Report to:

Avino Silver & Gold Mines Ltd.

AVINO SILVER & GOLD MINES LTD.

Technical Report on the Avino Property, Durango, Mexico

Document No. 735-1651920100-REP-R0001-03

TETRA TECH

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TECHNICAL REPORT ON THE AVINO PROPERTY, DURANGO, MEXICO

EFFECTIVE DATE: APRIL 11, 2017

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GLOSSARY

Units of Measure

above mean sea level ..... amsl
acre ..... ac
ampere ..... A
annum (year) ..... a
billion ..... B
billion tonnes ..... Bt
billion years ago ..... Ga
British thermal unit ..... BTU
centimetre ..... cm
cubic centimetre ..... cm^3
cubic feet per minute ..... cfm
cubic feet per second ..... ft^3/s
cubic foot ..... ft^3
cubic inch ..... in^3
cubic metre ..... m^3
cubic yard ..... yd^3
Coefficients of Variation ..... CVs
day ..... d
days per week ..... d/wk
days per year (annum) ..... d/a
dead weight tonnes ..... DWT
decibel adjusted ..... dBa

decibel	dB
degree	°
degrees Celsius	°C
diameter	ø
dollar (American)	US$
dollar (Canadian)	Cdn$
dry metric ton	dmt
foot	ft
gallon	gal
gallons per minute (US)	gpm
Gigajoule	GJ
gigapascal	GPa
gigawatt	GW
gram	g
grams per litre	g/L
grams per tonne	g/t
greater than	>
hectare (10,000 m^2)	ha
hertz	Hz
horsepower	hp
hour	h
hours per day	h/d
hours per week	h/wk
hours per year	h/a
inch	in
kilo (thousand)	k
kilogram	kg
kilograms per cubic metre	kg/m^3
kilograms per hour	kg/h
kilograms per square metre	kg/m^2
kilometre	km
kilometres per hour	km/h
kilopascal	kPa
kilotonne	kt
kilovolt	kV
kilovolt-ampere	kVA
kilovolts	kV
kilowatt	kW
kilowatt hour	kWh
kilowatt hours per tonne	kWh/t
kilowatt hours per year	kWh/a
less than	<
litre	L
litres per minute	L/m
megabytes per second	Mb/s

megapascal	MPa
megavolt-ampere	MVA
megawatt	MW
metre	m
metres above sea level	masl
metres Baltic sea level	mbsl
metres per minute	m/min
metres per second	m/s
microns	µm
milligram	mg
milligrams per litre	mg/L
millilitre	mL
millimetre	mm
million	M
million bank cubic metres	Mbm^3
million bank cubic metres per annum	Mbm^3/a
million tonnes	Mt
minute (plane angle)	'
minute (time)	min
month	mo
ounce	oz
pascal	Pa
centipoise	mPa·s
parts per million	ppm
parts per billion	ppb
percent	%
pound(s)	lb
pounds per square inch	psi
pounds per square inch (gauge)	psig
revolutions per minute	rpm
second (plane angle)	"
second (time)	s
short ton (2,000 lb)	st
short tons per day	st/d
short tons per year	st/y
specific gravity	SG
square centimetre	cm^2
square foot	ft^2
square inch	in^2
square kilometre	km^2
square metre	m^2
three-dimensional	3D
tonne (1,000 kg) (metric ton)	t
tonnes per day	t/d
tonnes per hour	t/h

tonnes per year	t/a
tonnes seconds per hour metre cubed	ts/hm³
volt	V
week	wk
weight/weight	w/w
wet metric ton	wmt
yard	yd

Abbreviations and Acronyms

acid-base accounting	ABA
Aranz Geo Expert Services	Aranz
atomic absorption	AA
Avino Silver & Gold Mines Ltd.	Avino
caliper volume	CV
Canadian Institute of Mining, Metalurgy, and Petroleum	CIM
Cannon-Hicks & Associates Ltd.	Cannon-Hicks
certified reference material	CRM
Compañía Minera Mexicana de Avino	CMMA
Compañía Minera Mexicana de Avino, S.A. de C.V.	Avino Mexico
Convention on International Trade in Endangered Species of Wild Fauna and Flora	CITES
copper sulphate	$CuSO_4$
copper	Cu
dissolved oxygen	dO_2
east	E
Electrometals Electrowinning	EMEW
Elena Toloso Zone	ET Zone
Environmental Impact Assessment Matter Regulation/ Reglamento en Materia de Evaluacion del Impacto Ambiental	REIA
Environmental Impact Assessment/Evaluación de Impacto Ambiental	EIA
Environmental Impact Statement/Manifestación de Impacto Ambiental	EIS/MIA
Environmental Quality Monitoring Program/ Programa de Seguimiento de la Calidad Ambiental	EQMP
Federal Attorney for Environmental Protection/ Procuraduría Federal de Proteccíon al Ambiente	PROFEPA
general and administrative	G&A
General Law for the Prevention and Comprehensive Management of Waste/ Ley General Para la Prevención y Gestión Integral de Residuos	LGPyGIR
General Law for the Prevention and Management of Waste/ Ley General Para la Prevención y Gestión Integral de los Residuos	LGPGIR
General Law of Ecological Equilibrium and Environmental Protection/ Ley General del Equilibrio Ecológico y la Protección al Ambiente	LGEEPA
global positioning system	GPS
gold	Au
induced polarization	IP
inductively coupled plasma	ICP
inductively coupled plasma-method spectroscopy	ICP-MS

internal rate of return	IRR
International Organization for Standardization	ISO
inverse distance squared	ID^2
kriging neighbourhood analysis	KRN
lead	Pb
life-of-mine	LOM
Minerales de Avino, Sociedad Anonima de Capital Variable	Minerales
MineStart Management Inc.	MMI
Ministry of Environment and Natural Resources/ Secretaría de Medio Ambiente y Recursos Naturales	MENR/SEMARNAT
National Instrument 43-101	NI 43-101
nearest neighbour	NN
net present value	NPV
net smelter return	NSR
north	N
ordinary kriging	OK
potassium amyl xanthate	PAX
preliminary economic assessment	PEA
PricewaterhouseCoopers	PwC
Process Research Associates Ltd.	PRA
QG Australia (Pty) Ltd.	QG Consulting
Qualified Person	QP
quality assurance	QA
quality assurance	QA
quality control	QC
quality control	QC
silver equivalent	Ag_Eq
silver	Ag
sodium carbonate	Na_2CO_3
sodium cyanide	NaCN
south	S
special mining duty	SMD
standard reference material	SRM
tailings storage facility	TSF
the Avino Mine	the Property or the Project
TSX Venture Exchange	TSXV
Universal Transverse Mercator	UTM
water displacement	WD
west	W
zinc	Zn

1.0 SUMMARY

1.1 INTRODUCTION

Avino Silver & Gold Mines Ltd. (Avino) is a Canadian-based mining and exploration company listed on the TSX Venture Exchange (TSXV) and the NYSE-MKT with precious metal properties in Mexico and Canada.

The Avino Mine (the Property or the Project), near Durango, Mexico, is Avino's principal asset. This Preliminary Economic Assessment (PEA) Update Technical Report focuses on the technical and economical assessments of the oxide tailings, including the Mineral Resource estimates on the oxide tailings, as well as the Avino and San Gonzalo veins (QG Australia (Pty) Ltd. (QG Consulting) 2016). Avino holds a 99.67% interest in the Property through its subsidiary companies called Compañía Minera Mexicana de Avino, S.A. de C.V. (CMMA) and Promotora Avino, S.A. de C.V. Avino commenced development, including drilling and bulk sampling, on the San Gonzalo Vein in 2010 and this work is ongoing. This marks the resumption of activity on the Property since 2001, when low metal prices and the closure of a key smelter caused the mine to close after having been in operation continuously for 27 years. Between 1976 and 2001, the mine produced approximately 497 t of silver, 3 t of gold, and 11,000 t of copper (Slim 2005a) as well as an apparently undocumented amount of lead.

This PEA update mainly focuses on the recovery of the silver and gold from the oxide tailings. This report includes a summary of material information concerning a PEA conducted on part of the Property by Tetra Tech Canada Inc. (Tetra Tech) (formerly Tetra Tech WEI Inc.) and filed in 2013 and the Mineral Resource estimates from Aranz Geo Expert Services (Aranz) (formerly QG Consulting) (QG Consulting 2016). This PEA update is preliminary in nature and includes Inferred Mineral Resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as Mineral Reserves. Furthermore, there is no certainty that the Mineral Resource estimate will be realized.

The majority of the information has been sourced from the data provided by Avino, Avino internal reports, Aranz (QG Consulting 2016), Tetra Tech (2013), Slim (2005d), and Gunning (2009). The majority of the information was provided in English, but some information was written in Spanish and subsequently translated into English.

1.2 PROPERTY DESCRIPTION AND LOCATION

The Property is located in Durango State in North Central Mexico, within the Sierra Madre Silver Belt, 82 km northeast of Durango City (Figure 1.1). The current Property is comprised of 23 mineral concessions, totalling 1,103.934 ha. Of these, 22 mineral concessions, totalling 1,005.104 ha, are held by CMMA (Avino's Mexican subsidiary company), by Promotora Avino SA de CV, and by Susesion de la Sra. Elena del Hoyo Algara de Ysita.

Figure 1.1 General Location of the Property

Through its subsidiary company, Avino entered into an agreement (the Agreement) on February 18, 2012 with Minerales de Avino, Sociedad Anonima de Capital Variable (Minerales), whereby Minerales has indirectly granted to Avino the exclusive mining and occupation rights to the La Platosa concession. The La Platosa concession covers 98.83 ha and hosts the Avino Vein and Elena Toloso Zone (ET Zone).

Pursuant to the Agreement, Avino has the exclusive right to explore and mine the concession for an initial period of 15 years, with the option to extend the agreement for another 5 years. In consideration of the grant of these rights, Avino has paid to Minerales the sum of US$250,000 by the issuance of 135,189 common shares of Avino. Avino has also agreed to pay to Minerales a royalty equal to 3.5% of net smelter returns (NSRs), at the commencement of commercial production from the concession.

All concessions are current and up to date based on information received. Mineral concessions in Mexico do not include surface rights and Avino has entered into agreements with communal landowners (Ejidos) of San Jose de Avino, Panuco de Coronado and Zaragoza for the temporary occupation and surface rights of the concessions.

1.3 GEOLOGY AND MINERALIZATION

The Property is located within the Sierra de Gamon, on the east flank of the Sierra Madre Occidental. The area is a geological window into the Lower Volcanic series and consists of volcanic rocks of mainly Andesitic affiliation with other rock types occurring more sparsely to the north (Slim 2005d).

A large monzonitic intrusion is observed in the region in the form of dykes and small stocks, which may be related to the Avino Vein mineralization. A number of younger thin mafic sills are also found in various parts of the region.

The Avino concession is situated within a 12 km north-south by 8.5 km caldera, which hosts numerous low sulphidation epithermal veins, breccias, stockwork and silicified zones. These zones grade into a "near porphyry" environment in the general vicinity of the Avino property. The caldera has been uplifted by regional north trending block faulting (a graben structure), exposing a window of andesitic pyroclastic rocks of the lower volcanic sequence which is a favourable host rock. The upper volcanic sequence consists of rhyolite to trachytes with extensive ignimbrite and is intruded by monzonite bodies. The basal andesite-bearing conglomerate and underlying Paleozoic basement sedimentary rocks (consisting of shales, sandstones and conglomerates) have been identified on the Avino concession in the south-central portion of the caldera, covering the Guadalupe, Santiago, San Jorge, the San Gonzalo Trend, Malinche, Porterito and Yolanda areas.

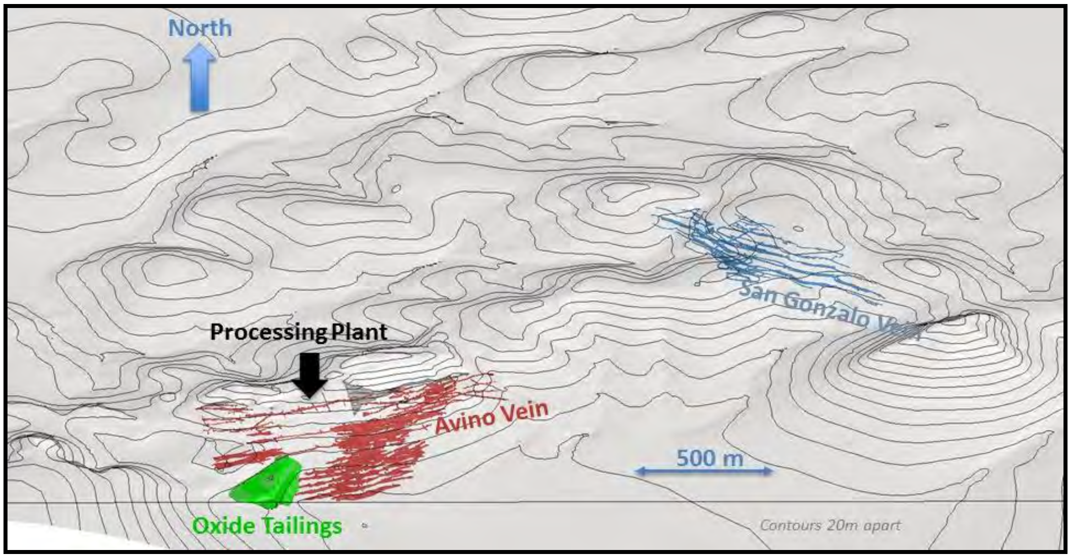
A northerly trending felsic dyke, probably a feeder to the upper volcanic sequence, transects the Property and many of the veins. The Aguila Mexicana low temperature vein system, with significant widths but overall low precious metal values, trends north-northwest, similar to the felsic dyke and with similar continuity across the Property. The two structures may occupy deep crustal faults that controlled volcanism and mineralization, with the felsic dyke structure controlling the emplacement of the Avino, Nuestra Senora and El Fuerte-Potosina volcanic centres and the Aguila Mexicana controlling the Cerro San Jose and El Fuerte-Potosina volcanic centres (Paulter 2006).

Silver- and gold-bearing veins crosscut the various lithologies and are generally oriented north-northwest to south-southeast (the Avino Vein trend) and northwest to southeast the San Gonzalo trend). In Mexico, these vein deposits may have large lateral extents, but can be limited in the vertical continuity of grades due to the effects of pressure on boiling levels for mineralizing fluids. The rocks have been weathered and leached in the upper sections, as a result of contact with atmospheric waters. The oxide tailings material is derived primarily from these shallow zones, whereas the sulphide tailings are predominantly from material sourced at depth from the underground workings.

The valuable minerals found during the period of mining of the oxide zone are reported to be argentite, bromargyrite, chalcopyrite, chalcocite, galena, sphalerite, bornite, native silver and gold, and native copper.

Three deposits, the Avino Vein, the San Gonzalo Vein and the oxide tailings deposit, are the subject of Mineral Resource estimates disclosed in this report.

Figure 1.2 Perspective View of the Property Looking North and Showing the Three Deposits



1.3.1 THE AVINO VEIN

The Avino Vein (see Figure 1.2 for location) has been and continues to be the primary deposit mined on the Property since at least the 19th century. It is 1.6 km long and up to 60 m wide on the surface. The deepest level is at the 1,930 m amsl level (430 m below surface).

1.3.2 THE SAN GONZALO VEIN

The San Gonzalo Vein system (see Figure 1.2 for location), including the crosscutting Angelica vein, is located 2 km northeast of the Avino Vein. It constitutes a strongly developed vein system over 25 m across, trending 300 to 325°/80° northeast to 77° south. Banded textures and open-space filling are common and individual veins have an average width of less than 2 m. The vein was mined historically and underground workings extend approximately 1.1 km along strike and to the 1,970 m amsl (300 m below surface).

1.3.3 THE OXIDE TAILINGS

The oxide tailings deposit (see Figure 1.2 for location) comprises historic recovery plant residue material that was wasted from processing plants during the earlier period of open pit mining of the Avino Vein. The oxide tailings are partially covered by younger unconsolidated sulphide tailings on the northwest side.

1.4 RESOURCE ESTIMATES

The Avino system, San Gonzalo system, and oxide tailings Mineral Resources were modelled and estimated using Datamine™ Studio software version 3.24.25.0. The reported Mineral Resource estimated by Aranz was interpolated using ordinary kriging (OK) and capped grades and inverse distance squared (ID^2) and nearest neighbour (NN) for model validation purposes. All three deposits were estimated for silver, gold, copper, lead and zinc. Under current economic and technical conditions gold and silver and copper are recoverable from the Avino system and all three metals are included in the mineral resource and for the silver equivalent (Ag_Eq) calculation for the Avino system. Under current economic and technical conditions only gold and silver are recoverable from the San Gonzalo system and the oxide tailings and consequently only silver and gold are included in the Mineral Resource and for the silver equivalent calculation for the San Gonzalo system and oxide tailings. Cut-off reporting (to consider "eventual prospects for eventual economic extraction") utilizes an Ag_Eq calculation where the total metal value is converted into an in situ silver resource. For reporting purposes, a base-case Ag_Eq cut-off of 55 g/t is used for the Avino system, an Ag_Eq cut-off of 125 g/t is used for the San Gonzalo system, and an Ag_Eq cut-off of 50 g/t is used for the oxide tailings based on current economic parameters.

Table 1.1 is the Mineral Resource statement. Other grade tonnage graphs and tables found in Section 14.0 are intended to show sensitivity of the mineralized material and must not be considered Mineral Resources.

It must be noted that no Mineral Resource has been estimated for the sulphide tailings portion of the Property.

Table 1.1 Mineral Resources at the Avino Property

Resource Category	Deposit	Cut-off (Ag_Eq g/t)	Tonnes (t)	Grade				Metal Contents		
				Ag_Eq (g/t)	Ag (g/t)	Au (g/t)	Cu (%)	Ag (million tr oz)	Au (thousand tr oz)	Cu (t)
Avino Mine: Measured and Indicated Mineral Resources										
Measured	Avino System	55	950,000	143	74	0.33	0.69	2.3	10.0	6,550
Measured	San Gonzalo System	125	170,000	357	272	1.50	0.00	1.5	8.2	0
Total Measured	**All Deposits**	-	**1,120,000**	**176**	**105**	**0.51**	**0.58**	**3.8**	**18.2**	**6,550**
Indicated	Avino System	55	500,000	129	68	0.36	0.56	1.1	5.7	2,800
Indicated	San Gonzalo System	125	320,000	310	237	1.30	0.00	2.4	13.3	0
Indicated	Oxide Tailings	50	1,330,000	124	98	0.46	0.00	4.2	19.8	0
Total Indicated	**All Deposits**	-	**2,150,000**	**152**	**111**	**0.56**	**0.13**	**7.7**	**38.8**	**2,800**
Total Measured and Indicated	**All Deposits**	-	**3,270,000**	**160**	**109**	**0.54**	**0.29**	**11.5**	**57.0**	**9,350**
Avino Mine: Inferred Mineral Resources										
Inferred	Avino System	55	5,790,000	155	81	0.57	0.58	15.1	105.8	33,550
Inferred	San Gonzalo System	125	540,000	403	314	1.58	0.00	5.5	27.5	0
Inferred	Oxide Tailings	50	1,810,000	113	88	0.44	0.00	5.1	25.6	0
Total Inferred	**All Deposits**	-	**8,140,000**	**162**	**98**	**0.61**	**0.41**	**25.6**	**158.9**	**33,550**

Notes: Figures may not add to totals shown due to rounding.
Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
The Mineral Resource estimate is classified in accordance with the Canadian Institute of Mining, Metallurgy and Petroleum's (CIM) Definition Standards For Mineral Resources and Mineral Reserves incorporated by reference into National Instrument 43-101 (NI 43-101) Standards of Disclosure for Mineral Projects.
Mineral Resources are reported at cut-off grades 50 g/t, 55 g/t, and 125 g/t Ag_Eq grade.
Au_Eq grades were calculated using conversion formulas Ag_Eq = Ag + 55.9 * Au + 72.99 * Cu for Avino Vein and Ag_Eq = Ag + 56.38 * Au for San Gonzalo Vein System and oxide tailings.
Cut-off grades were calculated using current costs, silver price of US$19.50/oz, gold price of US$1,250/oz, and copper price of US$2.10/lb.
Au – gold; Ag – silver; Cu – copper.

1.5 MINERAL PROCESSING, METALLURGICAL TESTING AND RECOVERY METHODS

1.5.1 AVINO VEIN

Prior to the mine shutting down in 2001, Avino operated a 1,000 t/d processing plant, achieving up to 1,300 t/d, producing a copper concentrate that was sold to a smelter in San Luis Potosi. Mine and mill operations were then suspended. Following several years of redevelopment, Avino completed the Avino Mine and mill expansion in Q4 2014. On January 1, 2015, full scale operations commenced and commercial production was declared effective April 1, 2016 following a 19 month advancement and test period.

The plant consists of a conventional three-stage crushing circuit with the tertiary crusher in closed circuit with a screen. The crushed material is fed to a ball mill and classified with a hydrocyclone. The fines from the hydrocyclone reports to the flotation circuit where typical flotation reagents for copper minerals are used. The concentrates from the rougher and scavenger circuits are upgraded in a cleaner circuit with the final concentrate reporting to a thickener and pressure filter. The moisture of the filter cake is approximately 8% and then shipped for sale overseas. Flotation tailing is pumped to the permitted tailings impoundment where decant water is reclaimed for process use.

1.5.2 SAN GONZALO VEIN

Avino is currently conducting mining activity on the San Gonzalo Vein, including processing of San Gonzalo Vein material at the mill plant at the Avino Mine site.

The process plant consists of crushing and grinding circuits, followed by a flotation process circuit to recover and upgrade silver and gold from the feed material. Common reagents are used within the flotation circuit. The flotation concentrate is thickened, filtered to 9.9% moisture content, and sent to the concentrate stockpile for subsequent shipping to customers.

The final flotation tailings is disposed of in the tailing pond.

1.5.3 OXIDE TAILINGS

Currently there is no metal recovery operation on the stored tailings. As reported by MineStart Management Inc. (MMI) and Process Research Associates Ltd. (PRA), several metallurgical work programs were conducted to investigate silver and gold recovery from the tailings.

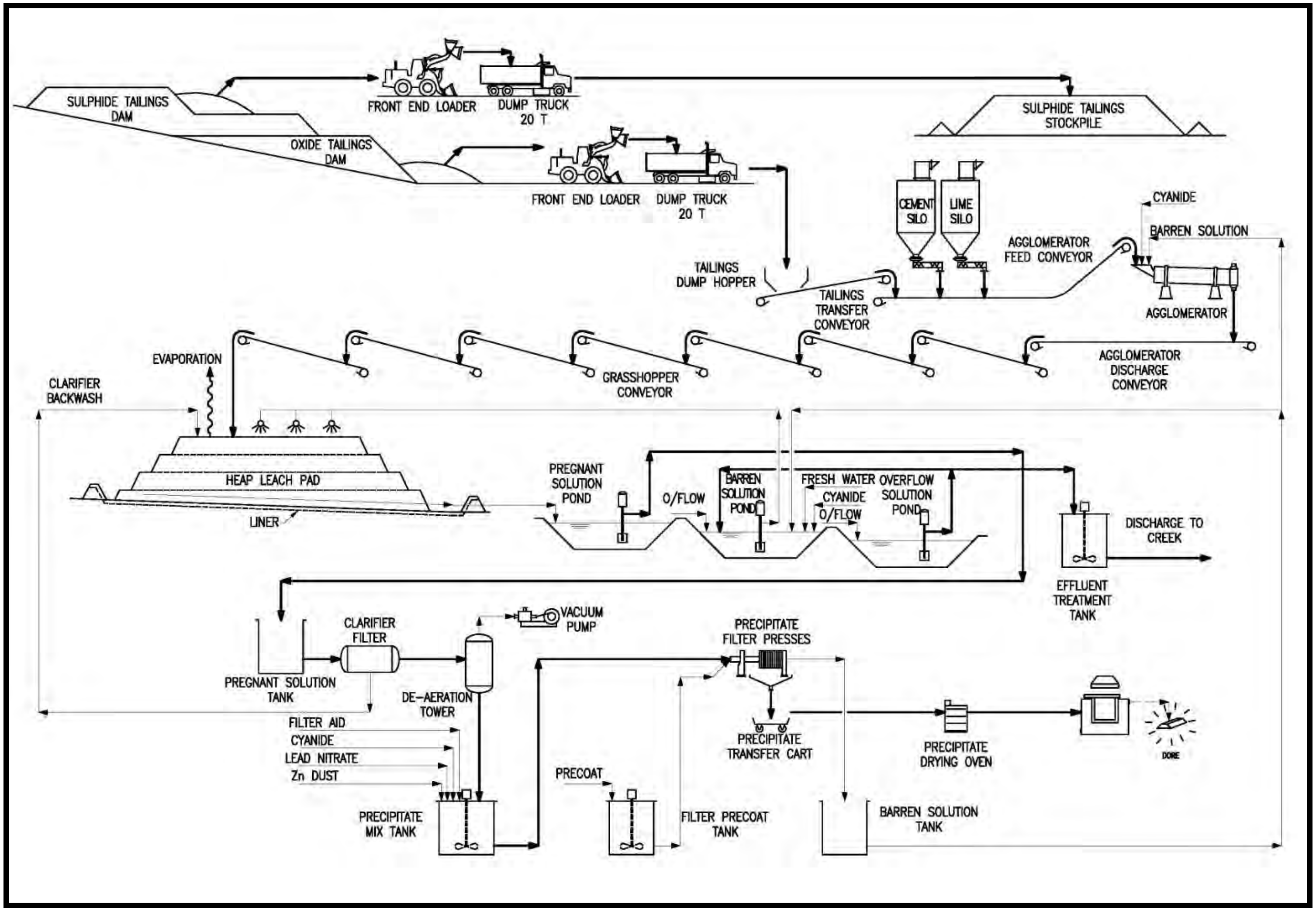
The test work investigated various treatment methods, including gravity separation, flotation, and cyanide leaching (tank leaching and heap leaching). The preliminary test results appears to show that the tailings materials responded reasonably well to the cyanide leaching treatment, including tank leaching and column leaching testing procedures. A preliminary economical evaluation was conducted in 2012 and appeared to indicate that a heap leaching treatment would produce a better financial alternative, compared to tank leaching with or without regrinding processes.

Accordingly, a heap leaching treatment is proposed for gold and silver recovery from the oxide tailings. The processing will consist of tailings reclamation, agglomeration, and cyanide heap leaching followed by a Merrill-Crowe process to recover silver and gold from the pregnant solution. The process plant will operate at a throughput rate of 1,370 t/d on a 24 h/d, 365 d/a basis, with an overall utilization of 90%. The simplified processing flowsheet is illustrated in Figure 1.3.

1.5.4 SULPHIDE TAILINGS

Avino is not currently conducting mining activity on the sulphide tailings. Because some of the oxide tailings and sulphide tailings were co-deposited, and the oxide tailings are partially covered by younger unconsolidated sulphide tailings on the northwest side of the tailings storage dam, the sulphide tailings materials will be reclaimed as required during the oxide tailings reclamation. The reclaimed sulphide tailings is planned to be stored in a separate sulphide tailings storage facility for further exploration, while some of the sulphide tailings could be used for constructing the heap leach pad and facilities for the oxide tailings retreatment; however, no quantities have been estimated at this stage. In addition, no recovery methods are currently proposed for the sulphide tailings, which have been excluded from this study.

Figure 1.3 Simplified Process Flowsheet



1.6 MINING METHODS

1.6.1 AVINO VEIN

Avino is currently conducting mining activity on the Avino Vein using longhole stoping and sub-level caving mining methods.

Avino has not based its production decisions on a Feasibility Study or Mineral Reserves demonstrating economic and technical viability, and as a result there is increased uncertainty and multiple technical and economic risks of failure that are associated with these production decisions. These risks, among others, include areas that would be analyzed in more detail in a Feasibility Study, such as applying economic analysis to Mineral Resources and Mineral Reserves, more detailed metallurgy, and a number of specialized studies in areas such as mining and recovery methods, market analysis, and environmental and community impacts. Information in this section was provided by Avino.

Production from the Avino Vein is summarized in Table 1.2.

Table 1.2 Recent Production from the Avino Vein

Production Description	2015	2016	Q1 2017
Mill Feed Tonnage			
Tonnes Milled (t)	396,113	429,289	116,553
Feed Grade			
Silver (g/t)	65	67	61
Gold (g/t)	0.29	0.42	0.50
Copper (%)	0.62	0.50	0.44
Recovery			
Silver (%)	87	85	86
Gold (%)	75	64	67
Copper (%)	87	90	91
Total Metal Produced			
Silver Produced (oz)	717,901	789,372	195,562
Gold Produced (oz)	2,757	3,691	1,252
Copper Produced (lb)	4,743,691	4,206,585	1,024,853
Ag_Eq Produced (oz)	1,801,997	1,606,272	439,163

Source: Avino (2017a; 2017b)

1.6.2 SAN GONZALO VEIN

Avino is currently conducting mining activity on the San Gonzalo Vein using cut-and-fill and shrinkage stoping mining methods.

Avino has not based its production decisions on a Feasibility Study or Mineral Reserves demonstrating economic and technical viability, and as a result there is increased

uncertainty and multiple technical and economic risks of failure that are associated with these production decisions. These risks, among others, include areas that would be analyzed in more detail in a Feasibility Study, such as applying economic analysis to Mineral Resources and Mineral Reserves, more detailed metallurgy, and a number of specialized studies in areas such as mining and recovery methods, market analysis, and environmental and community impacts. Information in this section was provided by Avino.

Production from the San Gonzalo Vein is summarized in Table 1.3.

Table 1.3 Recent Production from the San Gonzalo Vein

Production Description	2012	2013	2014	2015	2016	Q1 2017
Mill Feed Tonnage						
Total Mill Feed (t)	19,539	78,415	79,729	121,774	115,047	20,133
Feed Grade						
Silver (g/t)	259	288	337	279	267	229
Gold (g/t)	1.04	1.34	1.88	1.48	1.25	1.19
Recovery						
Silver (%)	79	83	84	83	83	84
Gold (%)	70	73	78	75	74	76
Total Produced						
Silver (oz)	128,607	602,233	724,931	907,384	822,689	124,520
Gold (oz)	455	2,473	3,740	4,326	3,427	585
Ag_Eq Produced (oz)	151,372	751,462	958,702	1,218,351	1,073,062	165,480

Source: Avino (2017a; 2017b)

1.6.3 Oxide Tailings

The oxide tailings Mineral Resource will be mined/moved using a conventional truck/loader surface mining method. The production cycle consists of loading and trucking. The production schedule has been developed for the oxide tailings based on a treatment rate of 500 kt/a, which would be equivalent to a throughput rate of 1,370 t/d. This will give an overall project duration of approximately eight years. This eight-year period includes a one-year pre-production period and excludes the time required for remediation of the heap after the leaching process has been completed. Only oxide tailings will be considered for treatment, while sulphide materials will be considered waste.

The production schedule is shown in Table 1.4.

Table 1.4 Mining Production Schedule

Year	Mineralized Material (t)	Head Grade		Waste (t)	Total Material Moved (t)
		Ag (g/t)	Au (g/t)		
-1	-	-	-	500,000	500,000
1	350,000	88.83	0.51	558,906	908,906
2	500,000	100.11	0.48	497,101	997,101
3	500,000	94.95	0.44	498,995	998,995
4	500,000	78.28	0.45	75,148	575,148
5	499,673	82.99	0.44	500,327	1,000,000
6	500,000	87.95	0.36	295,829	795,829
7	272,641	76.27	0.28	12,405	285,046
LOM	3,122,314	87.75	0.43	2,938,711	6,061,025

1.7 Project Infrastructure

The history of operations at the Avino Mine provides ample evidence of sufficient infrastructure and services in the area. The San Gonzalo Mine entered commercial production in October 2012, followed by reopening the Avino Mine in January 2015. The two mines feed a conventional flotation mill that has three separate circuits and a capacity of 1,500 t/d. The existing tailings deposition facility has been upgraded and is fully permitted and operational for approximately another 500,000 t of tailings. The offices, miner's quarters, secured explosives storage facilities, warehouse, laboratory and other associated facilities are all in place. The tailings leach facilities are planned to be located southeast of the existing tailings storage pond.

1.8 Environmental

Environmental settings, permits and registrations, and environmental management strategies that may be required for the Project are summarized in Section 20.0. Permits and authorizations required for the operation of the Project may include an operating permit, an application for surface tenures, a waste water discharge registration, a hazardous waste generator's registration, and an Environmental Impact Assessment (EIA) or Evaluación de Impacto Ambiental. Acid-base accounting (ABA) tests have indicated that mild acid generation may already have started on the tailings dam. A gap analysis and additional tests to further characterize current conditions of the tailings should be completed to properly design a tailings management plan.

1.9 CAPITAL AND OPERATING COSTS

1.9.1 CAPITAL COST ESTIMATES

OXIDE TAILINGS

The capital cost for the Project has been assessed at US$28.8 million (US$24.4 million of initial capital plus US$4.4 million sustaining capital) and is summarized in Table 1.5.

Table 1.5 Capital Cost Summary

Item/Description	Total Initial Capital Cost (US$000)	Total Sustaining Capital Cost (US$000)
Direct Costs		
Mining, Agglomeration, and Pad Loading	2,899	818
Process Facilities	3,979	
Reagents/Auxiliary Services	526	
Buildings	1,003	
Leach Pad and Infrastructure	4,522	1,819
Power Supply and Distribution	1,571	
Total Direct Costs	14,500	2,637
Indirect Costs		
Engineering, Procurement, Construction Management, Quality Assurance and Vendor Representatives	2,338	386
Freight and Construction Indirects	2,898	430
Owner's Costs	725	132
Contingency	3,902	767
Total Indirect Costs	**9,863**	**1,715**
Total Capital Costs	**24,363**	**4,352**

AVINO VEIN, SAN GONZALO VEIN AND SULPHIDE TAILINGS

Avino is currently conducting mining activity on the Avino and San Gonzalo veins. There is no cost estimate applicable and all costs are based on actual expenditure.

Avino has not based its production decisions on a Feasibility Study or Mineral Reserves demonstrating economic and technical viability, and as a result there is increased uncertainty and multiple technical and economic risks of failure that are associated with these production decisions. These risks, among others, include areas that would be analyzed in more detail in a Feasibility Study, such as applying economic analysis to Mineral Resources and Mineral Reserves, more detailed metallurgy, and a number of specialized studies in areas such as mining and recovery methods, market analysis, and environmental and community impacts.

The actual capital expenditures (in US dollars) to date on the Avino Vein and San Gonzalo Vein operations are summarized in Table 1.6 and Table 1.7, respectively. The capital expenditures have been broken down by year and area.

Table 1.6 Capital Costs for the Avino Vein (US$)

Description	Q1 2017	2016	2015	2014
Office Furniture	5,531	8,625	7,093	6,521
Computer Equipment	1,415	14,913	17,233	33,178
Mill Machinery and Processing Equipment	3,315	70,653	525,067	2,832,627
Mine Machinery and Transportation Equipment	106,659	1,985,446	1,918,764	2,125,229
Buildings and Construction	99,334	485,757	590,639	313,875
San Gonzalo Vein Mineral Property	0	0	0	0
Elena Toloso Mineral Property	233,772	4,330,125	0	0
Total Capital Costs	**450,026**	**6,895,518**	**3,058,796**	**5,311,429**

Source: Avino

Table 1.7 Capital Costs for the San Gonzalo Vein (US$)

Description	Q1 2017	2016	2015	2014
Office Furniture	5,212	7,248	3,725	6,521
Computer Equipment	1,368	12,575	17,233	32,937
Mill Machinery and Processing Equipment	139,499	188,884	100,537	264,178
Mine Machinery and Transportation Equipment	143,758	40,294	133,248	646,981
Buildings and Construction	101,559	443,135	55,819	356,300
San Gonzalo Vein Mineral Property	133,723	1,080,889	577,462	697,107
Elena Toloso Mineral Property	0	0	0	0
Total Capital Costs	**525,119**	**1,773,024**	**888,024**	**2,004,023**

Source: Avino

Avino is not currently conducting mining activity on the sulphide tailings portion of the Property. No capital costs have been estimated for any potential mining activity on the sulphide tailings portion of the Property.

1.9.2 OPERATING COST ESTIMATES

OXIDE TAILINGS

The life-of-mine (LOM) overall operating costs for the Oxide Tailings Retreatment Project, including the costs for mining, process and general and administrative (G&A), have been estimated to be approximately $15.06/t milled. Table 1.8 gives the LOM overall unit operating cost summary, based on a nominal processing rate of 1,370 t/d. The operating cost estimate is reported in US dollar with an exchange rate of Mexican Peso to US Dollar at 19.23.

Table 1.8 LOM Unit Operating Cost Estimate Summary

Description	Personnel	Unit Cost (US$/t treated)
Mining	15*	1.13
Process	39	12.53
G&A	11	1.41
Total Operating Cost	**65**	**15.06**

Note: *labour requirement for hauling the tailings and waste is excluded, as it will be by done by a contractor.

AVINO VEIN, SAN GONZALO VEIN, AND SULPHIDE TAILINGS

Avino is currently conducting mining activity on the Avino and San Gonzalo veins. There is no cost estimate applicable and all costs are based on actual expenditures.

Avino has not based its production decisions on a Feasibility Study or Mineral Reserves demonstrating economic and technical viability, and as a result there is increased uncertainty and multiple technical and economic risks of failure that are associated with these production decisions. These risks, among others, include areas that would be analyzed in more detail in a Feasibility Study, such as applying economic analysis to Mineral Resources and Mineral Reserves, more detailed metallurgy, and a number of specialized studies in areas such as mining and recovery methods, market analysis, and environmental and community impacts.

The actual operating costs (in US dollars) for the Avino Vein and the San Gonzalo Vein in 2016 and Q1 2017 are presented in Table 1.9 and Table 1.10.

The mine and milling costs include operating and maintenance labour together with the operation associated consumable supplies. The cost for electrical power is included in the milling costs. The geological component is mostly related to technical labour.

Table 1.9 Operating Costs for the Avino Vein (US$)

Description	Q1 2017	Q4 2016	Q3 2016	Q2 2016
Mining Cost	1,711,570	1,402,941	2,232,967	1,670,300
Milling Cost	947,743	922,639	1,082,387	942,560
Geological and Other	710,786	711,391	847,942	740,911
Royalties	160,468	202,790	219,658	188,349
Depletion and Depreciation	367,658	301,433	354,249	264,074
Total Direct Costs	3,898,225	3,541,194	4,737,202	3,806,193
G&A	777,487	742,572	1,516,352	558,332
Total Operating Costs	**4,675,712**	**4,283,766**	**6,253,555**	**4,364,525**

Source: Avino

Table 1.10 Operating Costs for the San Gonzalo Vein (US$)

Description	Q1 2017	Q4 2016	Q3 2016	Q2 2016	Q1 2016
Mining Cost	451,288	1,798,503	793,057	1,419,545	313,684
Milling Cost	70,962	212,467	208,665	358,227	221,803
Geological and Other	149,192	318,843	141,618	200,997	103,299
Royalties	0	0	0	0	0
Depletion and Depreciation	97,352	485,732	148,105	271,972	72,053
Total Direct Costs	768,794	2,815,545	1,291,445	2,250,740	710,839
G&A	293,096	607,351	635,649	281,192	666,121
Total Operating Costs	**1,061,890**	**3,422,897**	**1,927,094**	**2,531,933**	**1,376,960**

Source: Avino

Avino is not currently conducting mining activity on the sulphide tailings portion of the Property. No operating costs have been estimated for any potential mining activity on the sulphide tailings portion of the Property.

1.10 ECONOMIC ANALYSIS

No economic analysis was performed for the Avino Vein, the San Gonzalo Vein or the sulphide tailings. Tetra Tech prepared an economic evaluation for the oxide tailings retreatment based on a pre-tax financial model. Metal prices used in the base case were:

- gold – US$1,250/oz
- silver – US$18.50/oz.

The pre-tax financial results are:

- 48.4% internal rate of return (IRR)
- 2.0-year payback period
- US$40.5 million net present value (NPV) at an 8% discount rate.

Avino commissioned PricewaterhouseCoopers (PwC) in Vancouver to prepare the tax component of the model for the post-tax economic evaluation for this updated PEA, with the inclusion of applicable income and mining taxes.

The following post-tax financial results were calculated:

- 32.0% IRR
- 2.6-year payback period
- US$22.2 million NPV at an 8% discount rate.

1.11 RECOMMENDATIONS

Tetra Tech would recommend that Avino proceed with the next phase of work to identify potential cost savings and additional revenue generating opportunities and more completely assess the viability of the tailings retreatment Project.

2.0 INTRODUCTION

Avino is a Canadian-based mining and exploration company listed on the TSXV and NYSE-MKT, trading under the symbol ASM. Avino has precious metal properties in Mexico and Canada and has a head office located at 900-570 Granville Street, Vancouver, British Columbia, Canada, V6C 3P1.

Avino retained Tetra Tech, in conjuction with Aranz Geo Expert Services (Aranz) (formerly QG Australia (Pty) Ltd., to produce an updated technical report on the Avino Property. The primary purpose of this updated report is to evaluate technical and economical viability for the Project. The report also includes a summary of the information previously disclosed in a Technical Report filed in 2016 (QG 2016), comprising a Mineral Resource estimate and the 2013 PEA on the oxide tailings portion of the Property (Tetra Tech 2013). This report has been prepared in accordance with NI 43-101 and Form 43-101F.

2.1 EFFECTIVE DATES

The effective date of this report is April 11, 2017. The effective date of the Mineral Resource estimate is August 31, 2016.

2.2 QUALIFIED PERSONS

A summary of the Qualified Persons (QPs) responsible for this report is provided in Table 2.1. The following QPs conducted site visits of the Property:

- Hassan Ghaffari, P.Eng. M.A.Sc., visited the site March 30, 2011 for one day.
- Michael F. O'Brien, P.Geo., M.Sc., Pr.Scit.Nat., FAusIMM, FSAIMM visted the site June 6 to 7, 2016, inclusive.

Table 2.1 Summary of QPs

Report Section		Company	QP
1.0	Summary	All	Sign-off by Section
2.0	Introduction	Tetra Tech	Hassan Ghaffari, P.Eng.
3.0	Reliance on Other Experts	Aranz Tetra Tech	Michael F. O'Brien, P.Geo., M.Sc., Pr.Sci.Nat., FAusIMM, FSAIMM Sabry Abdel Hafez, Ph.D., P.Eng. Jianhui (John) Huang, Ph.D., P.Eng. Hassan Ghaffari, P.Eng.
4.0	Property Description and Location	Aranz	Michael F. O'Brien, P.Geo., M.Sc., Pr.Sci.Nat., FAusIMM, FSAIMM

table continues...

Report Section		Company	QP
5.0	Accessibility, Climate, Local Resources, Infrastructure and Physiography	Aranz	Michael F. O'Brien, P.Geo., M.Sc., Pr.Sci.Nat., FAusIMM, FSAIMM
6.0	History	Aranz	Michael F. O'Brien, P.Geo., M.Sc., Pr.Sci.Nat., FAusIMM, FSAIMM
7.0	Geological Setting and Mineralisation	Aranz	Michael F. O'Brien, P.Geo., M.Sc., Pr.Sci.Nat., FAusIMM, FSAIMM
8.0	Deposit Types	Aranz	Michael F. O'Brien, P.Geo., M.Sc., Pr.Sci.Nat., FAusIMM, FSAIMM
9.0	Exploration	Aranz	Michael F. O'Brien, P.Geo., M.Sc., Pr.Sci.Nat., FAusIMM, FSAIMM
10.0	Drilling	Aranz	Michael F. O'Brien, P.Geo., M.Sc., Pr.Sci.Nat., FAusIMM, FSAIMM
11.0	Sample Preparation, Analyses and Security	Aranz	Michael F. O'Brien, P.Geo., M.Sc., Pr.Sci.Nat., FAusIMM, FSAIMM
12.0	Data Verification	Aranz	Michael F. O'Brien, P.Geo., M.Sc., Pr.Sci.Nat., FAusIMM, FSAIMM
13.0	Mineral Processing and Metallurgical Testing	Tetra Tech	Jianhui (John) Huang, Ph.D., P.Eng.
14.0	Mineral Resource Estimates	Aranz	Michael F. O'Brien, P.Geo., M.Sc., Pr.Sci.Nat., FAusIMM, FSAIMM
15.0	Mineral Reserve Estimates	Tetra Tech	Sabry Abdel Hafez, PhD., P.Eng.
16.0	Mining Methods	Tetra Tech	Sabry Abdel Hafez, PhD., P.Eng.
17.0	Recovery Methods	Tetra Tech	Jianhui (John) Huang, Ph.D., P.Eng.
18.0	Infrastructure	Tetra Tech	Hassan Ghaffari, P.Eng.
19.0	Market Studies and Contracts	Tetra Tech	Hassan Ghaffari, P.Eng.
20.0	Environmental Studies, Permitting and Social or Community Impact	Tetra Tech	Hassan Ghaffari, P.Eng.
21.0	Capital and Operating Costs	Tetra Tech	Hassan Ghaffari, P.Eng. Jianhui (John) Huang, Ph.D., P.Eng. Sabry Abdel Hafez, Ph.D., P.Eng.
22.0	Economic Analysis	Tetra Tech	Sabry Abdel Hafez, PhD., P.Eng.
23.0	Adjacent Properties	Aranz	Michael F. O'Brien, P.Geo., M.Sc., Pr.Sci.Nat., FAusIMM, FSAIMM
24.0	Other Relevant Data and Information	Tetra Tech	Hassan Ghaffari, P.Eng.
25.0	Interpretation and Conclusions	All	Sign-off by Section
26.0	Recommendations	All	Sign-off by Section
27.0	References	All	Sign-off by Section
28.0	Certificates of Qualified Person	All	Sign-off by Section

2.3 INFORMATION AND DATA SOURCES

In preparation of this report, various historical engineering, geological and management reports compiled about the Project or site were reviewed and supplemented by direct site examinations and investigations. All the data files reviewed for this study were provided by Avino in the form of hard copy documents, electronic .pdf reports, .xls files, email correspondence, and personal communication with management and personnel from Avino. Work completed by Avino includes several decades of open pit and underground mining, drilling and sampling, trenching, metallurgical testing, and geophysical surveying.

The main sources of information in preparing this report are:

- Gunning, D. (2009). Resource Estimate on the San Gonzalo Vein – A Part of the Avino Mine, Durango, Mexico, for Avino Silver and Gold Mines Ltd. Prepared by Orequest. August 31, 2009.
- Slim, B. (2005d). A Tailings Resource. Prepared for Avino Silver & Gold Mines Ltd. Report prepared by Bryan Slim, MineStart Management Inc. October 25, 2005.
- Tetra Tech (2013). Technical Report on the Avino Property. Prepared for Avino Silver & Gold Mines Ltd. Effective Date: July 19, 2013. www.sedar.com Document No. 1251920100-REP-R0001-02.1.
- QG Australia (Pty) Ltd. (2016). Amended Resource Estimate Update for the Avino Property Durango, Mexico. Prepared for Avino Silver & Gold Mined Ltd. October 27, 2016.

A complete list of references is provided in Section 27.0.

2.4 Units of Measurement

All units of measurement used in this technical report and resource estimate are in metric, and currency is expressed in US dollars, unless otherwise stated.

3.0 RELIANCE ON OTHER EXPERTS

This PEA has been prepared by Michael O'Brien, P.Geo, of Aranz, and Hassan Ghaffari, P.Eng, Jianhui Huang, Ph.D. P.Eng. and Sabry Abdel Hafez, Ph.D., P.Eng, all of Tetra Tech. All authors are independent QPs as defined within the requirements of NI 43-101.

The information, conclusions, opinions, and estimates contained herein are based on:

- information available to the authors at the time the report was prepared
- assumptions, conditions, and qualifications as outlined in this report
- production and expenditure data, reports, and other information supplied by Avino and other third-party sources.

Avino reported to the authors that, to the best of its knowledge, there is no known litigation that could potentially affect the Project.

Note: The authors of this report are not qualified to provide extensive commentary on legal or political issues associated with the Property, which are considered to be outside the scope of this report. For the portions of this report (Sections 1.2, 4.2 and 4.3) that deal with the types and numbers of mineral tenures and licenses; the nature and extent of title and interest in the Property and the terms of any royalties, back-in rights, payments or other agreements and encumbrances to which the Property is subject, we have relied upon the title opinion dated February 3, 2017 by Juan Manuel Gonzalez Olguin of the Mexican law firm Bufete Gonazalez Olguin, S.C., dated February 3, 2017 (a copy of which is appended to this report).

Sabry Abdel Hafez, Ph.D., P.Eng. relied on PwC in Vancouver concerning tax matters relevant to this report. The reliance is based on a letter to Avino titled "Assistance with preparation of the income and mining tax portions of the economic analysis prepared by Tetra Tech Canada Inc. ("Tetra Tech) in connection with the Preliminary Economic Assesment (the "Report") on Avino Silver & Gold Mines Ltd.'s project (the "Project)" and dated May 10, 2017.

4.0 PROPERTY DESCRIPTION AND LOCATION

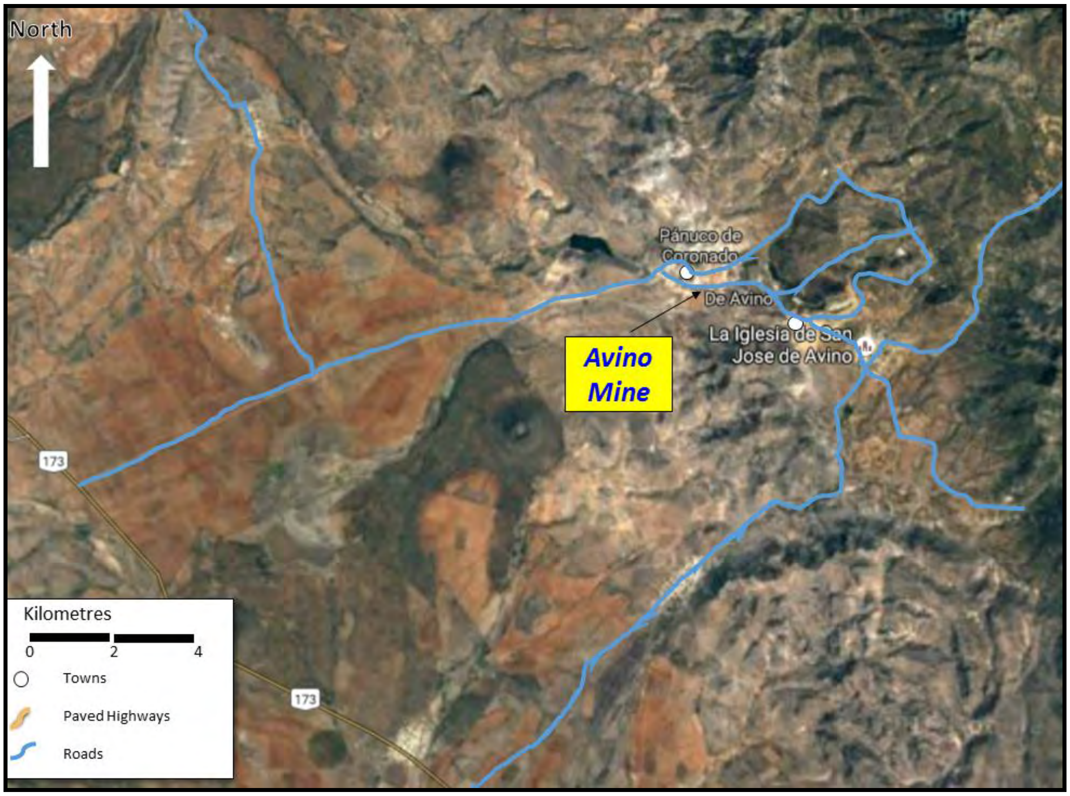
4.1 LOCATION

The Property is located in Durango State in North Central Mexico, within the Sierra Madre Silver Belt on the eastern edge of the Sierra Madre Occidental mountain range. The nearest major centre is the city of Durango, 82 km to the southwest of the Property. The Property is within the municipality of Pánuco de Coronado between the towns of Pánuco de Coronado and San José de Avino. The Property is located at latitude N 24° 53', longitude W 104° 31', 14 km northwest of Highway 40D.

