32	96	63,397	0.00	0.02	0.01
	2_Indicated	1.04	5,449	0.68	346.09	118	60,633	0.00	0.03	0.01
	3_Inferred	0.73	4,946	0.45	166.13	72	26,415	0.00	0.01	0.01
	4_Unknown	0.00	7,308	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**0.65**	**23,727**	**0.38**	**197.22**	**286**	**150,445**	**0.00**	**0.02**	**0.00**





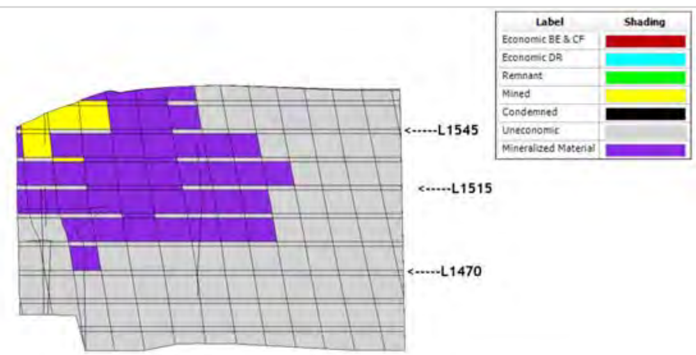
Arista Proven and Probable Reserves - January 2020										
Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
VICTORIA1	0	0.00	0.00	0.00	0	0	0	0.00	0.00	0.00

VICTORIA-NE



Measured
Indicated
Inferred

Vein	Classification	Width m	Ton T	Au g/T	Ag g/T	Au oz	Ag oz	Cu %	Pb %	Zn %
victoria-ne	1_Measured	1.21	11,428	1.31	545.12	480	200,289	0.01	0.09	0.03
	2_Indicated	1.14	19,628	0.73	316.73	458	199,871	0.01	0.07	0.03
	3_Inferred	0.97	22,213	0.57	223.61	405	159,694	0.01	0.07	0.02
	4_Unknown	0.00	10,459	0.00	0.00	0	0	0.00	0.00	0.00
Total general		**0.90**	**63,727**	**0.66**	**273.25**	**1,344**	**559,855**	**0.01**	**0.06**	**0.02**



Arista Proven and Probable Reserves - January 2020										
Vein	Tonnes	Au g/t	Ag g/t	Au Eq g/t	Au oz	Ag oz	Au Eq oz	Cu %	Pb %	Zn %
VICTORIA-NE	0	0.00	0.00	0.00	0	0	0	0.00	0.00	0.00

MARGARITAS PROJECT

TAPADA