The Property location is situated as illustrated in Figure 4.1 and Figure 4.2.

Figure 4.1 General Location of the Property

Figure 4.2 Local Property Location



4.2 PROPERTY OWNERSHIP

The current Property comprises 23 mineral concessions, totalling 1,103.934 ha.

In 1968, Avino Mines and Resources Ltd. acquired a 49% interest in the company CMMA and Minera San José de Avino SA, which together held mineral claims totalling 2,626 ha (6,488 ac). Avino Mines and Resources Ltd. retained Vancouver based Cannon-Hicks & Associates Ltd. (Cannon-Hicks), a mining consulting firm, to conduct the exploration and development of the Property. Cannon-Hicks's exploration activities included surface and underground sampling and diamond drilling (VSE 1979).

On July 17, 2006, the Company completed the acquisition of Compañía Minera Mexicana de Avino, S.A. de C.V. (Avino Mexico), a Mexican corporation, through the acquisition of an additional 39.25% interest in Avino Mexico which combined with the Company's pre-existing 49% share of Avino Mexico, brought the Company's ownership interest in Avino Mexico to 88.25%. The additional 39.25% interest in Avino Mexico was obtained through the acquisition of 79.09% of the common shares of Promotora Avino S.A. de C.V., referred to as "Promotora", which in turn owns 49.75% of Avino Mexico's common shares, and the direct acquisition of 1% of the common shares of Avino Mexico.

The July 17, 2006 acquisition was accomplished by a share exchange by which the Company issued 3,164,702 shares as consideration, which we refer to as the "Payment

Shares", for the purchase of the additional 39.25% interest in Avino Mexico. The Payment Shares were valued based on the July 17, 2006 closing market price of the Company's shares on the TSX-V.

The Company acquired a further 1.1% interest in Avino Mexico through the acquisition from an estate subject to approval and transfer of the shares to the Company by the trustee for the estate. On December 21, 2007 approval was received and the Company obtained the 1.1% interest from the estate for no additional consideration.

On February 16, 2009, the Company converted existing loans advanced to Avino Mexico into new additional shares of Avino Mexico. As a result, the Company's ownership interest in Avino Mexico increased to 99.28%.

On June 4, 2013, the Company converted existing loans advanced to Avino Mexico into new additional shares of Avino Mexico, resulting in the Company's ownership increasing by 0.38% to an effective 99.67%. The issuance of shares to the Company by Avino Mexico on June 4, 2013 resulted in a reduction in the non-controlling interest from 0.72% to 0.34%.

On August 26, 2015, the Company converted existing loans advanced to Avino Mexico into new additional shares, resulting in an increase of the Company's ownership by 0.01% to an effective 99.67%. The intercompany loans and investments are eliminated upon consolidation of the financial statements. The Company had a pre-existing effective ownership interest of 99.66% in Avino Mexico prior to the 0.01% increase. The issuance of shares to the Company by Avino Mexico on August 26, 2015, resulted in a reduction in the non-controlling interest from 0.34% to 0.33%.

4.3 MINERAL CONCESSIONS AND AGREEMENTS

The current Property comprises 23 mineral concessions, totalling 1,103.934 ha (Figure 4.3). Of these, 22 mineral concessions totalling 1,005.104 ha, are held by CMMA (Avino's Mexican subsidiary company), Promotora Avino SA de CV, and Susesion de la Sra. Elena del Hoyo Algara de Ysita. Ownership proportions and mineral concessions are summarized in Table 4.1 and Table 4.2, respectively.

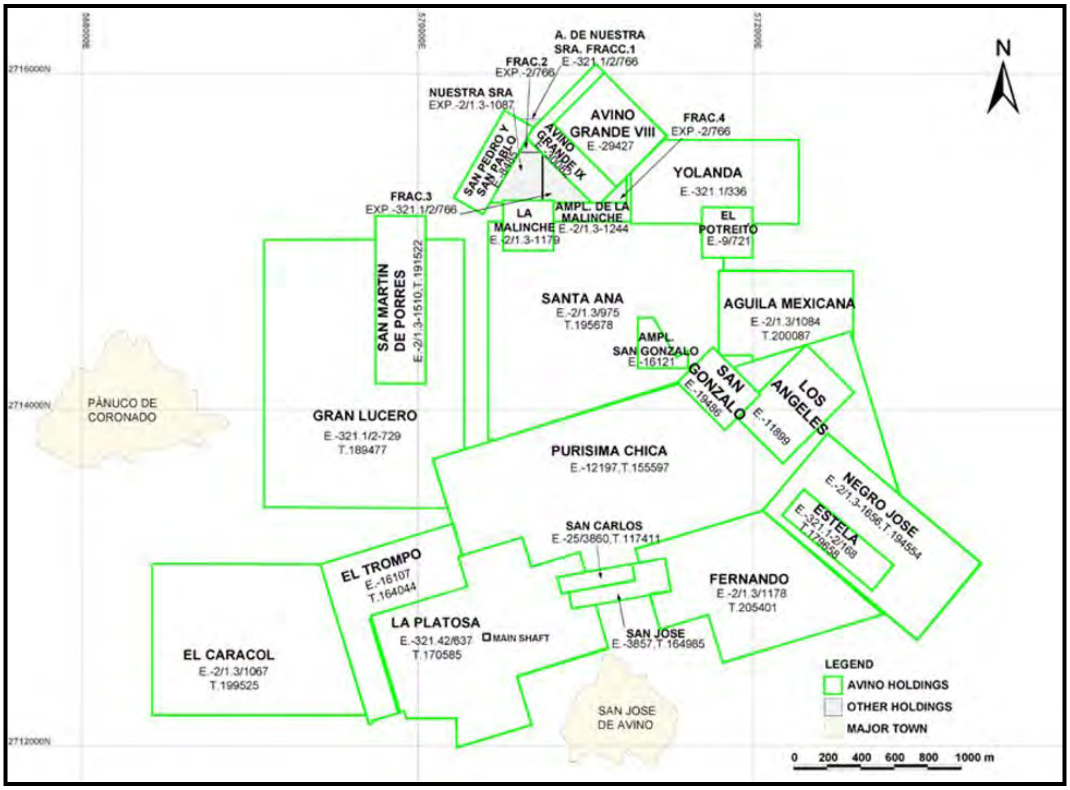
Table 4.1 Summary of Property Ownership

Company	Relationship to Avino Silver and Gold Mines Ltd.	Effective Ownership of Avino Mine Property (%)
CMMA	Subsidiary	98.45
Promotora Avino, S.A. de C.V.	Subsidiary	1.22
Total Effective Ownership of Avino Mine Property	-	99.67
Estate of Ysita	Non-controlling interest	0.33
Total	**-**	**100.00**

Table 4.2 Mineral Concessions – Avino Property

Concession Name	Concession No.	Location	Hectares (ha)	Date Acquired	Expiration Date	Cost (US$/ha)	Payment (US$)
Agrupamiento San Jose (Purisma Chica)	155597	Pánuco	136.708	30/09/1971	29/09/2021	124.74	17,052.91
Agrupamiento (San Jose)	164985	Pánuco	8.000	13/08/1979	12/8/2029	124.74	997.92
Agrupamiento San Jose (El Trompo)	184397	Pánuco	81.547	13/10/1989	12/10/2039	124.74	10,172.12
Agrupamiento San Jose (Gran Lucero)	189477	Pánuco	161.468	5/12/1990	4/12/2040	124.74	20,141.57
Agrupamiento San Jose (San Carlos)	117411	Pánuco	4.451	5/2/1961	16/12/2061	124.74	555.16
Agrupamiento San Jose (San Pedro Y San Pablo)	139615	Pánuco	12.000	22/06/1959	21/06/2061	124.74	1,496.88
Aguila Mexicana	215733	Pánuco	36.768	12/3/2004	29/06/2044	70.88	2,606.12
Ampliacion La Malinche	204177	Pánuco	6.010	18/12/1996	17/12/2046	124.74	749.72
Ampliacion San Gonzalo	191837	Pánuco	5.850	19/12/1991	18/12/2041	124.74	729.67
Avino Grande Ix	216005	Pánuco	19.558	2/4/2002	1/4/2052	70.88	1,386.24
Avino Grande Viii	215224	Pánuco	22.882	14/02/2002	13/02/2052	70.88	1,621.85
El Caracol	215732	Pánuco	102.382	12/3/2002	28/04/2044	70.88	7,256.84
El Potrerito	185328	Pánuco	9.000	14/12/1989	13/12/2039	124.74	1,122.66
Fernando	205401	Pánuco	72.129	29/08/1997	28/08/2047	124.74	8,997.33
La Estela	179658	Pánuco	14.000	11/12/1986	12/12/2036	124.74	1,746.36
La Malinche	203256	Pánuco	9.000	28/06/1996	27/06/2046	124.74	1,122.66
Los Angeles	154410	Pánuco	23.713	25/03/1971	24/03/2021	124.74	2,957.96
Negro Jose	218252	Pánuco	58.000	17/10/2002	16/10/2052	70.88	4,111.04
San Gonzalo	190748	Pánuco	12.000	29/04/1991	28/04/2041	124.74	1,496.88
San Martin De Porres	222909	Pánuco	30.000	15/09/2004	14/09/2054	70.88	2,126.40
Santa Ana	195678	Pánuco	136.182	14/09/1992	13/09/2042	124.74	16,987.38
Yolanda	191083	Pánuco	43.458	29/04/1991	28/04/2041	124.74	5,420.91
Total	-	-	**1005.106**	-	-	**110.29**	**110,856.58**

Figure 4.3 Map of Avino Property Concessions



Source: after Tetra Tech (2013)

In May 1970, Avino Mines and Resources Ltd. signed a formal agreement with Selco Mining and Development (Selco), a division of Selection Trust Company. Due to other commitments, Selco abandoned its interest in the Project in 1973 (VSE 1979). On February 18, 2012, through its subsidiary company CMMA, Avino re-entered into an agreement (the Agreement) with Minerales, whereby Minerales has indirectly granted to Avino the exclusive mining and occupation rights to the La Platosa concession. The La Platosa concession covers 98.83 ha and hosts the Avino Vein and ET Zone.

Pursuant to the Agreement, Avino has the exclusive right to explore and mine the concession for an initial period of 15 years, with the option to extend the agreement for another 5 years. In consideration of the grant of these rights, Avino has paid to Minerales the sum of US$250,000, by the issuance of 135,189 common shares of Avino. Avino will have a period of 24 months for the development of mining facilities.

Avino has agreed to pay to Minerales a royalty equal to 3.5% of NSRs, at the commencement of commercial production from the concession. In addition, after the development period, if the minimum monthly processing rate of the mine facilities is less than 15,000 t, then Avino must pay to Minerales in any event a minimum royalty equal to the applicable NSR royalty based on processing at a minimum monthly rate of 15,000 t. In the event of a force majeure, Avino shall pay the minimum royalty as follows:

- first quarter: payment of 100% of the minimum royalty
- second quarter: payment of 75% of the minimum royalty
- third quarter: payment of 50% of the minimum royalty
- fourth quarter: payment of 25% of the minimum royalty
- in the case of force majeure still in place after one-year of payments, payment shall recommence at a rate of 100% of the minimum royalty and shall continue being made as per the quarterly schedule.

Minerales has also granted to Avino the exclusive right to purchase a 100% interest in the concession at any time during the term of the Agreement (or any renewal thereof), upon payment of US$8 million within 15 days of Avino's notice of election to acquire the Property. The purchase would be completed under a separate purchase agreement for the legal transfer of the concession. This agreement replaces all other previous agreements.

During the month of May of each year, Avino must file assessment work made on each concession for the immediately preceding calendar year. During the months of January and July of each year, Avino must pay in advance the mining taxes which are based on the surface of the concession and the number of years that have elapsed since it was issued.

Consistent with the mining regulations of Mexico, cadastral surveys have been carried out for all the listed mineral concessions as part of the field staking prior to recording (Slim 2005d). It is believed that all concessions are current and up to date. Mineral concessions in Mexico do not include surface rights. Avino has entered into agreements with communal land owners (Ejidos) of San José de Avino, for the temporary occupation and surface rights of the concessions.

A current title opinion dated February 3, 2017, has been prepared by Juan Manuel González Olguin of the Mexican law firm Bufete González Olguin S.C. (a copy of which is appended to this report [Appendix A]).

5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 TOPOGRAPHY, ELEVATION AND VEGETATION

The average elevation of the Property is approximately 2,200 masl. Local relief is estimated to be roughly 100 m ranging from the bottom bench of the tailings to the top of the open pit.

Vegetation is sparse and consists of shrubs and grasses typical of the high desert.

5.2 ACCESSIBILITY AND LOCAL RESOURCES

The Property is easily accessible by road and the mine is an important employer of the local community from which skilled workers are available. Access is provided by Highway 40, a four-lane highway leading from Durango, past the airport and on to the city of Torreon in Coahuila. Successive turn-offs for the Property are at Francisco I Madero, Ignacio Zaragoza, and San José de Avino (Slim 2005d). The Avino mineral concessions are covered by a network of dirt roads, which provide easy transport access between all areas of interest on the Property and the mill at the main Avino Mine (Gunning 2009).

The nearest major city is Durango, with a population of approximately 465,000. Durango is a major mining centre in Mexico where experienced labour and services can be obtained. The two towns nearest the mine are Pánuco de Coronado and San José de Avino, where the majority of the employees lived while working at the mine when it was in operation. Pánuco de Coronado has a population of approximately 12,000, and San José de Avino is a small centre with a population of less than 1,000.

5.3 CLIMATE AND LENGTH OF OPERATING SEASON

The climate is temperate and semi-arid. In the region, the mean annual rainfall is 580.6 mm and the average annual temperature is 16.9°C. July and January average temperatures are 21.8°C and 11.3°C, respectively (www.worldclimate.com – Durango). The majority of the rainfall occurs between June and September. In the winter months, the temperature can drop below freezing and frost and even light snowfall can occur.

Exploration, development, and mining activities may take place throughout the year without any significant seasonal impact.

5.4 INFRASTRUCTURE

Infrastructure is disclosed in Section 18.0.

6.0 HISTORY

6.1 AVINO MINE, 1555-1968

The Avino deposit was originally discovered around 1555 by the Spanish conquistador, Don Francisco de Ibarra. In 1562, Francisco de Ibarra, was appointed governor of the newly formed province of Nueva Vizcaya, in the Viceroyalty of Nueva España (New Spain) and, in 1563, founded the town of Durango. Francisco de Ibarra led several expeditions in search of silver deposits in the region and is recognized as having established Minas de Avino, present day Avino Mine; San Martín, Durango; and Pánuco, Sinaloa. Mining operations at the Avino Mine are said to have commenced in 1562-1563 and have been in production until the early 1900s. Operations at the Avino Mine continued up to the onset of the War of Independence (1810) when operations were interrupted but then restarted and continued through to the early 1900s.

In 1880, the mines were taken over by Avino Mines Ltd., a company controlled by American and British interests. The introduction of more modern industrial technology helped the Avino Mine develop into a significant mining operation at the beginning of the 20th century. By 1908, the Avino Mine was considered one of the largest open pit mines in the world and equipped with one of the largest lixification smelters (Gallegos 1960; VSE 1979; Slim 2005d).

During the early phases of the Mexican Revolution in 1910, proceeds from the mine supplied funds to the revolutionary forces. Since much of the fighting occurred in and around Durango and the risk posed by brigands hiding in the mountains was high, the mine was abandoned in 1912.

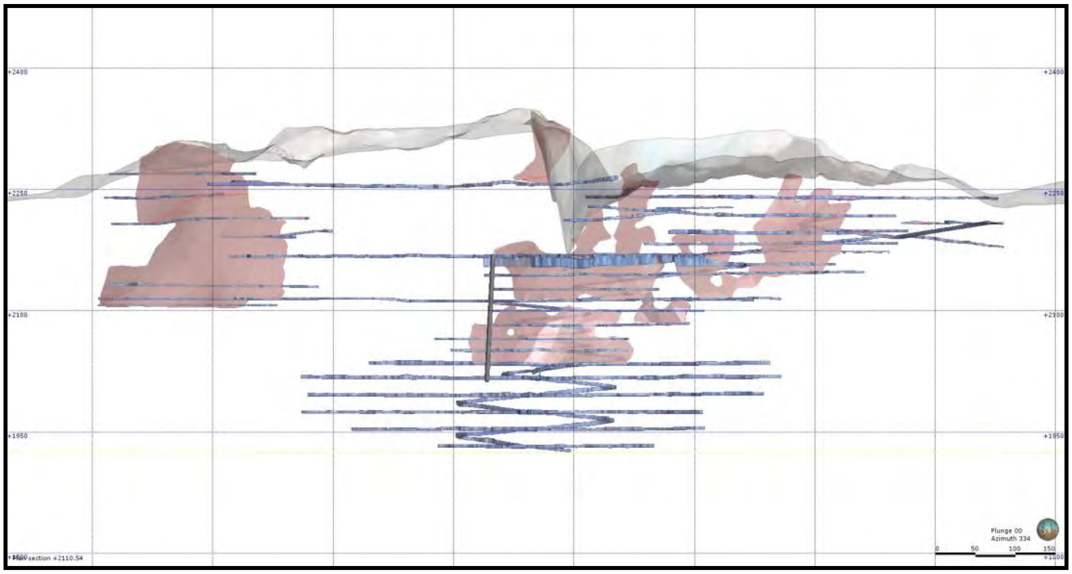
Between 1912 and 1968, the mine was worked intermittently on a small scale (Avino Annual Report 1980). There is no documentary record of production from the Avino Mine during this period.

The Property was acquired under current ownership in 1968.

6.1.1 AVINO VEIN SYSTEM DEPOSIT

The Avino Vein System was the mainstay of historic exploitation and is situated adjacent to the mine offices and processing plant. The upper portion of the deposit was extensively mined in an open pit and the lower portion is currently accessible via a ramp and has been extensively developed and mined from more than 6 km of horizontal drifts, with vertical spacings between 15 and 25 m. The Avino workings extend to a maximum depth of 360 m vertically below the portal of the Avino ramp. An old vertical shaft, no longer used for hoisting, is used for ventilation and to supply water and power for development and mining. A vertical section of Avino Mine is shown in Figure 6.1.

Figure 6.1 Avino Mine: Vertical Section View Showing Development and Stoping

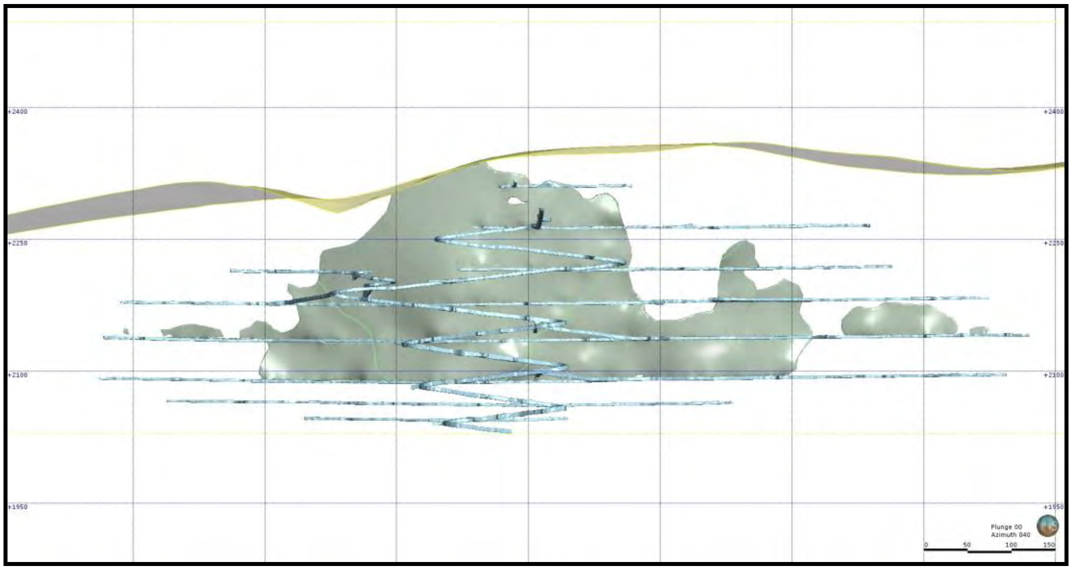


6.2 SAN GONZALO VEIN DEPOSIT

Shallow workings from an old mine are present in the San Gonzalo Vein, and consist of small underground workings which were originally accessed by a five-level vertical shaft.

Current access to the San Gonzalo Deposit is via a ramp that is being actively developed. All old working levels have been dewatered. The deposit has been explored and exploited by more than 4 km of horizontal drifts with upper levels at 40 m vertical spacing and lower levels at 25 m vertical spacing. A vertical section of the San Gonzalo Mine is shown in Figure 6.2.

Figure 6.2 San Gonzalo Mine: Vertical Section View Showing Development and Stoping



7.0 GEOLOGICAL SETTING AND MINERALIZATION

7.1 REGIONAL GEOLOGY

The Property is located within the Sierra de Gamon, on the east flank of the Sierra Madre Occidental. The area is a geological window into the Lower Volcanic series and consists mainly of volcanic flows, sills, and tuffaceous layers of andesite, rhyolite, and trachyte. Individual rock units typically vary from 300 to 800 m in thickness. Andesitic rocks outcrop over most of the region with other rock types occurring more sparsely to the north (Slim 2005d).

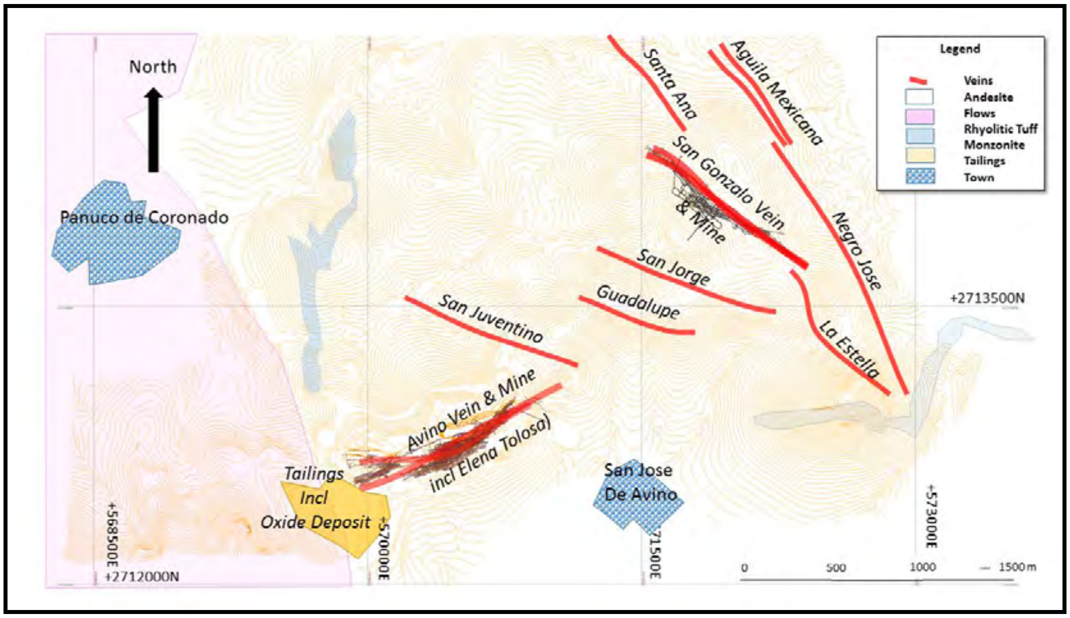
A large monzonitic intrusion is observed in the region in the form of dykes and small stocks, which appear to be linked to the onset of the Avino Vein mineralization. Other post-mineralization dykes of intermediate to felsic composition crop out in various areas and appear to cause minor structural displacements. Occurrences of thin mafic sills are also found in various parts of the region and are believed to be related to recent volcanism.

Higher areas of the Sierra Madre Occidental surrounding the mine are composed of rhyolites and ignimbrites of the Upper Volcanic Series, with thicknesses approaching 1,500 m.

The Laramide orogenic event is believed to have affected the Avino district. Later extrusive and intrusive igneous events appear to have caused the formation of various systems of pre-mineralization faulting. These fault systems usually produced normal displacement of the pre-existing rocks, and generally strike northwest-southeast (subparallel to the Avino Vein System). Additional normal fault systems are also observed in the region, striking northeast-southwest and dipping towards the south (subparallel to the San Gonzalo Vein System).

The rugged topography is a result of erosion of the post-mineralization faulted blocks. One of the most significant regional features of the district is the Avino Fault which strikes northwest 20° southeast, dips southeast and which appears to terminate the Avino Vein mineralization, juxtaposing the Upper and Lower Volcanic series (Figure 7.1).

Figure 7.1 General Map of Property Geology



7.2 PROPERTY GEOLOGY AND MINERALIZATION

The Avino concession is located within a 12 km (north-south) by 8.5 km (east-west) caldera. The Property contains numerous low-sulphidation epithermal veins, breccias, stockwork, and silicified zones that grade into a "near porphyry" environment, particularly in the Avino Mine area. The caldera has been uplifted by regional north-trending block faulting (a graben structure), exposing a window of andesitic pyroclastic rocks of the lower volcanic sequence within the caldera. The Lower Volcanic Sequence is overlain by the Upper Volcanic Sequence, consisting of rhyolite to trachyte flows and extensive ignimbrites and intruded by monzonite bodies.

The basal andesite-bearing conglomerate and underlying Paleozoic basement sedimentary rocks (consisting of shales, sandstones and conglomerates) have been identified on the Avino concession in the south-central portion of the caldera, covering the Guadalupe, Santiago, San Jorge, the San Gonzalo Trend, Malinche, Porterito and Yolanda areas. A northerly trending felsic dyke, possibly a feeder to the upper volcanic sequence, transects the Property and many of the veins. The Aguila Mexicana low temperature vein system, trends north-northwest at a similar orientation to the felsic dyke and with similar continuity across the Property. The two structures have been interpreted to occur along deep crustal faults that controlled volcanism and mineralization, with the felsic dyke structure controlling the emplacement of the Avino, Nuestra Senora and El Fuerte-Potosina volcanic centres and the Aguila Mexicana structure controlling the Cerro San Jose and El Fuerte-Potosina volcanic centres (Paulter 2006).

Silver- and gold-bearing veins cross-cut the various lithologies and are generally oriented north northwest-south southeast and northwest-southeast (Figure 7.1). The rocks have been weathered and leached in the upper sections, as a result of contact with atmospheric waters; the oxide tailings material (Section 7.2.3) is primarily from this source, whereas the sulphide tailings are predominantly from material sourced at depth, below the leached zone. In Mexico, these types of deposits can have large lateral extents, but can be limited in the vertical continuity of grades.

In the oxide zone, mineralization is primarily hosted by the minerals argentite, bromargyrite, chalcopyrite, chalcocite, galena, sphalerite, bornite, native silver, gold, and native copper. Other minerals present in mineralized areas, but not hosting the metals of interest, include hematite, chlorite, quartz, barite, pyrite, arsenopyrite and pyrrhotite. Malachite, anglesite and limonite are common in the quartz zones of the weathered parts of the oxide material.

7.2.1 AVINO VEIN

Geology and mineralization of the Avino Vein are summarized from Slim (2005d).

The Avino Vein is 1.6 km long and 60 m wide on the surface. The Avino Vein is the most striking and important example of the epithermal mineralization of the district whose structures are normally weathered and leached in their upper section as a result of contact with atmospheric waters producing a band of oxide minerals and zones of supergene enrichment to a depth of about 70 m.

In the oxide portion of the Avino Vein, the common minerals encountered include hematite, limonite, anglesite and copper carbonate in white or green, somewhat chloritized, quartz zones. The common primary and secondary minerals encountered are argentite, bromargyrite, chalcopyrite, chalcocite, galena sphalerite, bornite, native silver, free gold, and native copper. Other minerals present in mineralized areas include quartz, pyrite, chlorite, barite, arsenopyrite, pyrrhotite and specularite.

Higher silver values are reported to decrease overall with depth, except at vein intersections and vein inflections, where higher values persist to depth. The same can be said for gold, although the higher values start just below the onset of silver mineralization, at or near the surface. In contrast, higher copper values coincide with vein intersections and may increase with depth. Sporadic, localized copper enrichment occurs toward the footwall contact and may represent a different phase of fluid emplacement. Despite the overall decrease in precious metal grade with depth, local increases in metal grades are apparent in the mine sampling and exploration drilling, possible reflecting changes in boiling level with pressure variations in the epithermal system.

The Avino Vein has been followed longitudinally for more than 1,300 m and vertically for more than 600 m. It strikes north 66° east with an east-west splay, and dips to the south and southeast at 60° to 70°. Steeply dipping, high grade zones within the vein and stock-work zones are frequently found in the upper part of the vein, as well as at its intersections with a number of lateral veins. An example of a higher-grade area of mineralization encountered with major lateral vein intersecting the Avino was the El Hundido, which exceeded 40 m in thickness. In the lower areas of the vein and mine, mineralized cross-veins, branch-veins, and stockwork zones have been found in the footwall at San Luis and at El Hundido, and are assumed to persist with depth.

The hanging wall of the Avino Vein is andesite, while the footwall is a monzonite intrusive with andesite sections. A post-mineralization fault parallel with the vein occurs in the hanging wall at a distance of several metres in the area of San Luis, while in the central part of El Hundido, this fault is located at the contact with the vein over a distance of about 300 m, up to the area of Santa Elena and San Antonio. From that point, and proceeding toward the El Chirumbo Mine, this fault cuts the vein between the face at San Carlos and the exposure at the underground ramp. The fault then enters the footwall where it remains until a point about 30 m east of the west face of the Chirumbo area, producing a downward displacement of the vein of between 50 to 100 m.

At Chirumbo, the fault largely replaces the vein due to strong leaching by post-mineralization circulating of water in the gouge. On the east face at Chirumbo, the fault again enters the hanging wall; in this zone the vein is composed of branches and stockwork and to the east of this point the fault crosses the vein numerous times.

The deposit is epithermal and made up of veins and dependent stockwork structures, mainly in the hanging wall and often associated with vein intersections. Four vein systems have been described which, in decreasing order of importance, are:

- system striking east-west, dipping south at 60° to 70°, including the Avino Vein and its possible extension in the Cerro de San Jose
- system striking north 60° to 70° west, dipping 60° to 80° southwest, comprising the following important veins: El Trompo, San Juventino, San Jorge, Platosa, Los Reyes, Potosina, El Fuerte, and Conejo
- system striking north 20° to 30° west, dipping between 60° to 80° to either the southwest or northeast, comprising the following significant veins: San Gonzalo, Aguila Mexicana, and La Calcita, as well as the Stockwork La Potosina, and the Stockwork El Fuerte
- systems striking north 60° to 80° east, dipping 60° to 80° southeast, comprising the following veins: Santiago, Retana, Nuestra Senora, and San Pedro and San Pablo.

Alteration has been reported in three main types:

- Propylitic alteration is most common in andesite, giving the andesite a greenish tint.
- Argillaceous alteration appears mainly in the upper parts of the veins and manifests itself as a whitening of the country rock due to alunite and montmorillonite clays.
- Silicification, chloritization, and pyritization alteration is observed in the hanging wall and footwall, and is more prominent closer to the vein.

7.2.2 SAN GONZALO VEIN

The San Gonzalo Vein is located approximately 1.4 km northeast of the eastern modelled extent of the Avino Vein. The San Gonzalo Vein system constitutes a strongly developed vein system over 25 m wide, trending 300° to 325°/80° northeast to 77° south. It is characterized by banded textures and open-space filling. The main vein has an average width of 2 m, but the silica-pyrite or iron oxide-sericite alteration with additional stock working extends across 300 m, south of the main San Gonzalo Vein to the Los Angeles Vein.

The San Gonzalo is a typical narrow vein precious metal deposit with some erratic values and extends approximately 2 km to the northwest to the Santa Ana-Malinche area (Gunning 2009).

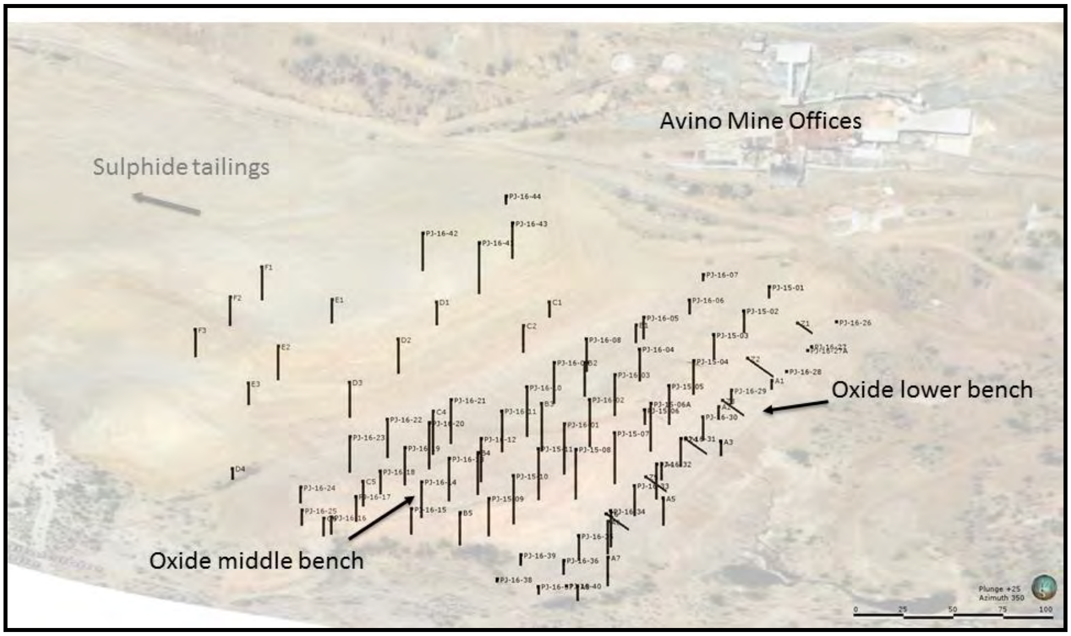
The Cerro San Jose-La Estella-San Gonzalo Cerro San Jose represents a distinct hydrothermal centre with similar characteristics to the Avino system which include the following (Paulter 2006):

- occur on a topographic high
- strong to intense silicification and brecciation
- easterly trending stockwork system similar to the trend of the Avino Vein
- similar temperatures of formation to Avino
- presence of an intersecting northwesterly trending vein system (la Estella at San Jose and San Juventino at Avino)
- emplacement along a northerly trending, deep crustal fault zone (defined by the Aguila Mexicana Vein at Cerro San Jose and the felsic dyke at Avino).

7.2.3 OXIDE AND SULPHIDE TAILINGS

The Avino tailings dam is located approximately 500 m west-southwest of the main shaft to the old underground workings and 2.5 km southwest of the San Gonzalo Vein. An orthogonal view of the oxide tailings deposit, looking northwards and with the drillholes indicated, is shown in Figure 7.2.

Figure 7.2 Orthogonal View of the Oxide Tailings Deposit and Drillholes



Within the tailings dam, there are three distinct benches:

- lower oxide bench
- middle oxide bench
- upper bench or sulphide bench.

Due to the historical processing sequence, the oxide tailings are primarily derived from weathered and oxidized rocks close to the surface on the Property, whereas the sulphide tailings are predominantly derived from material sourced at depth from the underground workings, below the weathered/leached zone.

The oxide tailings (both the middle and lower benches) have been analyzed in greater details than the sulphide tailings, and are included in the current mineral resource for the oxide tailings. The sulphide tailings, in the absence of any definitive sampling data penetrating the depth of the pile, are an exploration target (Section 14.15).

8.0 DEPOSIT TYPES

Regionally, the Property is situated within a 12 km by 8.5 km caldera that hosts numerous low- to intermediate-sulphidation silver-gold epithermal veins, breccias, stockwork and silicified zones, grading into a “near porphyry” environment in the Avino Mine area.

The historic mining on the Property was on the Avino Vein, a silver-gold-copper rich epithermal vein. The San Gonzalo Vein, however, has a much lower copper content than the Avino Vein and is more equivalent to other silver-lead-zinc deposits of the Sierra Madres.

Low-sulphidation vein systems are commonly characterized by low concentrations of sulphide minerals, alteration mineralogy dominated by quartz-adularia-sericite, and a lack of extensive wall-rock alteration. Conversely, high-sulphidation vein systems are commonly characterized by sulphur saturation leading to the presence of native sulphur and sulphide minerals, quartz-alunite alteration, and extensive wall-rock alteration. The Mexican silver deposits are usually within the intermediate sulphidation range, rather than either of the end member classifications.

In Mexico, and particularly within the Mexican Silver Belt, these types of deposits can have large lateral extents, but may be limited vertically. There are many silver-gold mines in Mexico, some of which form large mining districts, and others that exploit multiple veins over limited vertical horizons that are sometimes only 100 m in depth (Gunning 2009).

On the Property, the oxide tailings have been predominantly sourced from earlier open pit operations and the sulphide tailings have been predominantly sourced from later underground workings.

9.0 EXPLORATION

9.1 EARLY EXPLORATION (PRIOR TO MINE CLOSURE), 1968 TO 2001

Exploration on the Property has been ongoing since before production commenced, and the majority of the recorded work has been focused on the main Avino Vein and surrounding area. The following is a summary of significant exploration work conducted either by Avino, or on behalf of Avino, until the mine closed in 2001.

Pre-production exploration was carried out by CMMA and others, and covered 2,500 m of drifting and cross-cuts, as well as 8,000 m of surface and underground diamond drilling. Extensive rehabilitation was completed involving Selco, including connecting three of the old—possibly pre-1900—underground mine workings.

In 1970, a contract was signed with Selco, who spent more than US$1 million in exploration and feasibility studies before returning the Property back to CMMA in 1972, reportedly because of low metal prices. The majority of the documentation examined covered feasibility work and was related to investigations of old underground workings that were likely developed in the late 1800s. A contract was signed in October 1973 with S.G.L. Ltd. and Sheridan Geophysics Ltd., under which a new 500 t/d plant was completed in May 1974.

Since 1992 exploration in/for the mine has been limited to traditional underground mine development with associated sampling and planning for production feed. In the late 1990s it appears that development was not kept up as company monthly reports showed decreasing historical reserve allocations for production and mill feed.

The only recorded property exploration, apart from limited prospecting, is documented in the 1993 report by Servicios Administratos Luismin, SA de CV, the engineering branch of Cía Minera de San Luis Exploration. The study reported on detailed analysis and sampling of the then known showings on the Property with the emphasis on the Avino Vein and Potosina/El Fuerte area. The extensive underground sampling program carried out by Luismin provided later direction for underground mining. The report made recommendations for follow-up for drilling and underground development for the main Avino Vein, as well as trenching and drilling recommendations for the Potosina/El Fuerte area. It is believed that these recommendations were never implemented for the prospective areas. Additionally, the report included a property-scale geological mapping and lithogeochemical sampling program which was contoured and coloured for gold, silver, copper, lead, zinc, arsenic, antimony and mercury.

Other notable observations from the study include the following:

- All mineralization, with the exception of the Nuestra Senora and Potosina/El Fuerte area radiate outwards in a west to north-west direction from the Cerro San Jose. The Cerro San Jose is a silicified and partly hornfelsed body of volcanic rock probably overlying an intrusive stock, which could have been the source of most mineralization on the Property.
- Mineralization in all radiating structures is described as being strongest 2 to 3 km from Cerro San Jose. This resembles many of the gold deposits in Nevada where the source of mineralization is a near surface acid-intrusive but with mineralized bodies lying 1 to 5 km away along high angle faults.
- The two strongest and widest structures appear to be the Avino and Aguila Mexicana veins.
- The Avino Vein has three main mineralized zones—San Luis, Elena Tolosa (La Gloria/Hundido) and Chirumbo areas—which rake to the west and are open at depth. While silver values decrease with depth, gold appears to increase.
- The existence of other mineralization cutting the Cerro San Jose mineralization in the Nuestra Senora and Potosina/El Fuerta areas could offer the potential for bulk mineable stockwork zones.

Assay values from outcrop sampling of surface-mapped veins towards the San Jose hill ranged from lows of 2 g/t silver and trace gold over true thicknesses from 0.1 to 2.3 m up to a high of 755 g/t silver with a corresponding 1.5 g/t gold over a thickness of 0.45 m.

No systematic sampling, trenching or drilling of either the outcrops or the veins is known to have occurred during the program undertaken in 1993.

9.2 RECENT EXPLORATION, 2001 TO PRESENT

Since mine closure in 2001, Avino has intermittently conducted exploration work on the Property, with the intention of expanding and better defining known areas of mineralization. Historic near-to-surface mining activities are being relied upon for guidance, and modern techniques are being employed to integrate, manage and interpret results. Included in the list of exploration activities is an induced polarization (IP) geophysical survey, 1,500 soil samples, satellite imagery, mapping, trenching, tailings investigations, bulk sampling, and underground channel sampling.

9.2.1 TAILINGS INVESTIGATIONS (OXIDES), 2003 AND 2004

Two specific mineralogical assessments were conducted in 2003 and 2004 on samples from the tailings on the Property. The purpose of the program was to provide data for independent investigation of the 1990 drilling results on the oxide tailings (discussed in Section 10.0) in terms of verifying assay grades and volumes, as well to examine the metallurgical characteristics of the material. The results and implications of these findings are discussed further in Section 13.0.

The following information regarding the 2004 sampling is summarized from Slim (2005d).

The 2004 tailings field-work was under the direction of MineStart and excavation of the sample pits was under contract to Desarrollos Rod Construcciones of Durango. Given the hydraulic deposition of the tailings, four important factors required examination: anomaly characteristics of the samples and total population, assay comparison by fence, examination of downstream decrease in assays and factors arising from the downstream construction.

Comparison of the 2004 assays with those from 1990 show consistency in assay values and provide confidence in the 1990 sampling and assaying program.

The preliminary investigations in 2003 showed the need for a sampling of the oxide tailings to validate the assay results of the 1990 drilling and to carry out metallurgical characterization, the latter requiring large samples. In deciding on test pitting, the costs, timing and sample size were important. Backhoes were available locally and could be mobilized within a few days whereas drills would have to be brought in from up to 500 km away, for minimum contracts in excess of the project needs and with limited immediate availability. Backhoe sampling was chosen.

The sampling exercise carried out in 2004, using shallow (4 m deep) backhoe trenches and hand-dug pits, represented a local corroboration of the previous sampling but could not be considered to constitute a representative random sampling of the oxide tailings for the following reasons:

- The positions of the sampling pits and trenches were sketched on previous maps but were not surveyed, unlike the drillhole collars from the 1990 campaign.
- Full sections through the tailings were not obtained and access was limited to the eastern portion of the oxide tailings; thus the sampling is vertically and laterally biased to represent only the topmost 4 m of the easternmost oxide tailings.

The trench sampling material (Z-series) from the 1993 campaign was also considered to be non-representative as:

- Samples were taken in the surficial zone in the vicinity of the middle bench wall of the tailings heap, where cycloning of the material to aid the construction of the wall will have produced significantly coarser material than in the rest of the tailings deposit.
- These trench samplings also do not cover the full thickness of the upper (second) phase of the oxide tailings, so they cannot be considered fully representative of material, even on a local scale.

Consequently, it was decided to use only the drillhole assay data (excluding the Z-series trenches, (Section 10.1.2) from the 1990 campaign for the oxide tailings resource estimate (Section 14.2), as it represents unbiased vertical profiles through the entire oxide tailings and has positional control. Recent drilling of the oxide tailings (2014-2016), has provided samples which show statistical and spatial grade patterns similar to the 1990, which provide comfort that the 1990 is fit to be used for estimation.

9.2.2 Tailings Sampling (Sulphides), 2005

Some sampling was carried out in 2005 by means of hand-dug pits on the "upper bench" of sulphide tailings. The silver and gold values generally ranged from 40.0 to 100.0 g/t and 0.3 to 0.6 g/t, respectively. While these values give a general idea of the potential grade of the sulphide tailings, they have not been verified to be representative of the sulphide tailings, even at a local scale.

9.2.3 Bulk Sample Program of San Gonzalo Vein, 2011

Avino completed a 10,000 t bulk sample program at the San Gonzalo deposit following a comprehensive review of the data and discussions with Tetra Tech. The bulk sample feed grade was 261 g/t silver and 0.9 g/t gold. Silver and gold recoveries were stated to be 76% and 59%, respectively, and 232 dry tonnes of flotation concentrate were produced.

Table 9.1 Underground Channel Sampling by Level for the Avino and San Gonzalo Underground Mines, since 2013

Level	Hanging Wall Elevation (m)	Number of Channels	Total Sampled (m)	Avg. Channel Length (m)	Ag (g/t)	Au (g/t)	Cu (%)	Pb (%)	Zn (%)
Avino Vein									
9	2115.3	63	301.5	4.8	50.2	0.39	0.63	0.07	0.11
11.5	2037.2	160	1245.5	7.8	35.9	0.35	0.57	0.05	0.10
12	2019.5	294	1814.1	6.2	59.4	0.33	0.62	0.06	0.11
12.5	1997.3	197	1957.4	9.9	51.1	0.19	0.61	0.08	0.10
14	1976.5	152	1244.6	8.2	65.6	0.18	0.68	0.10	0.12
14.5	1954.6	146	1555.1	10.7	68.8	0.26	0.72	0.10	0.15
15	1934.5	97	1059.6	10.9	79.0	0.30	0.70	0.11	0.12
San Gonzalo Vein									
2	2264	84	233.4	2.8	42.8	0.18	0.03	0.14	0.22
3	2218	137	361.4	2.6	117.8	0.37	0.03	0.14	0.25
4	2178	359	997.8	2.8	229.8	0.97	0.04	0.28	0.36
5	2138	304	819.7	2.7	271.9	1.87	0.09	0.60	0.93
6	2091	447	1333.7	3.0	255.7	1.64	0.09	0.46	0.63
6.5	2045	403	1140.0	2.8	157.2	1.18	0.09	0.44	0.41
7	2025	136	405.6	3.0	67.5	0.45	0.06	0.27	0.25

9.2.4 UNDERGROUND CHANNEL SAMPLING OF SAN GONZALO AND ANGELICA VEINS, 2010-PRESENT

Underground channel sampling began in 2010 and has continued to the present. Channel sampling between 2010 and 2012 was summarized in Tetra Tech (2013). Results of underground sampling since 2013 are summarized in Table 9.1.

Figure 9.1 and Figure 9.2 show the location of all channels, colour coded by grade, included in the current resource estimate (Section 14.2), within and adjacent to the Avino and San Gonzalo Vein systems respectively.

Figure 9.1 Channel and Drillhole Samples, Colour Coded by Silver Grade, within the Avino System

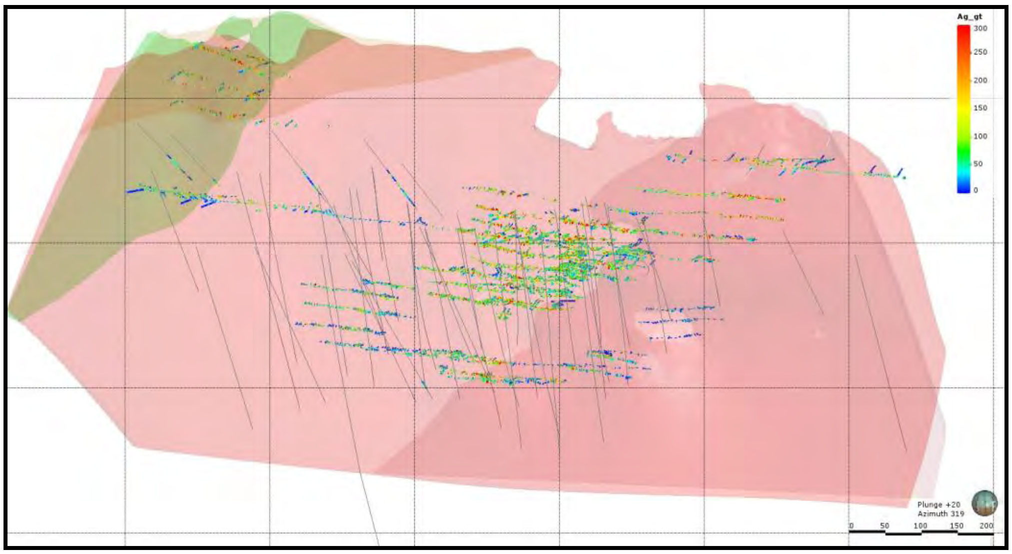
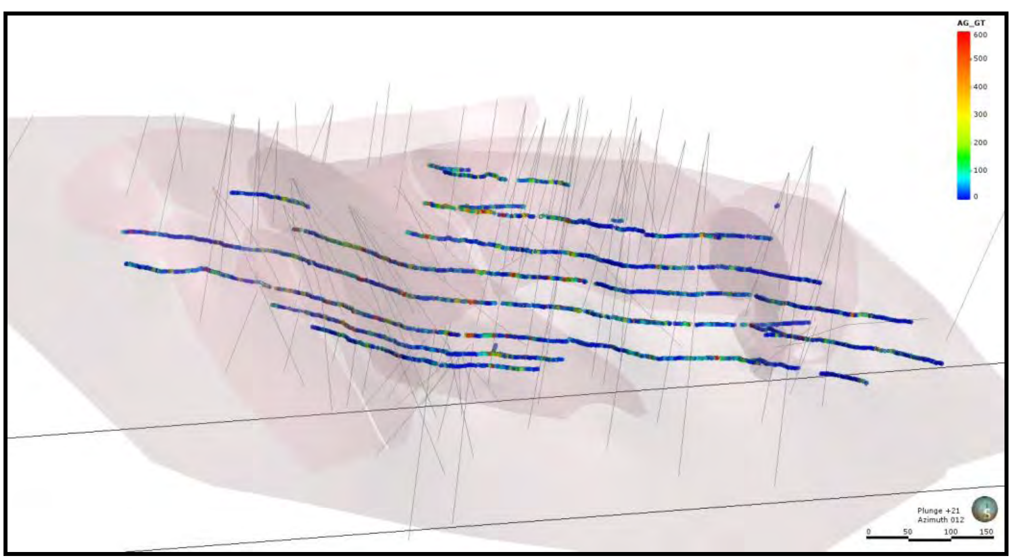


Figure 9.2 Channel Samples, Colour Coded by Silver Grade, within the San Gonzalo Vein System



10.0 DRILLING

Drilling activities performed by Avino since acquisition of the Property are summarized in the following sections. Drillhole assay results have been previously reported (except ET-12-07 to ET-12-09; Appendix A) by Gunning (2009), Tetra Tech (2012) and Tetra tech (2013) and are not disclosed here.

10.1 EARLY DRILLING (PRIOR TO MINE CLOSURE), 1968 TO 2001

10.1.1 AVINO VEIN

Between 1968 and 2001, at least 25 diamond drillholes, ranging in length from 132.20 to 575.20 m, are reported to have been drilled from surface into the Avino Vein. Included in this total are 10 holes that were drilled by Selco in 1970 when they were re-habilitating some of the old underground workings to provide access for sampling (Slim 2005d). No further information on these drillholes was available to Aranz and they are not included in the resource estimate for the Avino Vein.

10.1.2 OXIDE TAILINGS, 1990 TO 1991

Between November 10 and December 5, 1990 and March 8 and May 30, 1991, Avino completed six trenches and 28 vertical drillholes in the tailings (Table 10.1) along 7 fences at a spacing of roughly 50 m by 50 m (Figure 10.1) (Benitez Sanchez 1991). Drilling was completed transversely to the drainage pattern of the tailings. Cut at 1 m vertical increments, 461 samples were assayed for silver and gold at the mine assay lab and occasional moisture contents were reported. Assay results from these drillholes have been previously reported (Tetra Tech 2012). Although the Z-series trenches are included in Table 10.1 and Figure 10.1, they are not included in the oxide tailings resource estimate (Section 14.3) as they are not considered representative of the tailings at a local scale (see Section 9.2.1). During 2015 and 2016 further drilling was carried out on the oxide tailings.

10.2 RECENT DRILLING (POST-MINE CLOSURE), 2001 TO PRESENT

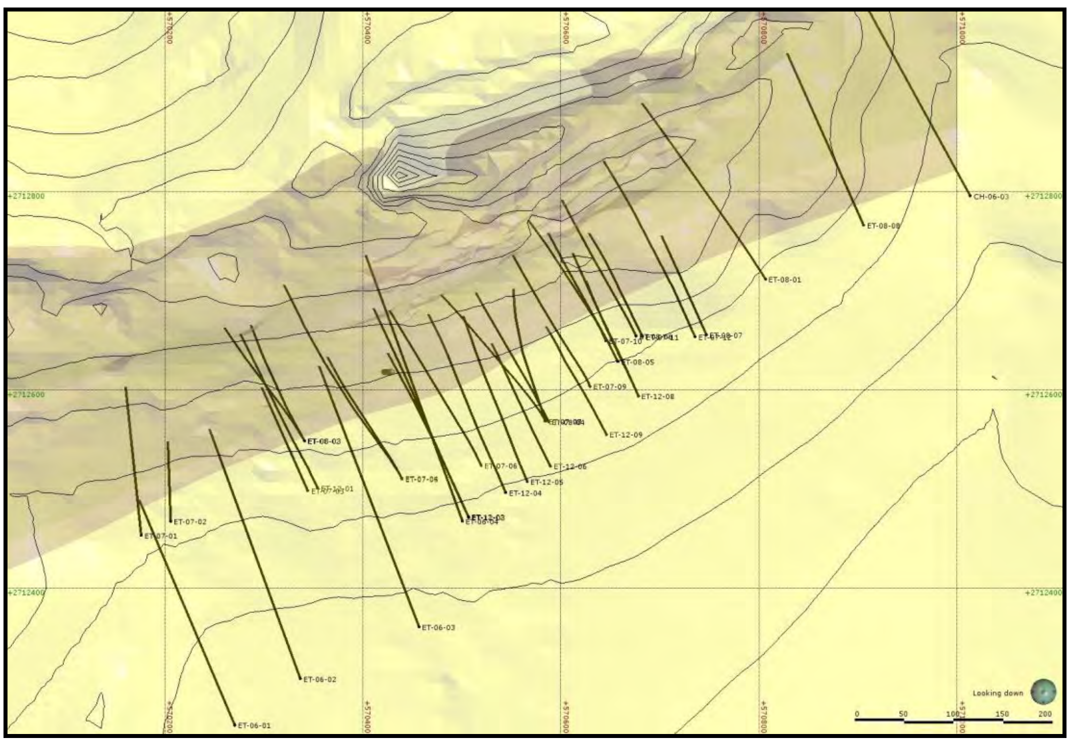
A total of 37 drillholes have been completed on the Avino Vein system and 101 holes 21,253 m San Gonzalo Vein system, totalling almost 34,100 m. Additional exploration holes have been drilled elsewhere on the Property, but those drilling results are not considered material. Most holes were surveyed downhole using a Tropari single-shot magnetic instrument. Of those holes for which downhole surveys were completed, the majority contain three or fewer measurements, typically at the collar and near the end of hole, and sometimes part-way down the hole. Many holes were not surveyed to within 10 m of the end of the hole.

10.2.1 AVINO VEIN (INCLUDING ET ZONE) AND NEARBY VEINS

Since 2001, Avino has drilled 34 holes below Level 12, where mining ceased, for a total of 11,523.2 m of drilling. Drilling has targeted the ET Zone in particular. There were 5 holes completed in 2006 (2,166.85 m), 12 holes in 2007 (3,906.5 m), 8 holes in 2008 (2,186.7 m), and 9 holes in 2012 (3,263.15 m). No drilling has been completed on the Avino Vein since 2012. Collar coordinates for all drillholes included in the Avino Vein resource estimate (Section 14.1) are provided in Table 10.2. Assay results from all drillholes up to and including ET-12-06 have been previously reported (Tetra Tech 2012). Assay results from drillholes ET-12-07 to ET-12-09 are provided in Appendix A. A location map of Avino Vein drillholes is provided in Figure 10.2.

Tecmin Servicios, S.A. de C.V., was contracted for the 2007 and 2008 drilling programs at the ET Zone of the Avino Vein. Since the Avino deposit strikes approximately east-west and dips at 60 to 70° to the south, holes are generally oriented from south to north at various bearings and dip angles in order to intersect the structure at a target depth. Holes were drilled using Avino's Longyear 44 core rig at thin wall NQ diameter.

Figure 10.1 Drillholes Completed from 2006 to 2016 on the Avino Vein



10.2.2 SAN GONZALO AND NEARBY VEINS

At San Gonzalo, Avino drilled 40 holes in 2007 (9,257 m), 6 in 2008 (1,783 m), and 18 in 2011 (3,619 m), 15 in 2014 (3,621 m), 24 in 2015 (3,413 m), 7 in 2016 (922 m), for a total of 110 drillholes and 22,614 m of drilling. All holes were of thin wall NQ size core diameter and were completed using Avino's Longyear 44 core rig. Additional holes also explored the nearby Guadalupe, San Juventino, San Lucerno, Mercedes, San Jorge, and Yolanda veins.

According to Gunning (2009), the collars for 2007 and 2008 drillholes were marked by concrete monuments and the collars have been surveyed. More recent collars were seen during a site visit in June 2016.

A check of the coordinates with a handheld global positioning system (GPS) during a site visit in 2016 revealed a possible 4 m constant error, which may indicate the existence of a small surveying error on the Property.

Collar coordinates for drillholes on the San Gonzalo are provided in Table 10.1. Assay results from these drillholes have been previously reported (Gunning 2009; Tetra Tech 2012). A location map of drillholes on the San Gonzalo Vein is provided in Figure 10.2.

Figure 10.2 Location of Drillholes Completed from 2006 to 2016 on the San Gonzalo Vein

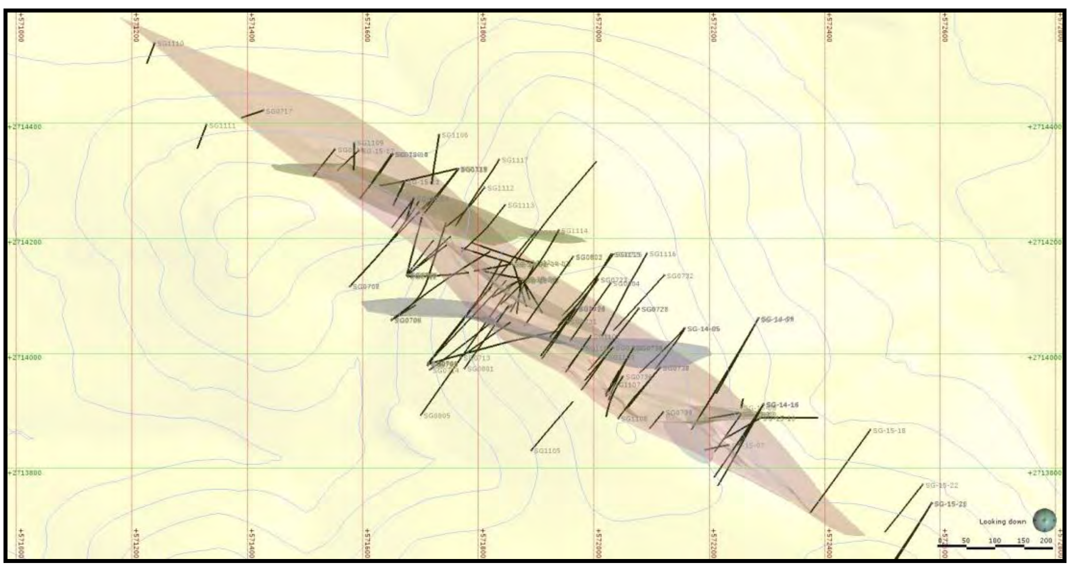


Table 10.1 Drillholes Completed from 2007 to 2016 on the San Gonzalo Vein

Hole ID	Azimuth (°)	Dip (°)	Depth (m)	Easting (m)	Northing (m)	Elevation (m)
SG-07-01	43	-60	386.8	571,713	2,713,982	2,297
SG-07-02	38	-48	323.7	571,714	2,713,983	2,297
SG-07-03	74	-43	315.0	571,714	2,713,981	2,297
SG-07-04	53	-49	312.7	571,651	2,714,059	2,276
SG-07-05	59	-69	137.0	571,650	2,714,058	2,276
SG-07-06	55	-58	387.2	571,650	2,714,058	2,276
SG-07-07	44	-44	281.6	571,578	2,714,117	2,281
SG-07-08	43	-55	383.7	571,578	2,714,116	2,281
SG-07-09	38	-45	106.6	571,677	2,714,137	2,277
SG-07-10	53	-58	162.9	571,677	2,714,136	2,277
SG-07-11	15	-49	158.6	571,676	2,714,135	2,277
SG-07-12	89	-53	175.5	571,678	2,714,133	2,277
SG-07-13	55	-49	160.6	571,770	2,713,993	2,315
SG-07-14	54	-53	295.2	571,716	2,713,972	2,297
SG-07-15	218	-49	96.2	571,689	2,714,268	2,296
SG-07-16	219	-54	99.9	571,552	2,714,354	2,285
SG-07-17	252	-55	69.8	571,428	2,714,421	2,268
SG-07-18	218	-65	238.1	571,765	2,714,318	2,293
SG-07-19	257	-66	344.9	571,763	2,714,320	2,293
SG-07-20	215	-67	247.4	571,650	2,714,345	2,281
SG-07-21	38	-53	295.0	571,713	2,713,979	2,297
SG-07-22	218	-54	232.5	572,007	2,714,128	2,343
SG-07-23	216	-70	303.5	572,007	2,714,128	2,343
SG-07-24	217	-53	124.4	571,969	2,714,077	2,351
SG-07-25	216	-65	190.5	571,969	2,714,078	2,351
SG-07-26	216	-69	395.4	572,033	2,714,172	2,337
SG-07-27	218	-55	237.8	572,078	2,714,077	2,345
SG-07-28	218	-74	319.5	572,078	2,714,078	2,345
SG-07-29	221	-43	103.6	572,033	2,714,010	2,356
SG-07-30	221	-64	158.4	572,034	2,714,010	2,356
SG-07-31	218	-43	104.8	571,954	2,714,056	2,352
SG-07-32	223	-70	408.0	572,122	2,714,135	2,330
SG-07-33	211	-43	130.6	572,069	2,714,009	2,353
SG-07-34	210	-58	183.1	572,069	2,714,010	2,353
SG-07-35	211	-68	272.2	572,069	2,714,010	2,353
SG-07-36	215	-41	102.2	572,050	2,713,959	2,358
SG-07-37	219	-53	154.4	572,115	2,713,975	2,351
SG-07-38	221	-67	214.2	572,115	2,713,975	2,351
SG-07-39	220	-73	128.1	572,120	2,713,898	2,353
SG-07-40	220	-74	516.1	571,899	2,714,211	2,321
SG-08-01	35	-51	210.1	571,776	2,713,974	2,314

table continues...

Hole ID	Azimuth (°)	Dip (°)	Depth (m)	Easting (m)	Northing (m)	Elevation (m)
SG-08-02	215	-57	269.1	571,964	2,714,167	2,335
SG-08-03	215	-70	332.0	571,964	2,714,168	2,335
SG-08-04	215	-63	270.0	572,029	2,714,121	2,343
SG-08-05	35	-55	475.3	571,701	2,713,893	2,285
SG-08-06	48	-64	226.4	571,679	2,714,137	2,277
SG-11-01	215	-59	101.0	571,981	2,714,009	2,357
SG-11-02	215	-63	141.2	571,995	2,714,030	2,355
SG-11-03	215	-44	98.5	572,020	2,713,994	2,357
SG-11-04	212	-54	176.5	571,969	2,714,079	2,351
SG-11-05	40	-43	151.4	571,892	2,713,832	2,317
SG-11-06	189	-44	122.3	571,732	2,714,379	2,274
SG-11-07	30	-68	74.0	572,030	2,713,946	2,358
SG-11-08	37	-67	125.4	572,043	2,713,888	2,360
SG-11-09	181	-48	71.1	571,585	2,714,366	2,278
SG-11-10	201	-61	78.4	571,240	2,714,538	2,235
SG-11-11	201	-61	92.0	571,329	2,714,397	2,274
SG-11-12	218	-71	312.2	571,811	2,714,288	2,305
SG-11-13	218	-71	345.4	571,847	2,714,258	2,310
SG-11-14	209	-61	330.5	571,939	2,714,214	2,326
SG-11-15	211	-68	363.5	572,030	2,714,172	2,337
SG-11-16	209	-62	334.3	572,092	2,714,173	2,331
SG-11-17	210	-70	383.1	571,836	2,714,336	2,306
SG-11-18	218	-71	318.2	571,765	2,714,321	2,293
SG-14-01	287	-54	156.6	571,858	2,714,156	2,086
SG-14-02	258	-60	120.1	571,858	2,714,155	2,086
SG-14-03	160	-71	173.0	571,861	2,714,153	2,086
SG-14-04	199	-70	120.0	571,688	2,714,270	2,296
SG-14-05	219	-70	346.8	572,157	2,714,044	2,330
SG-14-06	207	-79	411.0	572,158	2,714,044	2,331
SG-14-07	210	-27	248.3	572,284	2,714,059	2,297
SG-14-08	209	-58	336.0	572,285	2,714,061	2,298
SG-14-09	208	-68	401.8	572,285	2,714,061	2,297
SG-14-10	213	-50	235.3	572,293	2,713,911	2,300
SG-14-11	37	2	224.2	571,865	2,714,159	2,087
SG-14-12	286	-52	185.0	571,896	2,714,157	2,044
SG-14-13	209	-62	213.4	571,898	2,714,156	2,043
SG-14-14	208	-33	192.2	572,294	2,713,912	2,300
SG-14-15	210	-72	257.4	572,294	2,713,912	2,300
SG-15-01	237	-40	75.2	571,874	2,714,128	2,043
SG-15-02	187	-42	81.7	571,875	2,714,128	2,043
SG-15-03	148	-30	75.8	571,878	2,714,126	2,043
SG-15-04	280	-43	98.8	571,873	2,714,130	2,043

table continues...

Hole ID	Azimuth (°)	Dip (°)	Depth (m)	Easting (m)	Northing (m)	Elevation (m)
SG-15-05	163	-52	58.0	571,878	2,714,127	2,043
SG-15-06	242	-73	106.4	571,876	2,714,129	2,043
SG-15-07	258	0	44.0	572,234	2,713,841	2,139
SG-15-08	13	0	16.2	572,255	2,713,906	2,138
SG-15-09	215	-36	99.6	572,255	2,713,894	2,138
SG-15-10	260	-32	90.5	572,252	2,713,896	2,137
SG-15-11	204	-71	150.0	571,672	2,714,298	2,292
SG-15-12	192	-83	200.8	571,672	2,714,298	2,291
SG-15-13	240	0	74.5	572,288	2,713,887	2,138
SG-15-14	216	-58	145.8	571,652	2,714,345	2,280
SG-15-15	216	-76	195.7	571,652	2,714,346	2,280
SG-15-16	90	0	100.8	572,288	2,713,888	2,138
SG-15-17	226	-68	145.3	571,593	2,714,352	2,282
SG-15-18	215	-30	209.8	572,479	2,713,867	2,284
SG-15-19	214	-52	290.9	572,480	2,713,868	2,283
SG-15-20	210	-52	218.8	572,586	2,713,740	2,309
SG-15-21	212	-20	145.6	572,584	2,713,739	2,309
SG-15-22	218	-71	350.0	572,570	2,713,772	2,303
SG-15-23	213	-59	251.8	572,702	2,713,747	2,284
SG-15-24	215	-28	187.7	572,700	2,713,745	2,284
SG-16-01	250	-68	147.7	571,428	2,714,421	2,268
SG-16-02	250	-77	167.8	571,428	2,714,421	2,268
SG-16-03	208	-51	74.8	571,339	2,714,462	2,256
SG-16-04	193	-79	111.0	571,340	2,714,463	2,256
SG-16-05	190	-75	159.6	571,347	2,714,495	2,248
SG-16-06	215	-69	171.7	571,300	2,714,500	2,245
SG-16-07	215	-54	89.5	571,299	2,714,499	2,245
Datum NAD27 Mexico						

10.2.3 OXIDE TAILINGS

During 2015 and 2016, Avino has drilled 57 new holes on the oxide tailings deposit. Collar coordinates are provided in Table 10.2. Drillholes completed before 2015 on the oxide tailings have been previously reported (Tetra Tech 2013). A location map of oxide tailings drillholes is provided in Figure 10.3. The new holes are indicated in red.

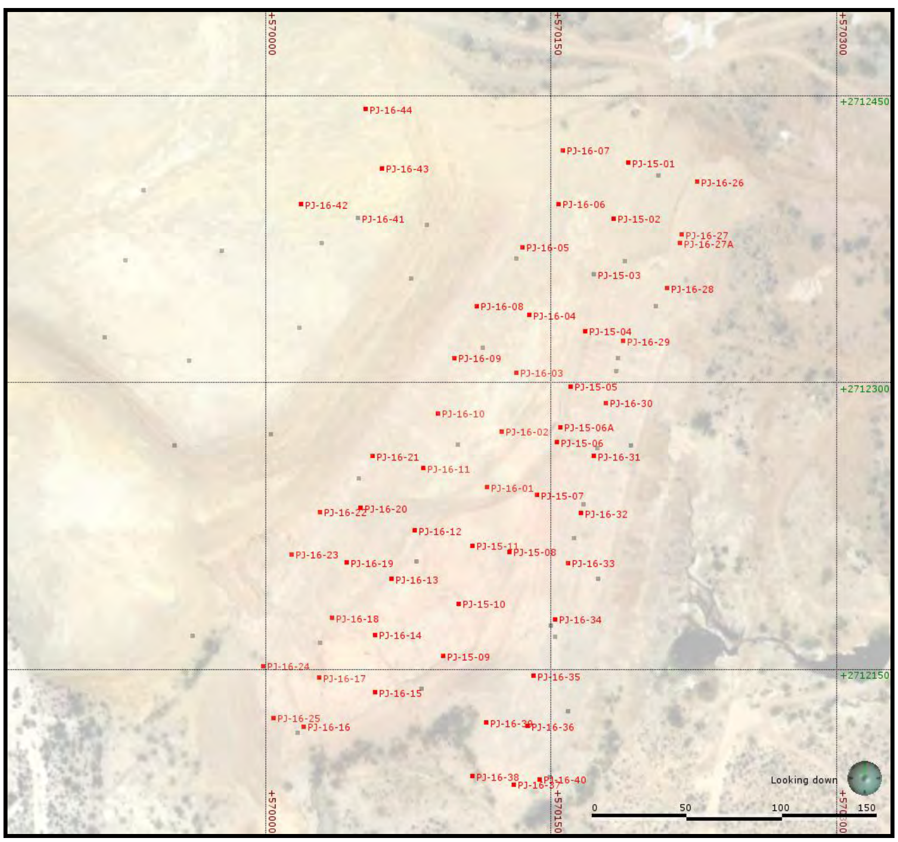
Table 10.2 Drillholes Completed from 2015 and 2016 on the Oxide Tailings

Hole ID	Azimuth (°)	Dip (°)	Easting (m)	Depth (m)	Northing (m)	Elevation (m)
PJ-15-01	0	90	2,219.473	6.48	570,190.7	2,712,415
PJ-15-02	0	90	2,219.162	12.35	570,183.0	2,712,386
PJ-15-03	0	90	2,218.644	13.4	570,172.7	2,712,357
PJ-15-04	0	90	2,217.708	18.9	570,167.8	2,712,327
PJ-15-05	0	90	2,216.812	21.8	570,160.3	2,712,298
PJ-15-06	0	90	2,216.389	8.3	570,153.1	2,712,269
PJ-15-06A	0	90	2,216.499	26.8	570,154.8	2,712,277
PJ-15-07	0	90	2,215.738	28.5	570,142.6	2,712,241
PJ-15-08	0	90	2,219.473	28	570,128.2	2,712,212
PJ-15-09	0	90	2,214.867	21.2	570,093.4	2,712,157
PJ-15-10	0	90	2,215.244	27	570,101.2	2,712,184
PJ-15-11	0	90	2,216.778	28.5	570,108.5	2,712,215
PJ-16-01	0	90	2,216.743	27.9	570,116.4	2,712,245
PJ-16-02	0	90	2,217.210	26.4	570,124.1	2,712,274
PJ-16-03	0	90	2,217.399	23	570,131.6	2,712,305
PJ-16-04	0	90	2,217.965	18	570,138.8	2,712,335
PJ-16-05	0	90	2,218.485	12	570,134.8	2,712,371
PJ-16-06	0	90	2,219.221	8	570,154.0	2,712,393
PJ-16-07	0	90	2,220.314	3.9	570,156.2	2,712,422
PJ-16-08	0	90	2,218.839	18	570,111.1	2,712,340
PJ-16-09	0	90	2,217.796	22.9	570,099.4	2,712,313
PJ-16-10	0	90	2,216.919	27.5	570,090.6	2,712,284
PJ-16-11	0	90	2,216.620	23	570,083.0	2,712,255
PJ-16-12	0	90	2,216.016	24.1	570,078.2	2,712,223
PJ-16-13	0	90	2,216.043	24	570,066.2	2,712,197
PJ-16-14	0	90	2,215.937	20	570,057.4	2,712,168
PJ-16-15	0	90	2,215.129	14.5	570,057.4	2,712,138
PJ-16-16	0	90	2,215.770	9.5	570,020.0	2,712,120
PJ-16-17	0	90	2,215.998	14	570,028.1	2,712,145
PJ-16-18	0	90	2,215.905	13.1	570,034.9	2,712,177
PJ-16-19	0	90	2,216.047	21	570,042.4	2,712,206
PJ-16-20	0	90	2,217.054	26	570,049.8	2,712,234
PJ-16-21	0	90	2,217.524	24.5	570,056.1	2,712,261
PJ-16-22	0	90	2,218.194	21.5	570,028.8	2,712,232
PJ-16-23	0	90	2,217.687	20	570,013.6	2,712,210
PJ-16-24	0	90	2,215.840	8.9	569,998.9	2,712,152
PJ-16-25	0	90	2,216.180	8.4	570,004.2	2,712,125
PJ-16-26	0	90	2,207.578	0.6	570,226.8	2,712,405
PJ-16-27	0	90	2,206.271	0.5	570,218.8	2,712,377
PJ-16-27A	0	90	2,206.009	0.7	570,217.7	2,712,373
PJ-16-28	0	90	2,204.970	0.6	570,211.0	2,712,349

table continues...

Hole ID	Azimuth (°)	Dip (°)	Easting (m)	Depth (m)	Northing (m)	Elevation (m)
PJ-16-29	0	90	2,205.515	7.9	570,187.8	2,712,322
PJ-16-30	0	90	2,205.253	13.5	570,179.0	2,712,289
PJ-16-31	0	90	2,205.810	16	570,172.7	2,712,261
PJ-16-32	0	90	2,204.902	19.6	570,165.6	2,712,232
PJ-16-33	0	90	2,204.493	17	570,158.9	2,712,206
PJ-16-34	0	90	2,203.793	20.5	570,152.0	2,712,176
PJ-16-35	0	90	2,202.850	13.7	570,140.9	2,712,147
PJ-16-36	0	90	2,201.348	8.1	570,137.8	2,712,120
PJ-16-37	0	90	2,200.552	4.3	570,130.4	2,712,090
PJ-16-38	0	90	2,200.867	2	570,108.7	2,712,094
PJ-16-39	0	90	2,201.701	6	570,115.8	2,712,122
PJ-16-40	0	90	2,200.646	0.6	570,144.2	2,712,093
PJ-16-41	0	90	2,245.898	28.5	570,048.6	2,712,386
PJ-16-42	0	90	2,245.372	21	570,018.7	2,712,393
PJ-16-43	0	90	2,245.549	20	570,061.0	2,712,412
PJ-16-44	0	90	2,245.549	5	570052.4	2,712,443
Datum NAD27 Mexico						

Figure 10.3 Location of Drillholes Completed from 2015 to 2016 on the Oxide Tailings



10.2.4 SPECIFIC GRAVITY RESULTS

Bulk density samples were analyzed from all 2006-2012 drilling programs on both the Avino and San Gonzalo Veins. Analytical procedures are discussed in Section 11.7. Table 10.3 summarizes the results of these specific gravity measurements.

Table 10.3 Avino and San Gonzalo Density Data Summary

Domain	Number	Minimum	Maximum	Mean	Variance	Coefficient of Variation
Avino Vein System						
10 (Main)	40	2.53	3.00	2.71	0.02	0.05
20	42	2.43	2.90	2.68	0.01	0.03
wall rock	93	2.29	3.00	2.65	0.04	0.07
Combined	175	2.29	3.00	2.67	0.03	0.06
San Gonzalo Vein System						
10	50	2.40	3.00	2.64	0.03	0.07
20	2	2.73	2.78	2.76	0.00	0.01
Wall Rock	41	2.40	3.00	2.69	0.02	0.05
Combined	93	2.40	3.00	2.67	0.03	0.06

11.0 SAMPLE PREPARATION, ANALYSES, AND SECURITY

11.1 DRILLING AND TRENCHING OF OXIDE TAILINGS, 1990 TO 1991

The oxide tailings were sampled prior to institution of NI 43-101 and associated quality assurance (QA)/quality control (QC) requirements, and as such no QA/QC measures were utilized during the 1990-1991 program. As a result, the resource estimate for the oxide tailings in Section 14.3 is all classified as Inferred. Twenty-eight holes were drilled and six trenches completed, from which a total of 461 samples were collecting for assaying. The analyses were completed in the on-site laboratory, which is described in Section 11.7 and was visited during the site visit, as summarized in Section 12.4.

Avino's current on-site, non-certified, laboratory facility consists of sample preparation, crushing and pulverizing, a fire assay and an atomic absorption (AA) section. However, the procedures and facilities used in 1990 to 1991 may be different from the current sample analysis procedures. As a result of the uncertainty associated with these analyses, two separate verification exercises have been completed. Slim (2005d) collected several samples from the oxide tailings, and the results of this verification are discussed in Section 11.2. In 2012, Mr. M.F. O'Brien, QP, collected numerous verification samples from the oxide tailings, and these results are discussed in Section 12.3.2.

11.2 TAILINGS INVESTIGATIONS (TEST PITS IN OXIDE TAILINGS), 2004

The sampling method and approach adopted by Slim (2005d) on the test pits in the oxide tailings incorporated the following steps:

1. A backhoe was used to excavate sample pits to a depth of 4 m. Hand samples were taken at 1 m vertical increments from the sidewalls of each pit.
2. The sample mass collected from each sampling point generally amounted to between 2 and 5 kg.
3. The sampling program was ostensibly based on the 1990 CMMA sampling program. Fourteen sample pits were excavated to a depth of 4 m and generated 86 samples.

The samples were air-freighted to PRA labs in Vancouver, British Columbia, from Durango, Mexico. The samples had been initially bagged and sealed with identification tags attached. The samples were allotted new identification numbers, and were subsequently un-bagged and dried. The dry samples were individually mixed and blended, and then split into four one-quarter fractions as directed by Slim (2005d). One fraction was used to determine the head grade assay, while another quarter was used to create composite samples used for the subsequent metallurgical test work program. Instructions were followed with the compositing of the samples, and the test work program.

Excess sample was archived for future test work or analyses. For analytical techniques employed during the test work program, the standard fire assay (with AA spectrophotometric finish) was initially used for the silver analyses.

However, this method is not very accurate for silver values of less than 100 g/t. Subsequently, the inductively coupled plasma spectroscopy method (ICP-MS), which uses multi-acid digestion, was used for silver. This method also resulted in analyses being obtained for other elements of interest (e.g. copper, zinc, lead, etc.). The standard fire assay method was used for gold analyses. Cyanide and lime concentrations were measured using standard titrimetric methods. Total sulphur was measured using a standard Leco furnace, and sulphide sulphur assays were measured using the standard wet chemical gravimetric analysis (Slim 2005d).

The PRA labs (part of Inspectorate labs) in Nevada and British Columbia are International Organization for Standardization (ISO) 9001:2008 certified, full service laboratories that are independent of Avino. Aranz did not independently verify nor compare the results of the sampling program.

11.3 Drilling Program, San Gonzalo, 2007 to Present

For the drilling programs at San Gonzalo, core is sawed at Avino's core storage facility at the secure mine site. Samples of vein material, usually from a few centimeters to 1.5 m, are placed and sealed in plastic bags, which are collected by personnel from Inspectorate Labs in Durango at the mine site facilities. Samples are prepared in Durango, and pulps are sent to the Inspectorate facility in Sparks, Nevada for analysis.

Sample preparation in Durango involves the initial drying of the entire sample. Two-stage crushing is used to create a product which is at least 80% minus 10 mesh. A Jones riffle splitter is then used to separate a nominal 300 g portion of the sample. This 300 g sub-sample is then pulverized to more than 90% passing a 150-mesh screen. Inspectorate Labs states that they use sterile sand to clean the pulverizer between samples (Gunning 2009).

Gold analyses are by 30 g fire assay with an AA finish. silver, zinc, and lead are analyzed as part of a multi-element inductively coupled argon plasma package using a four-acid digestion with over-limit results for silver being reanalyzed with assay procedures using fire assay and gravimetric. Avino employs a rigorous quality control program that includes standardized material, blanks, and core duplicates. However, for the 2007 program, Avino did not perform any independent QA/QC and relied on the internal QA/QC procedures completed by the labs (Gunning 2009).

Inspectorate Labs in Nevada and British Columbia are ISO 9001:2008 certified, full service laboratories that are independent of Avino.

Avino used a series of standard reference materials (SRMs), blank reference materials (blanks) and duplicates as part of their QA/QC program during analysis of assays from San Gonzalo Vein drillholes. Aranz compiled and reviewed these results in Section 12.1.4.

11.4 DRILLING PROGRAMS, ET ZONE OF THE AVINO VEIN, 2006 TO PRESENT

Sample lengths of NQ drill core were diamond sawed into halves by mine staff and shipped to Inspectorate Labs in Durango for preparation into pulps and rejects. Pulps were analyzed at Inspectorate Labs in Sparks, Nevada. Gold and silver were analyzed by fire assay using aqua regia leach and AA finish. Other elements are reported from a 29-element ICP-MS package. Inspectorate Labs in Nevada and British Columbia are ISO 9001:2008 certified, full service laboratories that are independent of Avino. Sample preparation and analysis and QA/QC procedures are as described in Section 11.3.

Avino used a series of certified reference materials (CRMs), blank reference materials (blanks) and duplicates as part of their QA/QC program during analysis of assays from Avino Vein drillholes. Aranz compiled and reviewed these results in Section 12.1.4.

11.5 UNDERGROUND CHANNEL SAMPLING OF SAN GONZALO VEIN, 2010 TO PRESENT

Samples from channels cut across the San Gonzalo Vein were assayed by Inspectorate Labs. Samples were crushed and ground in Durango with pulps assayed in Richmond, British Columbia using fire assay and AA finish for gold, four acid digestion and AA for most silver with fire assay and gravimetric finish for very high silver. Base metals were analyzed via aqua regia digestion and ICP-MS. Inspectorate Labs in Durango and British Columbia are ISO 9001:2008 certified, full service laboratories that are independent of Avino. Sample preparation and analysis and QA/QC procedures are as described in Section 11.3.

For the 2011 bulk sampling program of San Gonzalo, samples were obtained from channels cut across the vein, and were assayed by Inspectorate Labs. Samples were crushed and ground in Durango with pulps assayed in Richmond, British Columbia using fire assay and AA finish for gold, four acid digestion and AA for most silver with fire assay and gravimetric finish for very high silver. Base metals were analyzed via aqua regia digestion and ICP-MS for base metals. Inspectorate Labs in Nevada and British Columbia are ISO 9001:2008 certified, full service laboratories that are independent of Avino.

Samples from 2012 and 2013 underground channel sampling of the San Gonzalo Vein are shipped to Inspectorate Labs for analysis for gold, silver, arsenic, bismuth, copper, molybdenum, lead, antimony, zinc, and mercury. Samples are crushed and ground in Durango with pulps assayed in Reno, Nevada using fire assay and AA finish for gold, four acid digestion and AA for most silver with fire assay and gravimetric finish for very high silver, and aqua regia digestion and ICP-MS for base metals. Inspectorate Labs in Nevada and British Columbia are ISO 9001:2008 certified, full service laboratories that are independent of Avino. Sample QA/QC procedures are as described in Section 11.3.

11.6 AVINO LABORATORY

The Avino laboratory has fire assay, AA and sieving analysis equipment and has been recently upgraded with new AA equipment. A high standard of neatness and cleanliness is being maintained to reduce the risk of contamination.

11.7 SPECIFIC GRAVITY SAMPLES

Avino completed specific gravity measurements on drillcore from both the Avino and San Gonzalo Veins. All measurements were completed by Avino staff on the mine site. Two different methods were employed to obtain these specific gravity values: caliper volume calculation (CV) and water displacement (WD). The procedures followed for each method are summarized in the following sections.

A total of 262 samples were measured for bulk density, 110 from the Avino Vein and 152 from the San Gonzalo Vein. Aranz provides recommendations regarding specific gravity sampling procedures in Section 26.1.4 and a QP opinion in Section 12.5.1.

11.7.1 CALIPER VOLUME CALCULATION METHOD

The CV method of determining the specific gravity of drillcore samples involved the following procedures, based on the methodology outlined by Lipton (2001):

- Each measurement involves pieces of whole core with the ends neatly cut perpendicular to the core axis.
- The core diameter is determined using a pair of vernier calipers, and the diameter should be measured at several points along the length of core and averaged.
- The core length is measured using a tape measure.
- The mass is determined by weighing the core; weighing should be completed once the core is dried.
- The dry bulk density is calculated by: density = mass/volume where volume = Pi x (average core diameter/2)^2 x core length.

11.7.2 WATER DISPLACEMENT METHOD

The WD method of determining the specific gravity of drill core samples involved the following procedures, based on Archimedes' Principle:

- The mass is determined by weighing the core; weighing should be completed once the core is dried.
- A graduated cylinder, of an appropriate size to completely submerse the core, is used to determine the volume. The volume of water in the graduated cylinder is measured prior to submersing the core.
- The core is then submersed in water in the graduated cylinder and the total volume is measured.
- The difference in the volume of water before and after sample submersion is the volume of the sample.
- The dry bulk density = mass/volume.

11.8 QP Opinion

Aranz is not aware of any drilling, sampling or recovery factors affecting the reliability of the samples. It is Aranz's opinion that the sample preparation, security and analytical procedures followed by Avino are fit for the purpose of this Technical Report.

12.0 DATA VERIFICATION

12.1 AVINO AND SAN GONZALO VEIN DRILLHOLE DATABASE VERIFICATION

Aranz compiled the drillhole data provided by Avino on a hole-by-hole basis, including drillhole collar, survey, lithology, and assay data. As reported previously by Tera Tech (2013) the drillhole data exists in several forms of spreadsheet and Microsoft® Access databases. A rate of 0.5% depth errors were encountered.

During the site visit in June 2016, Aranz selected the following drillholes for verification in the core shack: ET-06-02, ET-07-01, ET-07-03, SG-15-03 and SG-14-02. Logging and cores showed good correspondence with no significant differences.

The QP opinion of the reliability of the Avino drillhole data is discussed in Section 12.5.1 and detailed recommendations are provided in Section 26.1.

12.1.1 COLLAR AND ASSAY DATA

Table 12.1 summarizes the database validation results. The Avino Vein lithology data for the older drillholes and upper portion of the mine, is very sparse owing to the age of the records. The upper part of the deposit model has consequently been modelled using assay data and development mapping information. As the deficient lithology information pertains mainly to parts of the deposit that have been mined out, Aranz does not consider it to be a material deficiency.

Table 12.1 Number of Records and Discrepancies for the Avino Drillhole Data

Avino Vein	Number of Records	Discrepancies	Discrepancy Rate (%)
Avino Vein			
Survey Data	3,330	-	2.2
No Surveys for Collar		2	
Duplicate Collar and Surveys		3	
Duplicate Survey Depths		67	
Assays	16,906		0.3
No Sample for Collars		24	
Overlapping Segments		8	
Collar Max Depth Exceeded		15	
Lithology	4,059		54.2
From to Depth Overelap		280	

table continues...

Avino Vein	Number of Records	Discrepancies	Discrepancy Rate (%)
No Samples for Collar		1,916	
Collar Max Depth Exceeded		2	
San Gonzalo Vein			
Survey Data	3,506		0.1
No Survey for Collar		1	
Duplicate Collar and Surveys		0	
Duplicate Survey Depths		0	
Incomplete Survey Data		2	
Assays	16,077		0.2
No Samples for Collars		23	
Overlapping Segments		8	
Collar Max Depth Exceeded		6	
Lithology	15,043		0.3
From to Depth Overlap		0	
No Samples for Collar		52	
Collar Max Depth Exceeded		0	

A previous validation exercise was completed for assay results from post-2009 drilling by Tetra Tech (2012). Original assay certificates were compared against the data as reported by Avino. Assay results from drillholes SG-11-13 to SG-11-17, and ET-12-01 to ET-12-09 were verified. For all metals in the database (gold, silver, copper, lead, zinc, and bismuth), the error incidence was less than 1%.

12.1.2 DOWNHOLE SURVEY DATA

Downhole survey data exists for 87 of the 98 drillholes completed in the Avino and San Gonzalo Veins. Most drillholes have three or fewer downhole survey points, which is less frequent than typical industry practice. Many of these holes contain a survey data point at the collar and near the end of hole, and sometimes part-way down the hole. However, 26 of the 87 holes for which downhole survey data exists were not surveyed to within 10 m of the end of the hole. All measurements were completed by a magnetic survey method, which is not recommended in general, and particularly not in locations with extensive underground infrastructure such as those present on the Property. Given the abundance of historical infrastructure on the Property and the potential for any drillholes to intersect active workings, downhole survey measurements should be collected at a frequency of at least every 10 m and all drillholes should be cemented following completion.

Downhole survey data for hole SG-07-06 was disregarded below 50 m depth due to an unrealistic kink in the drillhole orientation below this depth, which could be due to an instrument malfunction or to magnetic interference.

12.1.3 GEOLOGY DATA AND INTERPRETATION

Aranz has the following observations on the Avino geology database and interpretation:

To Aranz's knowledge, routine photography of drillcore and underground drifts is being completed. A digital photographic record is kept of all drillcore and underground drifts for future reference, and to facilitate consistent core logging and geology interpretation.

12.1.4 REVIEW OF DRILLHOLE QUALITY ASSURANCE/QUALITY CONTROL SAMPLES

QA/QC samples were submitted in the sample stream during all 2006 to 2012 drilling programs on both the Avino and San Gonzalo veins, although not in a consistent manner. These results were reviewed in detail by Tetra Tech and were discussed in Tetra Tech's 2013 report. Avino used a number of SRMs, blank reference materials (blanks) and duplicates as part of their 2015/2016 QA/QC program.

STANDARDS

Three standards were analyzed during 2015-2016 oxide tailings drilling campaign. Three laboratory-certified standards (see Table 12.2) were used and the silver and gold results are discussed below.

Table 12.2 Standards Specifications

CDN-ME-1307	
Recommended Value	1.02 ± 0.09 g/t Au
Recommended Value	54.1 ± 3.1 g/t Ag
Recommended Value	0.864 ± 0.036 % Pb
Recommended Value	0.746 ± 0.026 % Zn
Recommended Value	0.537 ± 0.020 % Cu
CDN-ME-1303	
Recommended Value	0.924 ± 0.100 g/t Au
Recommended Value	152 ± 10 g/t Ag
Recommended Value	1.22 ± 0.06 % Pb
Recommended Value	0.931 ± 0.048 % Zn
Recommended Value	0.344 ± 0.016 % Cu
CDN-ME-1305	
Recommended Value	1.92 ± 0.18 g/t Au
Recommended Value	231 ± 12 g/t Ag
Recommended Value	3.21 ± 0.09 % Pb
Recommended Value	1.61 ± 0.05 % Zn
Recommended Value	0.617 ± 0.024 % Cu

Note: Pb – lead; Zn – zinc

The 55 standards were submitted at a rate of 10% (total of 561 samples) which is higher than the industry norm of 5%. They were submitted to both Inspectorate and SGS Laboratories. Standards performances are graphed (Figure 12.1 to Figure 12.6, inclusive) against the recommended upper and lower limits and the laboratories are colour coded (red for SGS and green for Inspectorate).

Figure 12.1 Standard 1303 – Silver Performance

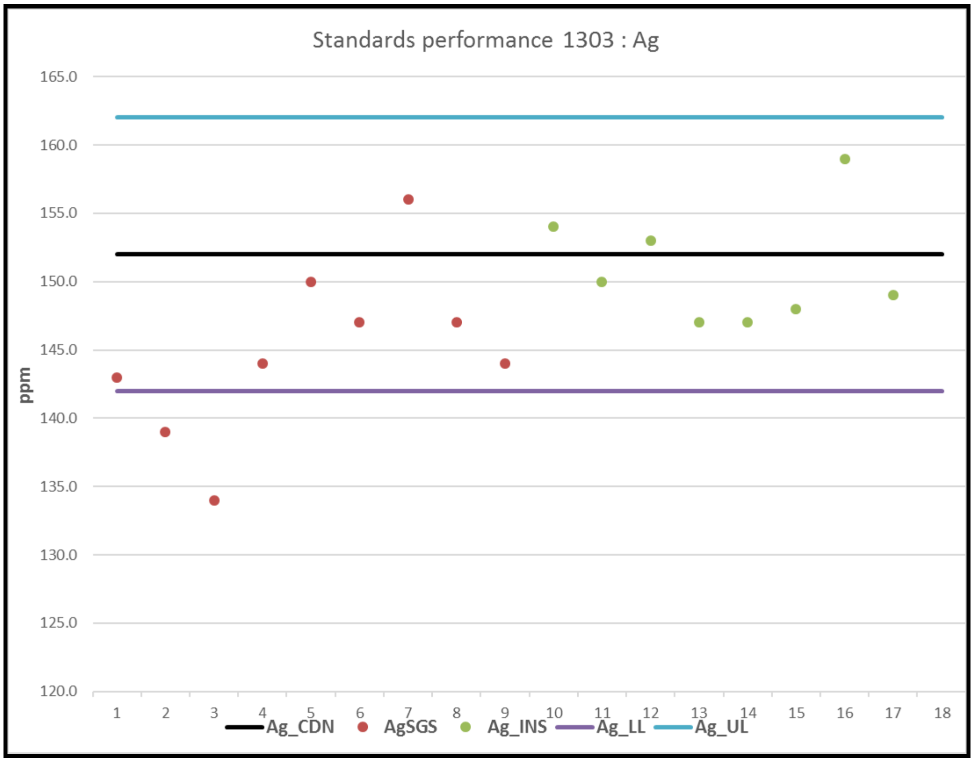


Figure 12.2 Standard 1303 – Gold Performance

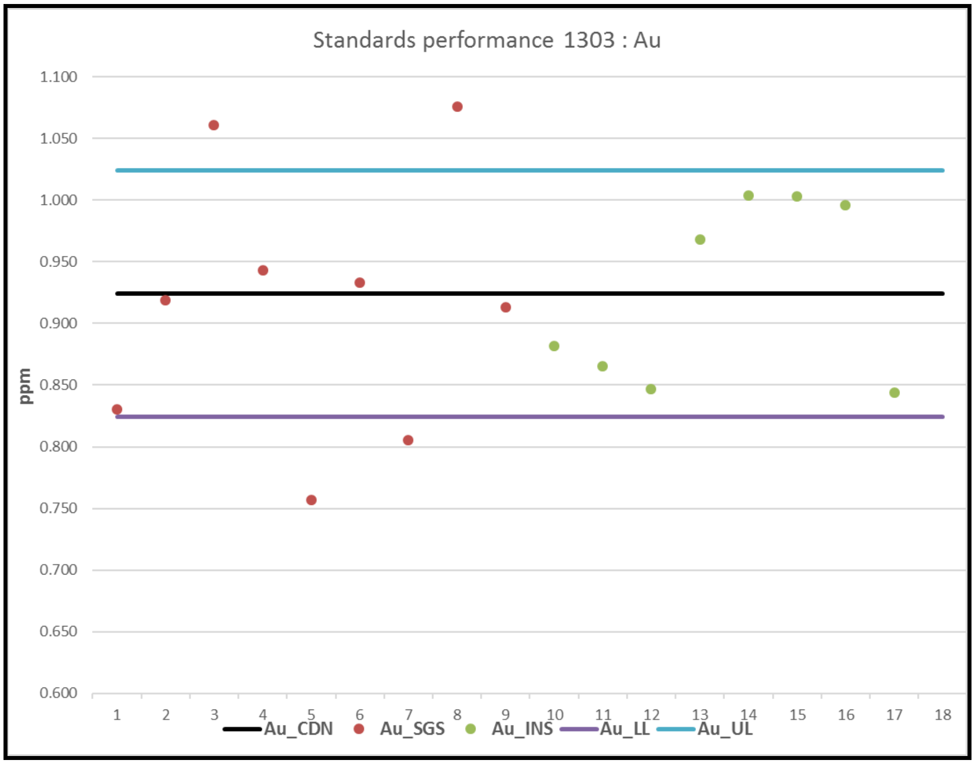


Figure 12.3 Standard 1305 – Silver Performance

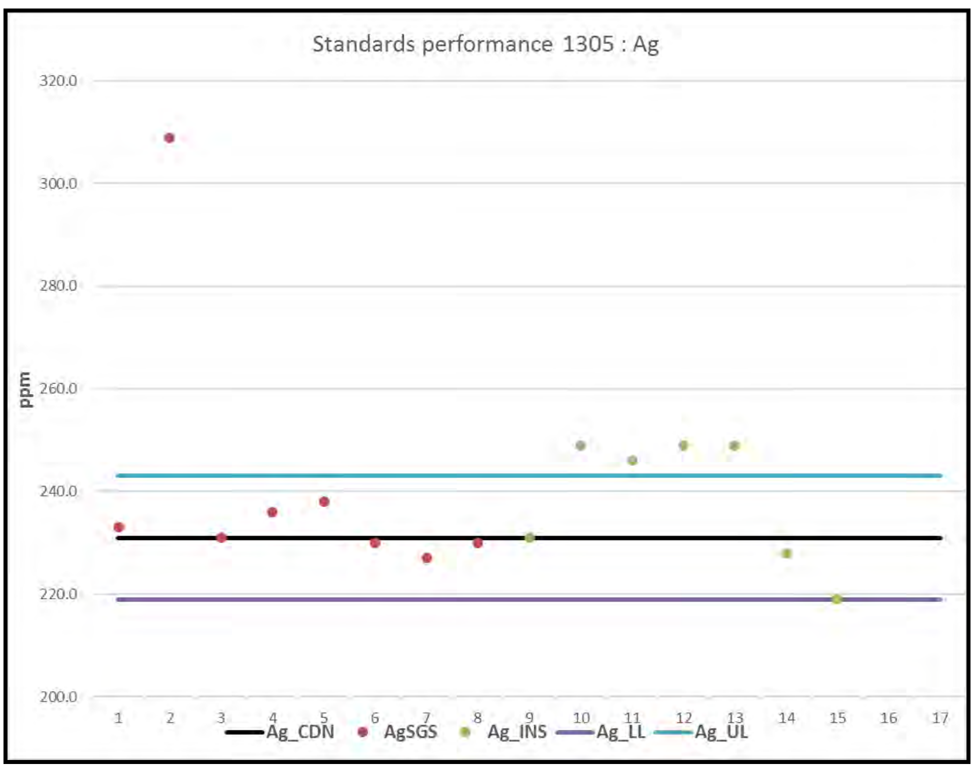


Figure 12.4 Standard 1305 – Gold Performance

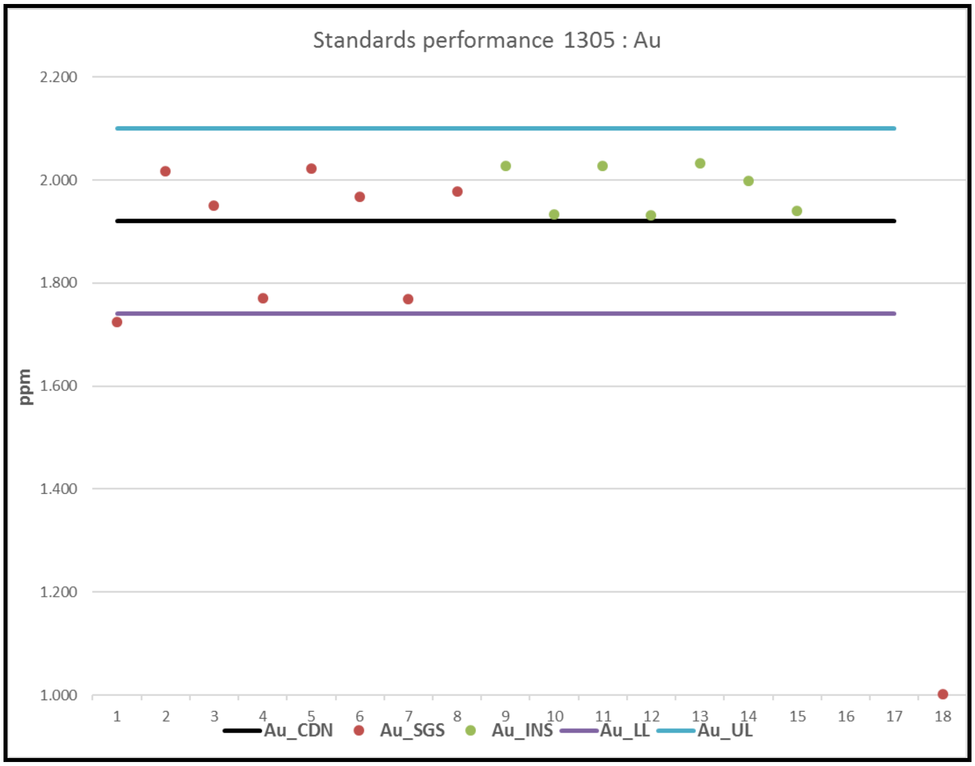


Figure 12.5 Standard 1307 – Silver Performance

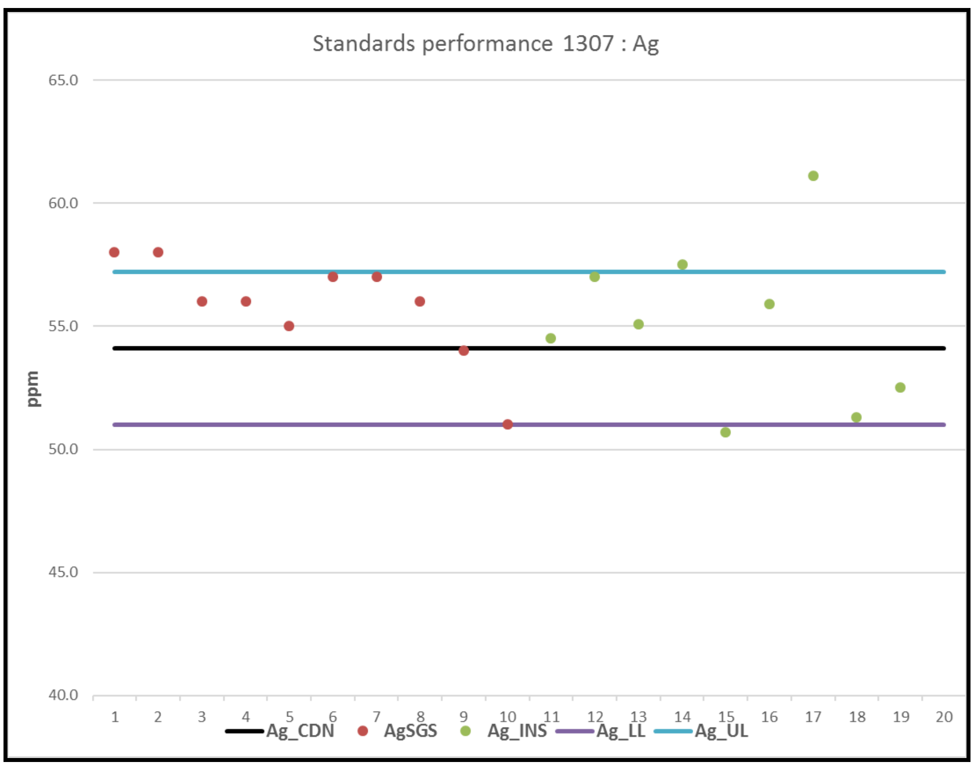
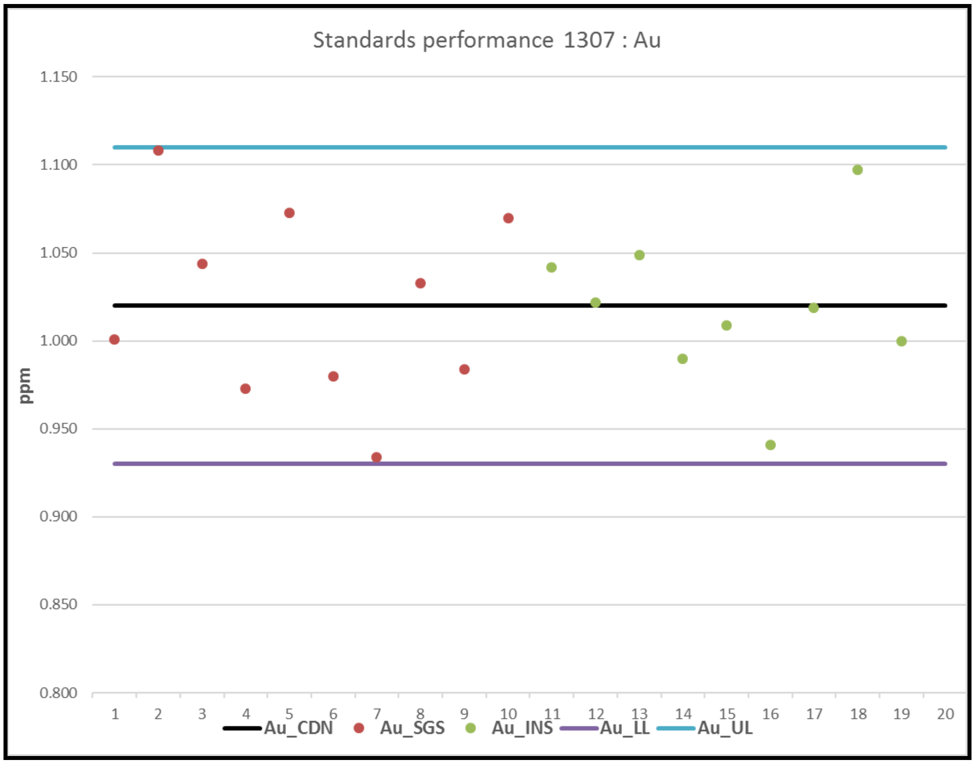


Figure 12.6 Standard 1307 – Gold Performance



The three standards appear to have been determined within the limits in the majority of cases, but standard CDN-ME-1305 shows some anomalies for silver, notably one high grade return above the upper limit and a run of four over the upper limit returns for the Inspectorate results. This is a high grade silver sample, so it may be that the standard was not well mixed and is showing some nugget behaviour.

Blanks

Sixteen blank samples were submitted which represents a submission rate of 3%, slightly lower than the industry norm of 5%. Silver and gold assay returns were acceptably low, the highest recorded being 0.032 g/t gold and 5 g/t silver, which are not significant. Blanks were recorded with generally higher but still negligible values by Inspectorate Laboratories.

12.2 Bulk Density

12.2.1 Avino and San Gonzalo Vein Bulk Density

A limited number of specific gravity measurements were originally collected by Avino from drillholes in the Avino and San Gonzalo Veins. These measurements were not representative of the veins spatially or by drilling program, and Tetra Tech (2012) requested additional specific gravity measurements be completed on drillcore from both veins. These additional measurements were completed by Avino in 2013. Review of these measurements (see Section 14.6) suggests that they are a limited basis for spatial estimation. Consequently, the long-term historic production average value of 2.63 has been assigned as a density factor to the Avino and San Gonzalo Mineral Resources disclosed in Section 14.0.

A QP opinion of the reliability of the Avino specific gravity data is discussed in Section 12.5.1.

12.3 OXIDE TAILINGS DRILLHOLE DATABASE

Tetra Tech compiled the assay data used in the oxide tailings resource estimate by referring to original mine sections (Tetra Tech 2012) and verification of this data is described below. The 1:1,000 scale plans drafted for this exercise were scanned and used to verify the positions of the old drillholes. A transposition error on one collar elevation in mine coordinates was observed and subsequently corrected (drillhole E3 was incorrectly recorded at an elevation of 2,275 m, and was corrected to 2,257 m).

Avino provided the following formulae to convert the collar coordinate data from local mine grid coordinates to Universal Transverse Mercator (UTM) coordinates:

- local mine grid X + 560421.245 = X UTM
- local mine grid Y + 2707618.312 = Y UTM
- local elevation - 41.306 = elevation amsl.

Since the trenches (named with Z-series) from the 1990 to 1991 program represent incomplete surface sampling of an unrepresentative part of the pile (at the wall where the outlets for the hydraulic emplacement of the material were sited), these data were not used in the oxide tailings resource estimate.

12.3.1 ASSAY VERIFICATION OF 1990/1991 DRILLHOLES IN OXIDE TAILINGS

The drillholes in the oxide tailings were completed prior to institution of NI 43-101 and related QA/QC requirements. The analyses were completed in the Avino Mine laboratory and no original assay certificates have been produced or preserved. The database and mine sections were therefore compared with the original hand-written data collected from the mine laboratory. These assay sheets from the mine laboratory show good agreement with the mine sections and resulting database used by Tetra Tech for estimation of the oxide tailings in Section 14.1.

Tetra Tech (2013) verified 54% of drillholes in this database (15 of 28 drillholes) and 58% of both silver and gold assays (444 of 766 values) used for this estimation.

The QP opinion of the reliability of the 1990 to 1991 oxide tailings assays is discussed in Section 12.5.2.

12.3.2 OXIDE TAILINGS VERIFICATION SAMPLES

As was reported by Tetra Tech (2013), during a previous site visit conducted on June 7 and 8, 2012, Michael F. O'Brien visited the tailings heaps and supervised the collection of eight samples from the oxide tailings (3 to 4 kg each). The samples were collected from gulleys that had eroded into the tailings pile and provided a vertical section through the tailings. It is believed that while such samples cannot provide a statistically representative reflection of overall grade, they do provide some insight into the grade of the tailings near surface. The eight samples were each split into three separate sub-samples, which were submitted in turn to the Avino Mine laboratory together with SGS laboratories in Durango and Vancouver.

Statistical analysis of the three sets of results demonstrated that there is good correlation between the three laboratories and this conclusion remains valid.

The sampling exercise in 2012 provided the opportunity to review the artificial sedimentary deposit that comprises the Avino oxide tailings and supported the previous assumptions of the tailings, such as regarding the oxide tailings as two superimposed units with slightly different chemical and particle size characteristics and pronounced horizontal continuity. The source data and plans prepared more than 20 years ago after the initial drilling campaign, were examined at the mine and found to be of professional standard and provide support for their use in the estimation of the oxide tailings. The overall homogeneity of the material, horizontal continuity and relatively high confidence in the volume and tonnage, mitigate any uncertainty in the historical data set. The pattern of sample grades (see Figure 14.6) from the 2015/2016 drill campaigns the earlier drilling form a coherent pattern with no obvious discontinuity between campaigns.

12.4 SITE VISIT

Michael F. O'Brien conducted site visits on June 7 and 8, 2012 and June 6 and 7, 2016. During the latest visit, Mr. O'Brien visited the tailings heaps and verified the location of walls and the extent of the oxide and sulphide tailings. Mr. O'Brien used a Garmin® etrex 20 GPS was used to verify collar locations and topography. The Avino and San Gonzalo underground mines were visited to gain familiarity with the Avino and San Gonzalo Vein systems. Exposures of the San Gonzalo Vein including the Anjelica vein were examined between three and five levels. The Avino Vein system was examined in the deeper levels of the Avino Mine and the characteristically competent silicified zones with marginal brecciation were examined. The core shed was visited, where Mr. O'Brien reviewed core logs (ET-06-02, ET-07-03, SG0701, SG-15-03, SG-14-02 and SG-07-17) as well as logging procedures followed by mine staff. Mr. O'Brien also visited the Avino Mine laboratory which has been re-equipped and renovated since 2012.

12.5 ARANZ CONCLUSIONS AND OPINION

The drill dataset has been produced over a long period of time within a brownfield property. All data used for this study is obtained from work carried out by staff of the current issuer, which has owned the Property continuously since the start of this work.

12.5.1 AVINO AND SAN GONZALO VEINS

DRILLHOLE DATABASE

A single, compiled database containing all relevant drilling information does not exist for the Property. A variety of partially-compiled data sources were provided to Aranz.

DOWNHOLE SURVEY DATA

Downhole survey data and the location of the Avino and San Gonzalo Vein intersections observed in drillholes has been verified by both surface and underground mapping, providing confidence in the location, orientation, and true width of both veins.

GEOLOGY DATA AND INTERPRETATION

The legacy data from the Avino Vein is deficient in recorded lithology data. Modelling of the Avino Vein and San Gonzalo Vein Systems made use of grade as well as lithology data. Consequently, Aranz regards the lithology database adequate and fit for purposes of resource estimation. The recent mining history provides comfort that the potentially economic units persistently demonstrate continuity as new exposures become available.

SPECIFIC GRAVITY SAMPLES

Based on a review of specific gravity data from drillholes in the Avino and San Gonzalo veins, Aranz concludes that future bulk density measurements should be completed using a water displacement method. A comparison of the two measurement techniques used for these specific gravity samples indicates that the results are acceptable for this study. However, Aranz considers that the current level of data is inadequate for meaningful spatial estimation and recommends that the frequency at which specific gravity measurements are collected should be increased. To supplement the specific gravity data generated from drillhole samples, Aranz recommends that large grab samples be obtained from the underground development at approximately 30 m intervals and subjected to the water displacement method of specific gravity determination.

QA/QC SAMPLES

The rate of QA/QC sample insertion is slightly below recommended industry standards on the Avino Vein, but significantly below industry standards on the San Gonzalo Vein. Based on the information provided to Aranz, it also does not appear that industry standard plots of standard, blank, and duplicate results (as in Section 12.3) are being constructed and reviewed by Avino on a routine basis. However, QA/QC samples were collected, albeit inconsistently, from all 2006 to 2012 drilling programs and Tetra Tech reviewed the results of these samples. This review found no evidence of systematic laboratory bias, indicating that the assay results are reliable.

12.5.2 Oxide Tailings

The identified grade pattern is similar in character to other tailings deposits, such as overall homogeneity and a pronounced horizontal continuity.

Verification samples taken by Mr. O'Brien have confirmed the presence of gold and silver mineralization at grades similar to those obtained in the original tailings drilling campaign, with a low silver bias consistent with the superficial position of the samples in the zone most likely to have suffered surface leaching. The verification samples also confirm that the mine lab assays are not materially different from those of external labs.

12.5.3 QP Opinion

There were no limitations on or failure to conduct data verification.

In Aranz's opinion the assay, sample location, vein lithology, and specific gravity data from the Avino and San Gonzalo Veins are reliable to support the purpose of this Technical Report and a current mineral resource on both veins and the oxide tailings.

13.0 MINERAL PROCESSING AND METALLURGICAL TESTING

There are three separate mineralization sources in the Avino property, including the Avino and San Gonzalo Mines, which are currently in operation, and the potential tailings resource from previous milling operations.

The San Gonzalo Mine entered commercial production in October 2012, followed by reopening of the Avino Mine in January 2015. The two mines feed a conventional flotation mill that has three separate circuits and a capacity of 1,500 t/d.

13.1 AVINO VEIN

No mineral processing or metallurgical test work has been performed in the preparation of this report; however, the Avino Vein material has been successfully processed in the past using froth flotation to produce a marketable copper concentrate with silver and gold credits. Bismuth was identified as a deleterious material in the concentrate and there are plans for test work to reduce the bismuth content in the concentrate to improve on the smelter return.

The Avino Vein was mined during the 27 years of open pit and underground production prior to 2001. From 1997 to 2001, the mine and mill production averaged 1,000 t/d and achieved up to 1,300 t/d. The mine and mill operations were then suspended. Following several years of redevelopment, in Q4 2014 Avino completed its Avino Mine and mill expansion. On January 1, 2015, full-scale operations commenced and commercial production was declared effective April 1, 2016 following a 19-month advancement and test period.

The mill feed from the Avino Mine has been processed using froth flotation to produce a copper concentrate with silver and gold credits. In 2016 operation, the average copper, silver and gold recoveries reporting to a copper concentrate of 20.3% copper were 90%, 85%, and 64% respectively. The total ore processed was 429,289 t. In Q1 2017, the average copper, silver and gold recoveries reporting to a copper concentrate of 19.4% copper were 91%, 86%, and 67% respectively. The total ore processed was 116,553 t.

Avino has not based its production decisions on a Feasibility Study or Mineral Reserves demonstrating economic and technical viability, and as a result there is increased uncertainty and multiple technical and economic risks of failure that are associated with these production decisions. These risks, among others, include areas that would be analyzed in more detail in a Feasibility Study, such as applying economic analysis to Mineral Resources and Mineral Reserves, more detailed metallurgy, and a number of

specialized studies in areas such as mining and recovery methods, market analysis, and environmental and community impacts.

13.2 San Gonzalo Vein

The San Gonzalo treatment scheme was based on the bulk sample test carried out in 2012. The feed grade of the bulk sample test was 261 g/t silver and 0.9 g/t gold. Silver and gold recoveries were 76% and 59%, respectively, and 232 dry tonnes of flotation concentrate were produced from 10,000 t of feed. Standard froth flotation was used to produce the flotation concentrate with the silver and gold values. Since then, a gravity circuit has been installed to improve the silver and gold recoveries. In 2016 a total of 115,047 t of mill feed has been processed. The silver and gold recoveries to the silver and gold concentrate were 83% and 74%, respectively. In Q1 2017, a total of 20,133 t of mill feed has been processed. The silver and gold recoveries to the silver and gold concentrate were 84% and 76%, respectively.

Avino has not based its production decisions on a Feasibility Study or Mineral Reserves demonstrating economic and technical viability, and as a result there is increased uncertainty and multiple technical and economic risks of failure that are associated with these production decisions. These risks, among others, include areas that would be analyzed in more detail in a Feasibility Study, such as applying economic analysis to Mineral Resources and Mineral Reserves, more detailed metallurgy, and a number of specialized studies in areas such as mining and recovery methods, market analysis, and environmental and community impacts.

13.3 Tailings Materials

There are two potential tailings resources at the Avino tailings storage facility: oxide tailings and sulphide tailings. No metallurgical testing has been carried out on either of the tailings samples since 2012.

13.3.1 Sulphide Tailings

Limited test work has been completed on material from the sulphide tailings before 2012. The two sets of the results on the reground sulphide samples indicate that 73% and 87% of the silver and 77% and 85% of the gold can be extracted using 1 and 2 g/L cyanide solutions, respectively. However, the cyanide consumptions were higher than the results from the oxide tailings. No further testing has been conducted on the sulphide tailings samples after 2012.

13.3.2 Oxide Tailings

This study assesses the potential for processing the oxide tailings resource from previous milling operations. The subsections summarize the metallurgical characterization obtained from previous test work and the study conducted by MMI in 2005 (Slim 2005c). MMI's report used the metallurgical results obtained and conclusions drawn by PRA

(Huang 2003; Huang and Tan 2005). The revised and final report by MMI was dated October 2005 (Slim 2005d).

The following sections are reproduced from the 2013 PEA (Tetra Tech 2013), with some minor modifications to summarize the findings of the metallurgical test programs conducted so far.

Historical Metallurgical Test Results

A number of metallurgical evaluations have been completed on various samples from the oxide tailings dam, according to the MMI report produced in 2003 (Slim 2003). Apparently, the first cyanidation tests were conducted in 1982, followed by further tests performed over the years. The summarized cyanidation test results are shown in Table 13.1 taken from the 2003 MMI report (Slim 2003), while the reported flotation test results are given in Table 13.2. The results obtained from the test work program initiated by MMI in 2003 and 2004 were reported in the MMI 2005 technical report (Slim 2005d) and are included in Table 13.1 for purposes of comparison. The results will be discussed in greater detail later in this section.

Table 13.1 Cyanidation Test Results

Author	Date of Test	Extraction (%)		Leaching Time (h)	Particle Size (µm)
		Ag	Au		
Denver Equipment	1982	69.3	66.7	24	66.6% <149
Penoles	1987	78.3	88.9	24	87% <74
Maja	1990	85.9	80.9	24	100% <105
Chryssoulis	1990	85.9	80.9	24	no data
Rosales	1996	83.9	76.9	23	75% <74
MMI	2003	77.1	71.4	24	86% <74
MMI	2003	88.8	88.4	48	86% <74

Source: Slim (2003)

Table 13.2 Flotation Test Results

Author	Date of Test	Recovery (%)		Particle Size (µm)
		Ag	Au	
Penoles	1987	60.2	47.1	87% <74
Rosales	1996	69.4	66.9	75% <74

For the tests outlined in Table 13.1 and Table 13.2, no details have been provided regarding:

- the location or the manner in which the samples were taken
- why these particular samples were taken

- the test parameters employed
- the assay techniques used, etc.

The first set of results for tests conducted on MMI samples from the 2003 sampling campaign indicate a silver extraction of 77.1% and gold extraction 71.4%. However, these results cannot be verified since the origin of this set of numbers as quoted in the MMI technical report (Slim 2005d) is not known. The second set of results was reported in the 2003 PRA report (Huang 2003). Considered in general terms, it would appear as if the cyanidation test results are reasonably consistent over the indicated period of time. However, no specific conclusions should be drawn since nothing is known about the head grades of the samples, the samples used, or the test and assay procedures used at the time that these tests were conducted.

The flotation results vary widely for similar particle sizes with recoveries ranging from 60% to 69% for silver and 47% to 67% for gold. However, the test details of these reported cyanidation and flotation tests are unknown.

The MMI Technical Report

Avino commissioned MMI to produce a document that was NI 43-101 compliant with respect to detailing the indicated oxide tailings resource (subsequently referred to as an Inferred Resource) and to define the metallurgical characterization and assay results for this material. The proposed economic processing of this tailings material could then be used to form the financial basis for restarting the mine.

The first report prepared by MMI was titled "Tailings Valuation" and was dated November 2003 (Slim 2003). Two further reports by MMI titled "Preliminary Feasibility" (Slim 2005a) and "Tailings Valuation" (Slim 2005b) were produced in May 2005. The “Tailings Valuation” report (Slim 2005b) was subsequently revised and re-titled "A Tailings Resource" in July 2005 (Slim 2005c). This July 2005 MMI report (Slim 2005c) was reviewed by the Canadian Securities Administrators and returned to MMI for revision. The revised MMI report was re-issued as "A Tailings Resource" and dated October 2005 (Slim 2005d) and was resubmitted to the CSRA for review. The October 2005 report (Slim 2005d) was produced for Avino Mines, Cia Minera Mexicana, Durango, Mexico, by Bryan Slim, of MMI, North Vancouver, British Columbia, Canada. The document was submitted as a Technical Report to the CSRA.

Two sets of test programs were conducted by PRA under direction of MMI. One was conducted during 2003, for which no sample origin can be determined (Huang 2003), and the other, more detailed test program, was conducted during 2004 (Huang and Tan 2005). The 2004 test work and assaying program was designed and supervised by MMI. It was conducted on samples collected from the tailings dam by MMI during 2004, while also using the results from the preliminary metallurgical scoping tests completed during 2003 as a guide. PRA staff, at their facilities in Vancouver, British Columbia, conducted all the test work from both MMI test programs.

Introduction to the MMI 2003 Metallurgical Test Program

The 2003 test program consisted of the following tests as summarized in Table 13.3. The cyanidation extraction results obtained were used in a preliminary report by MMI (Slim 2003). MMI considered using a 2,000 t/d vat leaching process to recover the silver and gold from the oxide tailings; however, this treatment process option was revised when the results of the 2004 test program became available.

Table 13.3 Test Procedures MMI 2003 Test Program

Process/Procedure	Details of Test	Sample Identify
Sample Preparation	No details documented	Sample L and Sample U
Head Assays	Fire assays, AA, and ICP multi-acid	Composite of L and U
Specific Gravity	Standard pycnometer test	Composite of L and U
Cyanidation Leach	P_{80} = 68 µm; 40% solids; pH 10.5; 1.0 g/L NaCN; 48 h; dO_2 > 7.9 mg/L 0.4 kg sample	Composite of L and U
Flotation	Rougher and 2 scavenger stages; P_{80} = 85 µm; 35% solids; pH 5.5; PAX & A208 with MIBC; 1 kg sample	Composite of L and U
Mineralogical	Examination of flotation tailings	Composite of L and U

Note: dO_2 – dissolved oxygen; PAX – potassium amyl xanthate; NaCN – sodium cyanide
Source: Slim (2003)

The exact origin of Sample L and Sample U is not known and does not appear to have been documented. The manner in which each of the samples was collected by MMI has apparently also not been documented. The size of both samples, namely 0.8 kg for Sample L and 0.9 kg for Sample U, is small and its representation is questioned. Also, there appears to be no documentation relating to the arrival and receipt of these samples at PRA. There is no receiving log in the PRA Report No. 0302303 (Huang 2003). Also, no assay certificates have been recovered to date. Even though these tests were considered to be scoping tests only, the results cannot be validated. When considering all the above factors, it is apparent that these results cannot be used with any degree of validity in the review of process options for the recovery of silver and gold.

Introduction to the MMI 2004 Metallurgical Test Program

The 2004 test program was a better structured program, which included the pre-concentration processes such as gravity concentration and flotation, both with and without regrinding, in an attempt to upgrade the material into a smaller mass for the subsequent treatment for the recovery of silver and gold. Also, cyanidation leach tests were conducted on as-received samples, as well as samples that were reground in order to attempt to improve the liberation of silver and gold from the associated minerals. A single column leach test was also performed.

Additional work completed included establishing the specific gravity and bulk density of the material, determining the Bond Mill Work Index on an oxide sample from the open pit, settling and filtration tests following cyanidation tests, and electrowinning tests using Electrometals Electrowinning (EMEW) technology. All the different test procedures are summarized in Table 13.4.

Table 13.4 Test Procedures – MMI 2004 Test Program

Process/Procedure	Details of Test	Sample Identify
Sample Preparation	Individually numbered ; dried; weighed; subsequently composited	Composites A, B and C
Head Assays	Fire assays, AA and ICP multi-acid	Individual samples, and Composites A, B and C
Specific Gravity	Standard pycnometer test	Composites A, B and C
Bulk Density	Standard volume displacement test	Composites A, B and C
Mineralogical Examination	Examination of as-received samples	Selected Samples
Test Product Assays	Fire assays, AA and ICP multi-acid	All test products
Bond Mill Work Index	Six cycles; closing screen size 150 µm	Oxide sample
Size-assay Distribution	Screened and assayed the size fractions	Selected samples
Gravity Concentration	Various test conditions	Composites A, B and C
Cyanidation Leach	Various test conditions	Composites A, B and C
Flotation	Various test conditions	Composites A, B and C
Column Leach Test	Agglomerated feed; 81 d duration; 0.5 to 1.0 g/L NaCN; pH 10.5; 0.05 mL/s	Composite of A and B
EMEW	Various test conditions	PLS from leach test
ABA	Acid generation tests	Composites A, B and C

The results obtained from this test program led MMI to include the heap leach process as the recommended treatment option in their report dated May 2005 (Slim 2005a).

Evaluation and Review of Metallurgical Tests

Tetra Tech reviewed the metallurgical tests conducted during the MMI 2004 test program. The most promising process option will be selected as the recommended process treatment route based on the evaluation of the results obtained from the test program. This process option will then be evaluated with respect to capital and operating cost estimates. The process implications of the procedures and processes investigated, and the results obtained, are discussed in this section.

Sample Preparation and Characteristics

Bagged samples carrying the MMI identification tags were prepared at Avino Mine under the direct supervision of MMI personnel. These samples were then transported from the mine site to Durango, Mexico, and shipped via airfreight to Vancouver, British Columbia. The samples were delivered to the PRA facility, and unpacked in the presence of MMI personnel to ensure that no tampering had occurred to the samples en route. The samples were subsequently renumbered by MMI prior to PRA staff un-bagging and drying the samples. These details are shown on the PRA sample receiving log (Huang and Tan 2005). The individual samples were initially air-dried, followed by a low-temperature of less than 50°C, of oven drying.

The individual samples were subsequently homogenized and riffled, and split into four one-quarter fractions. One of these fractions was used for head assay determinations. A second fraction was used for compositing selected individual samples to create the sample Composite A, representing the oxide material of the lower bench of the tailings dam. Similarly, Composite B, representing the oxide material of the middle bench of the tailings dam, was prepared by compositing selected individual samples, as was Composite C, representing the sulphide tailings of the upper bench.

Although the samples had arrived at PRA from Avino Mine without any indication of tampering, it is the sampling regime itself, which is considered to be deficient. First, the sampling of the oxide section of the tailings dam was incomplete. The sampling did not replicate the 1990 CMMA program, and certain parts of the tailings dam were not sampled. Second, the samples that were taken by MMI only represented the first 4 m of depth of the tailings dam. Indications are, however, that the overall depth of the oxide section of the tailings dam varies between 7 and 27 m. These two major deficiencies were also recognized by the Canadian Securities Administrators as deficiencies during their review. Both these items were addressed in the final MMI report dated October 2005 (Slim 2005d). The October 2005 report recommended a more detailed program of sampling of the whole tailings dam up to bedrock or ground soil level, as well as conducting metallurgical characterization tests using representative material from this more detailed sampling process whenever this is to be performed. However, since the MMI Technical Report (as reviewed by the Canadian Securities Administrators subsequently referred to the oxide tailings as an Inferred Resource (Slim 2005d), this and other sampling discrepancies noted in the MMI test program, will not be discussed any further.

Moisture Content

The moisture contents of the samples as received from the Avino Mine tailings dam were found to vary widely, namely from a low value of 5.12% to a high value of 28.25% moisture. A frequency distribution for moisture content of all the oxide tailings samples as received by PRA is given in Table 13.5. The bi-nodal distribution is apparent.

Table 13.5 Moisture Content of Samples

Frequency Distribution	
Moisture Content Range (%)	Number
5.00-7.50	9
7.51-10.00	14
10.01-12.50	19
12.51-15.00	16
15.01-17.50	5
17.51-20.00	5
20.01-22.50	12
22.51-25.00	5

25.01-27.50	0
27.51 -30.00	1

The particular presence of these high moisture content values in the tailings dam apparently confirms the high moisture content values found during the 1990 sampling program conducted by CMMA. Although the precise sampling procedure and drying conditions are unrecorded, a data sheet provided by Avino Mines as ostensibly related to this sampling program, provides assay values and moisture contents obtained during the program. The moisture values obtained varied from a low moisture value of 13.89% to a high value of 29.4%, and a calculated average of 22.87% moisture.

A possible reason for the high moisture content of the tailings material is that the mine was operational during this period when the sampling program was undertaken, i.e. 1990, and that routine tailings deposition was still in progress.

The specific reason for the relatively high moisture contents found during the 2004 MMI sampling program, is not apparent. The MMI Technical Report (Slim 2005d) has referred to the possibility of the original manner of deposition of the tailings which has resulted in the localized areas of high moisture content. Also, the presence of artesian springs under the tailings dam has also been mentioned as a possible reason. It was also observed that any rain water run-off from the higher levels above the tailings dam would collect at the head of the tailings dam and subsequently seep through the dam exiting at the foot of the dam. Whatever the reason(s) may be, areas of high moisture content do exist and will influence the method of recovery of the tailings and the subsequent agglomeration process.

Head Assays and Test Products Assays

Gold assaying was completed using the standard fire assay procedure. Initially the silver was also analyzed by the fire assay procedure followed by an AA spectrophotometric finish. However, this fire assay based method for silver is not very accurate in the low concentration range of less than 100 g/t for silver. Assaying for silver was then done using ICP-MS preceded by the total digestion of the sample in a suite of mineral acids. A further method was also investigated, namely that of total acid digestion followed by an AA finish. The results obtained with this acid digestion and AA method were similar to the ICP-MS. The assay method selected for all the silver assays was therefore the ICP-MS method preceded by the total digestion of the sample in a suite of mineral acids (ICP-MS). All the other analyses for the various products arising from the metallurgical tests were done by the standard and universal methods using titration, ICP-MS or AA methods.

All the various head sample analyses conducted during the test program are listed in Table 13.6. The reference to the test number relates to the stage of the test work that the sample was submitted for analysis. The average values for the four different composite samples tested, namely Composite A, Composite B, Composite C, and the Composite A + B blended sample, have all been calculated and are given in the table together with the respective standard deviation values. The standard deviation of the head samples representing Composite A and Composite B are shown to be within 10% of the deviation from the average value. This is considered to be reasonable.

However, the average silver value of all the head assay analyses assayed as head samples representing both Composite A and Composite B together is only 86.8 g/t silver. This average silver grade is less than the 95.5 g/t silver as given in the MMI Technical Report as being the overall silver grade of the material of the whole oxide tailings dam (Slim 2005d). Similarly, the average gold value of all the head assay analyses assayed as head samples representing both Composite A and Composite B (i.e. representing the oxide tailings dam) taken during the test work program, is 0.44 g/t gold which also is less than the 0.53 g/t gold, as quoted in the MMI Technical Report (Slim 2005d). For silver, this amounts to a difference of about 9% based on the MMI quoted head grade of 95.5 g/t silver, while for gold the difference is larger at 17% based on the MMI quoted gold value of 0.53 g/t gold. It is of interest that the average head assay for the Composite A + B sample is closer to the calculated average for Composite A and for Composite B, namely 89.6 g/t compared with 86.8 g/t for silver, and 0.41 g/t compared with 0.44 g/t for gold. The above discussion assumes that the tonnages of the tailings dam labelled Composite A (lower bench) will be mixed in equal proportion to the area of the tailings dam designated as Composite B (middle bench). In the absence of specific tailings dam volumes, or tonnages, this assumption may be an oversimplification and may therefore not be entirely valid. However, the assay values for the Composite B is lower than the overall average head grade of the tailings samples collected.

Table 13.6 Head Assays

Test No.	Assays (g/t)		Test No.	Assays (g/t)	
	Ag	Au		Ag	Au
Composite A			**Composite B**		
SA9	99.8	0.37	SA10	88.3	00.55
Ave. 1	103.4	0.34	Ave. 1	82.6	0.68
Ave. 2	105.3	0.36	Ave. 2	88.4	0.51
C1	95.2	0.35	C4	76.3	0.52
C2	94.3	0.35	C5	70.6	0.49
C3	94.1	0.36	C6	71.4	0.50
C7	88.7	0.36	C9	70.3	0.52
C8	88.7	0.36	C10	70.3	0.52
C13	95.9	0.28	C15	77.2	0.49
C14	98.9	0.37	C16	78.3	0.52
C17	95.2	0.35	C18	77.2	0.49
Average Value	**96.32**	**0.350**	**Average Value**	**77.35**	**0.526**
Standard Deviation	**5.27**	**0.025**	**Standard Deviation**	**6.72**	**0.054**
Composite C			**Column Composite A+B**		
C11	39.8	0.34	C4	87.4	0.42
C12	39.8	0.34	C5	90.1	0.40
Ave. 1	31.7	0.29	C6	91.4	0.42
Ave. 2	39.8	0.39	C9	-	-
Average Value	**37.78**	**0.340**	**Average Value**	**89.63**	**0.413**
Standard Deviation	**4.05**	**0.041**	**Standard Deviation**	**2.04**	**0.012**

A further comment regarding the assay results above relates to the methods employed for the assaying techniques for silver from these samples. The MMI Technical Report (Slim 2005d) states that for the CMMA 1990 tailings drilling program, the silver assaying was completed using the mine standard practice of fire assay followed by acid digestion and AA finish. The PRA metallurgical test work program used multi-acid digestion followed by ICP assay method for silver analyses. It is anticipated that there will not be a significant difference between the silver assays as reported in 1990 and those from the MMI test program as conducted by PRA, but the extent of this difference cannot be quantified in this review. Similarly, no comment can be given as to the accuracy of the assays conducted by CMMA since the standards of precision of sampling, sample preparation and detailed methodology of the assaying methods are unknown. However, a summary sheet containing assay values has been provided by Avino as being the silver and gold grades obtained from the 1990 CMMA sampling program. No calculations have been performed using these assay values and it is only included in this report since it is part of the CMMA sampling program. The MMI report (Slim 2005d) provides a grid map identifying the various sample holes.

Mineralogical Evaluation

At the start of the 2004 metallurgical test program, MMI requested that a sample from some of the individual samples be submitted for mineralogical analysis. The mineralogical findings have not been reported in the PRA Report No. 0406407 (Huang and Tan 2005), and also were not alluded to in the MMI Technical Report (Slim 2005d), nor in any of the preceding reports. The reason(s) why these results have apparently not been communicated to Avino or to the investigators of the test program at PRA, is not known.

Bond Ball Mill Work Index

Although this information was not required for the treatment of the oxide tailings dam material, a Bond Ball Mill Work Index determination test was done on an oxide material sample. The work index was determined to be 12.3 kWh/t using a closing screen size of 74 µm (200 mesh) with convergence of the specific energy input (grams of product per revolution) found after five cycles of testing. This makes the sample tested a moderately hard rock type. The details regarding the origin of this sample have not been documented and its relevance as data is therefore questioned.

Bulk Density and Specific Gravity

Bulk density and specific gravity determinations were conducted on samples specifically identified by MMI. The specific gravity measurements were done using the standard pycnometric method, while the bulk density values were obtained by measuring the volume of dry solids in a measuring cylinder. The values obtained are reproduced in Table 13.7.

Table 13.7 Bulk Density and Specific Gravity

Location/ Bench	Sample Identify	P_{80} Size (µm)	Bulk Density (g/cm³)	Specific Gravity
Upper Bench	S2	226	1.66	2.74
Lower Bench	S10	326	1.73	2.62
Lower Bench	S22	367	1.73	2.76
Middle Bench	S45	254	1.60	2.76
Middle Bench	S50	201	1.63	2.74
Upper Bench	S74	301	1.57	2.72
Average	-	-	1.653	2.723

The bulk density values determined for the oxide tailings material were found to vary between 1.57 and 1.73 g/cm³ with an average of 1.653 g/cm³. This average value is in reasonable accord with the bulk density of 1.605 g/cm³ as quoted in the MMI Technical Report. The specific values obtained were generally consistent with an average value of 2.723.

Particle Size – Assay Analysis

A particle size – fraction analysis was done on the same samples as were used for the bulk density and specific gravity determinations. These tests were conducted to determine whether the silver and gold were predominantly occurring in a particular particle size range. The size-assay analyses indicated that the metal distributions were varied according to the location, but that all displayed the bi-nodal distribution for silver, gold and mass to varying degrees.

Sample S10 from Composite A from the Lower Bench of the tailings dam indicated one maximum metal distribution occurring in the size range 149 to 210 µm, and another in the minus 37 µm size range. The maximum mass distributions are generally similar although it occurs over a wider size range in the coarse size, namely 105 to 210 µm. The second sample from this bench, Sample S22, was similar but with a shifted maximum metal and mass distribution in the 210 to 297 µm size range, and a secondary maximum metal and mass distribution in the minus 37 µm size range.

Sample S45 from the Middle Bench of the tailings dam, and part of Composite B, indicated maximum metal distribution in the 149 to 210 µm size range with maximum mass distribution in the 105 to 149 µm size range. The secondary maximum metal and mass distribution was found in the minus 37 µm size range. The second sample from the Middle Bench, namely Sample S50, had the maximum metal and mass distributions in the 105 to 149 µm size range as well as the minus 37 µm size range.

The two samples from the Upper Bench of the tailings dam of Composite C displayed totally different particle size distributions. Sample S2 was bi-nodal with one maximum for metal and mass distribution in the size range 105 to 149 µm and the second maximum occurring for the size range of minus 37 µm. Sample S74 displayed only one maximum metal and mass distribution over the relatively wide coarse particle size range of 105 to 297 µm. This sample was almost entirely devoid of slimes, or minus 37 µm material.

These samples reflect the operating discharge conditions and history at the time of plant operations and tailings deposition. The results typify the use of a tailings cyclone situated on the tailings dam wall discharging the coarse undersize material onto the wall area with the finer cyclone overflow material flowing downstream and settling within the tailings dam. Changes in the size distribution would be anticipated with downstream distance from the point of discharge by the cyclones at the tailings dam wall. This is typified by the size distribution of Sample S74 which purports to be a cyclone underflow sample taken at the point of discharge and which was found to be almost totally devoid of fines, or minus 37 µm material.

Gravity Concentration Tests

Pre-concentration tests using the centrifugal gravity concentration method were conducted to evaluate the potential upgrading of silver and gold. The laboratory size concentrator used was the Falcon Model SB40 centrifugal concentrator. The tests were conducted on samples from Composites A, B and C. MMI dictated the test parameters used for these tests, including a set of tests where the samples were reground prior to conducting the gravity concentration test. The results from the gravity concentration tests are summarized in Table 13.8.

Table 13.8 Summary of Results of Gravity Concentration Tests

Sample Identify	Head Grade		Concentrate Grade		Recovery (%)			P_{80} (µm)	Remarks (Note: All tests are 3-pass tests)
	Ag (g/t)	Au (g/t)	Ag (g/t)	Au (g/t)	Mass	Ag	Au		
Composite A	93.8	0.35	124.7	0.52	24.1	32.1	36.5	269	Pressure 1.5 psig; no regrind
Composite B	70.3	0.50	96.9	0.71	23.6	32.5	33.3	180	-
Composite C	39.7	0.33	58.0	0.65	24.1	35.2	47.0	254	-
Composite A	92.1	0.33	126.1	0.71	19.7	27.2	42.1	76	Pressure 1.0 psig; reground
Composite B	70.5	0.56	96.5	1.29	22.4	30.7	51.5	77	-
Composite C	40.7	0.38	65.5	0.98	24.8	39.9	64.3	79	-

Note: psig = pounds per square inch (gauge)

The mass recoveries varied between 20 and 25% indicating that the tests were performed in a uniform and consistent manner. The highest silver recovery obtained was 40% (after regrind) for Composite C and decreasing to 31% for Composite B (after regrind) and about 27% for Composite A, also after regrind. The gold recoveries were higher than the equivalent silver recoveries, particularly after regrind, indicating that the liberation of the precious metals could be incomplete.

However, the upgrading factor for both silver and gold is very low, namely about 1.4 for silver and up to 2.3 for gold. No further upgrading or silver and gold recovery tests were conducted on the gravity concentrates produced possibly as a result of the relatively low grades and recoveries obtained. Also of interest is the fact that no historical test work was documented by MMI where gravity concentration was used to produce a saleable high-grade concentrate.

Flotation

Different scoping flotation tests were conducted on samples from Composite A and Composite B using various reagent schemes and conditions as dictated by MMI. The results of the flotation tests are summarized in Table 13.9. The test results reported led to the following conclusions.

For Composite A, a regrind from a P_{80} size of 238 µm (as received particle size) to a P_{80} of 72 µm, improved the flotation recovery of silver from 18 to 23%, and that of gold from 18 to 39%. The standard suite of reagents was used for these tests (Tests F1, F3 and F4). For Composite B, a regrind from a P_{80} size of 173 µm (as received particle size) to a P_{80} of 74 µm, improved the flotation recovery of silver from 22 to 33%, and that of gold from 12 to 32% (Tests F2, F5 and F6). A particle size fraction analysis distribution conducted on the tailings of Test F4 (Composite A) indicated that the major proportion of the mass and the silver and gold is present in the slimes, or minus 37 µm size fraction. However, significant losses of silver, and particularly gold, occurred in the coarser sizes, namely the size range 53 to 105 µm. This indicates that the degree of liberation could be improved and that some metal appears to be occluded in the coarser particle sizes. Some silver may also occur within secondary oxide minerals and be unrecoverable by flotation. A similar mass and metal distribution was obtained in the case of Test F9 (also Composite A) which was a flotation test performed using a sulphidization reagent.

In testing the various flotation reagent suites, variable mass and metal recoveries and concentrate grades were obtained. However, the maximum silver grade obtained for a rougher concentrate was 909 g/t silver, while the overall recoveries for silver could not be improved beyond approximately 40%. This indicated that mineral surface alteration or oxidation, or occlusion of precious metals in gangue, was inhibiting the concentration by the flotation process. Since the silver recoveries obtained were deemed low and unsatisfactory, no further flotation tests were conducted and no extraction tests were performed on flotation concentrates.

The head assays obtained during the flotation testing stage gave inconsistent results. Table 13.9 shows the actual head assays obtained for each flotation test compared with the head assay obtained for silver for the composite samples. For Composite A, the individual silver head values for each flotation test conducted are all higher than the assay for the composite sample, except in the case of Test F11. The gold (and silver) values obtained for Tests F7, F8 and F9, are known to have been the result of poor sampling technique adopted for these three tests. The composite head assay gold value of 0.36 g/t gold is probably a reasonably representative assay value for Composite A. For Composite B, the silver head value for the composite sample is slightly lower than the assays for the individual flotation tests. For gold, the composite sample value is higher at 0.52 g/t gold than the assays for the individual tests.

The historical results of the flotation tests reported in Table 13.2 are significantly higher at 60 to 69% recovery for silver and 47 to 67% for gold. However, in the absence of information regarding the origins of these samples, the lack of head grade data and the absence of sampling and flotation procedures involved, these results will not be taken into consideration in selecting of the processing options for the oxide tailings dam material.

Table 13.9 Summary of Results of Flotation Tests

Sample Identify & Test No.	Head Grade		Concentrate Grade		Recovery (%)			P_{80} (µm)	Remarks
	Ag (g/t)	Au (g/t)	Ag (g/t)	Au (g/t)	Mass	Ag	Au		
Composite A/F1	112.2	0.35	908.7	3.17	2.1	17.8	18.4	238	3-stage ro., pH 8;
Composite A/F3	119.2	0.39	734.6	3.88	2.6	21.0	30.4	103	Conditioning NaCN +
Composite A/F4	104.6	0.40	630.9	3.36	3.8	22.6	38.6	72	Na_2CO_3; A404, PAX
Composite A/F7	111.9	1.39	654.6	5.56	2.3	16.3	34.9	~75	2-stage ro., nil NaCN
Composite A/F8	108.5	2.38	887.2	11.91	0.9	7.8	30.7	~75	2-stage ro., nil NaCN
Composite A/F9	114.5	1.67	723.9	5.86	2.7	20.8	45	~75	2-stage ro., NaS_2, PAX
Composite A/F10	103.5	0.58	401.3	1.62	8.9	34.6	39.8	~75	with $NaCO_3$, $CuSO_4$
Composite A/F11	99.6	0.34	484.8	1.83	8.8	42.2	48.3	~75	with $CuSO_4$, A208
Composite B/F2	88.4	0.42	695.4	2.65	2.6	22.0	12.2	173	3-stage ro., pH 8
Composite B/F5	89.7	0.47	806.1	4.18	2.9	27.0	24.6	92	conditioning NaCN +
Composite B/F6	89.9	0.51	867.1	5.45	2.9	32.5	32.1	74	Na_2CO_3; A404, PAX
Composite A: Head	99.8	0.36	-	-	-	-	-	-	-
Composite B: Head	88.3	0.52	-	-	-	-	-	-	-

Note: $CuSO_4$ = copper sulphate; $NaCO_3$ = sodium carbonate

Cyanidation Tests

Cyanide leaching tests were conducted on samples from Composite A, Composite B and Composite C using different leaching conditions. The first set of tests were to determine the effect of regrinding the tailings samples prior to leaching while subsequent tests determined the effect of cyanide concentration in the leach solution.

For Composite A, the silver extractions varied from 66% for the un-milled (as received) sample to 80% for the samples that were reground, while the gold extractions varied from 82 to 89% respectively. For Composite B, the silver extractions ranged between 69% for as-received material, to 77% for samples that were reground. The corresponding gold extractions varied between 82 and 87%. Although the cyanide consumption increased with the regrinding of samples tested for both Composite A and Composite B, the increase in extraction may compensate for the additional cost of cyanide reagent and regrinding provided that the filtration characteristics are not detrimentally affected. Higher cyanide concentrations in the leach solution tended to improve the extractions of silver and gold, but increased the cyanide consumption significantly as well.

The results from the sulphide tailings, namely Composite C, indicate that between 73 and 87% of the silver can be extracted, with between 77 and 85% of the gold. However, the cyanide consumption values were higher than the results from the oxide tailings. Only two leach tests were conducted on reground samples from Composite C, each having a P_{80} of about 69 µm. A summary of the cyanide leach test results is given in Table 13.10.

Table 13.10 Summary of Results of PRA Cyanidation Tests

Sample Identify & Test No.	Extraction (%)		Reagent Usage (kg/t)		NaCN Concentration (g/L)	P_{80} (µm)
	Ag	Au	NaCN	Lime		
Composite A+/C1	66.4	81.5	1.8	1.4	1.0	269
Composite A+/C2	79.3	85.7	1.6	1.8	1.0	103
Composite A+/C3	80.4	89.1	2.6	1.6	1.0	78
Composite A+/C7	78.6	82.7	2.2	1.8	0.5	74
Composite A+/C8	89.7	85.5	5.1	0.8	2.0	74
Composite A*/C13	79.7	86.8	1.5	1.3	0.5	74
Composite A*/C14	83.1	82.1	3.7	0.8	2.0	74
Composite A*/C17	79.4	90.9	1.0	1.2	1.0	74
Composite B+/C4	69.1	82.0	2.6	1.8	1.0	180
Composite B+/C5	77.1	88.3	1.7	1.8	1.0	100
Composite B+/C6	77.3	86.9	1.7	1.9	1.0	84
Composite B+/C9	73.2	86.0	2.6	1.2	0.5	84
Composite B+/C10	79.5	86.4	4.5	1.0	2.0	84
Composite B*/C15	72.9	82.6	1.6	2.0	0.5	84
Composite B*/C16	75.4	83.4	3.8	1.0	2.0	84
Composite B*/C18	67.7	78.6	0.9	1.3	1.0	84
Composite C+/C11	73.8	77.3	4.0	2.8	1.0	69
Composite C+/C12	86.6	85.0	7.3	2.6	2.0	67

Notes: "+" indicates Original Composite Sample.
"*" indicates New Composite Sample.
Tests C17 & C18 = 24 h leach duration; other tests + 72 h leach duration.

During the cyanide leach test program, a new Composite A and Composite B sample had to be prepared since the original composite samples had been exhausted. Comparison of results from the two composite samples indicated similar behaviour patterns, although there are some noticeable differences in the extractions. Also, the cyanide and lime consumption values as recorded are inconsistent. This indicates that absolute numbers cannot be assigned to a single test although any observed trends would be valid. The averages of similar tests would more likely predict the overall responses more accurately. It is also apparent that non-systematic variations in the assay results could have arisen from subtle variations in mineralogy, sample preparation, the sample regrinding process and possibly daily variations in temperature.

The cyanide leach extraction results quoted by MMI in Table 13.1, and the averaged results from the present test program, are summarized below in Table 13.11, and will be discussed in the following section.

Table 13.11 Summary of Cyanidation Test Results Used by the MMI Reports

Sample Identify & Test No.	Extraction (%)		Remarks
	Ag	Au	
Composite A/C1	66	82	As-received; 1.0 g/L NaCN
Composite A/C7 & C13	80	85	Average; reground; 0.5 g/L NaCN
Composite B/C4	69	82	As-received; 1.0 g/L NaCN
Composite B/C9 & C15	73	84	Average; reground; 0.5 g/L NaCN
MMI 2003	77	71	Results from 2003 test program
MMI 2003	88	88	Origin of results unrecorded
MMI 2004/C8 & C10	85	86	Average; reground; 2.0 g/L NaCN

The average extraction results obtained from samples from Composite A and Composite B in the present study are generally lower than the results from the historical test work as detailed in Table 13.11. However, in the absence of details, these historical results cannot be used in the overall evaluation of this process. The MMI claim of a 77% silver extraction, based on the MMI (2003) test program, cannot be considered an acceptable result since only one test was done. The sample origin is purported to be four holes dug at approximately 25 m intervals with samples scraped into a bag, one for the lower bench and one for the upper bench of the oxide tailings dam. Clearly, a sample collected in this manner cannot be considered to be representative. Also, the other MMI (2003) claim for an extraction result of 89% silver and 88% gold cannot be validated. All these test results can therefore not be considered as valid and will not be used in any further discussions or evaluations.

The MMI (2004) results, as claimed in the Technical Report and listed in Table 13.11 above, are also considered unusable. The reasons for this statement are that these results were obtained with a reground sample and leached at a high cyanide concentration of 2.0 g/L sodium cyanide, whereas the other tests were done using 1.0 g/L sodium cyanide. Both these conditions, that is, the regrinding of the tailings material and a high cyanide concentration leach condition, will not be implemented in a recovery process and these results are considered to be unrealistic.

The extraction results from the cyanidation tests obtained using as-received samples from Composite A and Composite B, namely 66 to 69% for silver and 82% for gold, were encouraging.

Column Leach Test

One column leach test was conducted on a 30.9 kg sample being an equal mix of material from Composite A and Composite B. The sample was mixed with water, Portland Cement and lime and then agglomerated to a P_{80} size of 2,614 µm. After curing, the sample was put into a column with a diameter of 102 mm and a height of 3 m. The column test was run for a total of 81 days after the solution flowrate and pH had been stabilized. The silver extraction obtained was 73.0% while the gold extraction was 78.9%.

These results compare very well to the average extraction values calculated from the cyanidation tests of the individual composite samples leached in the as-received condition, namely 67.8% for silver and 81.8% for gold. The cyanide consumption values are also comparable. The results obtained from the column test, as well as the calculated average extraction values obtained from the tests conducted on the as-received samples of Composite A and Composite B, have been summarized in Table 13.12.

Table 13.12 Summary of Results of Column Leach Tests

Sample & Test No.	Extraction (%)		Reagent Consumption (kg/t)			NaCN Concentration (g/L)	P_{80} (µm)	Remarks
	Ag	Au	NaCN	Lime	Cement			
Column Test, Composites A and B	73.0	78.9	2.32	13.73	21.8	0.5 & 2.0	2,614	pH 11; flowrate 0.05 mL/s
Composites A and B Average, Tests C1&C4	67.8	81.8	2.18	1.59	-	1.0	225	pH 10.5/11; bottle roll

The kinetics of leaching had slowed down significantly by Day 81 when the test was terminated, although there was evidence that some leaching was still in progress.

A particle size assay analysis of the leach residue of the column test found that the highest unleached (undissolved) silver grade was in the coarsest size range of plus 210 µm, while the highest gold value was found in the minus 37 µm size range. This suggests both inadequate liberation of the silver grains and/or minerals, and occlusion of gold possibly by clay minerals, or the presence of tarnished/coated mineral surfaces, or the presence of refractory minerals. The subsequent leaching of de-agglomerated column leach test residue resulted in a negligible extraction of silver and gold. This indicates that the column leach test had virtually reached its maximum potential extraction, which confirms the observation that the leaching rate had slowed down.

Only one column leach test was conducted. Also, the material tested was a mixture of samples from Composite A and Composite B, that is, a mixture of material from the lower and the middle benches of the oxide tailings dam. During the test, flow problems were encountered which resulted in the column having to be unloaded and the material having to be re-agglomerated with the test subsequently re-started after filling the column. In general terms, the results from one test only cannot be regarded as representative of the whole oxide tailings dam. However, despite these limitations and problems encountered, the encouraging results obtained and the close comparison with the bottle-roll tests, implies that the results are relatively reliable. The extraction values obtained from the column test, namely 73.0% for silver and 78.9% for gold, will therefore be used in the evaluation of this treatment process. The reagent consumption values also appear to be very high, namely 13.73 kg/t for lime, 21.8 kg/t for cement and 2.32 kg/t for cyanide. However, lime and cement consumption values obtained in laboratory tests generally approximate commercial operations although, in this case, they seem to be unrealistically high. The cyanide consumption of a commercial operation would typically only be 30 to 50% of that measured in a laboratory test.

Acid-base Accounting

The ABA results predict the overall acid generating potential of selected samples. A net acid general potential was found for the sulphide tailings but not the oxide tailings. The processing of the sulphide tailings for silver and gold recovery could modify the ABA and increase the stability of the ultimate residues. Alternatively, the sulphide tailings would require the addition of lime during the process of relocating this material. This would ensure that the sulphide tailings would not cause acid-generating environmental problems.

Electrowinning

Electrowinning metal recovery tests were conducted using EMEW technology (from the Electrometals Electrowinning company), specifically designed for the electrodeposition of metals from dilute solution tenors. The tests were carried out using filtered cyanide leach pregnant solutions. Although the test results were favourable, it appears unlikely at this stage that this technology could be applied in this situation given the high solution volumes generated and the very low silver concentrations anticipated in the pregnant solution from the heap. However, further test work using the EMEW metal recovery system should be undertaken if the Project advances to the Feasibility Study level because the potential for savings in capital cost and operating cost needs to be investigated.

Test Result Review

Gravity Concentration

Review of Results

As indicated in Table 13.8, the upgrading for silver from the as-received oxide tailings was poor with a maximum concentrate grade of 125 g/t silver at a mass recovery of 20%. The upgrading of gold is similarly poor. The re-grinding of the samples prior to gravity concentration leads to an almost negligible improvement in the upgrading of silver to 126 g/t silver, while for gold a maximum concentrate grade of 1.29 g/t gold was obtained. The sulphide tailings response to gravity concentration is equally poor with even lower grade gravity concentrates being obtained despite slightly improved recoveries being observed for both silver and gold.

Conclusion

The poor results obtained in that no high-grade metal concentrate could be produced, coupled with the fact that no extraction tests for silver and gold were conducted on the gravity concentrates produced, has resulted in the gravity concentration treatment option not being selected for further consideration.

Flotation

Review of Results

The flotation results have been summarized in Table 13.9. The results indicate that the overall recoveries for both silver and gold are low, namely between 8 and 42% for silver and 12 to 48% for gold. The re-grinding of both the tailings samples (Composite A and Composite B) are seen to improve the recoveries, while the testing of various reagent regimes also resulted in improvements to the overall recoveries of both silver and gold in some cases. However, the overall recoveries are generally considered to be low at less than 40% for silver and less than 48% for gold, and this is coupled with a very low grade concentrate being produced. This poor flotation response is probably the result of surface alterations and/or inadequate liberation of the silver and gold bearing minerals. No extraction tests were conducted on any of the flotation concentrates produced and so the total extent of extraction is not known. No tests were conducted on the sulphide tailings material (Composite C) and its response to flotation as a pre-concentration process is therefore not known.

Conclusion

Flotation will not be considered as a treatment option for the recovery of silver and gold from the oxide tailings dam material. For the reasons specified above, namely a generally low recovery of silver and gold, the option of using flotation to recover silver and gold will not be considered as a processing method in the treatment of the oxide tailings dam material.

Cyanide Leaching

Review of Results

Cyanidation leach tests were done on samples from Composite A and Composite B under different conditions of particle size and solution cyanide concentration. The results have been summarized in Table 13.10. The results generally indicated that cyanidation was still occurring after 72 h of the leaching time used for the laboratory tests, but at a much reduced rate. The base metals copper and zinc also dissolved during the cyanide leach and will contribute to the overall consumption of cyanide. Increasing the cyanide concentration in the leach solution generally improved the extraction of silver and gold, but also increased the overall cyanide consumption. The extraction of silver and gold from Composite A increased with fineness of grind, while Composite B did not improve the extraction for finer grinds than P_{80} of 100 µm. The cyanide consumption figures are inconsistent in some cases although trends are apparent. Although limited test work was done on material from Composite C, namely the sulphide tailings, a set of results have been included in Table 13.13 below for purposes of comparison.

Table 13.13 Cyanide Leaching Parameters

Sample Identify	Head Grade		Extraction (%)		Reagent Consumption (kg/t)		NaCN Concentration (g/l)	P80 (µm)	Remarks
	Ag (g/t)	Au (g/t)	Ag (g/t)	Au (g/t)	NaCN	Lime			
Composite A	94.7	0.35	66.4	81.5	1.8	1.4	1.0	269	As-received sample
Composite B	95.9	0.28	69.1	82.0	2.6	1.8	1.0	180	
Average of A & B	95.3	0.32	67.8	81.8	2.2	1.6	1.0	225	
Composite A	94.7	0.35	79.3	85.7	1.6	1.8	1.0	103	Reground sample
Composite B	70.3	0.52	77.1	88.3	1.7	1.8	1.0	100	
Average of A & B	82.5	0.44	78.2	87.0	1.7	1.8	1.0	102	
Composite C	39.8	0.34	73.8	77.3	4.0	2.8	1.0	69	

Conclusions

As-received (unmilled) and reground tailings dam material will be expected to show the following extraction results under normal leaching conditions of approximately 68% for silver and 82% for gold. The reground material will give higher extractions at approximately 78% for silver and 87% for gold (see results in Table 13.12). Although the regrinding of tailings material is considered to be an expensive treatment method, cyanidation with and without regrinding as a treatment option will be reviewed and discussed in Sections 17.1.

Column Leach Test

Review of Results

One column leach test was conducted using a blend of equal proportions of as-received (unmilled) Composite A and Composite B oxide tailings material. Despite interruptions in the leaching cycle as a result of the de-agglomeration of material in the column and the resultant percolation of fines, the overall extraction of silver was 73% and 79% for gold (see Table 13.12 for the results). Although the test was terminated after a total leaching time of 81 d, indications were that the leaching process was nearing completion but had not finalized at that stage. The above extraction results compare very well with the average extraction results obtained from the bottle roll leach tests, namely 68% extraction for silver and 82% for gold. The cyanide consumption of 2.3 kg/t for the column test was also comparable with that obtained for the bottle roll leach tests, namely 2.2 kg/t. The lime consumption for the column test was significantly higher probably as a result of the two repeated agglomeration exercises.

Conclusions

Although only one column leach test was performed, the extraction results are in keeping with those obtained from the bottle roll tests. The results as given in Table 13.12 will be used for developing the process design criteria.

Precious Metal Recovery

Review of Results

Only one technology was tested for recovering precious metals from cyanide leach solutions. The pregnant solution arising from leach tests performed on oxide tailings material was used to conduct electrowinning tests. Three tests were conducted using the EMEW technology. These tests indicated that silver could be electrowon from solutions with a starting concentration of about 58 mg/L silver to a depleted electrolyte with about 3 mg/L silver. The deposition was also shown to be very selective with respect to the co-deposition of base metals. However, the pregnant solution from a leaching heap is expected to be significantly less than 58 mg/l silver, possibly as low as 16 mg/L silver. It is unclear whether the EMEW technology could operate efficiently under such low silver tenors.

The alternative process options for the recovery of precious metals would likely be either activated carbon, or the zinc precipitation method. No tests were conducted on these two process options. The use of an activated carbon circuit to recover silver is not recommended because of the added operational complexity. Also, the relatively high-grade of the silver in solution will result in the treating of relatively large amounts of carbon, which will add to the cost of the Project.

Conclusions

No other historical test work results were reported by MMI, nor are any alternative technology results known to have taken place, which tested the recovery of silver from the Avino Mine tailings material. The Merrill-Crowe process will therefore be the preferred technology to recover the silver and gold from pregnant leach solution.

13.3.3 Recommendations

Further tests are recommended to evaluate the metallurgical performances of the tailings samples, including the sulphide tailings samples. Test work should be conducted on samples that better represent the tailings resources. The test work should include:

- head characterization and mineralogical determination

  leaching condition optimization, including cyanide concentration, leaching retention time, agglomeration binding material types and dosages.
- determination of the effect of the particle size distribution on metal extraction and agglomeration.

- further confirmation of the effect of flotation pre-concentration on improving overall metal recovery.
- residual cyanide management tests, including residual cyanide and valuable metal recoveries from the barren solution.

For the sulphide tailings, systematic test work should be conducted to effectively recover silver and gold values from the tailings, including co-processing of the sulphide tailings with the oxide tailings.

14.0 MINERAL RESOURCE ESTIMATES

14.1 RESOURCE SUMMARY

The following tables provide a synopsis of the reported Mineral Resources reported in this section. Table 14.1 summarizes the base case values for all current Mineral Resources on the Property.

The reporting cut-off for the Avino Vein is 55 g/t Ag_Eq and the cut-off for the San Gonzalo Vein is 125 g/t Ag_Eq. These cut-offs were determined by Avino based on actual mining scenarios and a silver price of $19.50/oz. Current cut-offs used for financial projections by Avino, based on recent market prices, include 50 g/t for the Avino Vein and 120 g/t for the San Gonzalo Vein.

The reporting cut-off for the oxide tailings is 50 g/t Ag_Eq.

No Mineral Resource for the sulphide tailings is disclosed in this Technical Report.

A PEA should not be considered to be a Prefeasibility or Feasibility study, as the economics and technical viability of the Project have not been demonstrated at this time. The PEA is preliminary in nature and includes Inferred Mineral Resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as Mineral Reserves. Furthermore, there is no certainty that the conclusions or results reported in the PEA will be realized. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

Table 14.1 Avino Mine – Mineral Resources

Resource Category	Deposit	Cut-off (Ag_Eq g/t)	Tonnes (t)	Grade				Metal Contents		
				Ag_Eq (g/t)	Ag (g/t)	Au (g/t)	Cu (%)	Ag (million tr oz)	Au (thousand tr oz)	Cu (t)
Avino Mine: Measured & Indicated Mineral Resources										
Measured	Avino System	55	950,000	143	74	0.33	0.69	2.3	10.0	6,550
Measured	San Gonzalo System	125	170,000	357	272	1.50	0.00	1.5	8.2	0
Total Measured	All Deposits	-	1,120,000	176	105	0.51	0.58	3.8	18.2	6,550
Indicated	Avino System	55	500,000	129	68	0.36	0.56	1.1	5.7	2,800
Indicated	San Gonzalo System	125	320,000	310	237	1.30	0.00	2.4	13.3	0
Indicated	Oxide Tailings	50	1,330,000	124	98	0.46	0.00	4.2	19.8	0
Total Indicated	**All Deposits**	**-**	**2,150,000**	**152**	**111**	**0.56**	**0.13**	**7.7**	**38.8**	**2,800**
Total Measured & Indicated	**All Deposits**	**-**	**3,270,000**	**160**	**109**	**0.54**	**0.29**	**11.5**	**57.0**	**9,350**
Avino Mine: Inferred Mineral Resources										
Inferred	Avino System	55	5,790,000	155	81	0.57	0.58	15.1	105.8	33,550
Inferred	San Gonzalo System	125	540,000	403	314	1.58	0.00	5.5	27.5	0
Inferred	Oxide Tailings	50	1,810,000	113	88	0.44	0.00	5.1	25.6	0
Total Inferred	**All Deposits**	**-**	**8,140,000**	**162**	**98**	**0.61**	**0.41**	**25.6**	**158.9**	**33,550**

Notes: Figures may not add to totals shown due to rounding.
Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
The Mineral Resource estimate is classified in accordance with the CIM Definition Standards
For Mineral Resources and Mineral Reserves incorporated by reference into NI 43-101 Standards of Disclosure for Mineral Projects.
Mineral Resources are reported at cut-off grades 50 g/t, 55 g/t, and 125 g/t Ag_Eq.
Silver equivalent grades were calculated using conversion formulas Ag_Eq = Ag + 55.9 * Au + 72.99 * Cu for Avino Vein and Ag_Eq = Ag + 56.38 * Au for San Gonzalo Vein System and oxide tailings.
Cut-off grades were calculated using current costs, silver price of US$19.50/oz., gold price of US$1,250/oz. and copper price of US$2.10/lb.

14.2 DATA

Drillhole data for the Avino and San Gonzalo resource estimates was supplied by Avino to Aranz in the form of several Microsoft® Excel spreadsheet and Microsoft® Access files, and this data was verified and compiled into .csv files (see Section 12.1).

Wireframe meshes (.dxf files) of the topography, underground development, previous 3D models of the San Gonzalo and Avino Veins and cross-section and plan view images were supplied by Avino. Drillhole data was imported into Datamine™ software (version 3.24.25.0) and Leapfrog Geo™.

Data includes underground channel sampling and diamond drill data.

14.3 AVINO VEIN

14.3.1 GEOLOGICAL INTERPRETATION

The Avino Vein and the surrounding system are interpreted as part of a low- to intermediate-sulphidation system of silver-gold epithermal veins, breccias, stockworks, and silicified zones. The Avino system is relatively thick (up to 40 m thick in places) and exhibits lower silver but higher copper grades than the San Gonzalo Vein system.

Historically, exposure and sampling of the deposit in underground development has been understandably biased towards the higher end of the silver grade spectrum. This presents problems when making decisions on what should be considered to be mineralized vein material, as the position of the mineralization to barren interface was either not exposed or recorded in the development data. In many cases the edge of the mineralized zones was approximated by the end of sampling, the edge of the development or a 40 g/t silver grade.

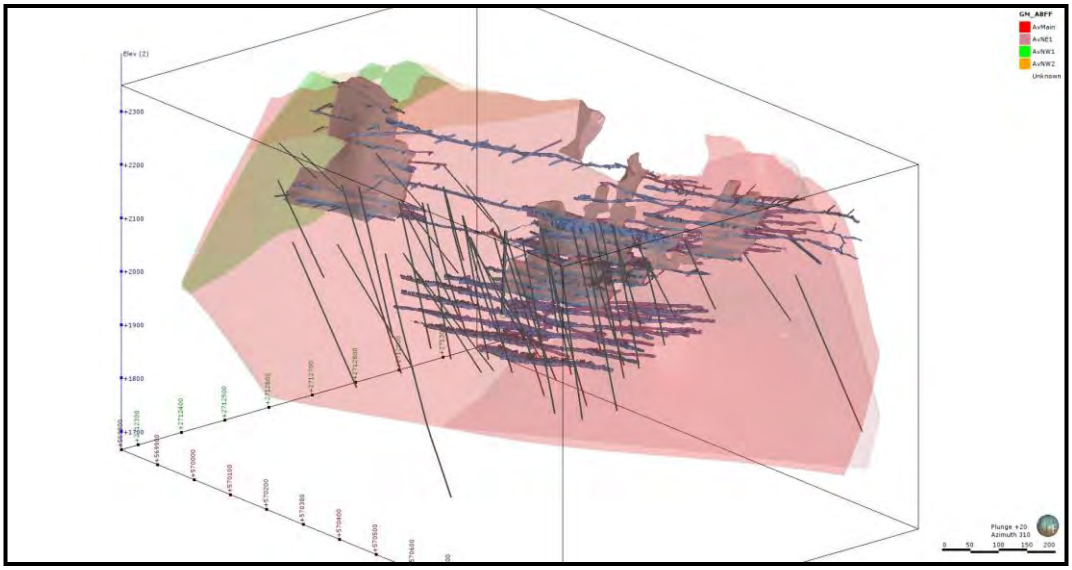
14.3.2 WIREFRAMING

Mineralized zones were independently modeled by Aranz in Leapfrog Geo™ software, utilizing the drillhole data, topography and the underground development information. Wireframes supplied by Avino assisted in modelling the deposit. These wireframes were imported into Datamine Studio 3™ software to provide the domain information to populate blocks in the resource model.

The modelling was carried out independently by Aranz using Leapfrog Geo™ software applying an implicit "vein system"-style of modelling workflow to produce a series of seamless 3D units.

The Avino mineralized vein system was modelled as four subparallel but cross-cutting veins including the main most persistent body consisting of vein material sandwiched between two prominent and siliceous breccias and three subsidiary units (NW1, NW2, NE1). Lithology information and grade information were both used to interpret the extents of the veins and to flag sampled and logged intervals as country rock or as one of the units of interest. Lithology information is often not available for the mined-out areas and grade interpretations had to be used. Material outside the veins and most likely of low grade has usually not been recorded in the legacy data for obvious reasons. Where there is absence of recorded intersections of the vein margins, Aranz has erred on the side of caution by interpreting the edges of the vein to the last samplings with appreciable grades.

Figure 14.1 Oblique View, Looking North, of the Avino Vein System Model



To test the robustness of the model, grade contact profiles were generated.

Grade contact profiles demonstrate how well the wireframe meshes segregate the metal, based on the assayed samples. These contact profiles were generated by determining the average grades for sampled metals within successive 5 m wide slices inside and outside the Avino Vein System models for a range of distances from -10 m (inside the system) to +50 m (outside) from the contact.

The profiles are shown in graphs in Figure 14.2 and the number of samples per 5 m slice is shown in Figure 14.3. There is a moderately rapid decrease with increasing distance from the vein contacts in silver, gold, zinc and copper profiles (as shown in Figure 14.2). To better display the profiles on a single graph, silver has been re-scaled to fit and copper and zinc are in percentage units. For example, the silver grade is generally in excess of 80 g/t within the vein but decreases to an average of less than 30 g/t at a distance of 30 m from the vein contact. Zinc appears to be a good indicator element for the mineralized system and rapidly decreases in abundance within 5 m of the contact. This may be used to advantage in future modelling of the system.

As can be seen (Figure 14.3), there is a rapid decrease of information at ranges greater than 20 m from the contact (contact is represented by "0" on the horizontal axis). This is to be expected as the information has been generated in underground workings that have been designed to preferentially expose and sample material that is better mineralized in the vein system. Information is biased towards the underground excavations and the understandable historic tendency to only sample material at any distances away from the known veins that display good mineralization characteristics. However, the profiles do provide an indication that the Avino Vein System has a gradational or soft boundary tendency from an estimation point of view. Silver, gold and copper show the gradational profile, while zinc has relatively sharp profile. This should be followed up to develop future estimation strategies.

Figure 14.2 Grade Profiles Across the Avino Vein System Contacts

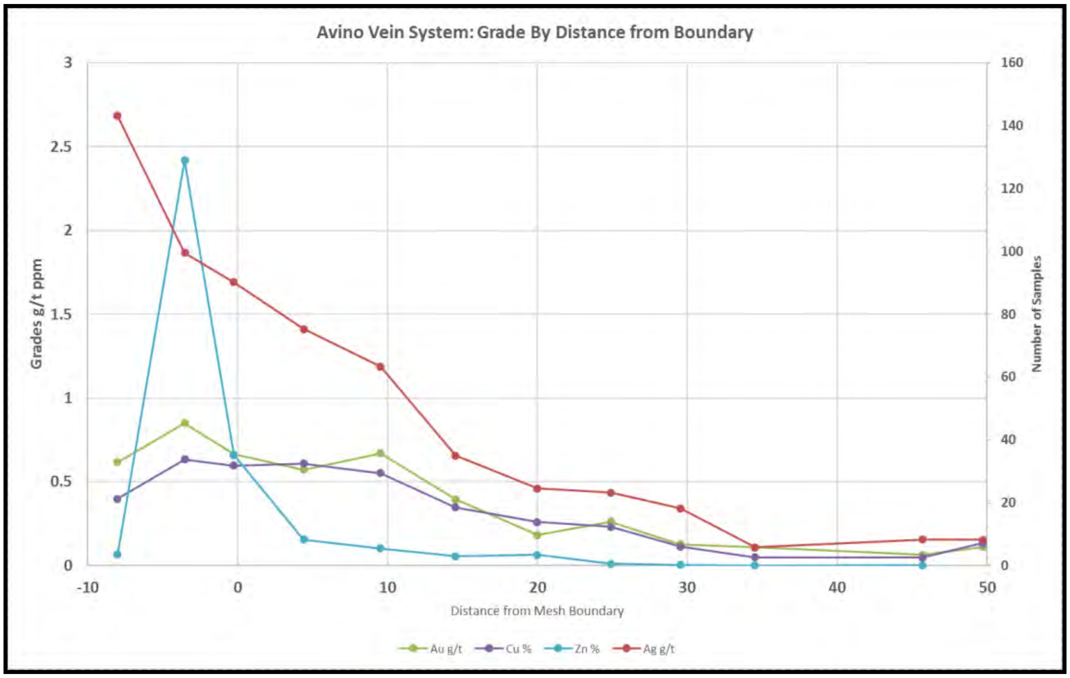
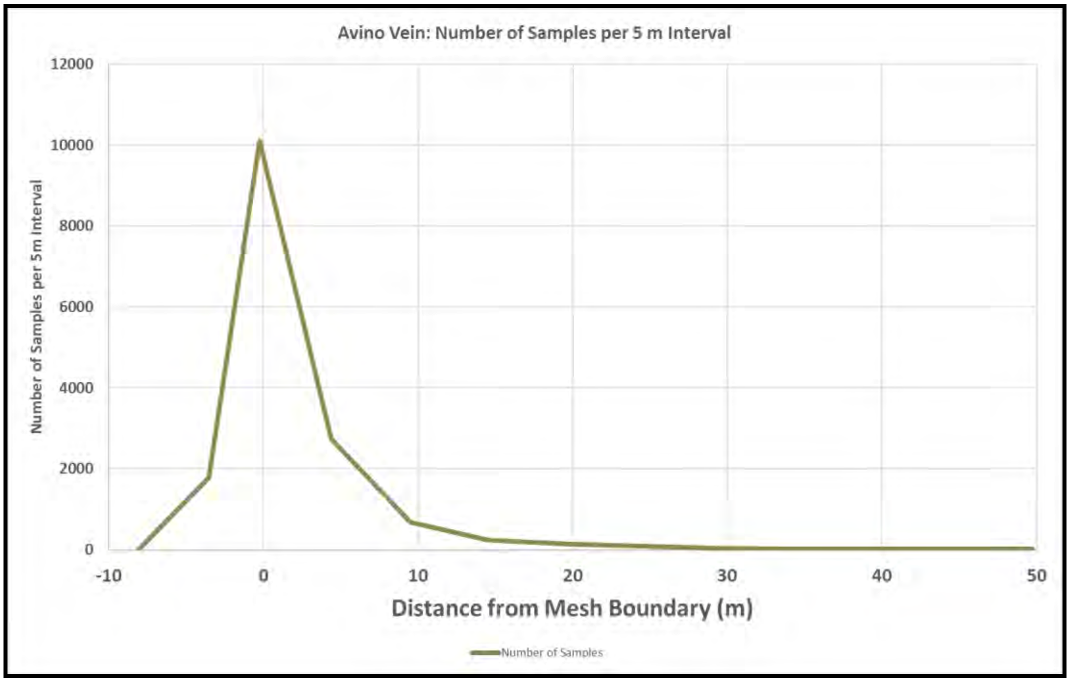


Figure 14.3 Number of Samples per Slice Across the Avino Vein System Contacts



14.4 San Gonzalo Vein

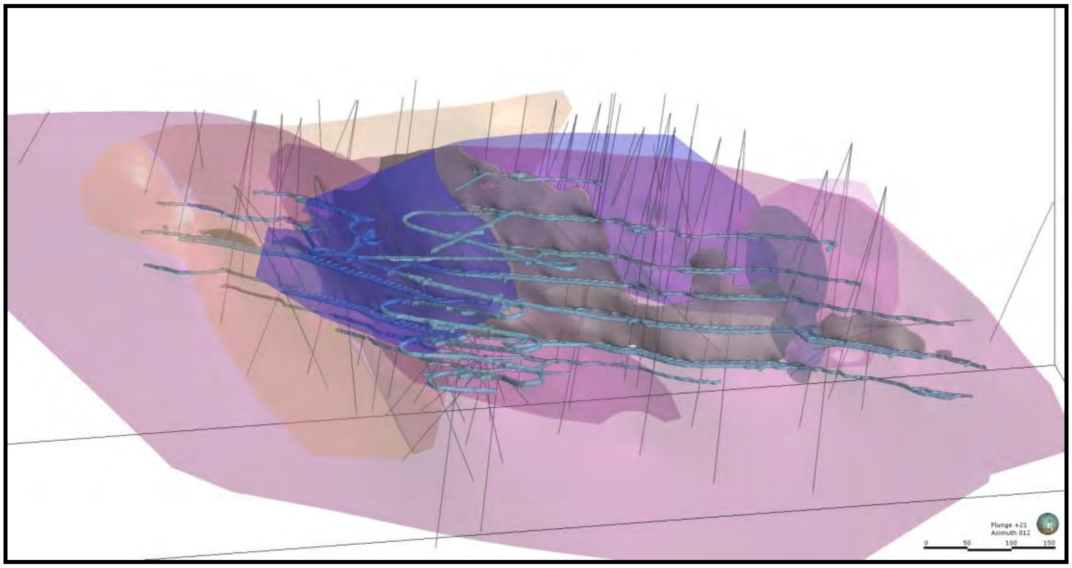
14.4.1 Geological Interpretation

The San Gonzalo Vein is interpreted as part of a low- to intermediate-sulphidation system of silver-gold epithermal veins and silicified zones. The individual veins in the San Gonzalo system are relatively narrow (mostly less than 3 m thick in places) and exhibits higher silver but lower copper grades than the Avino Vein system.

14.4.2 Wireframing

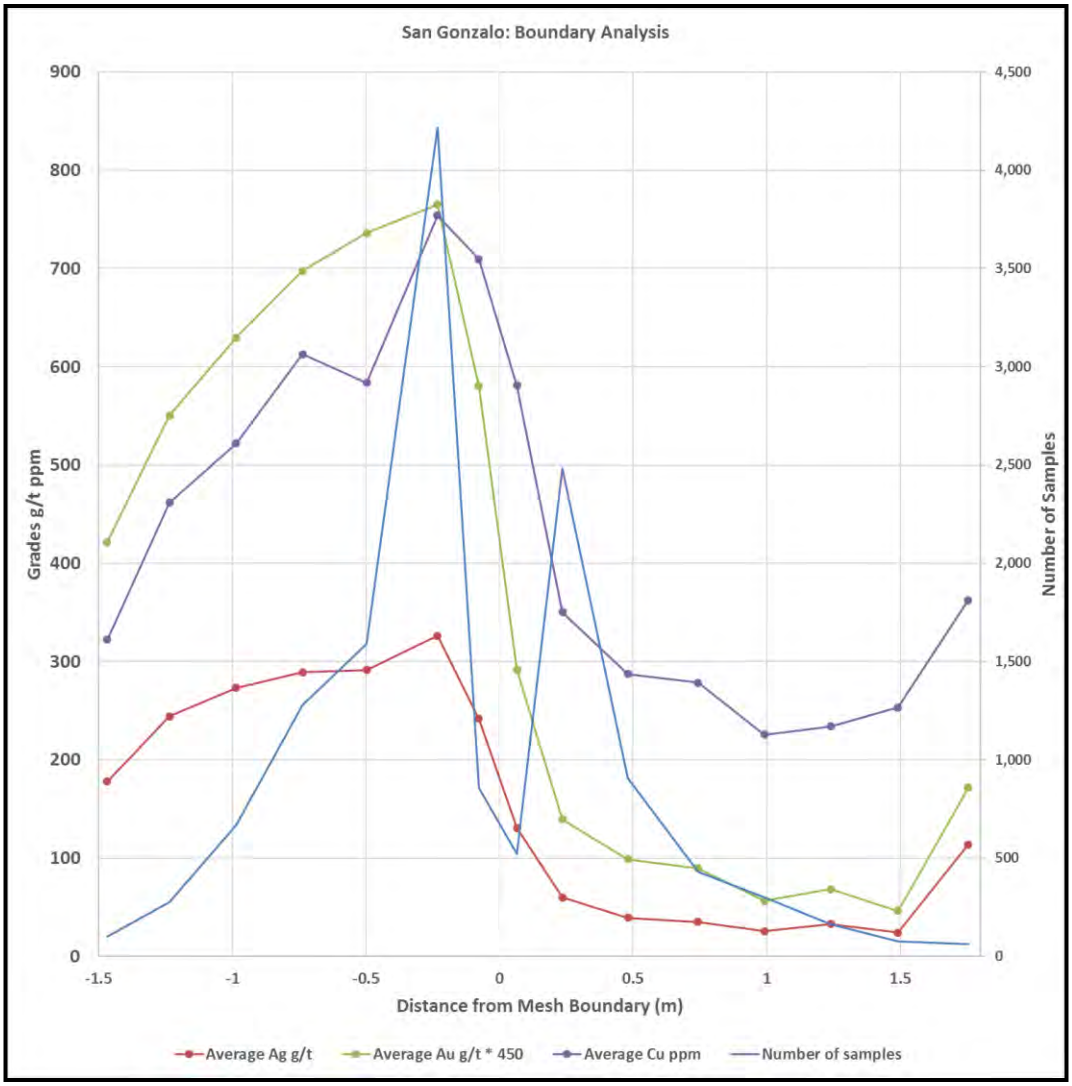
The system was modelled as six sub parallel but cross-cutting veins consisting of a main vein (SG1) and five subsidiary units (SG2 through SG6). Lithology information and grade information were both used to interpret the extents of the veins and to flag sampled and logged intervals as country rock or as one of the units of interest. Figure 14.4 displays the modeling results graphically.

Figure 14.4 Oblique View, Looking North, of the San Gonzalo Vein System Model



To assess the level to which the interpreted San Gonzalo Veins have honoured the selection contact profiles were generated to examine how well the wireframe meshes segregate the metal, based on the assayed samples. The San Gonzalo Veins are more compact than the Avino Veins and the metal grades at San Gonzalo are largely confined to the vein material. The contact profiles were generated by determining the average grade s for several metals within successive 5 m wide slices inside and outside the San Gonzalo Vein System models for a range of distances from -1.5 m (inside the system) to +1.7 m (outside) from the contact. The profiles are shown in Figure 14.5. There is a rapid decrease with increasing distance from the vein contacts in silver, gold and copper profiles.

Figure 14.5 Grade Profiles Across the San Gonzalo Vein System Contacts



For example, the silver grade is generally in excess of 200 g/t within the vein but decreases to an average of less than 50 g/t at a distance of 1 m from the vein contact.

For gold the contacts were less conspicuous, but average grade data still showed that the populations were statistically distinct. All contacts between mineralized and wall rock populations were treated as hard boundaries in estimation.

The San Gonzalo Vein System model is more robust when compared to the data and displays more abrupt metal profiles than the equivalent for the Avino Vein. This may reflect real differences in the mineralization styles (thickness and metal grade differences also support a different process) but may also to some degree be a result of the sparse legacy lithology data in the upper part of the Avino Mine.

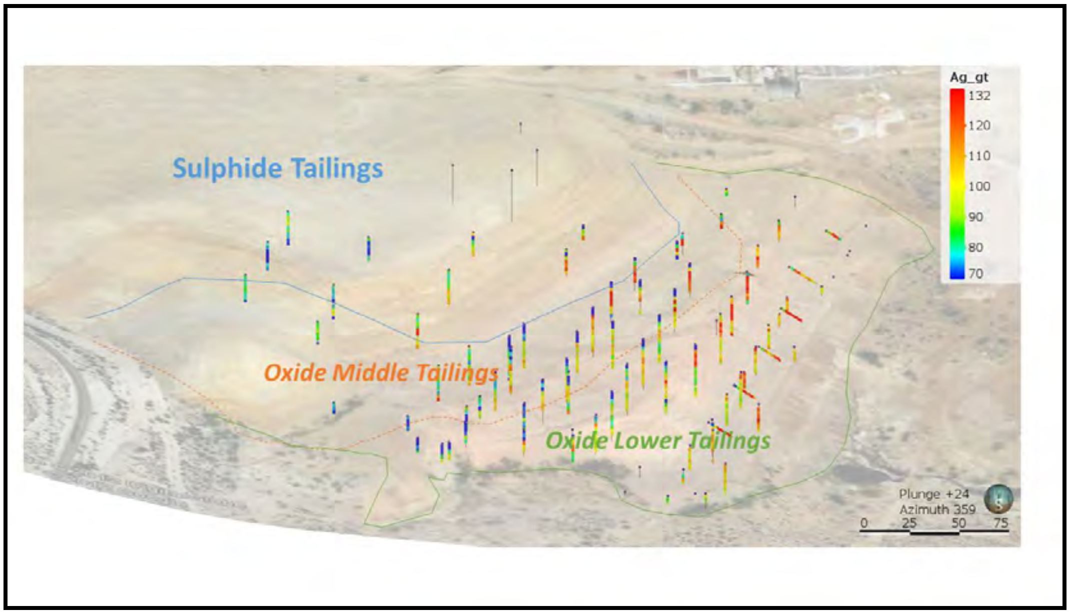
14.5 Oxide Tailings

14.5.1 Geological Interpretation

In the Avino oxide tailings, a prominent bench separates the lower portion of the deposit (referred to as the "oxide lower bench" in various documents) from the upper portion of the oxide tailings (the "middle bench"). Overlying the oxide tailings is a volume of sulphide tailings material (the "upper bench" or "sulphide tailings"). The sulphide tailings material lacks representative sampling data.

Figure 14.6 is a perspective view looking north, showing the oxide lower bench, oxide lower bench and sulphide tailings and the positions of drillholes and silver assays.

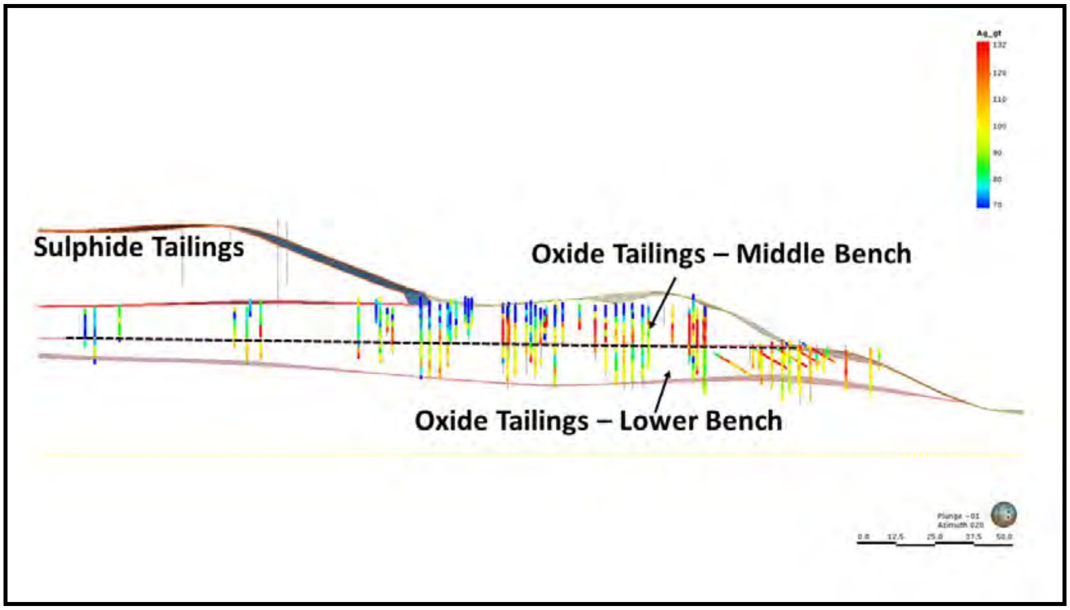
Figure 14.6 Perspective View of Oxide Tailings Drilling and Silver Assays



14.5.2 Wireframing

The tailings deposit was modelled using topography information supplied by Avino and bedrock contact information from the drilling data.

Figure 14.7 Section View, Looking Northeast, Showing Silver Grades in Oxide Tailings Benches



The grade pattern of the upper and lower and middle benches has been better defined by the addition of the recent drilling information (more than doubling the amount of assays, see Table 14.2). Previously, the middle and lower oxide benches were considered separately from an estimation perspective based on the colour difference, the middle bench appearing to be more reddish than the lower material. This may reflect a change in iron content but not necessarily the gold or silver grades. The sampling data (see Figure 14.7) shows a pattern of silver depletion at the top of the middle bench with enrichment immediately below.

The spatial pattern indicates gradational changes between the middle and lower oxide benches, except for silver which appears to have been leached downwards from the top of the middle bench. While the colour difference between the two units may be significant for iron-bearing species, there is not a great statistical difference between the silver and gold grades in the middle and lower benches and the leaching effect (see Figure 14.6) appears to affect the upper portion of the middle bench. Consequently, it was decided to estimate the middle and lower bench as a single domain. The use of a variogram and search ellipse, flattened in the horizontal direction also reduces the risk of smearing grade vertically. In future it may be preferable to evaluate the leached cap of the tailings separately from the remainder. The risk of not doing so at this time, is ameliorated by the horizontal variogram continuity which reduces the risk of mixing.

14.6 EXPLORATORY DATA ANALYSIS

14.6.1 RAW DATA ASSAYS AND STATISTICS

AVINO AND SAN GONZALO

Table 14.2 shows the length-weighted metal statistics for the sample data for the Avino and San Gonzalo mineralization. Assayed metals include silver, gold, copper, zinc, and lead. Metals considered in the Avino resource estimate include silver, gold, and copper. The domain numbers refer to the individual veins making up the Avino and San Gonzalo systems.

OXIDE TAILINGS

The drillhole dataset included 28 drillholes with a total metreage of 482.9 m that was completed in the tailings from 1990 to 2005. A total of 57 holes were drilled and sampled in 2015 and 2016, providing an additional 772.5 m of sampling. All drillholes intersect the oxide tailings, with a total of 1,004 assays of gold and 1,004 assays of silver. Most of the new campaign drilling has also been assayed for copper, lead and zinc. However, only the gold and silver are considered to be of economic interest in the oxide tailings deposit.

Table 14.2 Metal Grade Statistics for Sampling of the Avino and San Gonzalo Vein Systems

Deposit	Domain	Metal	Number of Samples	Minimum	Maximum	Mean	Variance	Coefficient of Variation	Capping Value	Number Capped
San Gonzalo Vein	10	Ag	9,324	0	14,768	293.78	533,214	2.49	3,000	13
San Gonzalo Vein	10	Au	9,324	0	276.54	1.531	29.152	3.527	50	2
San Gonzalo Vein	10	Cu	9,372	0	3.74	0.061	0.017	2.132	0.8	3
San Gonzalo Vein	10	Pb	9,372	0	20	0.456	1.403	2.598	10	7
San Gonzalo Vein	10	Zn	9,372	0	35.5	0.757	4.255	2.725	15	3
San Gonzalo Vein	20	Ag	222	0.7	3,610.7	111.31	89,853.73	2.69	200	1
San Gonzalo Vein	20	Au	222	0.005	33.37	0.752	6.393	3.364	11	1
San Gonzalo Vein	20	Cu	232	0	0.832	0.051	0.012	2.167	0.4	5
San Gonzalo Vein	20	Pb	232	0	6.53	0.301	0.639	2.657	4	2
San Gonzalo Vein	20	Zn	232	0	13.15	0.429	1.326	2.681	2	1
San Gonzalo Vein	30	Ag	95	0.5	1,917.4	203.95	100,522.77	1.55	1,000	4
San Gonzalo Vein	30	Au	95	0.003	12.82	1.048	2.524	1.516	3	10
San Gonzalo Vein	30	Cu	95	0.001	0.938	0.064	0.013	1.762	0.5	1
San Gonzalo Vein	30	Pb	95	0.006	12.82	0.751	3.565	2.514	5	8
San Gonzalo Vein	30	Zn	95	0.012	17.3	1.221	7.154	2.19	6	7
San Gonzalo Vein	40	Ag	229	0.5	5,265.2	225.85	330,283.92	2.54	2,000	1
San Gonzalo Vein	40	Au	229	0.01	16.32	0.745	2.635	2.179	2	2
San Gonzalo Vein	40	Cu	230	0	0.52	0.058	0.005	1.226	0.4	2
San Gonzalo Vein	40	Pb	230	0	1.83	0.22	0.066	1.164	1.2	2
San Gonzalo Vein	40	Zn	230	0	7.02	0.906	1.252	1.235	5	2
San Gonzalo Vein	50	Ag	36	1.5	2,851.9	229.25	320,717.12	2.47	1,000	8
San Gonzalo Vein	50	Au	36	0.01	5.96	0.679	2.21	2.189	3	11
San Gonzalo Vein	50	Cu	36	0.001	0.649	0.074	0.014	1.582	-	
San Gonzalo Vein	50	Pb	33	0	2.39	0.243	0.28	2.175	1	5
San Gonzalo Vein	50	Zn	33	0.009	1.18	0.223	0.105	1.458	1	9
San Gonzalo Vein	60	Ag	56	0.7	395.1	28.49	4,906.92	2.46	100	8
San Gonzalo Vein	60	Au	56	0.002	2.66	0.168	0.137	2.208	1	6

table continues…

Deposit	Domain	Metal	Number of Samples	Minimum	Maximum	Mean	Variance	Coefficient of Variation	Capping Value	Number Capped
San Gonzalo Vein	60	Cu	56	0	0.258	0.019	0.001	1.938	-	5
San Gonzalo Vein	60	Pb	56	0.001	4.83	0.134	0.202	3.363	1	5
San Gonzalo Vein	60	Zn	56	0.01	4.22	0.198	0.18	2.146	1	3
Avino Vein	10	Ag	4,916	0.91	1,242.95	124.03	8,145.44	0.73	800	5
Avino Vein	10	Au	4,915	0	1,17.154	0.935	10.694	3.496	12	10
Avino Vein	10	Cu	4,916	0	7.6	0.803	0.326	0.712	5	2
Avino Vein	10	Pb	1,101	0	19.15	0.236	1.064	4.369	6	3
Avino Vein	10	Zn	1,958	0	4.89	0.152	0.085	1.913	-	0
Avino Vein	20	Ag	79	21	566.75	148.1	8,327.32	0.62	500	1
Avino Vein	20	Au	79	0.168	5.6	1.228	0.819	0.737	3	5
Avino Vein	20	Cu	78	0.08	2.85	0.776	0.24	0.631	2	2
Avino Vein	20	Pb	25	0.04	5.2	0.689	0.927	1.397	3	4
Avino Vein	20	Zn	25	0.08	2.8	0.624	0.575	1.215	-	0
Avino Vein	30	Ag	35	22	356.18	172.42	7,887.49	0.52	300	2
Avino Vein	30	Au	35	0.35	2.65	1.241	0.296	0.439	2	2
Avino Vein	30	Cu	35	0.2	2.829	0.663	0.258	0.766	2	2
Avino Vein	30	Pb	4	0.4	1.328	0.774	0.225	0.613	2.5	1
Avino Vein	30	Zn	4	0.22	4	2.115	3.524	0.888	-	0

Table 14.3 Oxide Tailings Samples by Sampling Campaign

By campaign	Pre-2012	2015-16
Campaign	0	1
Number (Ag)	448	561
Number (Au)	448	556
Number (Cu)	0	566
Number (Pb)	0	563
Number (Zn)	0	566
Mean Ag (g/t)	95.39	97.81
Mean Au (g/t)	0.53	0.47
Mean Cu (%)	-	0.14
Mean Pb (%)	-	0.99
Mean Zn (%)	-	0.19
Variance Ag	814.94	1073.20
Variance Au	0.03	0.06
Variance Cu	-	0.01
Variance Pb	-	0.18
Variance Zn	-	0.04
Minimum Ag	11.00	4.00
Minimum Au	0.10	0.01
Minimum Cu	-	0.00
Minimum Pb	-	0.00
Minimum Zn	-	0.00
Maximum Ag	222.00	309.00
Maximum Au	1.28	2.02
Maximum Cu	-	0.66
Maximum Pb	-	3.26
Maximum Zn	-	1.65
CV Ag	0.09	0.11
CV Au	0.10	0.26
CV Cu	-	0.53
CV Pb	-	0.18
CV Zn	-	1.19

The total dataset has been divided by unit and the metal assay statistics are summarized in Table 14.4.

Table 14.4 Oxide Tailings Assays by Unit

Unit	Unknown	Lower	Middle	Bedrock
Length (m)	139.7	608.9	619.2	28.2
Number (Ag)	50	497	482	11
Number (Au)	50	497	482	11
Number (Cu)	41	186	207	3
Number (Pb)	41	186	207	3
Number (Zn)	41	186	207	3
Mean Ag (g/t)	97.72	103.85	89.27	77.55
Mean Au (g/t)	0.39	0.47	0.51	0.29
Mean Cu (%)	0.15	0.13	0.12	0.14
Mean Pb (%)	1.24	1.12	0.85	1.28
Mean Zn (%)	0.18	0.18	0.12	0.20
Variance Ag	20.60	20.60	52.00	20.60
Variance Au	0.20	0.11	0.13	0.11
Variance Cu	0.00	0.00	0.00	0.00
Variance Pb	0.00	0.00	0.00	0.00
Variance Zn	0.00	0.00	0.00	0.00
Minimum Ag	148.13	182.01	193.13	115.00
Minimum Au	0.74	1.08	1.21	0.44
Minimum Cu	0.27	0.27	0.26	0.15
Minimum Pb	1.75	1.83	2.02	1.50
Minimum Zn	0.34	0.38	0.26	0.22
Maximum Ag	542.01	428.63	525.92	1257.48
Maximum Au	0.01	0.02	0.01	0.01
Maximum Cu	24.41	22.01	9.75	3.51
Maximum Pb	479.10	531.34	528.62	453.94
Maximum Zn	18.67	25.97	12.96	6.20
CV Ag	0.00	0.00	0.01	0.00
CV Au	1.30	0.52	0.48	1.34
CV Cu	0.00	0.00	0.00	0.00
CV Pb	0.00	0.00	0.00	0.00
CV Zn	0.00	0.00	0.00	0.00

14.6.2 OUTLIER MANAGEMENT AND CAPPING STRATEGY

It is common practice in the mineral industry to restrict the influence of high assays through “top-cutting” or “capping”. Capping was implemented for each element and for each domain, after to sample length compositing. Capping limits were chosen based on a review of sampling histograms using Snowden Supervisor™ software and examination of coefficient of variation statistic for each domain. The coefficient of variation, also known as relative standard deviation (RSD), is a standardized measure of dispersion of a probability distribution and provides an indication of the presence of significant outliers. Coefficient of variation statistics greater than two and the visual detection of irregular behaviour in the upper portion of log histogram of the data were used as an indicator that capping should be applied.

14.6.3 Drillhole Compositing

Compositing is carried out to ensure a common 'change of support' length. If samples are not composited, small length samples with a high grade (and the converse) might bias the estimation process.

Inspection of the raw data from the Avino and San Gonzalo systems, indicated that a common composite length of 2 m would accommodate most sample lengths as the majority of sample lengths were less than 2 m and 2 m was used as the standard composite length for the deposit.

Compositing in Leapfrog™ included all samples in the composites with a minimum width of 1.0 m within the mineralized zones. New composites were thus created each time the domain changed.

14.7 Density

14.7.1 Density Data

Density data was supplied by Avino in the form of a set of measurements made at site. Summary statistics for these measurements are provided in Table 14.5 and Table 14.6.

Table 14.5 Avino Vein System Density Data Summary

Domain	Number	Minimum	Maximum	Mean	Variance	Coefficient of Variation
10 (Main)	40	2.53	3.00	2.71	0.02	0.05
20	42	2.43	2.90	2.68	0.01	0.03
Wall Rock	93	2.29	3.00	2.65	0.04	0.07
Combined	175	2.29	3.00	2.67	0.03	0.06

Table 14.6 San Gonzalo Vein System Density Data Summary

Domain	Number	Minimum	Maximum	Mean	Variance	Coefficient of Variation
10	50	2.40	3.00	2.64	0.03	0.07
20	2	2.73	2.78	2.76	0.00	0.01
Wall Rock	41	2.40	3.00	2.69	0.02	0.05
Combined	93	2.40	3.00	2.67	0.03	0.06

The Avino Vein System density data is widely spaced in drillholes across the lower portion of the mine and more than half of the measurements are not in the vein material. The San Gonzalo Vein System density data is more comprehensive but more than 40% of the measurements are not in the vein material.

The density data is generally so sparse and so widely-spaced that spatial estimation seems unlikely to provide meaningful results. Consequently, it was decided to use a global average of 2.63 that reflects the historic average used at the mine for both the Avino and the San Gonzalo Vein Systems.

Avino conducted bulk density measurements on 432 samples from 20 drillholes in the oxide tailings. Based on these data, Slim (2005d) determined a global average specific gravity value of 1.605 for the oxide tailings. No new specific gravity data that can be considered representative of the tailings pile has been collected, so Aranz used the specific gravity value of 1.605 for the current oxide tailings estimate.

14.8 VARIOGRAPHY AND SPATIAL ANALYSIS

Variography was conducted utilizing Snowden Supervisor™ software. The experimental variograms were modelled parallel to the orientations of the veins in the case of the Avino and San Gonzalo Veins and horizontal for the oxide tailings.

Experimental variograms were modelled for all three deposits, for all domains and for silver, gold, copper, lead and zinc.

Figure 14.8 through to Figure 14.14 are representative of the variography.

Figure 14.8 Avino Vein: Domain 10 Experimental Silver Variograms

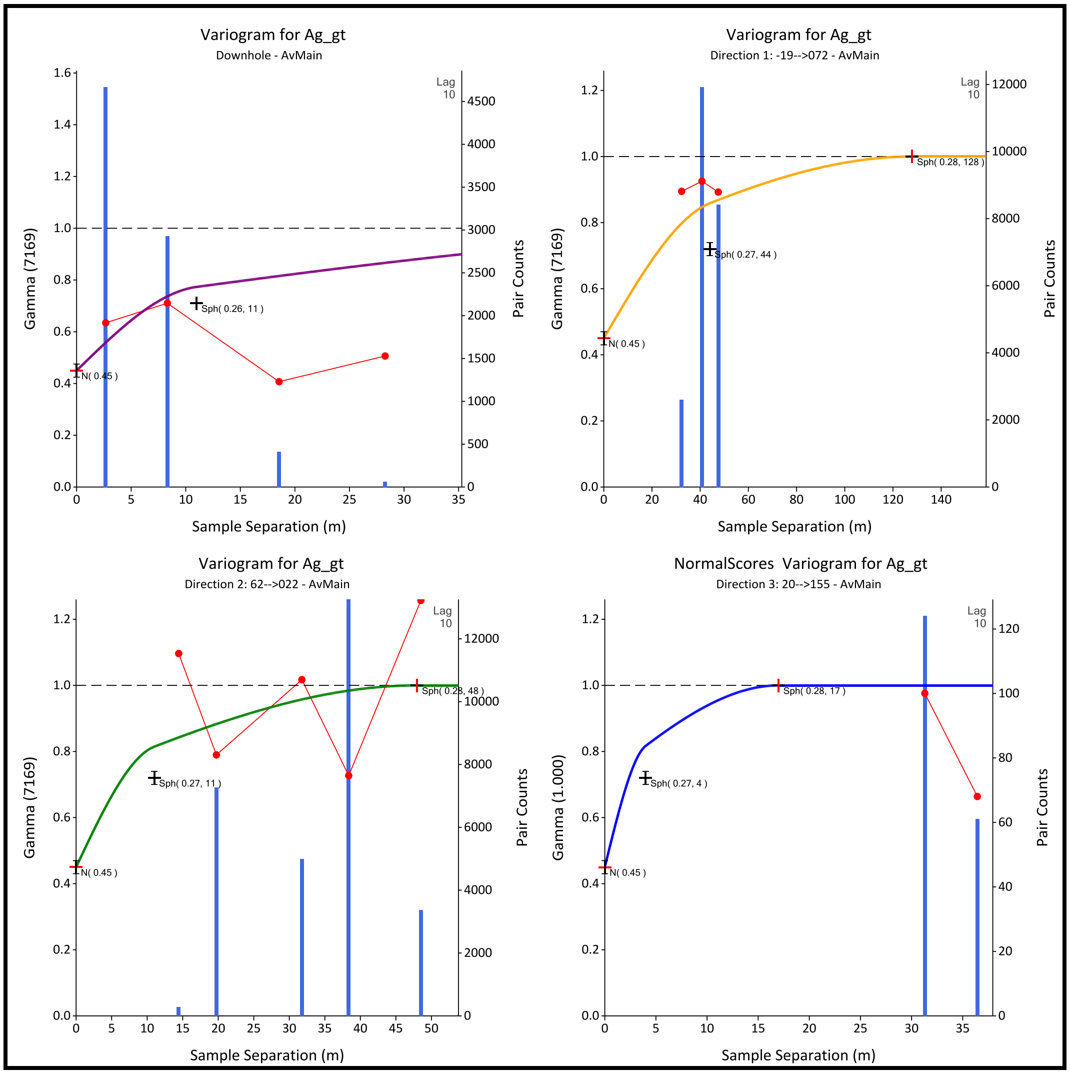


Figure 14.9 Avino Vein: Domain 10 Experimental Gold Variograms

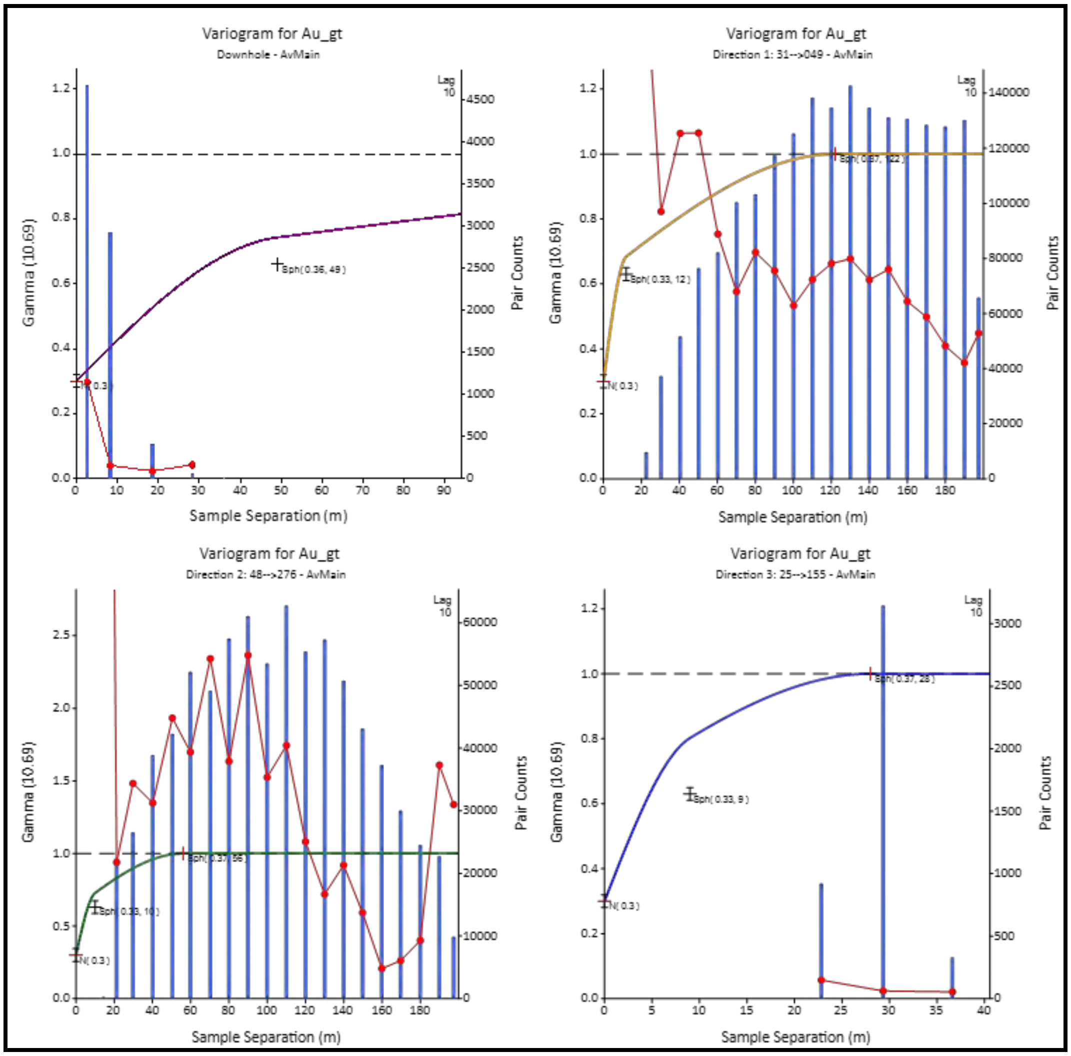


Figure 14.10 Avino Vein: Domain 10 Experimental Copper Variograms

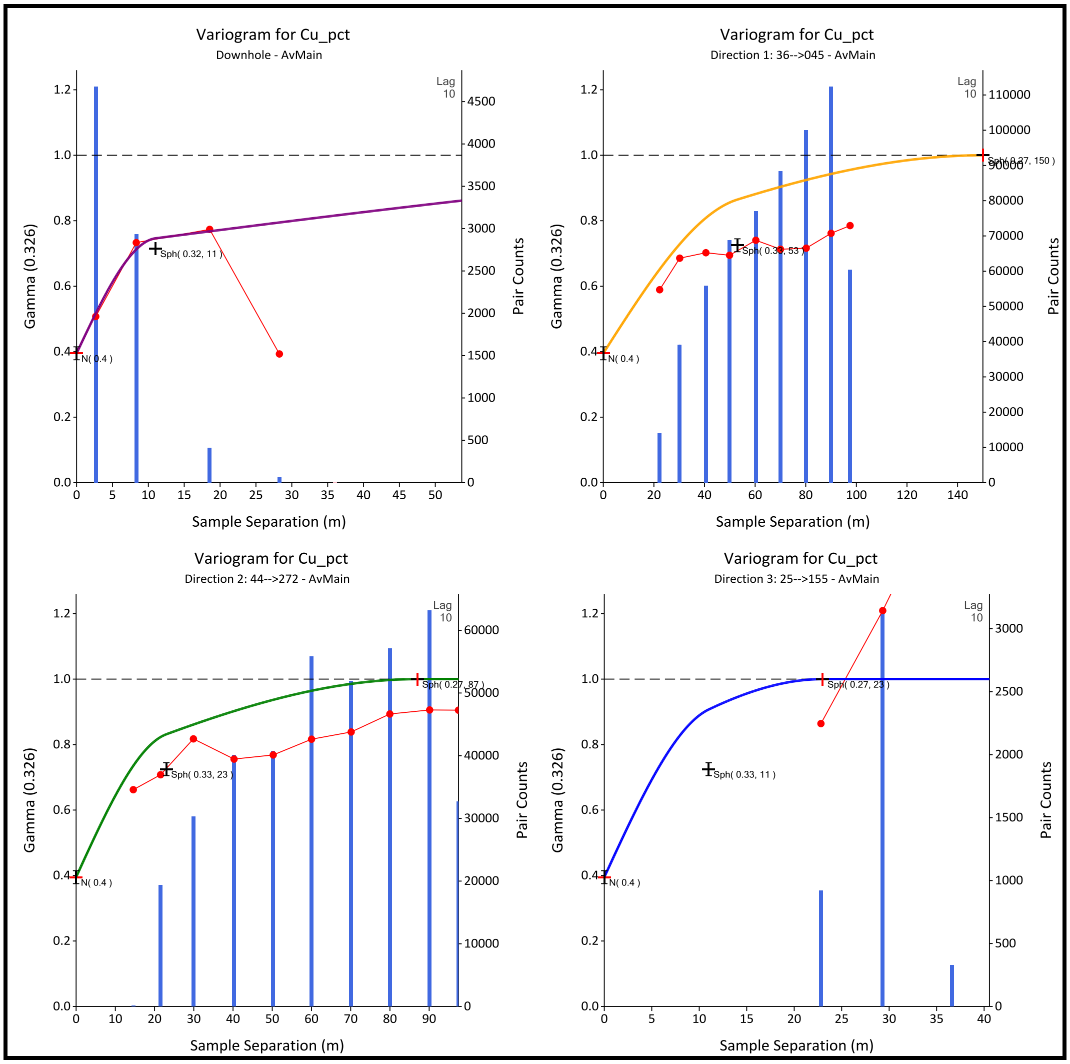


Figure 14.11 San Gonzalo Vein: Domain 10 Experimental Silver Variograms

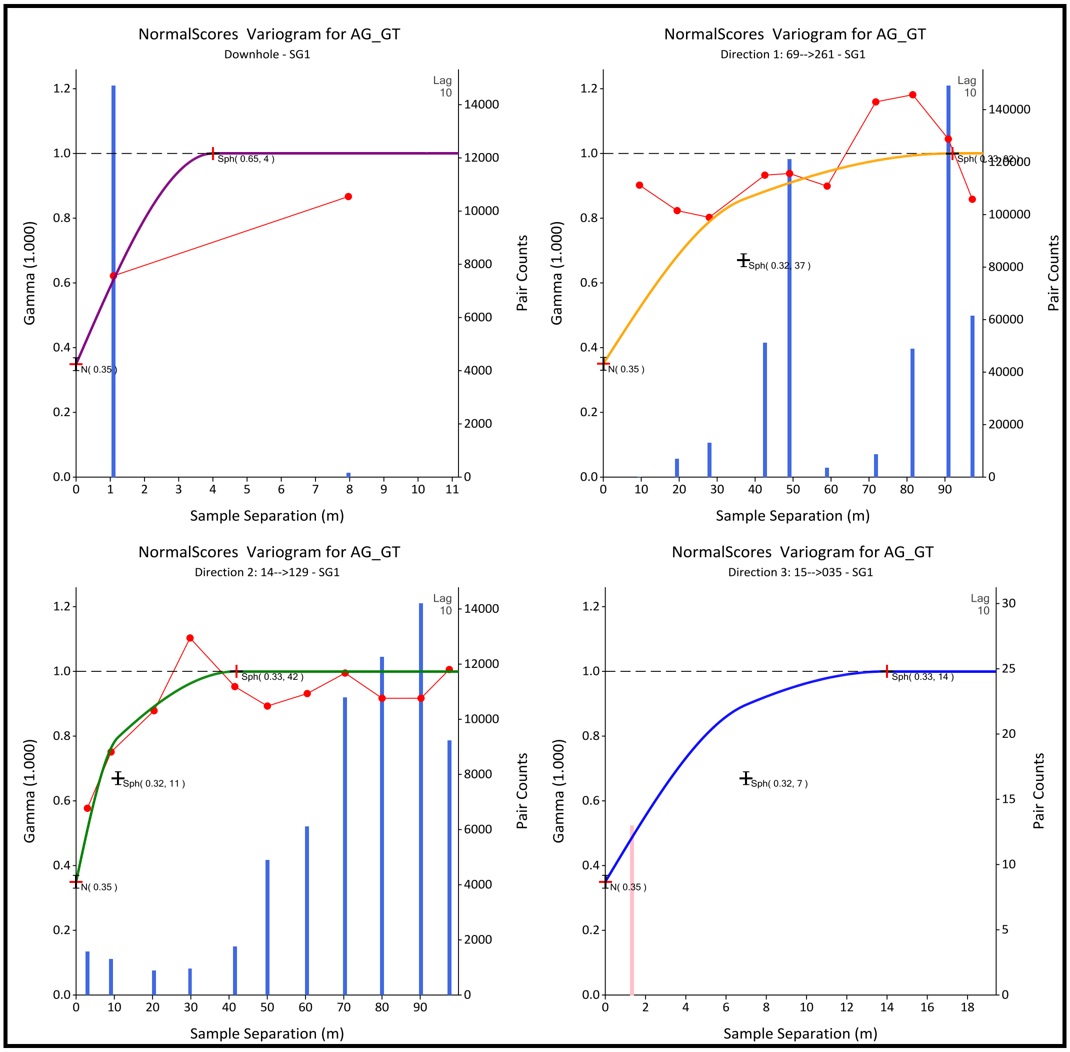


Figure 14.12 San Gonzalo Vein: Domain 10 Experimental Gold Variograms

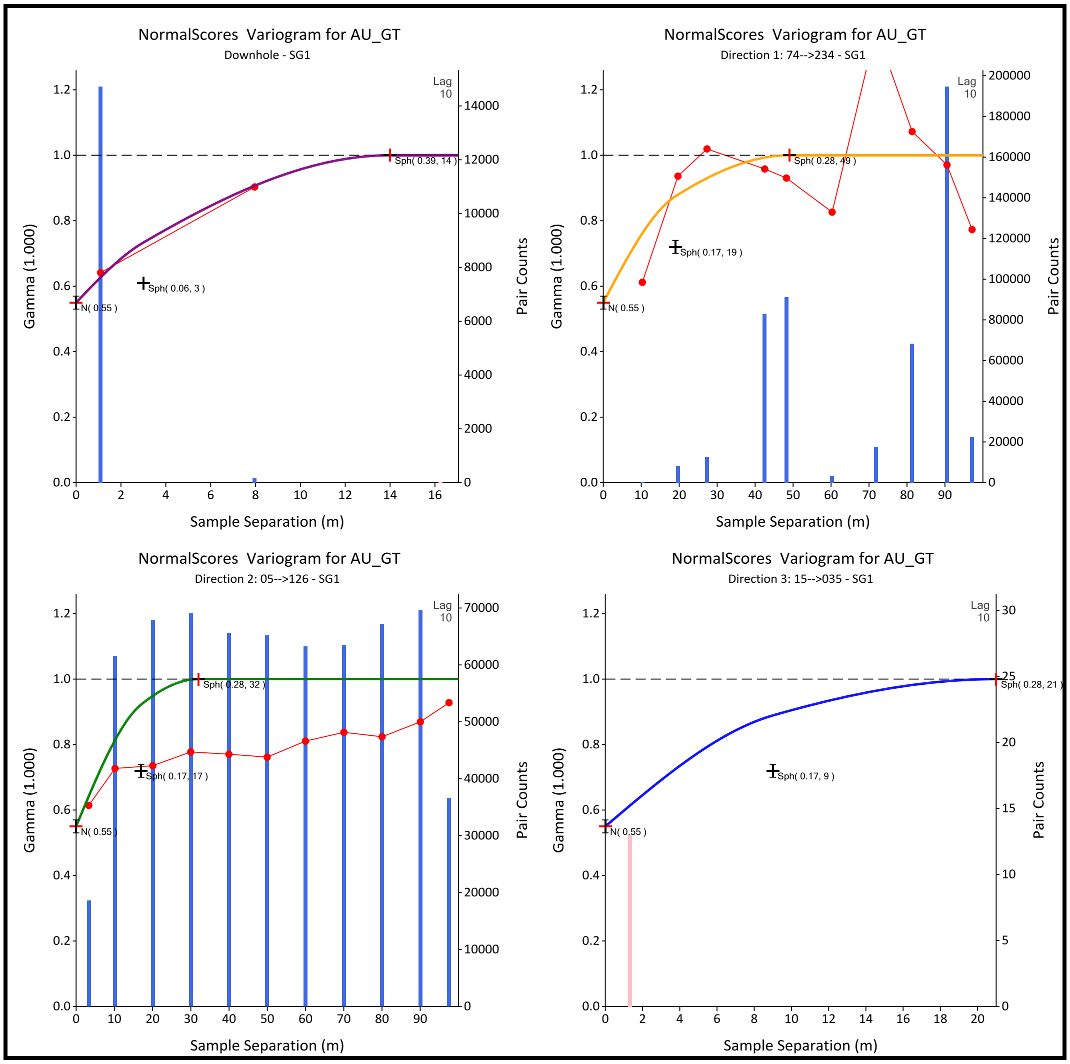


Figure 14.13 Oxide Tailings: Domain 10 Experimental Silver Variograms

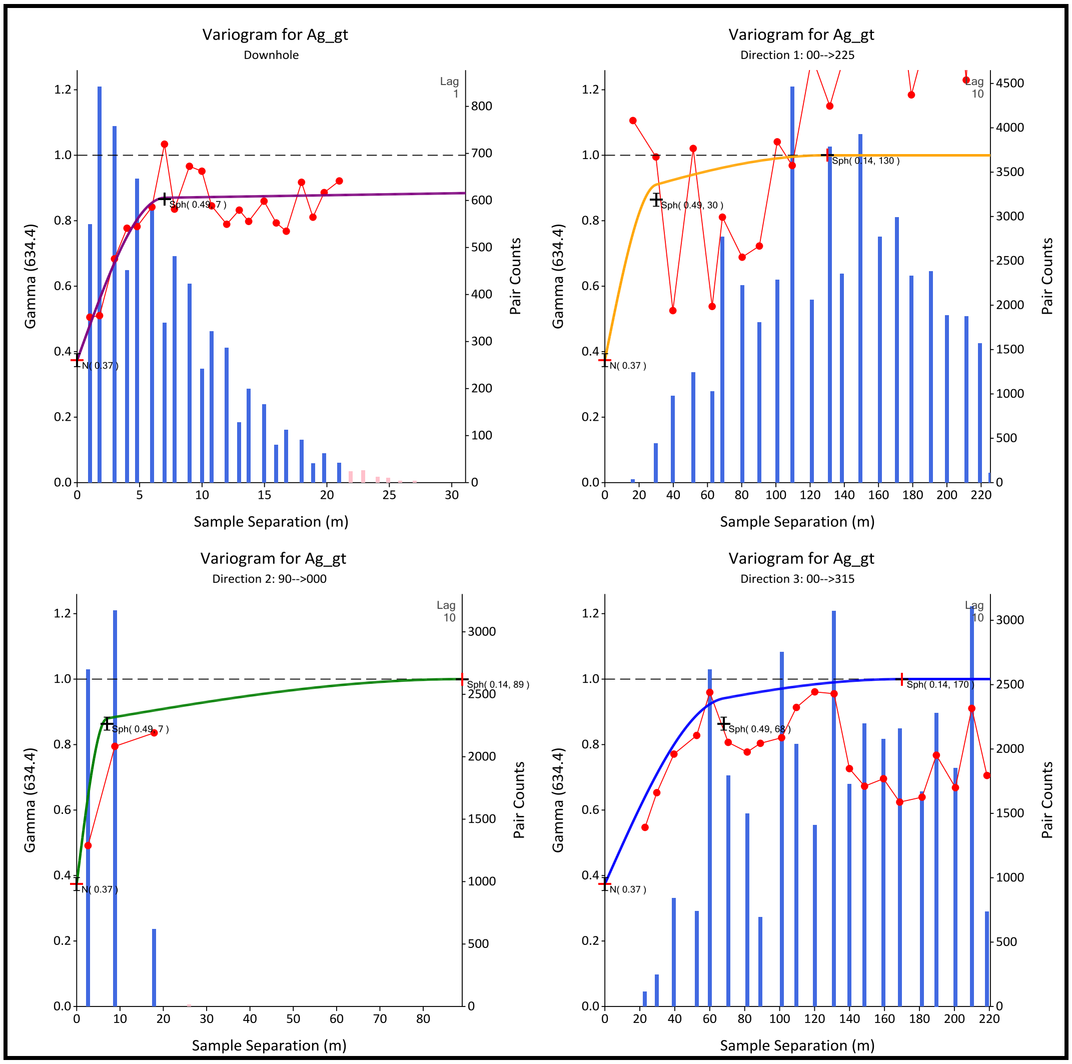
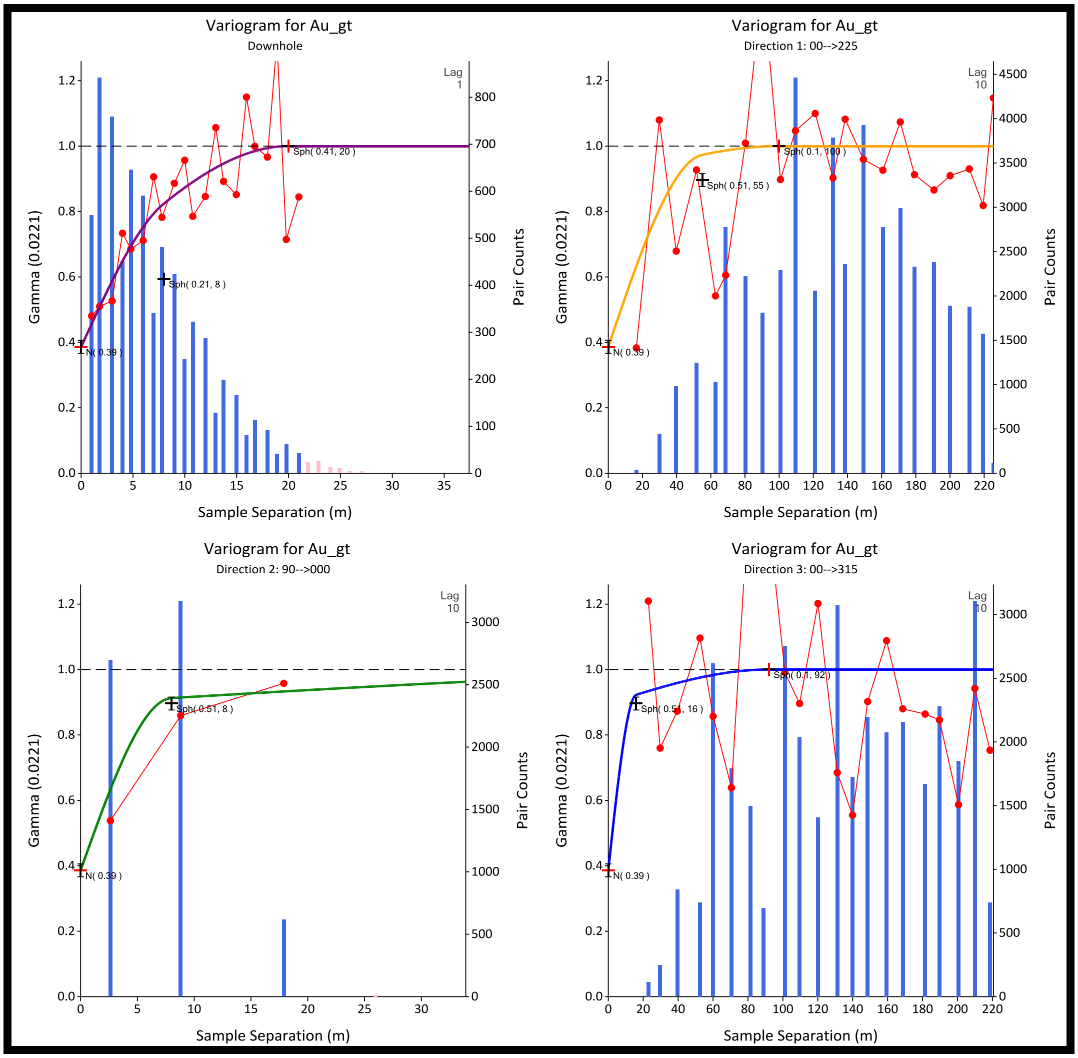


Figure 14.14 Oxide Tailings: Domain 10 Experimental Silver Variograms



14.9 Interpolation Plan and Kriging Parameters

Estimation for the Avino and San Gonzalo Vein systems was carried out using Datamine™ software and parameters optimized by kriging neighbourhood analysis (KNA) carried out using Supervisor™ software. Optimization was achieved by minimising the number of negative kriging weights and maximising the theoretical slope of regression of the estimates.

14.9.1 Avino

A single block model was created to cover the Avino system. A block size of 10 m by 10 m by 10 m was used for block model and resource estimate. The interpolation method used for populating the block model was OK following a kriging neighbourhood specification tested in Snowden Supervisor™ software. A minimum of 16 and maximum of 48 composites were used per block with a maximum of 40 samples per drillhole.

Estimation parameters for the Avino Vein System are summarised in Table 14.7.

14.9.2 San Gonzalo

A single block model was created to cover the San Gonzalo system. A block size of 10 m by 10 m by 10 m was used for block model and resource estimate. The interpolation method used for populating the block model was OK following a kriging neighbourhood specification tested in Snowden Supervisor™ software. A minimum of 16 and maximum of 48 composites were used per block with a maximum of 40 samples per drillhole.

Estimation parameters used for the San Gonzalo System are summarised in Table 14.8.

14.9.3 Oxide Tailings

A single block model was created to cover the Avino oxide tailings deposit. A block size of 20 m by 20 m by 2 m was used for block model and resource estimate, as the average distance between sample drillholes approximates 30 m and the composite length is 2 m. The interpolation method used for populating the block model was OK following a kriging neighbourhood specification tested in Snowden Supervisor™ software. A minimum of 8 and maximum of 32 composites were used per block with a maximum of 40 samples per drillhole.

Estimation parameters used for the oxide tailings deposit are summarised in Table 14.9.

Table 14.7 Avino Vein System: Variogram and Search Parameters

Domain 10 (Main)										Angle Rotation DM Convention				
Metal	Nugget	C1	R11	R12	R13	C2	R21	R22	R23	Angle1	Angle2	Angle3	mincomps	maxcomps
Ag	0.5	0.27	44	11	4	0.23	128	48	17	155	65	145	8	32
Au	0.3	0.33	12	10	9	0.37	122	56	28	155	65	145	8	32
Cu	0.4	0.33	53	23	11	0.27	150	87	23	155	65	145	8	32
Pb	0.42	0.28	12	10	8	0.3	88	50	23	155	65	145	8	32
Zn	0.43	0.31	20	14	6	0.26	93	60	20	155	65	145	8	32
Domain 20 (NW1)										Angle Rotation DM Convention				
Metal	Nugget	C1	R11	R12	R13	C2	R21	R22	R23	Angle1	Angle2	Angle3	mincomps	maxcomps
Ag	0.5	0.27	44	11	4	0.23	128	48	17	-175	45	135	8	32
Au	0.3	0.33	12	10	9	0.37	122	56	28	-175	45	135	8	32
Cu	0.4	0.33	53	23	11	0.27	150	87	23	-175	45	135	8	32
Pb	0.42	0.28	12	10	8	0.3	88	50	23	-175	45	135	8	32
Zn	0.43	0.31	20	14	6	0.26	93	60	20	-175	45	135	8	32
Domain 30 (NW2)										Angle Rotation DM Convention				
Metal	Nugget	C1	R11	R12	R13	C2	R21	R22	R23	Angle1	Angle2	Angle3	mincomps	maxcomps
Ag	0.5	0.27	44	11	4	0.23	128	48	17	180	90	110	8	32
Au	0.3	0.33	12	10	9	0.37	122	56	28	180	90	110	8	32
Cu	0.4	0.33	53	23	11	0.27	150	87	23	180	90	110	8	32
Pb	0.42	0.28	12	10	8	0.3	88	50	23	180	90	110	8	32
Zn	0.43	0.31	20	14	6	0.26	93	60	20	180	90	110	8	32

table continues…

Domain 40 (NE1)										Angle Rotation DM Convention				
Metal	Nugget	C1	R11	R12	R13	C2	R21	R22	R23	Angle1	Angle2	Angle3	mincomps	maxcomps
Ag	0.5	0.27	44	11	4	0.23	128	48	17	180	90	110	8	32
Au	0.3	0.33	12	10	9	0.37	122	56	28	180	90	110	8	32
Cu	0.4	0.33	53	23	11	0.27	150	87	23	180	90	110	8	32
Pb	0.42	0.28	12	10	8	0.3	88	50	23	180	90	110	8	32
Zn	0.43	0.31	20	14	6	0.26	93	60	20	180	90	110	8	32

Domain 50										Angle Rotation DM Convention				
Metal	Nugget	C1	R11	R12	R13	C2	R21	R22	R23	Angle1	Angle2	Angle3	mincomps	maxcomps
Ag	0.35	0.32	37	11	7	0.33	92	42	14	35	75	130	8	32
Au	0.82	0.11	19	17	9	0.07	49	32	21	35	75	130	8	32
Cu	0.57	0.21	31	22	11	0.22	135	92	24	35	75	130	8	32
Pb	0.71	0.22	35	20	6	0.06	123	38	21	35	75	130	8	32
Zn	0.62	0.22	22	15	11	0.16	117	98	21	35	75	130	8	32

Domain 60										Angle Rotation DM Convention				
Metal	Nugget	C1	R11	R12	R13	C2	R21	R22	R23	Angle1	Angle2	Angle3	mincomps	maxcomps
Ag	0.35	0.32	37	11	7	0.33	92	42	14	55	80	110	8	32
Au	0.82	0.11	19	17	9	0.07	49	32	21	55	80	110	8	32
Cu	0.57	0.21	31	22	11	0.22	135	92	24	55	80	110	8	32
Pb	0.71	0.22	35	20	6	0.06	123	38	21	55	80	110	8	32
Zn	0.62	0.22	22	15	11	0.16	117	98	21	55	80	110	8	32

Table 14.8 San Gonzalo Vein System: Variogram and Search Parameters

Domain 10 (SG1)										Angle Rotation DM Convention				
Metal	Nugget	C1	R11	R12	R13	C2	R21	R22	R23	Angle1	Angle2	Angle3	mincomps	maxcomps
Ag	0.35	0.32	37	11	7	0.33	92	42	14	35	75	105	8	32
Au	0.82	0.11	19	17	9	0.07	49	32	21	35	75	95	8	32
Cu	0.57	0.21	31	22	11	0.22	135	92	24	35	75	105	8	32
Pb	0.71	0.22	35	20	6	0.06	123	38	21	35	75	105	8	32
Zn	0.62	0.22	22	15	11	0.16	117	98	21	35	75	105	8	32
Domain 20										Angle Rotation DM Convention				
Metal	Nugget	C1	R11	R12	R13	C2	R21	R22	R23	Angle1	Angle2	Angle3	mincomps	maxcomps
Ag	0.35	0.32	37	11	7	0.33	92	42	14	5	85	100	8	32
Au	0.82	0.11	19	17	9	0.07	49	32	21	5	85	100	8	32
Cu	0.57	0.21	31	22	11	0.22	135	92	24	5	85	100	8	32
Pb	0.71	0.22	35	20	6	0.06	123	38	21	5	85	100	8	32
Zn	0.62	0.22	22	15	11	0.16	117	98	21	5	85	100	8	32
Domain 30										Angle Rotation DM Convention				
Metal	Nugget	C1	R11	R12	R13	C2	R21	R22	R23	Angle1	Angle2	Angle3	mincomps	maxcomps
Ag	0.35	0.32	37	11	7	0.33	92	42	14	-165	90	95	8	32
Au	0.82	0.11	19	17	9	0.07	49	32	21	-165	90	95	8	32
Cu	0.57	0.21	31	22	11	0.22	135	92	24	-165	90	95	8	32
Pb	0.71	0.22	35	20	6	0.06	123	38	21	-165	90	95	8	32
Zn	0.62	0.22	22	15	11	0.16	117	98	21	-165	90	95	8	32

table continues...

Domain 40 (Anjelica)		C1	R11	R12	R13	C2	R21	R22	R23	Angle Rotation DM Convention			mincomps	maxcomps
Metal	Nugget									Angle1	Angle2	Angle3		
Ag	0.35	0.32	37	11	7	0.33	92	42	14	10	95	100	8	32
Au	0.82	0.11	19	17	9	0.07	49	32	21	10	95	100	8	32
Cu	0.57	0.21	31	22	11	0.22	135	92	24	10	95	100	8	32
Pb	0.71	0.22	35	20	6	0.06	123	38	21	10	95	100	8	32
Zn	0.62	0.22	22	15	11	0.16	117	98	21	10	95	100	8	32
Domain 50		C1	R11	R12	R13	C2	R21	R22	R23	Angle Rotation DM Convention			mincomps	maxcomps
Metal	Nugget									Angle1	Angle2	Angle3		
Ag	0.35	0.32	37	11	7	0.33	92	42	14	35	75	130	8	32
Au	0.82	0.11	19	17	9	0.07	49	32	21	35	75	130	8	32
Cu	0.57	0.21	31	22	11	0.22	135	92	24	35	75	130	8	32
Pb	0.71	0.22	35	20	6	0.06	123	38	21	35	75	130	8	32
Zn	0.62	0.22	22	15	11	0.16	117	98	21	35	75	130	8	32
Domain 60		C1	R11	R12	R13	C2	R21	R22	R23	Angle Rotation DM Convention			mincomps	maxcomps
Metal	Nugget									Angle1	Angle2	Angle3		
Ag	0.35	0.32	37	11	7	0.33	92	42	14	55	80	110	8	32
Au	0.82	0.11	19	17	9	0.07	49	32	21	55	80	110	8	32
Cu	0.57	0.21	31	22	11	0.22	135	92	24	55	80	110	8	32
Pb	0.71	0.22	35	20	6	0.06	123	38	21	55	80	110	8	32
Zn	0.62	0.22	22	15	11	0.16	117	98	21	55	80	110	8	32

Table 14.9 Oxide Tailings Deposit: Variogram and Search Parameters

Domain 10														
Metal	Nugget	C1	R11	R12	R13	C2	R21	R22	R23	Angle1	Angle2	Angle3	mincomps	maxcomps
Ag	0.37	0.49	30	7	68	0.14	130	20	170	0	-90	135	8	32
Au	0.39	0.51	55	8	16	0.1	100	20	92	0	-90	135	8	32
Cu	0.2	0.59	68	8	24	0.21	195	19	112	0	-90	135	8	32
Pb	0.45	0.35	63	13	70	0.2	269	14	170	0	-90	135	8	32
Zn	0.23	0.42	190	11	51	0.35	191	12	165	0	-90	135	8	32

14.10 RESOURCE BLOCK MODELS

14.10.1 BLOCK MODEL CONFIGURATIONS

The specifications for the estimation block models (built using DataMine Studio™) are summarized in Table 14.10. All three are oriented with the model origin at the lower left hand corner (bottom southwest). Both the hard rock vein deposit models for the Avino and San Gonzalo systems are rotated about a vertical axis passing through the bottom left hand corner to better conform to the strike of the veins. Sub-blocking was used to optimize volume filling of the vein models by preferentially minimizing block dimension in the Y-dimension for the vein models while the sub-blocking used for the oxide tailings block model minimized the block dimension in the vertical direction. The block models were not inclined, to avoid potential geometric confusion when the models are used for planning and reconciliation.

Table 14.10 Estimation Block Model Specifications

Model	X0	Y0	Z0	NX	NY	NZ	DX	DY	DZ	Min DX	Min DY	Min DZ	Rot V
Avino Vein	569840	2712270	1800	137	44	65	10	10	10	5	1	5	335
San Gonzalo Vein	571060	2714430	1800	163	72	56	10	5	10	5	0.5	1	35
Oxide Tailings	569680	2712020	2170	16	15	37	40	40	2	4	4	0.2	0

Table 14.11 Explanation of Table 14-10

Variable	Meaning
X0	minimum easting
Y0	minimum northing
Z0	minimum elevation
NX	number of primary blocks in easting direction
NY	number of primary blocks in northing direction
NZ	number of primary blocks in elevation direction
DX	primary easting block dimension
DY	primary northing block dimension
DZ	primary vertical block dimension
MinDX	minimum sub-block easting dimension
MinDY	minimum sub-block northing dimension
MinDZ	minimum sub-block vertical dimension
RotV	Rotation angle of model about a vertical axis

14.10.2 Interpolation

The reported resource relies on OK as the best unbiased linear estimator of grade. Other methods of interpolation, includingID^2 and NN were employed for model validation purposes and are retained in the block models.

14.11 Model Validation

14.11.1 Statistics

Mean values for estimated blocks and composites used for the estimation in the Avino Vein are shown in Table 14.12. Overall the block estimates show lower silver grades than the composites due to the declustering effect of kriging and the large numbers of relatively high-grade composites in the development sampling.

Table 14.12 Avino Vein: Block Estimates and Composite Sample Grades

Estimator	Ag (g/t)	Au (g/t)	Cu (%)	Pb (%)	Zn (%)
Ordinary Kriging	86.31	0.62	0.57	0.33	0.19
Nearest Neighbour	79.57	0.61	0.57	0.34	0.21
Inverse Distance	86.41	0.62	0.59	0.31	0.19
Composites	100.87	0.68	0.67	0.31	0.14
Number of Blocks	19,024	-	-	-	-

Mean values for estimated blocks and composites used for the estimation in the San Gonzalo Vein are shown in Table 14.13. The block estimates show lower silver grades than the composites due to the declustering effect of kriging and the large numbers of relatively high-grade composites in the development sampling.

Table 14.13 San Gonzalo Vein: Block Estimates and Composite Sample Grades

Estimator	Ag (g/t)	Au (g/t)	Cu (%)	Pb (%)	Zn (%)
Ordinary Kriging	258.42	1.37	0.06	0.46	0.76
Nearest Neighbour	222.87	1.10	0.06	0.41	0.63
Inverse Distance	267.74	1.37	0.06	0.46	0.77
Composites	279.82	1.47	0.06	0.47	0.78
Number of Blocks	84,385	-	-	-	-

Mean values for estimated blocks and composites used for the estimation in the oxide tailings model are shown in Table 14.14. The block estimates show lower silver grades than the composites due to the declustering effect of kriging and the large numbers of relatively high-grade composites in the development sampling.

Table 14.14 Oxide Tailings: Block Estimates and Composite Sample Grades

Estimator	Ag (g/t)	Au (g/t)	Cu (%)	Pb (%)	Zn (%)
Ordinary Kriging	93.24	0.48	0.130	0.950	0.150
Nearest Neighbour	92.56	0.48	0.129	0.930	0.150
Inverse Distance	93.94	0.48	0.128	0.949	0.151
Composites	96.48	0.46	0.125	0.958	0.153
Number of Blocks	45,607	-	-	-	-

14.11.2 Sections

The spatial pattern of metal grade distributions for the Avino Vein is shown in Figure 14.15 to Figure 14.18, inclusive. Figure 14.15 shows a typical transverse section illustrating the interaction between the secondary (NE1) zone developed on the footwall side of the main the Avino Vein system. Figure 14.16 to Figure 14.18 are longitudinal sections viewed from the south showing silver, gold and copper grades with high-grade zones tending to plunge steeply to the west.

Figure 14.15 Avino Vein: Typical Transverse Section, Looking East through Drillhole ET07-10, Showing the Block Model Centroids Colour Coded by Silver Grade

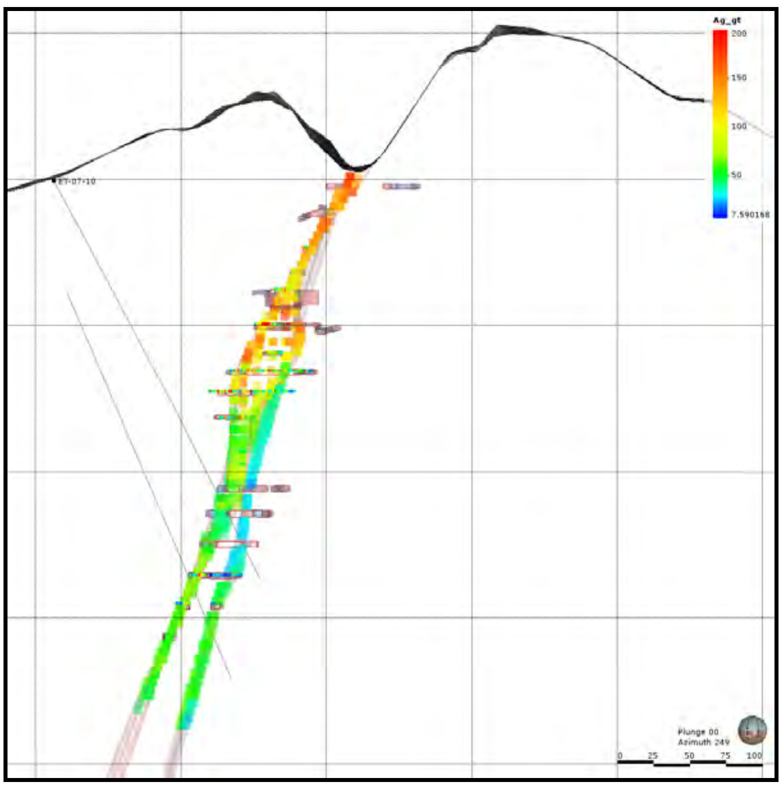


Figure 14.16 Avino Vein: Longitudinal Section Showing the Block Model Centroids Colour Coded by Silver Grade

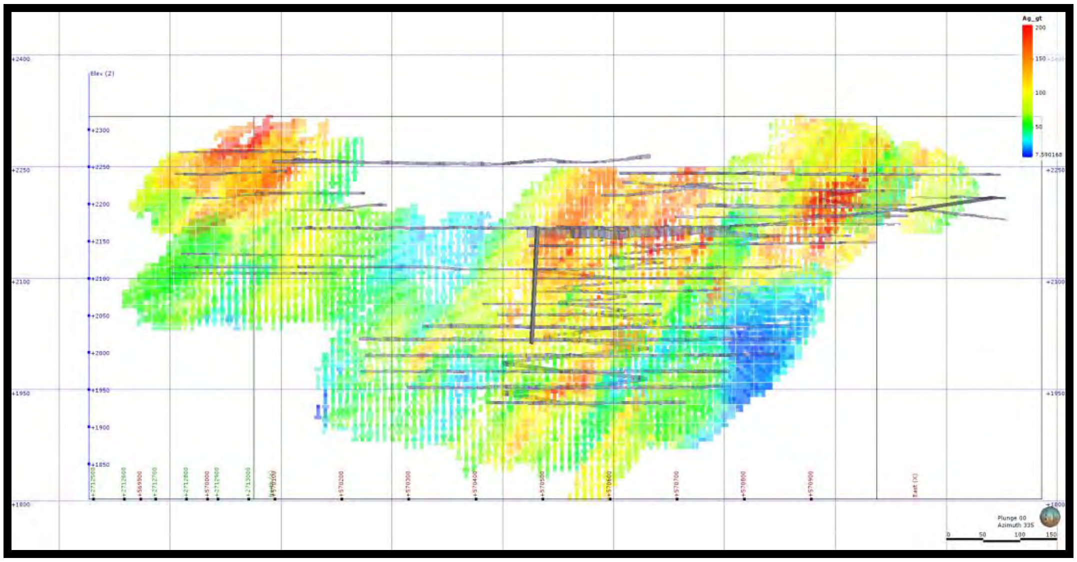


Figure 14.17 Avino Vein: Longitudinal Section Showing the Block Model Centroids Colour Coded by Gold Grade

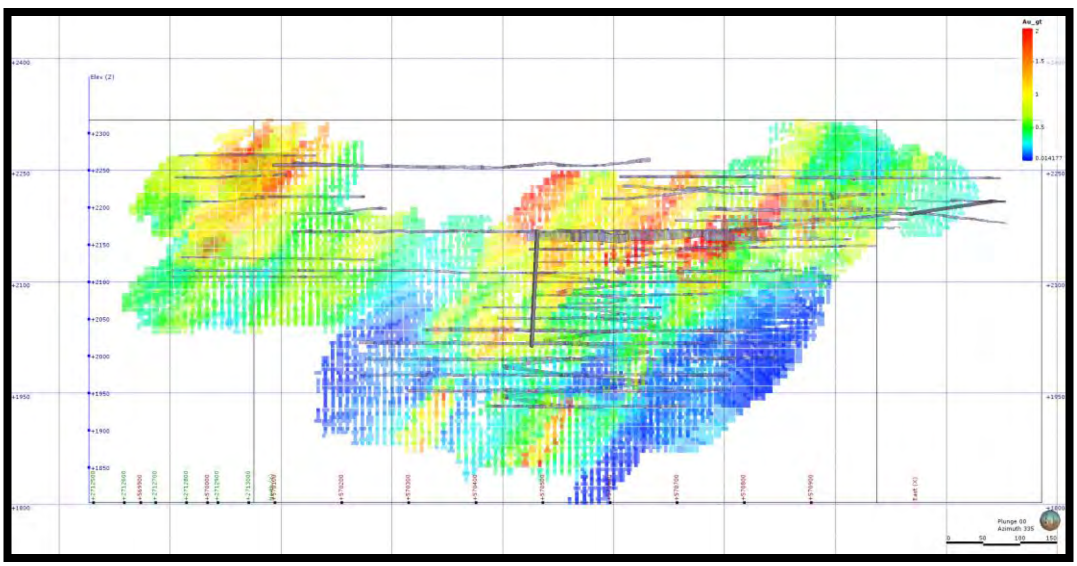
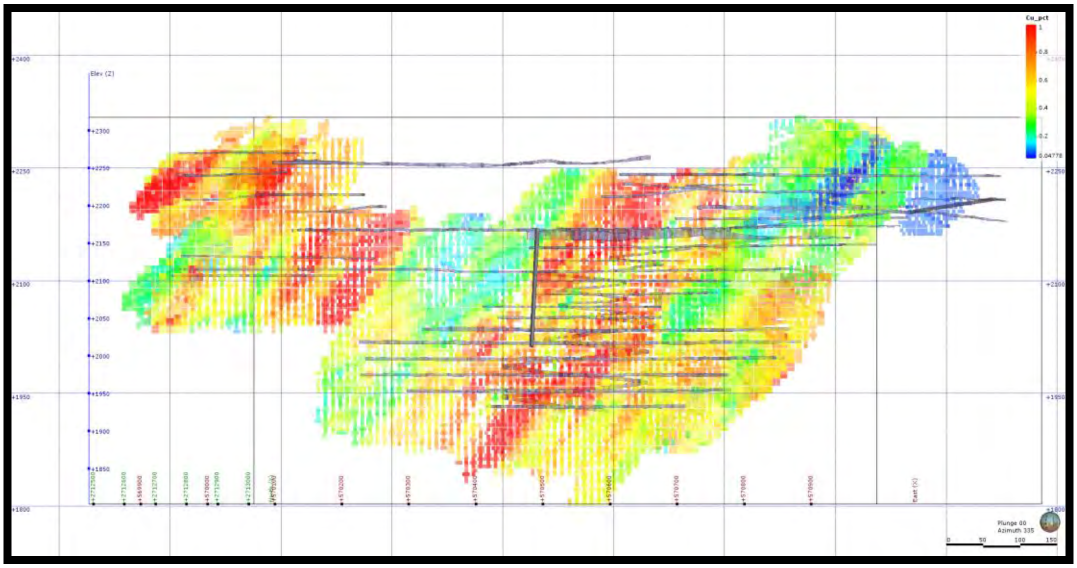


Figure 14.18 Avino Vein: Longitudinal Section Showing the Block Model Centroids Colour Coded by Coper Grade



The spatial pattern of metal grade distributions for the San Gonzalo Vein is shown in Figure 14.19 to Figure 14.22, inclusive. Figure 14.19 shows a typical transverse section illustrating the relatively narrow San Gonzalo Vein and the Anjelica vein (SG4). Figure 14.20 to Figure 14.22 are longitudinal sections viewed from the south showing silver, gold and copper grades with high-grade zones tending to plunge almost vertically.

Figure 14.19 San Gonzalo Vein: Typical Transverse Section, Looking East Aligned Along Drillhole SG1115 Showing the Block Model Centroids Colour Coded by Silver Grade

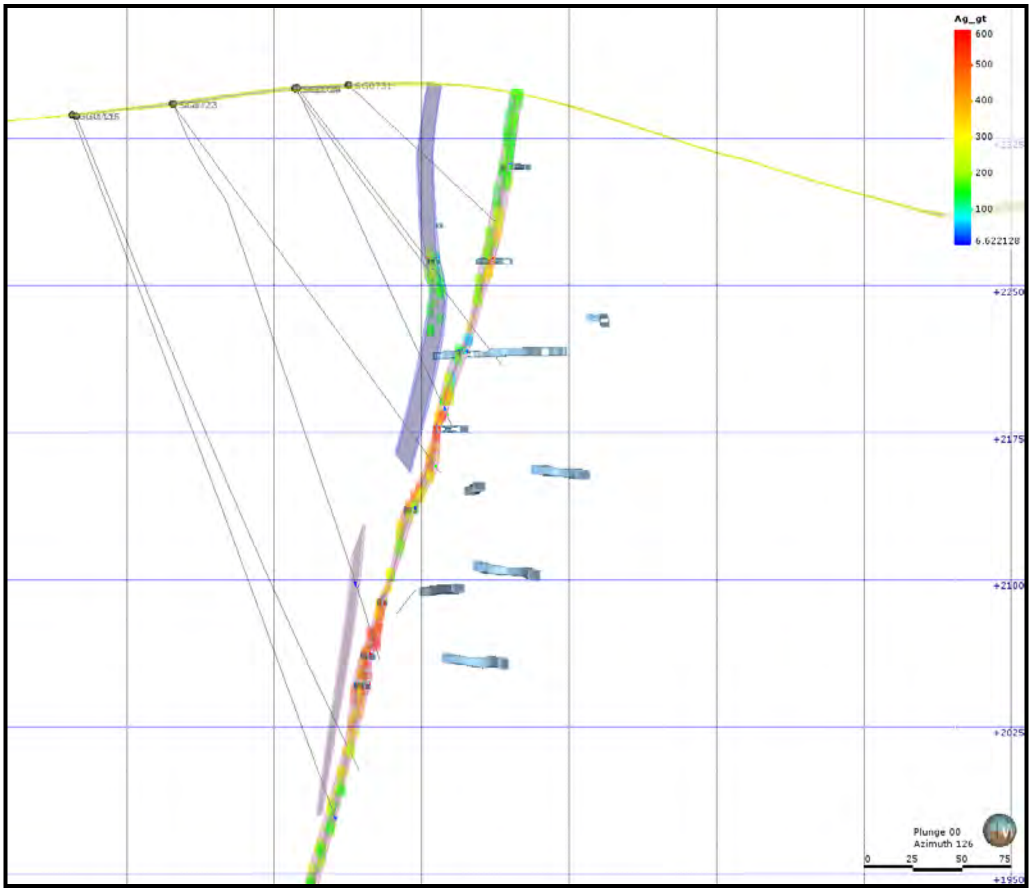


Figure 14.20 San Gonzalo Vein: Longitudinal Section Showing the Block Model Centroids Colour Coded by Silver Grade

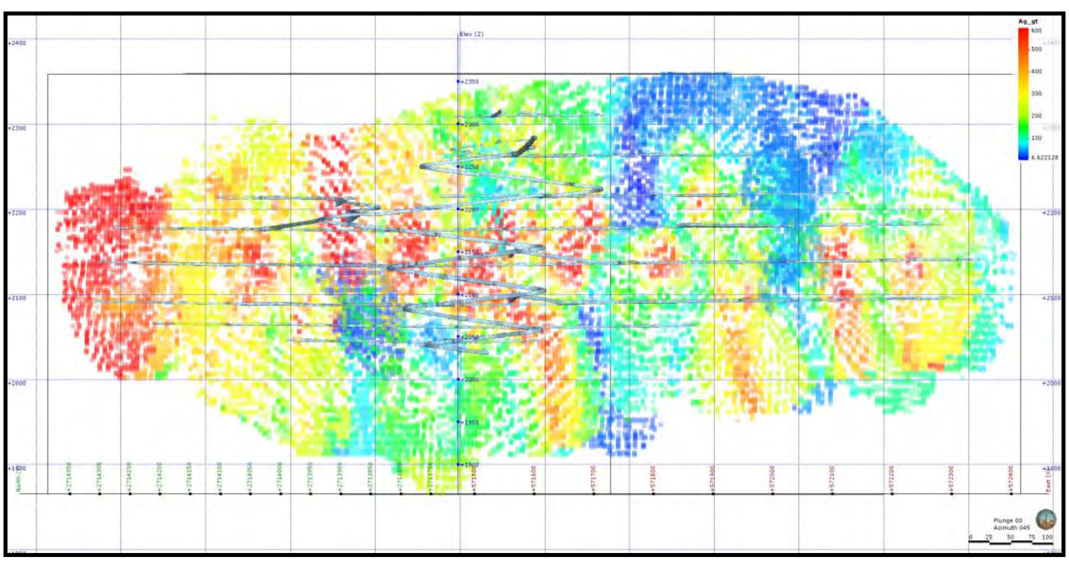


Figure 14.21 San Gonzalo Vein: Longitudinal Section Showing the Block Model Centroids Color Coded by Gold Grade

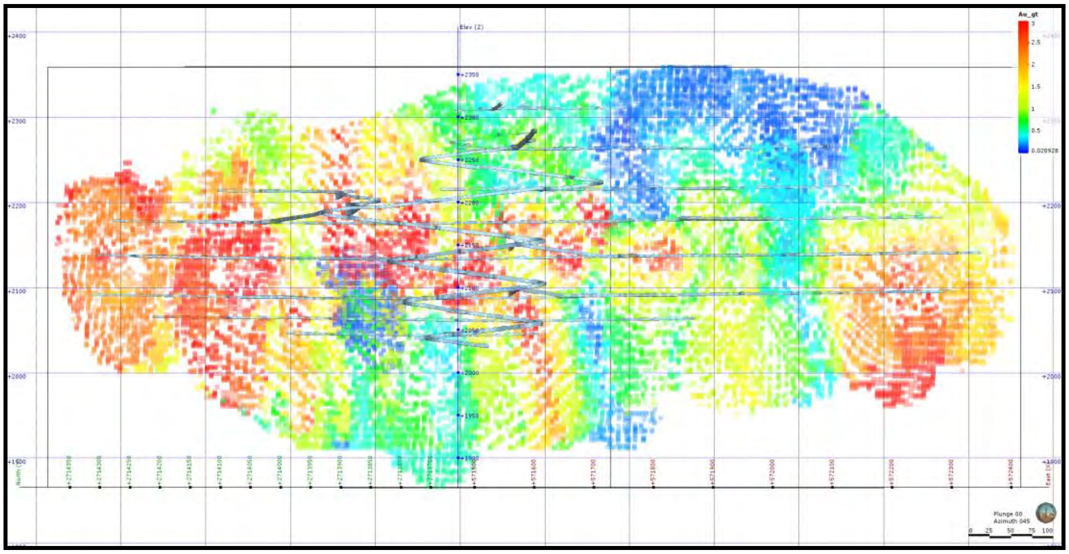
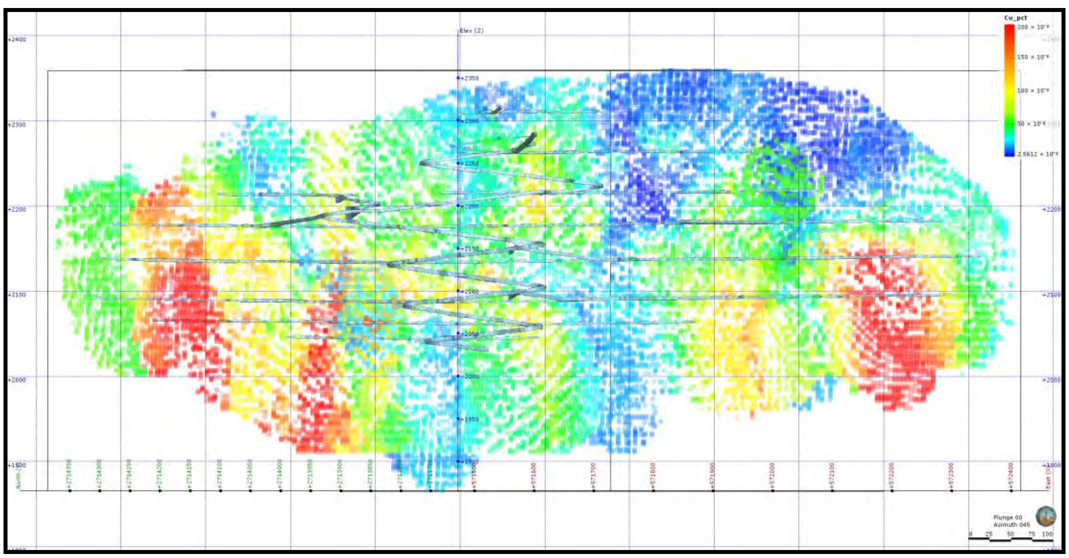


Figure 14.22 San Gonzalo Vein: Longitudinal Section Showing the Block Model Centroids Colour Coded by Copper Grade



14.11.3 SWATH PLOTS

Swath plots were generated for the underground vein deposits to compare trends in the estimated grades for the three estimation methods (ordinary kriging, inverse distance and nearest neighbour) in the block models to the source sampling data. The estimation methods for comparison are ordinary kriging (OK), nearest neighbour (NN) and inverse distance squared (ID2) block estimates for the silver, gold, and copper) and averages were generated for slices oriented parallel to the eastings, northings and elevations. The widths of the swaths (or slices) are 20 m for eastings and 10 m for elevations and the number of blocks is also plotted to give an indication of the model volume.

Figure 14.23 through Figure 14.28 displays the swath plots for the Avino deposit, comparing block model estimates and sample grades.

Figure 14.23 Avino Vein, Swathplot for Silver, Eastings

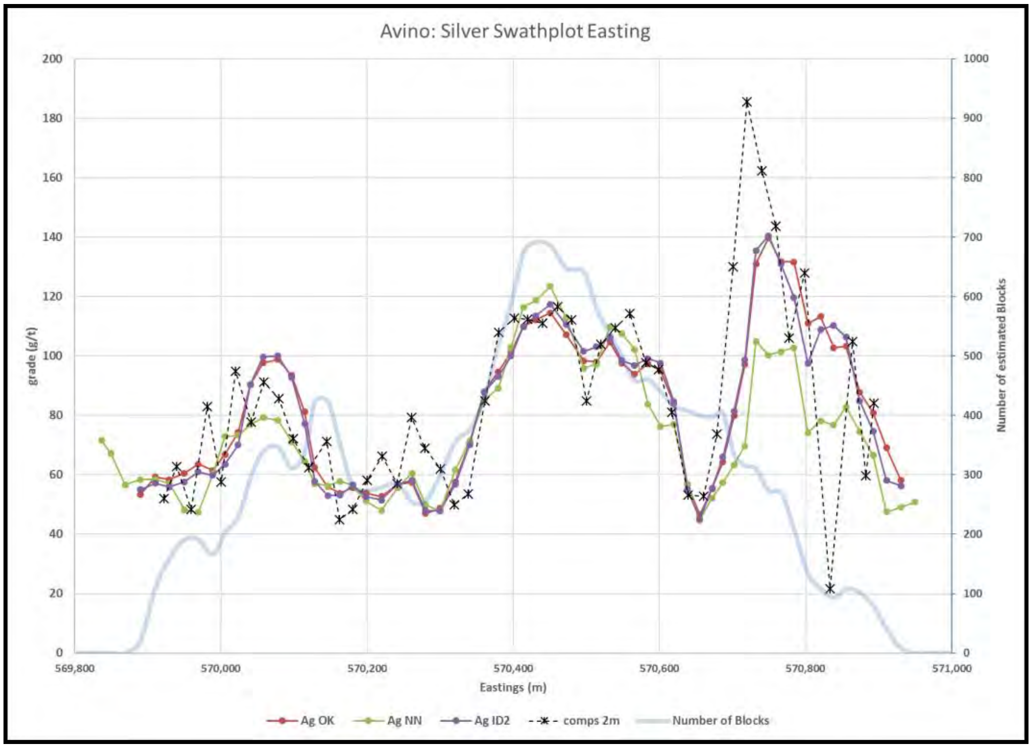


Figure 14.24 Avino Vein, Swathplot for Gold Eastings

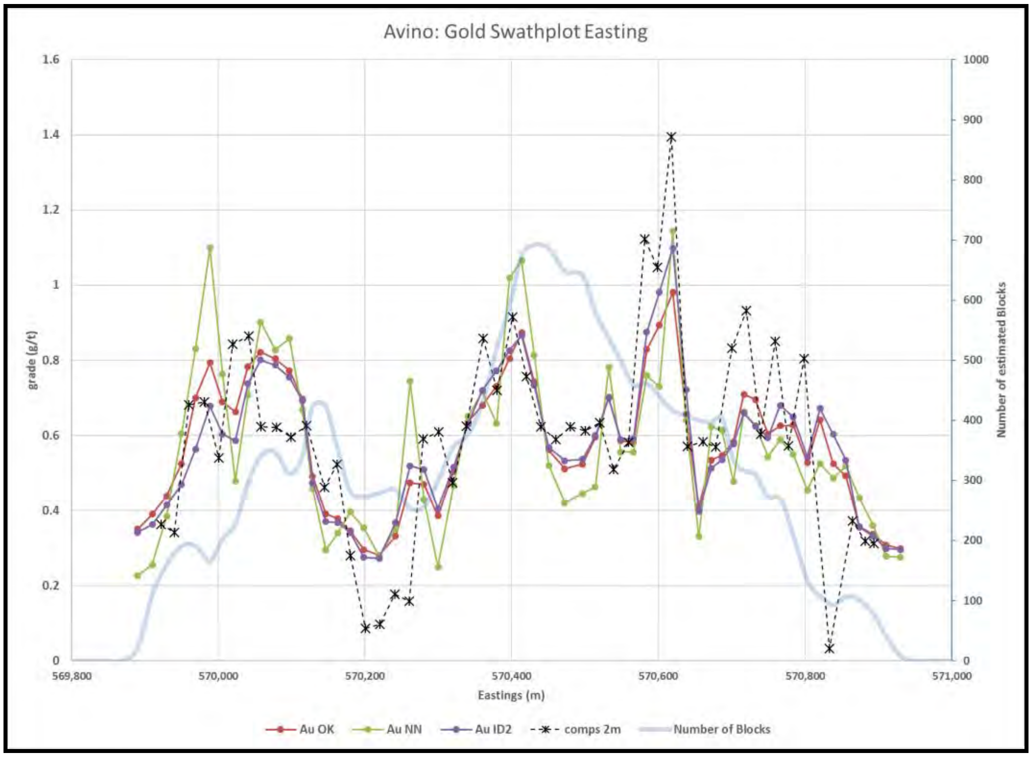


Figure 14.25 Avin Vein, Swathplot for Copper, Eastings

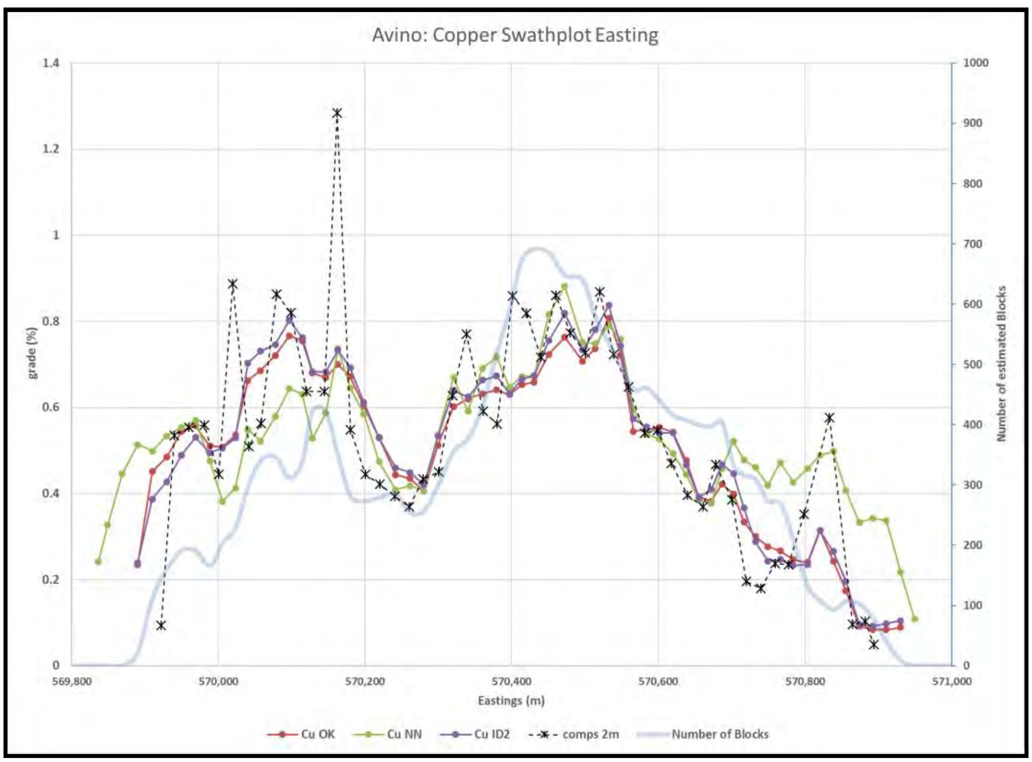


Figure 14.26 Avino Vein, Swathplot for Silver, Elevation

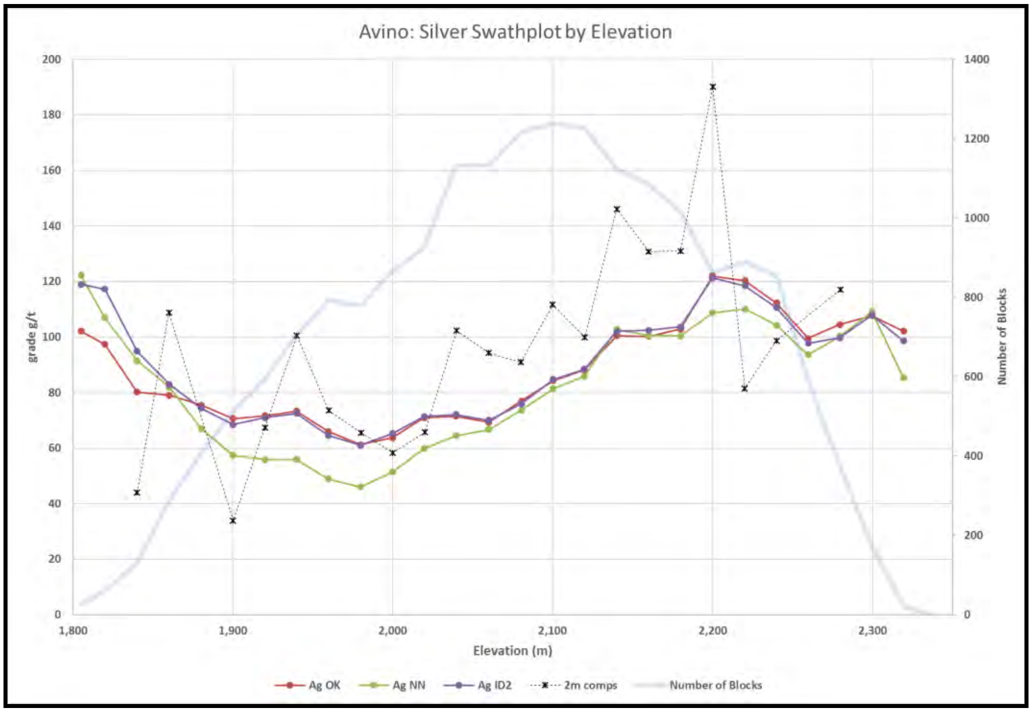


Figure 14.27 Avino Vein, Swathplot for Gold, Elevation

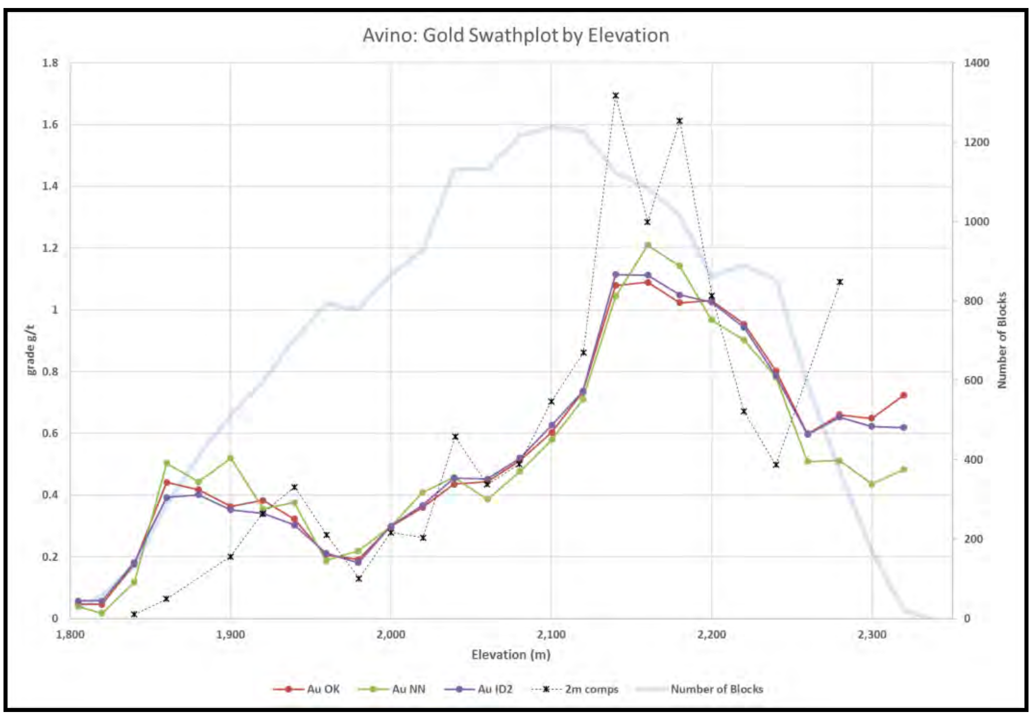


Figure 14.28 Avino Vein, Swathplot for Copper, Elevation

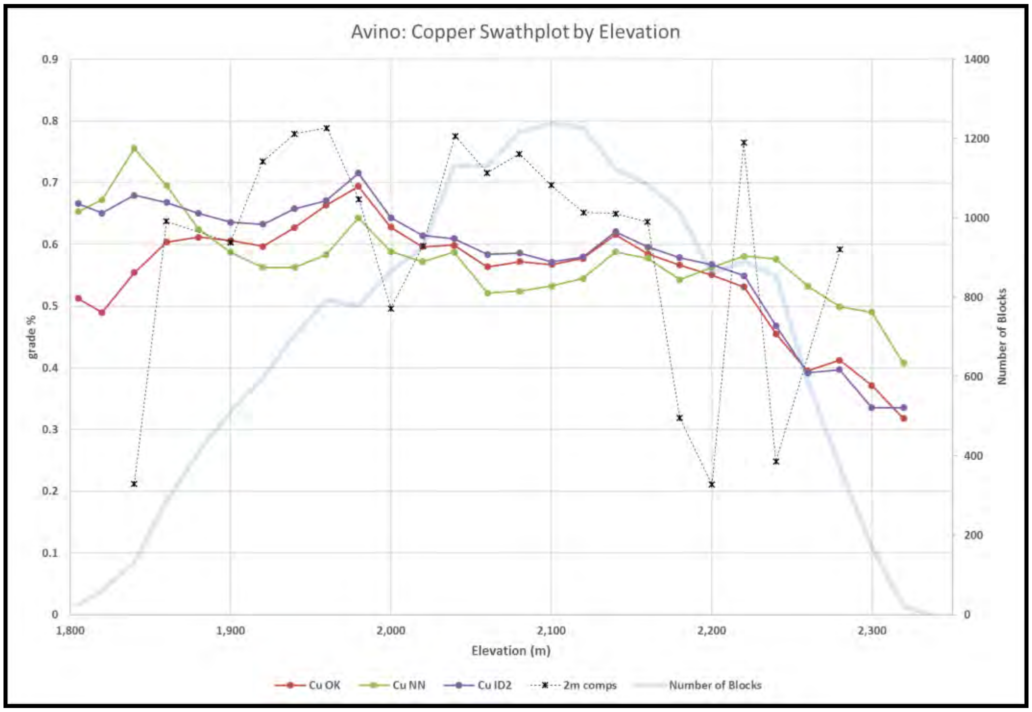


Figure 14.29 through Figure 14.34 displays the swath plots for San Gonzalo Deposit, comparing block model estimates and sample grades.

Figure 14.29 San Gonzalo Vein, Swathplot for Silver, Eastings

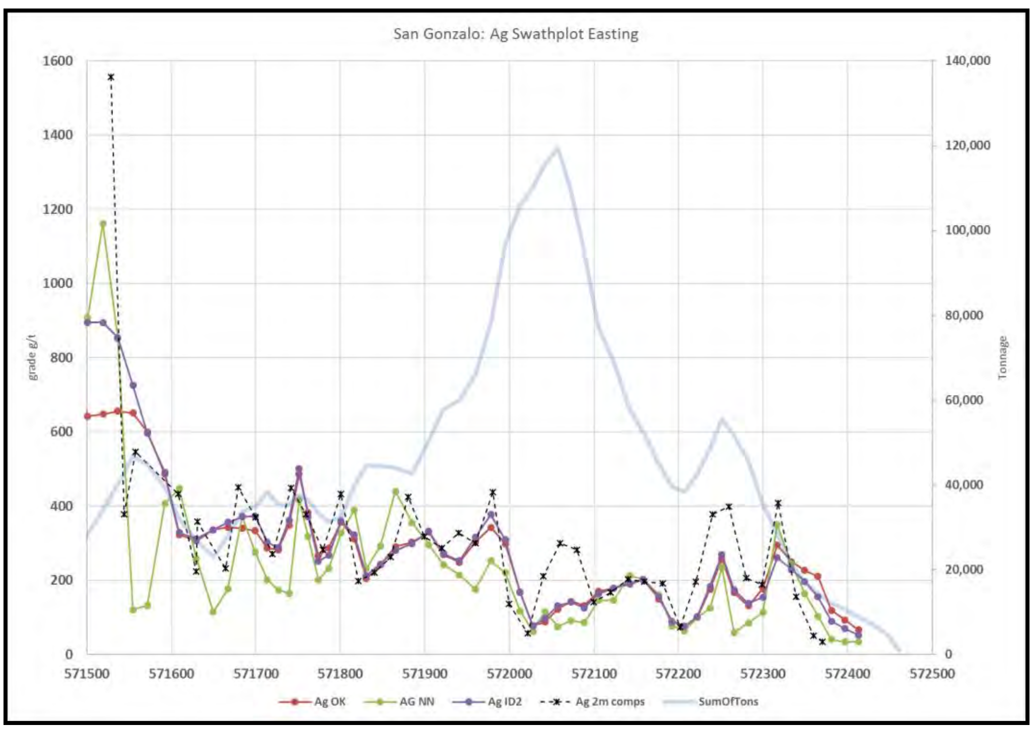


Figure 14.30 San Gonzalo Vein, Swathplot for Gold, Eastings

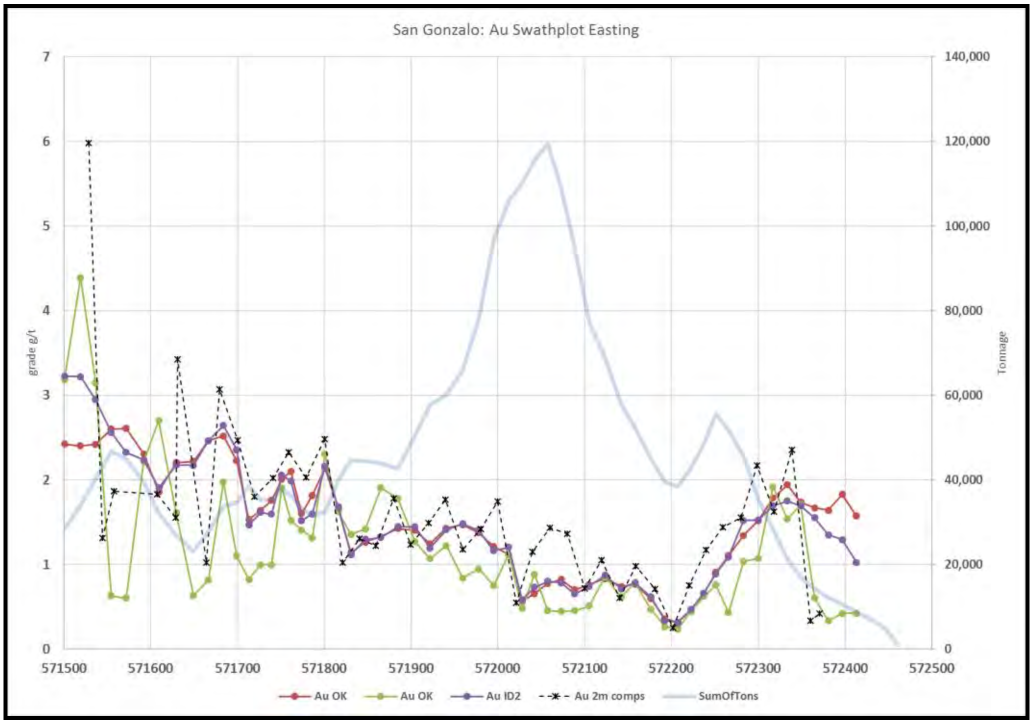


Figure 14.31 San Gonzalo Vein, Swathplot for Copper, Eastings

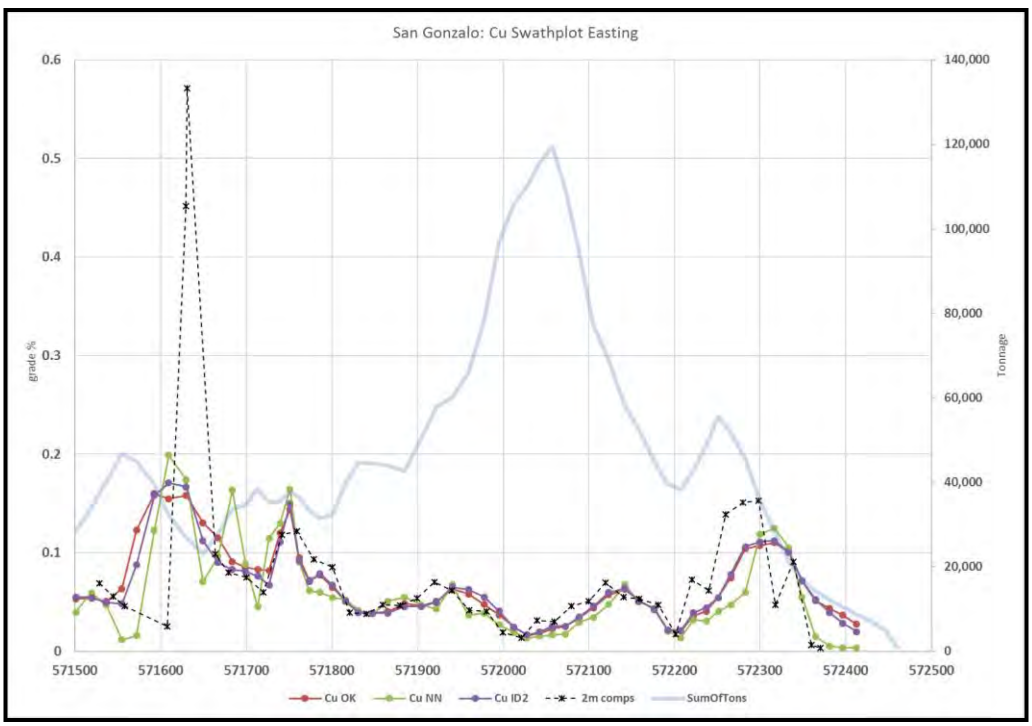


Figure 14.32 San Gonzalo Vein, Swathplot for Silver, Elevation

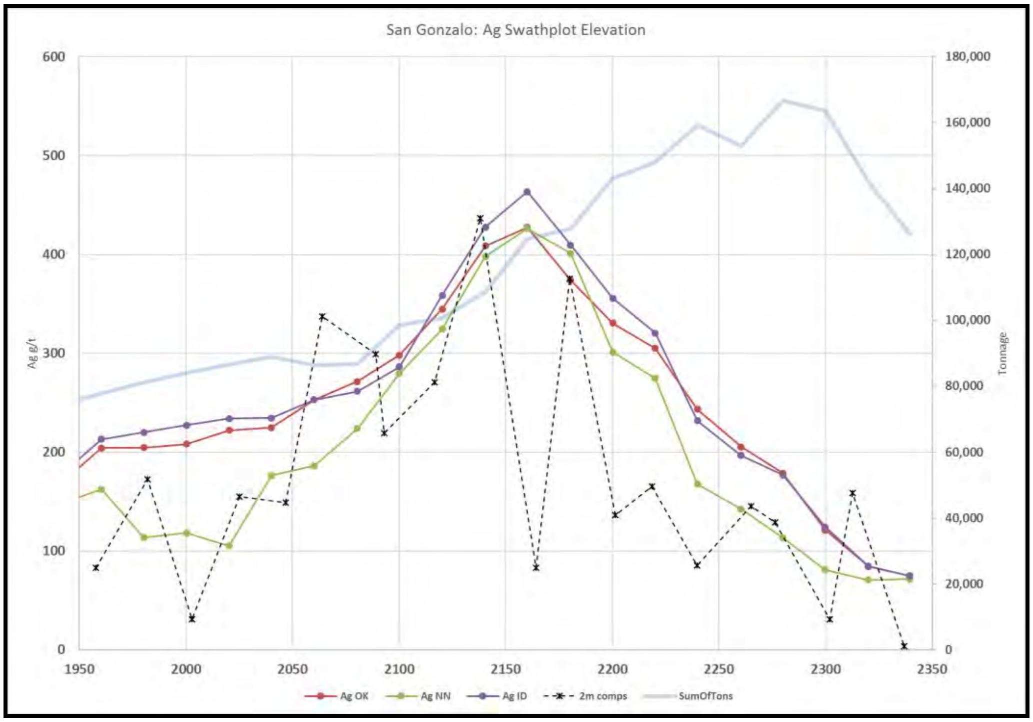


Figure 14.33 San Gonzalo Vein, Swathplot for Gold, Elevation

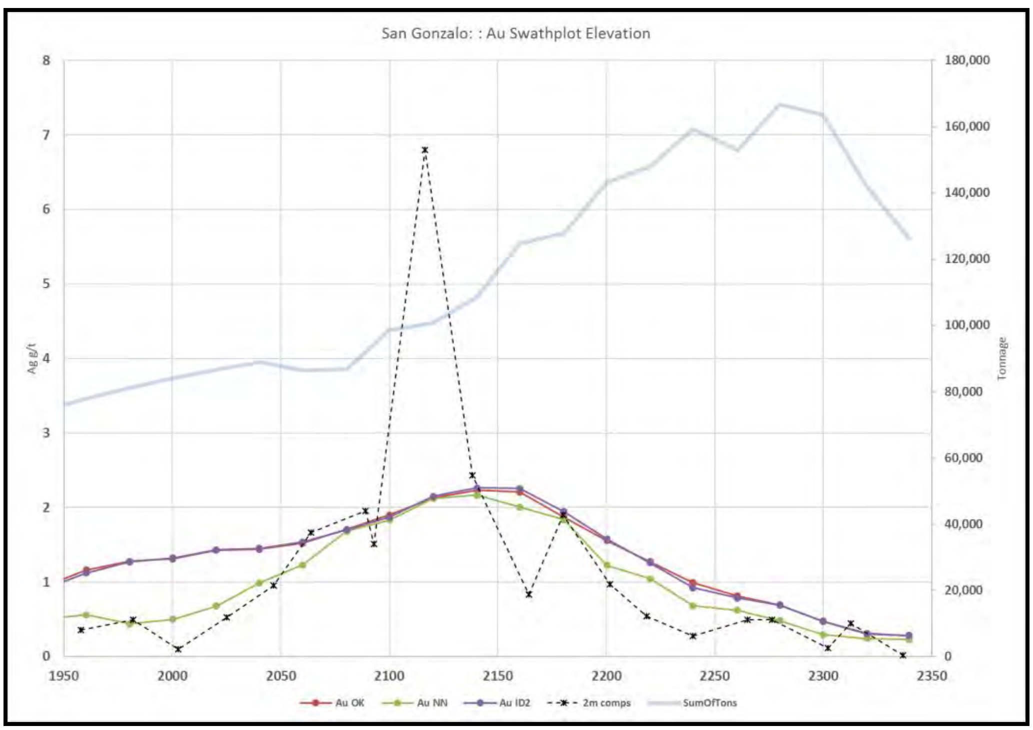


Figure 14.34 San Gonzalo Vein, Swathplot for Copper, Elevation

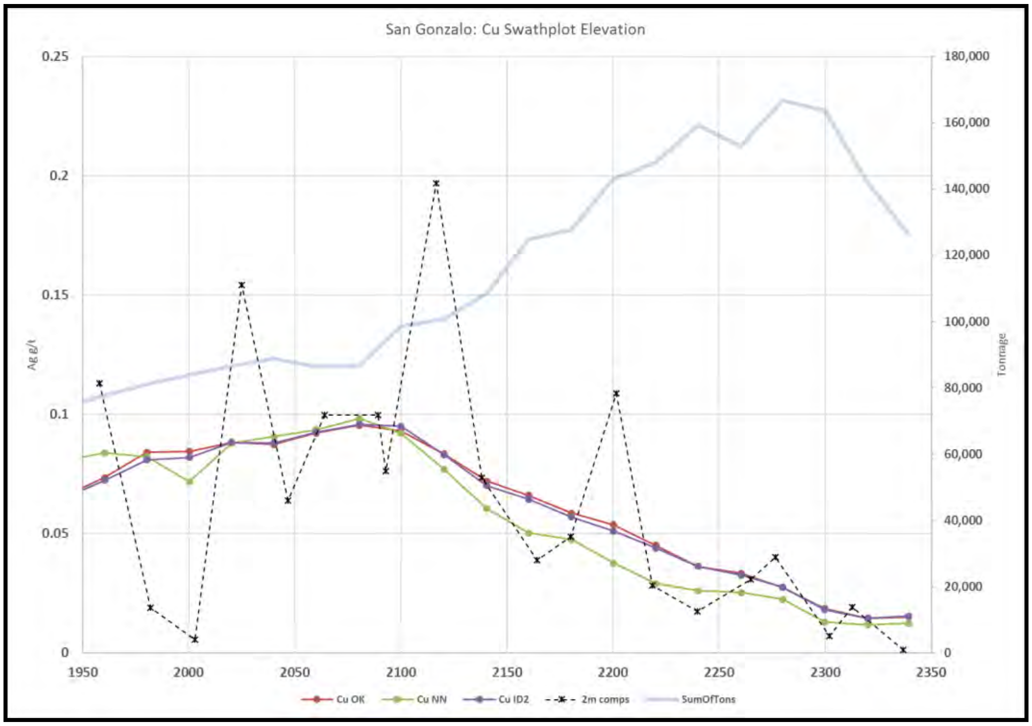


Figure 14.35 through Figure 14.40 displays the swath plots for oxide tailings deposit, comparing block model estimates and sample grades.

Figure 14.35 Oxide Tailings Deposit, Swathplot for Silver, Easting

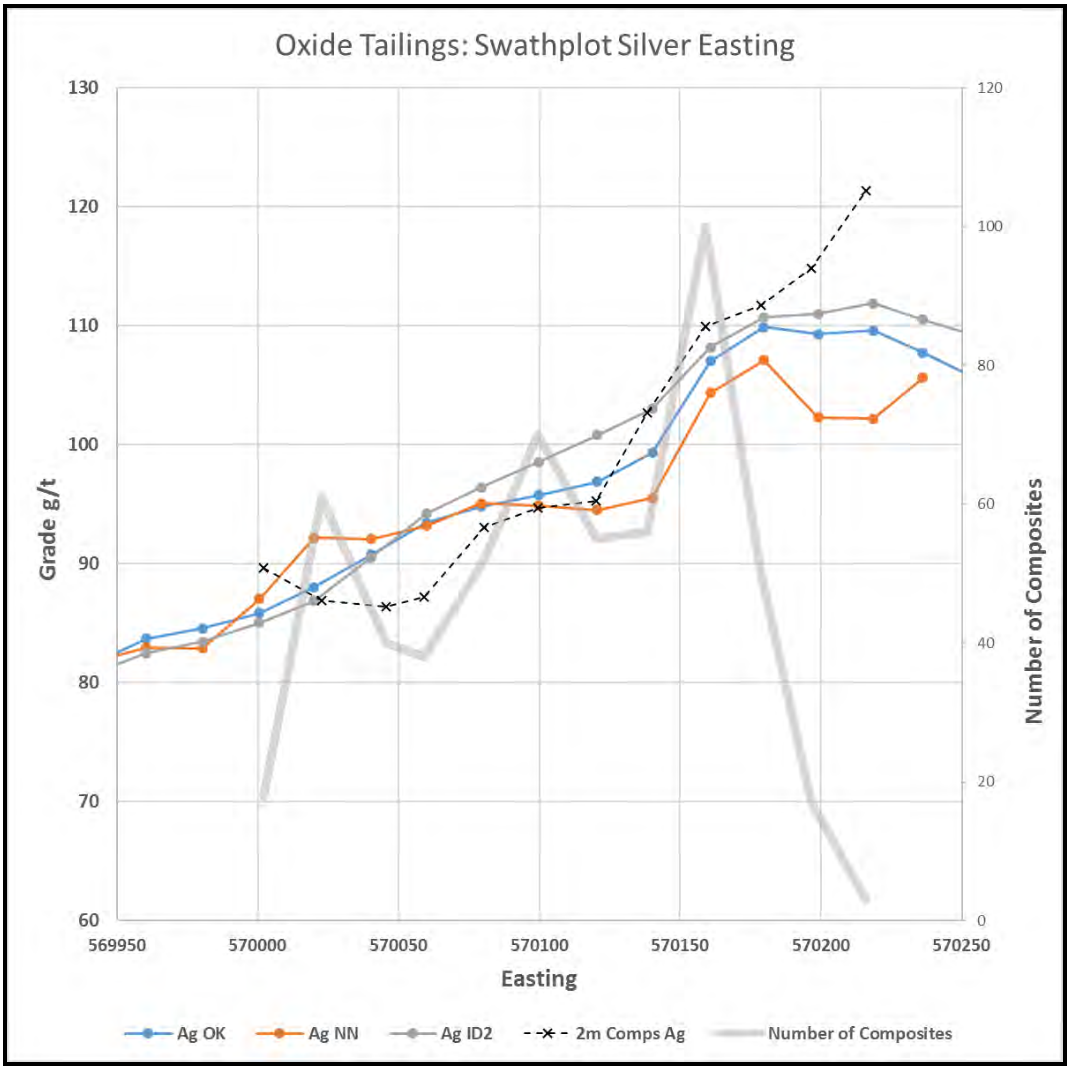


Figure 14.36 Oxide Tailings Deposit, Swathplot for Gold, Easting

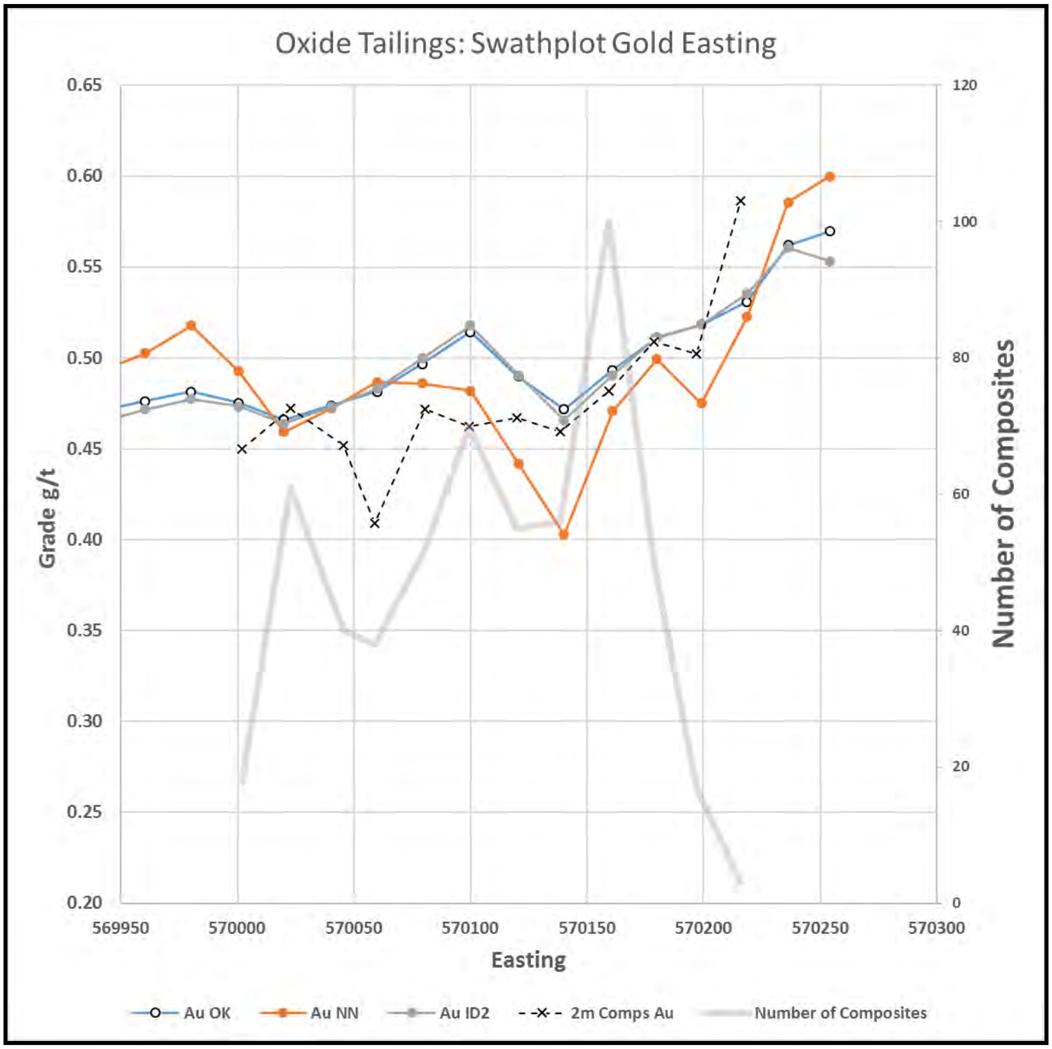


Figure 14.37 Oxide Tailings Deposit, Swathplot for Silver, Northing

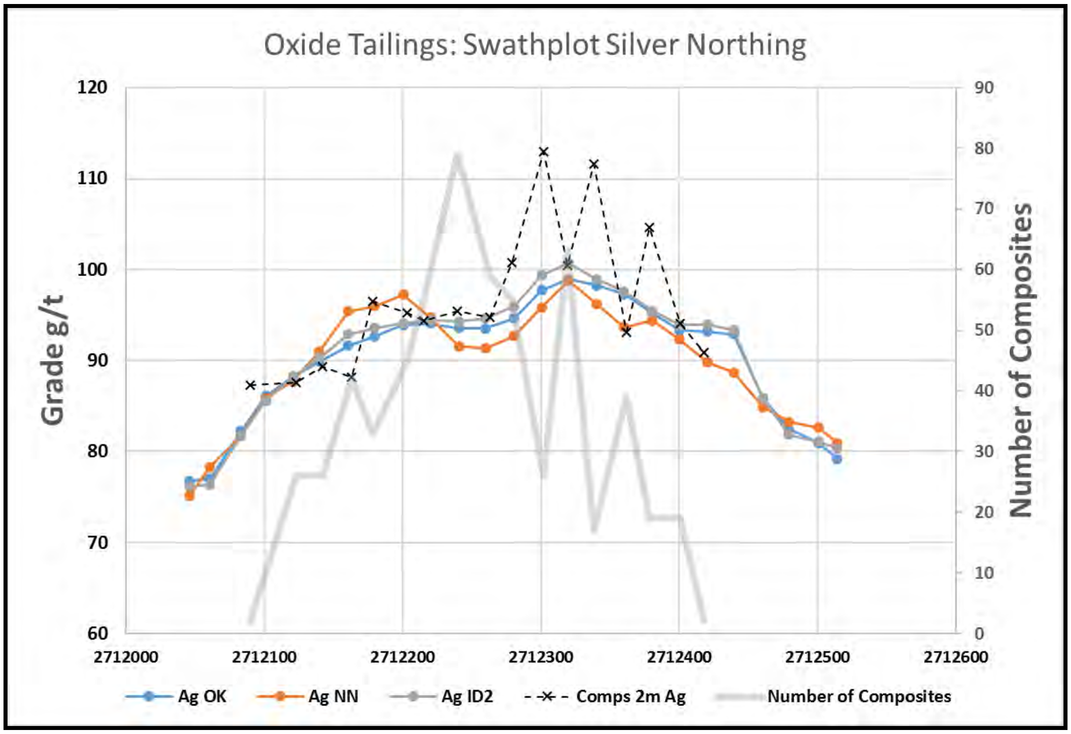


Figure 14.38 Oxide Tailings Deposits, Swathplot for Gold, Northing

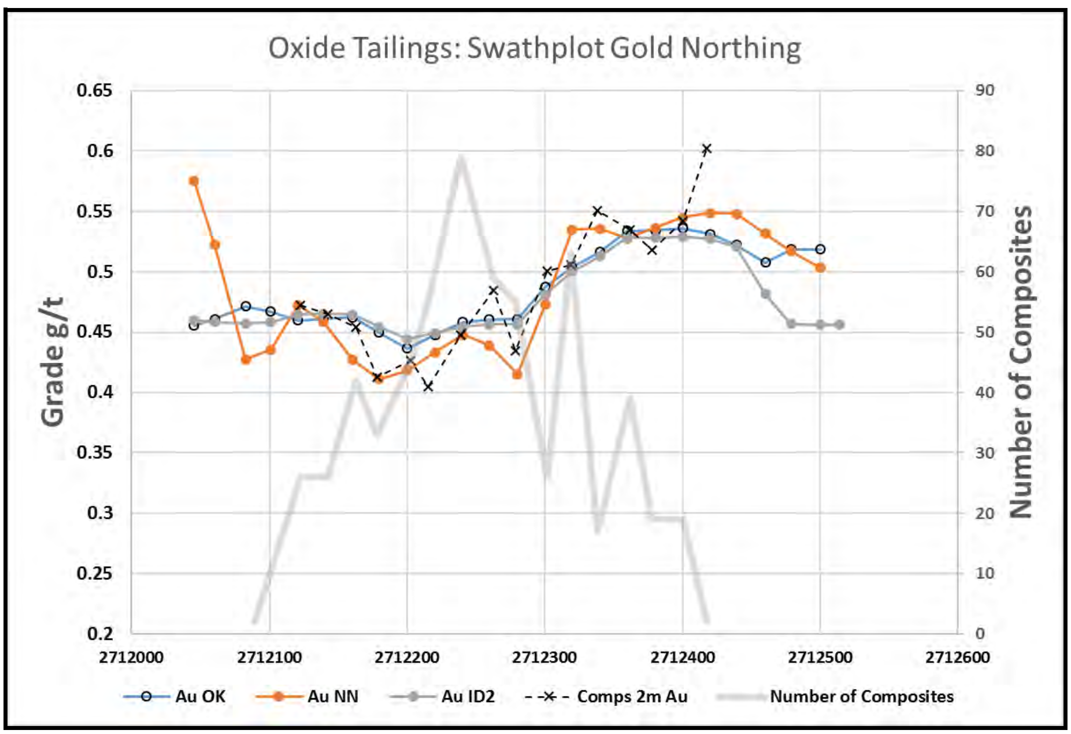


Figure 14.39 Oxide Tailings Deposit, Swathplot for Silver, Elevation

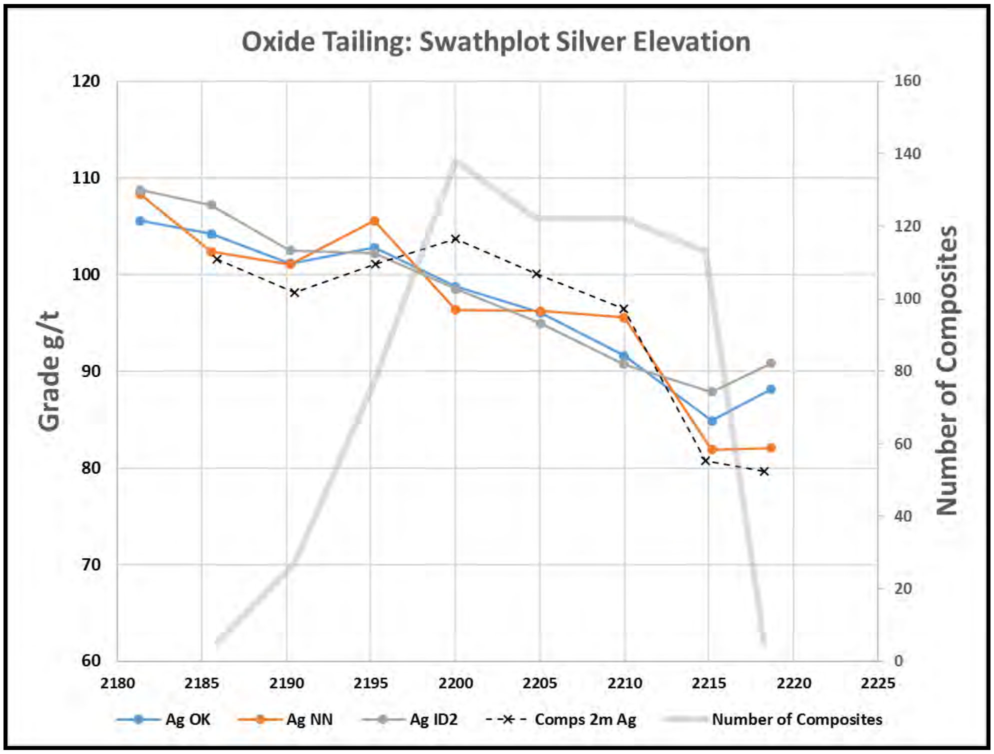
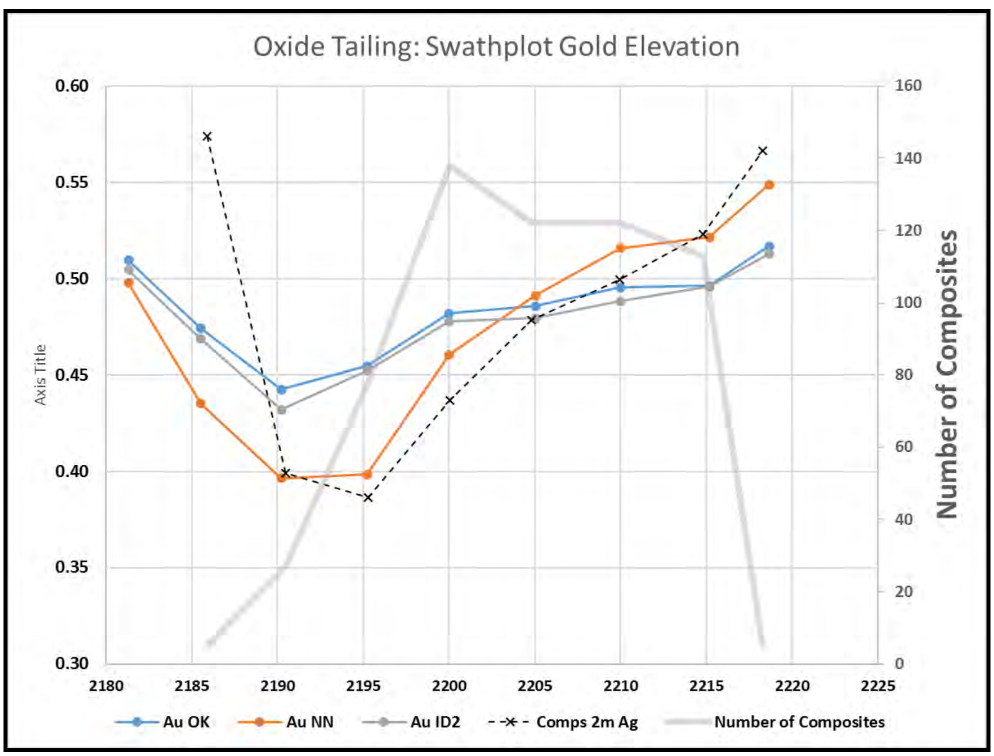


Figure 14.40 Oxide Tailings Deposit, Swathplot for Gold, Elevation



The swath plot comparisons show reasonable correspondence between block estimates and sampling data. As expected, the OK and ID estimates show less extreme values than the NN estimates particularly near the edges of the models.

14.12 MINERAL RESOURCE CLASSIFICATION

14.12.1 INTRODUCTION

CIM Definition Standards (adopted by the CIM Council on May 10, 2014) for reporting on mineral resources are stated below:

Mineral Resource

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

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

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

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

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

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

Inferred Mineral Resource

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

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

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

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

Indicated Mineral Resource

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

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

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

Mineralization may be classified as an Indicated Mineral Resource by the Qualified Person when the nature, quality, quantity and distribution of data are such as to allow confident interpretation of the geological framework and to reasonably assume the continuity of mineralization. The Qualified Person must recognize the importance of the Indicated Mineral Resource category to the advancement of the feasibility of the project. An Indicated Mineral Resource estimate is of sufficient quality to support a Pre-Feasibility Study which can serve as the basis for major development decisions.

Measured Mineral Resource

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

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

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

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

The Avino resource has estimates for silver, gold, copper, zinc, and lead but reports silver, gold and copper. Silver, gold and copper are recovered from the Avino material and gold and copper are included in the silver equivalent calculation.

The San Gonzalo resource estimates silver, gold, copper, zinc, and lead but reports only silver and gold. This is because copper, lead and zinc are not current payable metals at San Gonzalo and only gold is additional in the silver equivalent estimate.

Resource classification for both Avino and San Gonzalo is in part based on kriging variance, geological consideration and the practical geometry of distance from data.

The 2014 CIM Definition Standards of indicated Mineral Resources includes the phrase that "quantity, grade or quality, densities, shape and physical characteristics are estimated with sufficient confidence to allow the application of Modifying Factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit".

Aranz has noted that, in our opinion, the current information available for estimating in situ density is insufficient to support localized (block) estimates to the same level of detail as the metal grades. However, the current data shows that the wall-rock and vein material of the Avino and San Gonzalo deposits have small differences (density difference of vein to wall-rock less than 2%) and very low variability within the veins as measured by the coefficient of variation (less than 0.08, see Table 14.5). The variability of the metal grades shows levels of variability orders of magnitude higher as measured by the coefficient of variation (between 0.4 and 4.4, see Table 14.2). It would be ideal to have density measurements sufficient for local block estimation. However, potential error resulting from the use of a global density mean is likely to be less than 2%. No significant density anomalies have been reported during the current phase of production at the Avino property. Based on the data from the Avino and San Gonzalo veins, grade is a much more material risk factor than the density information. Aranz considers the restricted amount of density information to be less material and significant than the metal grade variability. Aranz used the kriging variance of the silver grade estimates as the main factor for resource classification.

Aranz has also noted that, despite the lack of metallurgical bulk sampling, there have been several years of metal production from ore from all operating levels on the Avino and San Gonzalo Veins using current processing facilities and that there has been no report of unforeseen metallurgical recovery issues. Aranz considers that this production history mitigates the lack of a formal bulk sampling programme or density data and has allowed mineral resources to be defined with sufficient confidence to support detailed mine planning and evaluation of the economic viability of the deposit.

Table 14.15 Criteria for Classification of Underground Mineral Resources

Avino	
Measured:	Ag_kvar <=0.15 (up to 20 m from sampled development)
Indicated:	Ag_kvar <=0.24 (30m from sampling, contiguous with development and measured)
Inferred:	Up to 250m from sampling data (with demonstrated vein continuity)
San Gonzalo	
Measured:	Ag_kvar <=0.18 (up to 15 m from sampled development)
Indicated:	Ag_kvar <=0.24 (up to 40m from sampling, contiguous with development and measured)
Inferred:	Up to 250m from data (with demonstrated vein continuity)

14.13 MINERAL RESOURCE TABULATION

14.13.1 CUT-OFFS AND SILVER EQUIVALENT CALCULATIONS

The San Gonzalo and Avino reported Mineral Resources are tabulated on the basis of Ag_Eq cut-offs (Table 14.16).

Table 14.16 Silver Equivalent Based Metal Prices and Operational Recovery Parameters

Metal	Price	Unit	Recovery (%)	Rev. ($/t)	Ag_Eq per Grade Unit
San Gonzalo Vein System					
Ag	19.50	$/oz	83	0.52	1.00
Au	1,250.00	$/oz	73	29.34	56.38
Avino Vein System					
Ag	19.50	$/oz	86	0.54	1.00
Au	1,250.00	$/oz	75	30.14	55.90
Cu	2.10	$/lb	85	39.35	72.99
Avino – Oxide Tailings					
Ag	19.50	$/oz	73	0.46	1.00
Au	1,250.00	$/oz	79	31.75	69.37

Silver equivalent was calculated from metal grade estimates using operational recovery parameters and the metal prices based on price trends over the last three years. The gold price used is $1250/oz, $80/oz. less than July 2016 levels. The silver price used is $19.50/oz. which is $0.45/oz less than the average daily spot price for July 2016. The copper price used is $2.10/lb, which is lower than the average over the last three years average which was $2.75/lb. Copper was only used in the equivalent calculation for the Avino System, the only mineralization where the copper grade justifies extraction.

A PEA should not be considered to be a Prefeasibility or Feasibility study, as the economics and technical viability of the Project have not been demonstrated at this time. The PEA is preliminary in nature and includes Inferred Mineral Resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as Mineral Reserves. Furthermore, there is no certainty that the conclusions or results reported in the PEA will be realized. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

Table 14.17 Mineral Statement for the Avino Property

Resource Category	Deposit	Cut-off (Ag_Eq g/t)	Metric Tonnes (t)	Grade				Metal Contents		
				Ag_Eq (g/t)	Ag (g/t)	Au (g/t)	Cu (%)	Ag (million tr oz)	Au (thousand tr oz)	Cu (t)
Avino Mine: Measured & Indicated Mineral Resources										
Measured	Avino System	55	950,000	143	74	0.33	0.69	2.3	10.0	6,550
Measured	San Gonzalo System	125	170,000	357	272	1.50	0.00	1.5	8.2	0
Total Measured	All Deposits	-	1,120,000	176	105	0.51	0.58	3.8	18.2	6,550
Indicated	Avino System	55	500,000	129	68	0.36	0.56	1.1	5.7	2,800
Indicated	San Gonzalo System	125	320,000	310	237	1.30	0.00	2.4	13.3	0
Indicated	Oxide Tailings	50	1,330,000	124	98	0.46	0.00	4.2	19.8	0
Total Indicated	**All Deposits**	**-**	**2,150,000**	**152**	**111**	**0.56**	**0.13**	**7.7**	**38.8**	**2,800**
Total Measured & Indicated	**All Deposits**	**-**	**3,270,000**	**160**	**109**	**0.54**	**0.29**	**11.5**	**57.0**	**9,350**
Avino Mine: Inferred Mineral Resources										
Inferred	Avino System	55	5,790,000	155	81	0.57	0.58	15.1	105.8	33,550
Inferred	San Gonzalo System	125	540,000	403	314	1.58	0.00	5.5	27.5	0
Inferred	Oxide Tailings	50	1,810,000	113	88	0.44	0.00	5.1	25.6	0
Total Inferred	**All Deposits**	**-**	**8,140,000**	**162**	**98**	**0.61**	**0.41**	**25.6**	**158.9**	**33,550**

Notes: Figures may not add to totals shown due to rounding.
Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
The Mineral Resource estimate is classified in accordance with the CIM Definition Standards for Mineral Resources and Mineral Reserves" (May 2014) incorporated by reference into NI 43-101 "Standards of Disclosure for Mineral Projects".
Mineral Resources are reported at cut-off grades 50 g/t, 55 g/t, and 125 g/t Ag_Eq.
Silver equivalent grades were calculated using conversion formulas Ag_Eq = Ag + 55.9 * Au + 72.99 * Cu for Avino Vein and Ag_Eq = Ag + 56.38 * Au for San Gonzalo Vein System and oxide tailings
Cut-off grades were calculated using current costs, silver price of US$19.50/oz., gold price of US$1,250/oz. and copper price of US$2.10/lb

14.13.1 Grade-Tonnage Tables

Table 14.18 to Table 14.25 inclusive, provide a summary of the grade and tonnage for the Avino, San Gonzalo and Tailings models at a series of cutoffs. These tables show the grade and tonnages for mineralized material at confidence levels of confidence (see Table 14.14) equivalent to measured, indicated and inferred for the three deposits. Each table contains a yellow-highlighted line that represents the selection used for the Mineral Resource summarized in Table 14.17.

Table 14.18 Avino Vein – High Confidence/Measured

Cut-off (Ag_Eq g/t)	Tonnes (t)	Ag_Eq (g/t)	Ag (g/t)	Au (g/t)	Cu (%)
30	1,019,980	136.17	70.36	0.31	0.67
40	1,007,882	137.38	71.05	0.31	0.67
50	971,719	140.84	73.11	0.32	0.68
55	953,309	142.56	74.19	0.33	0.69
60	898,408	147.76	77.63	0.34	0.70
70	827,990	154.83	82.48	0.37	0.71
80	770,524	160.76	86.55	0.38	0.72
90	739,951	163.90	88.21	0.39	0.74
100	698,528	168.02	90.47	0.41	0.75
110	639,419	173.81	93.80	0.43	0.77
120	573,669	180.51	97.62	0.45	0.79
130	518,439	186.41	101.44	0.46	0.81
140	475,307	191.14	104.91	0.47	0.82
150	424,679	196.58	108.23	0.48	0.84

Table 14.19 Avino Vein – Medium Confidence/Indicated

Cut-off (Ag_Eq g/t)	Tonnes (t)	Ag_Eq (g/t)	Ag (g/t)	Au (g/t)	Cu (%)
30	524,291	125.50	65.94	0.34	0.55
40	520,806	126.08	66.26	0.34	0.56
50	513,705	127.22	66.95	0.35	0.56
55	503,579	128.71	67.92	0.36	0.56
60	498,385	129.46	68.39	0.36	0.56
70	462,354	134.36	71.79	0.38	0.57
80	430,137	138.85	74.07	0.40	0.58
90	377,602	146.30	77.75	0.44	0.61
100	332,695	153.18	81.26	0.47	0.62
110	299,163	158.60	84.23	0.50	0.63
120	266,748	163.90	86.66	0.53	0.65
130	232,361	169.68	90.16	0.55	0.67
140	215,529	172.36	91.19	0.55	0.69
150	180,484	177.79	93.03	0.56	0.73

Table 14.20 Avino Vein – Low Confidence/Inferred

Cut-off (Ag_Eq g/t)	Tonnes (t)	Ag_Eq (g/t)	Ag (g/t)	Au (g/t)	Cu (%)
20	5,837,088	154.14	80.43	0.56	0.58
30	5,830,973	154.28	80.50	0.56	0.58
40	5,825,582	154.39	80.56	0.57	0.58
50	5,816,640	154.55	80.65	0.57	0.58
55	5,785,540	155.10	80.97	0.57	0.58
60	5,747,865	155.73	81.35	0.57	0.58
70	5,603,347	158.07	82.74	0.58	0.59
80	5,401,560	161.16	84.45	0.60	0.59
90	5,144,675	164.95	86.57	0.61	0.61
100	4,837,425	169.42	89.17	0.63	0.62
110	4,416,559	175.51	92.30	0.66	0.63
120	4,025,084	181.44	95.22	0.69	0.65
130	3,688,575	186.59	97.96	0.72	0.66
140	3,239,700	193.71	101.12	0.77	0.68
150	2,814,692	201.06	104.51	0.81	0.70

Table 14.21 San Gonzalo Vein – High Confidence/Measured

Cut-off (Ag_Eq g/t)	Tonnes (t)	Ag_Eq (g/t)	Ag (g/t)	Au (g/t)
10	229,763	286.77	218.54	1.21
20	228,317	288.49	219.86	1.22
30	223,846	293.76	223.92	1.24
40	217,600	301.19	229.68	1.27
50	211,781	308.22	235.10	1.30
60	207,474	313.52	239.21	1.32
70	203,003	318.97	243.42	1.34
80	197,612	325.62	248.53	1.37
90	193,009	331.38	252.95	1.39
100	186,336	339.85	259.43	1.43
110	183,212	343.85	262.47	1.44
120	175,059	354.44	270.52	1.49
125	173,218	356.89	272.34	1.50
130	170,358	360.74	275.24	1.52
140	164,671	368.49	281.23	1.55
150	159,016	376.41	287.10	1.58

Table 14.22 San Gonzalo – Medium Confidence/Indicated

Cut-off (Ag_Eq g/t)	Tonnes (t)	Ag_Eq (g/t)	Ag (g/t)	Au (g/t)
10	588,232	195.71	150.10	0.81
20	587,148	196.04	150.36	0.81
30	576,891	199.05	152.71	0.82
40	542,733	209.38	160.74	0.86
50	487,208	228.01	175.05	0.94
60	423,003	254.36	195.12	1.05
70	398,281	266.12	204.04	1.10
80	379,838	275.44	211.05	1.14
90	363,828	283.88	217.36	1.18
100	350,875	290.88	222.61	1.21
110	335,950	299.17	228.91	1.25
120	320,071	308.31	235.67	1.29
125	316,751	310.24	237.13	1.30
130	307,184	315.93	241.47	1.32
140	285,092	329.91	252.03	1.38
150	272,271	338.61	258.57	1.42

Table 14.23 San Gonzalo – Low Confidence/Inferred

Cut-off (Ag_Eq g/t)	Tonnes (t)	Ag_Eq (g/t)	Ag (g/t)	Au (g/t)
10	1,139,119	221.44	170.95	0.90
20	1,138,691	221.52	171.01	0.90
30	1,060,515	235.82	182.12	0.95
40	968,399	254.83	196.92	1.03
50	875,790	277.07	214.14	1.12
60	787,849	302.02	233.38	1.22
70	714,933	326.02	252.31	1.31
80	654,015	349.37	271.04	1.39
90	614,335	366.44	284.67	1.45
100	596,813	374.43	291.04	1.48
110	559,500	392.49	305.45	1.54
120	548,585	398.02	309.88	1.56
125	537,999	403.44	314.29	1.58
130	520,214	412.87	321.87	1.61
140	498,977	424.70	331.26	1.66
150	470,178	441.86	345.05	1.72

Table 14.24 Oxide Tailings – Medium Confidence/Indicated

Cut-off (Ag_Eq g/t)	Tonnes (t)	Ag_Eq (g/t)	Ag (g/t)	Au (g/t)
50	1,329,680	123.69	97.85	0.46
90	1,329,680	123.69	97.85	0.46
100	1,246,533	125.43	99.52	0.46
110	1,113,074	127.88	101.94	0.46
120	817,672	132.45	105.81	0.48
130	412,200	140.02	111.51	0.51
140	165,903	148.05	117.76	0.54
150	49,547	156.67	126.68	0.54

Table 14.25 Oxide Tailings – Low Confidence/Inferred

Cut-off (Ag_Eq g/t)	Tonnes (t)	Ag_Eq (g/t)	Ag (g/t)	Au (g/t)
50	1,810,640	112.51	87.91	0.44
70	1,810,640	112.51	87.91	0.44
80	1,672,985	115.39	88.76	0.48
90	1,630,901	116.14	88.82	0.49
100	1,580,804	116.71	89.23	0.49
110	994,997	123.72	95.01	0.51
120	541,494	131.80	102.11	0.53
130	290,153	137.97	107.37	0.55
140	112,432	143.11	111.60	0.56
150	3,657	154.09	122.29	0.57

14.13.2 GRADE-TONNAGE GRAPHS

Figure 14.41 to Figure 14.48 show the grade-tonnage curves for the mineralized material in the Avino and San Gonzalo Vein systems and the oxide tailings. The graphs correspond to the information shown in Table 14.18 to Table 14.25 inclusive, provide a summary of the grade and tonnage for the Avino, San Gonzalo and Tailings models at a series of cut-offs. These tables show the grade and tonnages for mineralized material at confidence levels of confidence (see Table 14.14Table 14.14) equivalent to measured, indicated and inferred for the three deposits. Each table contains a yellow-highlighted line that represents the selection used for the Mineral Resource summarized in Table 14.17.

Figure 14.41 Grade Tonnage Graph of Avino Vein Material at Measured Confidence Level

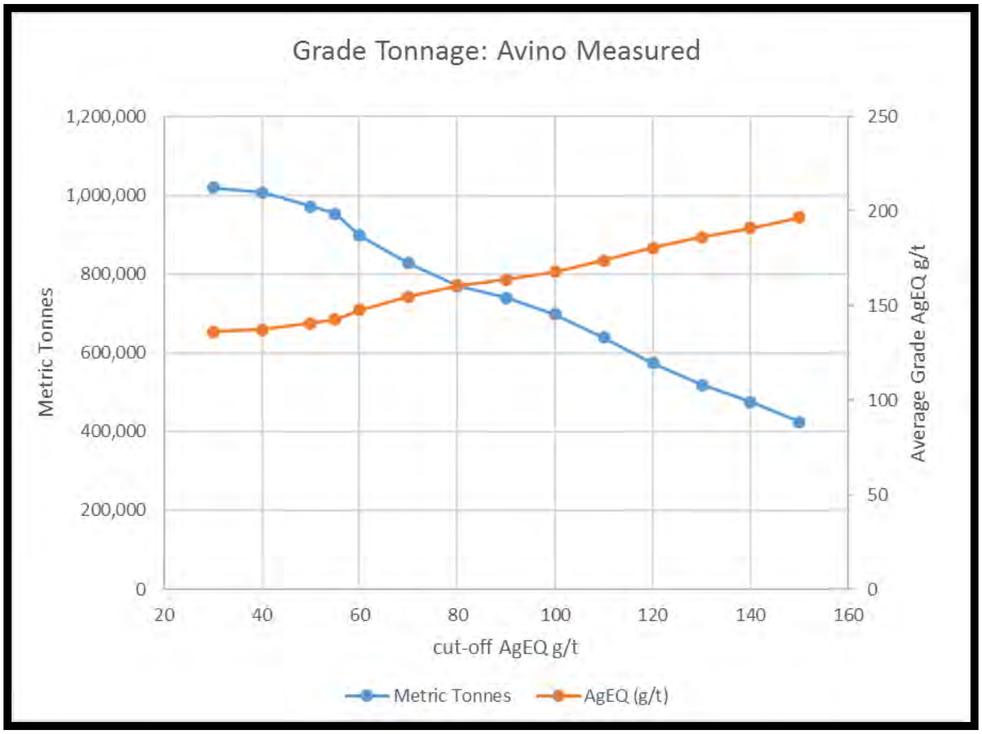


Figure 14.42 Grade Tonnage Graph of Avino Vein Material at Indicated Confidence Level

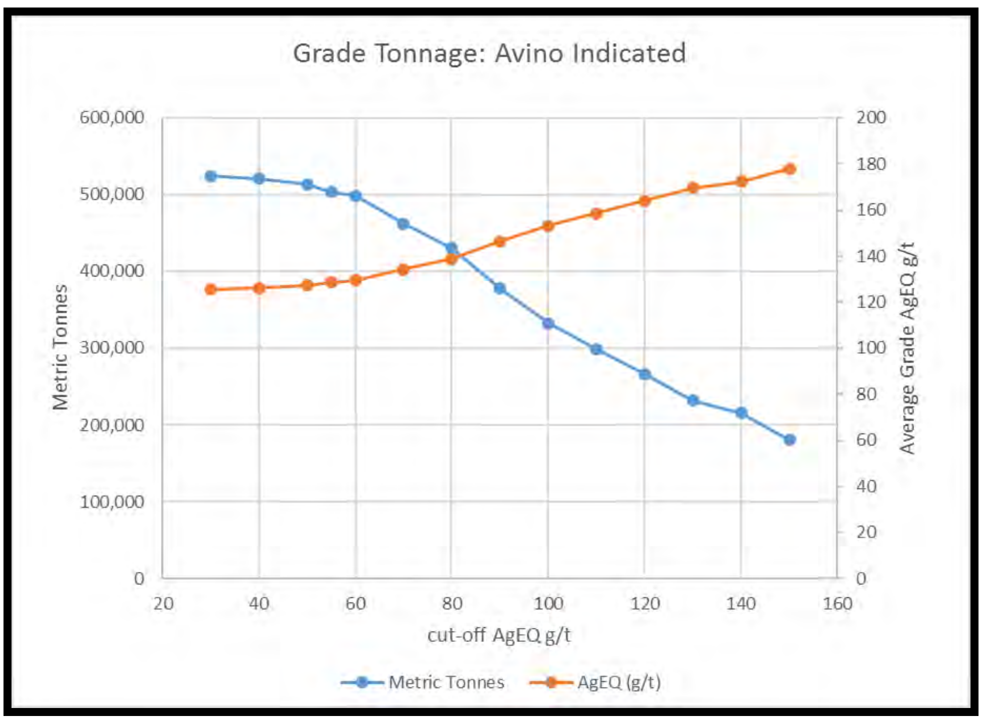


Figure 14.43 Grade Tonnage Graph of Avino Vein Material at Inferred Confidence Level

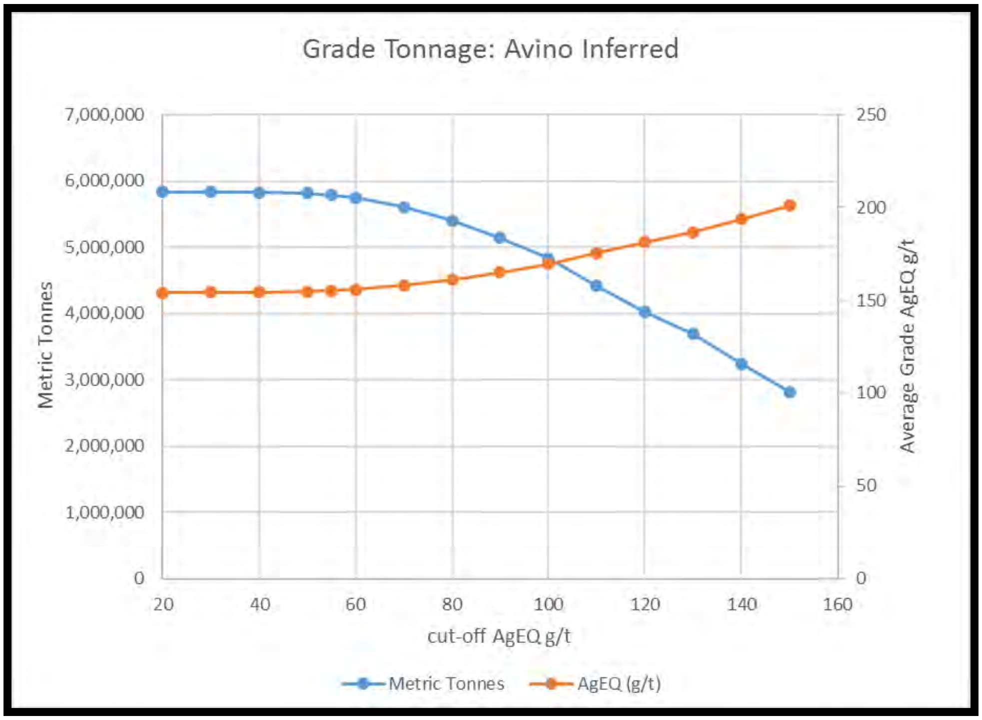


Figure 14.44 Grade Tonnage Graph of San Gonzalo Vein Material at Measured Confidence Level

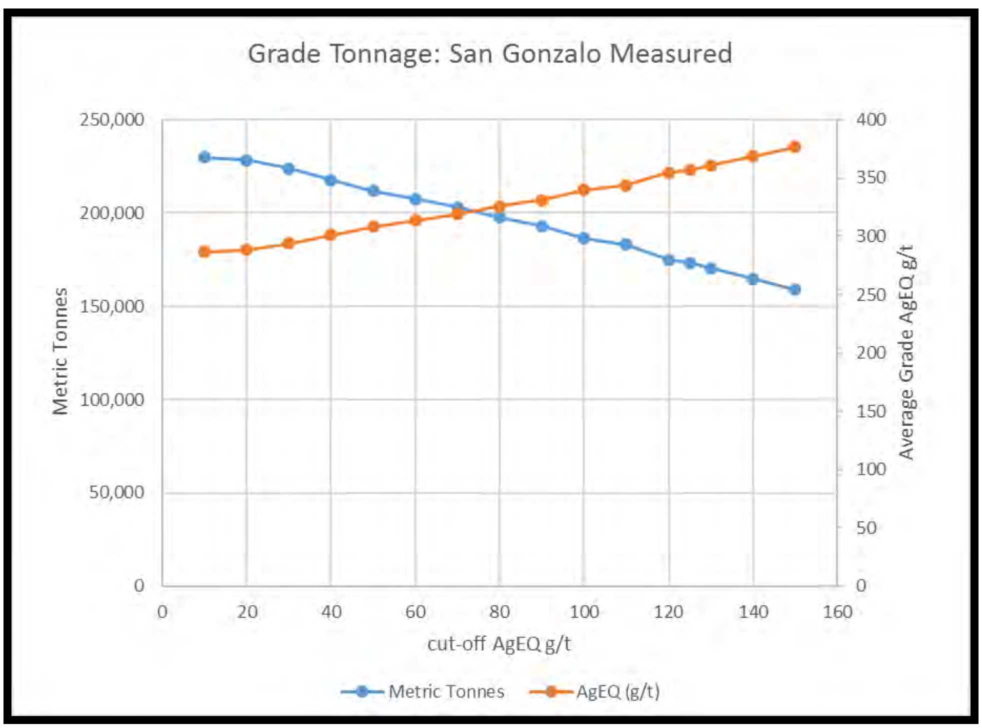


Figure 14.45 Grade Tonnage Graph of San Gonzalo Vein Material at Indicated Confidence Level

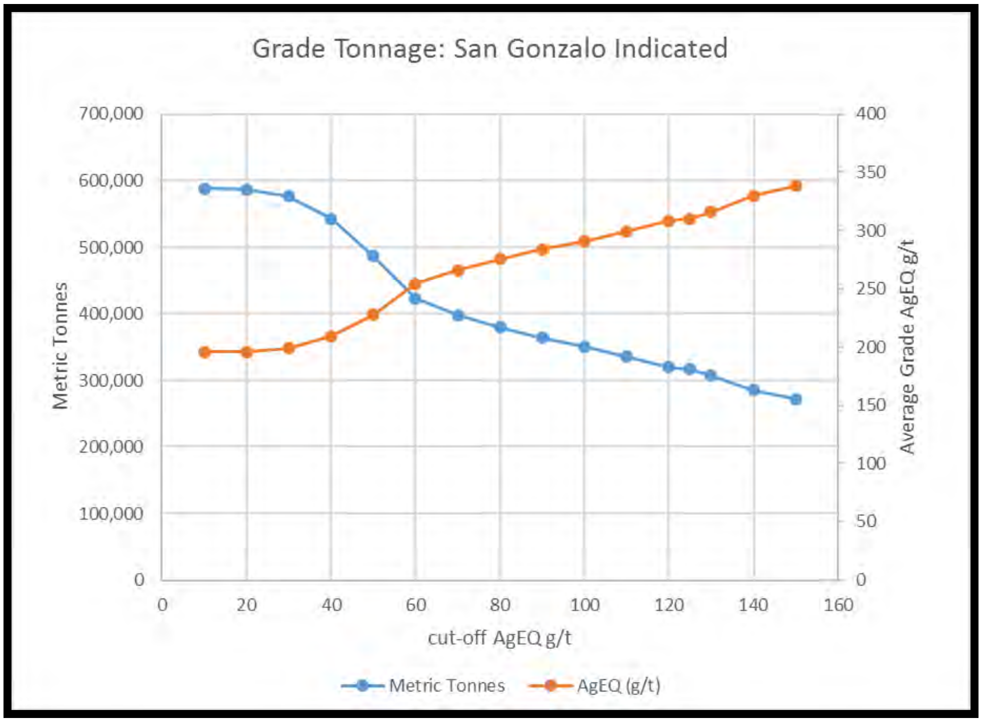


Figure 14.46 Grade Tonnage Graph of San Gonzalo Vein Material at Inferred Confidence Level

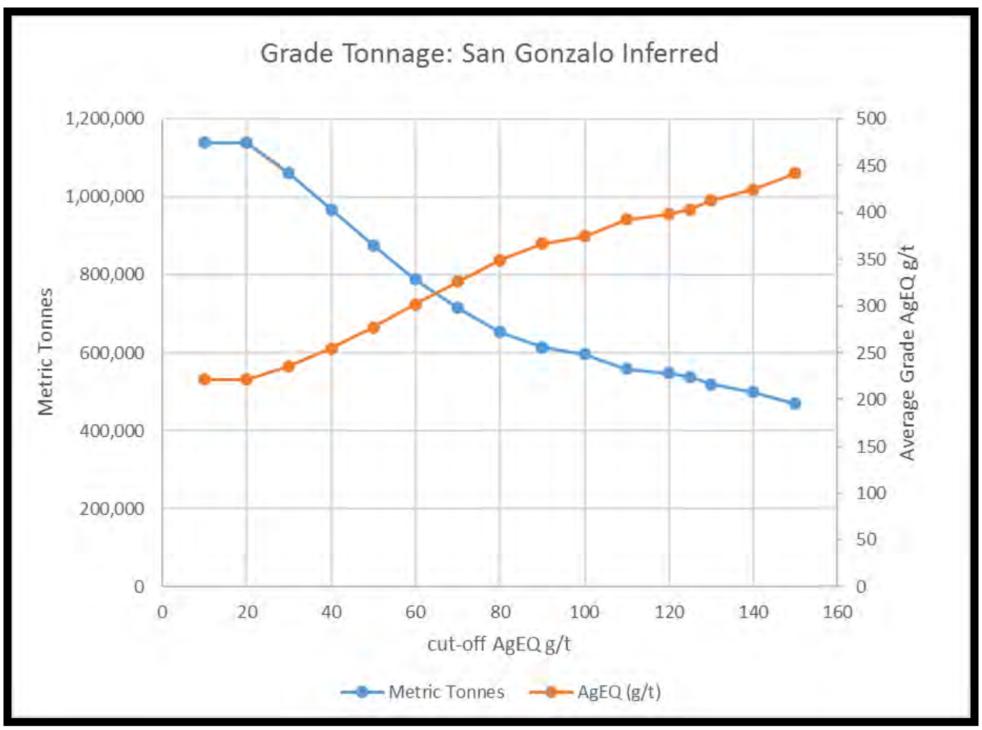


Figure 14.47 Grade Tonnage Graph of Oxide Tailings Material at Indicated Confidence Level

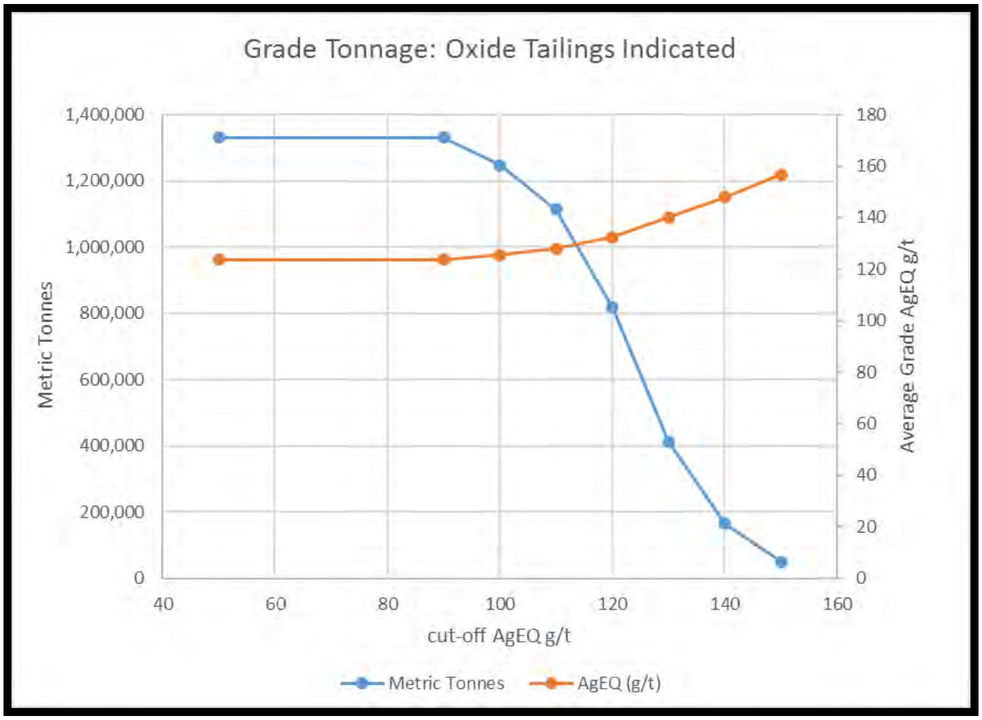
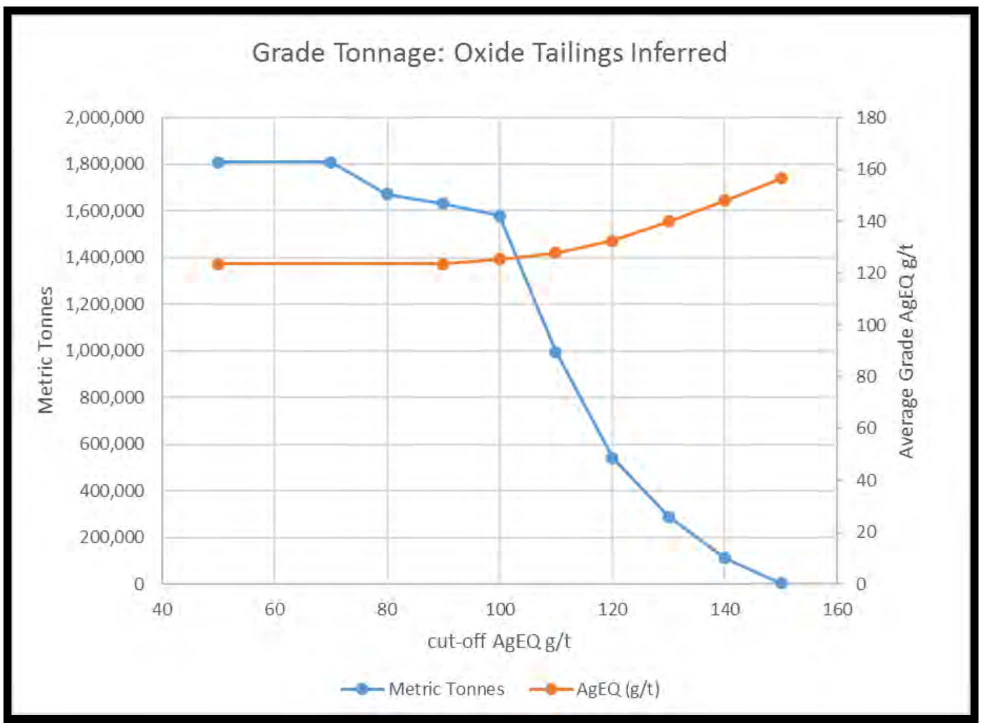


Figure 14.48 Grade Tonnage Graph of Oxide Tailings Material at Inferred Confidence Level



14.14 SULPHIDE TAILINGS

There is no current resource estimate for the sulphide tailings (The upper bench of the tailings heap shown in Figure 14.6).

Some sampling was carried out in 2005 by means of hand-dug pits on the "upper bench" of sulphide tailings but this information does not provide an unbiased sample, being restricted to the top surface of the deposit and consequently no estimation can be carried out with any confidence on the sulphide tailings.

The volume of the deposit can be estimated with but the tonnage and recoverable metal are not quantifiable. At best, the sulphide tailings are considered a target for further exploration.

No Mineral Resource for the sulphide tailings is disclosed in this Technical Report.

15.0 MINERAL RESERVE ESTIMATES

There are currently no Mineral Reserves on the Property.

16.0 MINING METHODS

A PEA should not be considered to be a Prefeasibility or Feasibility study, as the economics and technical viability of the Project have not been demonstrated at this time. The PEA is preliminary in nature and includes Inferred Mineral Resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as Mineral Reserves. Furthermore, there is no certainty that the conclusions or results reported in the PEA will be realized. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

16.1 AVINO VEIN

Avino has not based its production decisions on a Feasibility study or Mineral Reserves demonstrating economic and technical viability, and as a result there is increased uncertainty and multiple technical and economic risks of failure, which are associated with these production decisions. These risks, among others, include areas that would be analyzed in more detail in a Feasibility study, such as applying economic analysis to Mineral Resources and Mineral Reserves, more detailed metallurgy, and a number of specialized studies in areas such as mining and recovery methods, market analysis, and environmental and community impacts. Information in this section was provided by Avino.

Avino is currently mining on the Avino Vein using longhole stoping and sublevel caving mining methods. Avino has not yet developed a LOM plan for the Avino Vein; however, mine development and production have been scheduled on a monthly basis for 2015 and 2016.

From 1997 to 2001, mining in the Avino Vein consistently yielded 1,000 t/d of mill feed. During that period, mine production was comprised of ore development mining (drift and slash) and longhole stoping. In contrast, Avino's strategy for 2015 and 2016 was to produce 1,000 t/d of mill feed by ore development mining until reaching Level 17. The longhole stoping and sublevel caving will then be employed to extract the mineralized material between Levels 9.5, when mining ceased in 2001, to Level 17. In Q4 2014, approximately 35,000 t of mill feed was stockpiled near the mine portal as operations started ramping up. The average mining rate during the first 12 days of January 2015 was 700 t/d and a steady state mining rate of 1,100 t/d has been achieved since then.

Production from the Avino Vein is summarized in Table 16.1.

Table 16.1 Recent Production from the Avino Vein

Production Description	2015	2016	Q1 2017
Mill Feed Tonnage			
Tonnes Milled (t)	396,113	429,289	116,553
Feed Grade			
Silver (g/t)	65	67	61
Gold (g/t)	0.29	0.42	0.50
Copper (%)	0.62	0.50	0.44
Recovery			
Silver (%)	87	85	86
Gold (%)	75	64	67
Copper (%)	87	90	91
Total Metal Produced			
Silver Produced (oz)	717,901	789,372	195,562
Gold Produced (oz)	2,757	3,691	1,252
Copper Produced (lb)	4,743,691	4,206,585	1,024,853
Ag_Eq Produced (oz)	1,801,997	1,606,272	439,163

Source: Avino (2017a; 2017b)

16.2 SAN GONZALO VEIN

Avino has not based its production decisions on a Feasibility study or Mineral Reserves demonstrating economic and technical viability, and as a result there is increased uncertainty and multiple technical and economic risks of failure, which are associated with these production decisions. These risks, among others, include areas that would be analyzed in more detail in a Feasibility study, such as applying economic analysis to Mineral Resources and Mineral Reserves, more detailed metallurgy, and a number of specialized studies in areas such as mining and recovery methods, market analysis, and environmental and community impacts. Information in this section was provided by Avino.

Avino is currently mining on the San Gonzalo Vein using cut-and-fill and shrinkage stoping methods.

Production from the San Gonzalo Vein is summarized in Table 16.2.

Table 16.2 Recent Production from the San Gonzalo Vein

Production Description	2012	2013	2014	2015	2016	Q1 2017
Mill Feed Tonnage						
Total Mill Feed (t)	19,539	78,415	79,729	121,774	115,047	20,133
Feed Grade						
Silver (g/t)	259	288	337	279	267	229
Gold (g/t)	1.04	1.34	1.88	1.48	1.25	1.19
Recovery						
Silver (%)	79	83	84	83	83	84
Gold (%)	70	73	78	75	74	76
Total Produced						
Silver (oz)	128,607	602,233	724,931	907,384	822,689	124,520
Gold (oz)	455	2,473	3,740	4,326	3,427	585
Ag_Eq Produced (oz)	151,372	751,462	958,702	1,218,351	1,073,062	165,480

Source: Avino (2017a; 2017b)

16.2.1 Bulk Sample Program

Note that information in this section was provided by Avino.

No formal Prefeasibility study has been commissioned, but a 10,000 t bulk sample program was carried out in 2011, and in July 2011 the results were announced. The bulk sample was intended to allow Avino to assess the economics of the zone by confirming mineral grades obtained through earlier diamond drilling. The bulk sample program was completed during Q1 2011.

The overall bulk sample feed grade was 261 g/t silver and 0.9 g/t gold. Silver and gold recoveries were 76% and 59%, respectively, and 232 dry tonnes of flotation concentrate were produced, of which 188 t were sold for net proceeds of US$1.83 million. If the entire production were sold under the same contract terms, the net proceeds would have been US$2.26 million.

Evaluation costs relating to mining, milling, and overhead for the bulk sample program were US$567,045 or US$7.62/oz Ag_Eq, including the costs for the raises and stopes. The cost per tonne produced was US$53.91 and proceeds on 188 t of concentrate sold at US$1.83 million. (The contract prices per ounce of silver and gold were US$36.75 and US$1,511.31, respectively.)

On the basis of internal modelling of the bulk sampling program, Avino proceeded with their mine plan to develop the third, fourth, and fifth levels and to provide mill feed at the rate of 250 t/d on a sustained basis.

It should be noted this production decision is being made without Mineral Reserves or any studies of economic viability that have been prepared in accordance with NI 43-101.

16.2.2 Production

Note that information in this section was provided by Avino.

Recent production for the Avino Vein and San Gonzalo Vein are summarized in Table 16.1 and Table 16.2, respectively.

Concentrate has been sold on a regular basis to a concentrate-trading firm, with shipments taking place monthly. The Q1 2017 financial results indicated that the cost as cash per ounce silver for the San Gonzalo and Avino Veins was US$8.01. Mining and milling operations continue, even though there has been no Prefeasibility or Feasibility study commissioned after the bulk sample program.

16.2.3 Mine Design

Note that information in this section was provided by Avino.

Access to the underground mining on the San Gonzalo Vein is via a 4 m by 4 m decline developed at -12%. Ground conditions are good. Ground support is mainly bolting, as required.

San Gonzalo uses shrinkage mining for the narrower material, approximately 1.4 m in width, and cut-and-fill mining for mineralized material wider than 2 m.

During shrinkage mining, miners use hand-held jacklegs and stopers to drill and blast in stopes. Material is drilled and blasted using jacklegs to breast horizontally, with two miners from two ends of the stope, with several breasts worked on at once. After each blast, the swell (approximately 40% of the broken material) is mucked from the extraction drift below to allow room for the miners to drill the next lift. Materials and supplies are carried into the stopes by hand down a small raise equipped with steel ladders and a rope. Only 40% of the material is extracted during mining, with the remainder extracted after all mining has been completed; meaning more stopes are required in the development stage at one time to sustain production targets. Scoops are used to muck from the extraction drift below and the material is trammed to a mineralized material pass.

Cut-and-fill mining is more mechanized, as access for scoops is maintained in the stopes from the main ramp by a smaller access attack decline/incline ramp. This access means less manhandling of materials and provides material on a steady basis from each lift while mining takes place. This method requires that waste fill be placed after each lift of material has been mined prior to mining the next lift. Stopers are used to drill vertical holes, with half the stope being blasted at once. A two-yard scoop is used in the stope to place waste and muck material. It is 1.2 m wide and requires 2.0 m wide to operate. No mill discharge is used for backfilling.

The mine is able to achieve a production rate of 230 t/d, with three shrinkage stopes and one cut-and-fill stope developed/mined at once, plus two headings in mineralized material or the shrinkage undercut. The mine works 6 d/wk, or 26 d/mo. A mining contractor has been hired for material haulage.

16.3 OXIDE TAILINGS

The oxide tailings Mineral Resource will be mined/moved using a conventional truck/loader surface mining method. The production cycle consists of loading and trucking.

16.3.1 SCHEDULE

The production schedule has been developed for the oxide tailings based on a treatment rate of 500 kt/a. This would be equivalent to a throughput rate of 1,370 t/d. This will give an overall Project duration of approximately eight years. This eight-year period includes one year of pre-production and excludes the time required for remediation of the heap after the leaching process has been completed. Only oxide tailings will be considered for treatment, while sulphide materials will be considered waste. The production schedule is shown in Table 16.3.

Table 16.3 Mining Production Schedule

Year	Mineralized Material (t)	Head Grade		Waste (t)	Total Material Moved (t)
		Ag (g/t)	Au (g/t)		
-1	-	-	-	500,000	500,000
1	350,000	88.83	0.51	558,906	908,906
2	500,000	100.11	0.48	497,101	997,101
3	500,000	94.95	0.44	498,995	998,995
4	500,000	78.28	0.45	75,148	575,148
5	499,673	82.99	0.44	500,327	1,000,000
6	500,000	87.95	0.36	295,829	795,829
7	272,641	76.27	0.28	12,405	285,046
LOM	3,122,314	87.75	0.43	2,938,711	6,061,025

16.3.2 EQUIPMENT

The mining operations include loading and trucking. Loading/trucking operations will be conducted in two, 12 h shifts per day. A 3.85 m^3 rated (5.0 yd^3) front-end loader will be used to load 3, 24 t articulated truck that will either deliver the sulphide tailings to the sulphide waste stockpile or the oxide tailings to the oxide tailings hopper.

16.3.3 MODIFYING SITE CONSIDERATIONS

Certain areas of the tailings might contain high amounts of moisture that can lead to equipment getting stuck. To mitigate this challenge, wider, oversized tires with chains will be installed on the front-end loader. Also, the front-end loader bucket will be downsized to 3.06 m^3 (4.0 yd^3). This will lighten the load on the front tires preventing them from sinking into saturated material. The trucks will not enter the soft zones so there will be no modifications to the trucks.

16.4 SULPHIDE TAILINGS

Avino is not currently conducting treatment activity on the sulphide tailings. In this study, sulphide tailings are considered as waste.

17.0 RECOVERY METHODS

17.1 INTRODUCTION

As mentioned in Section 13.0, there are three separate mineralization sources in the Property, including the Avino and San Gonzalo mines, which are currently in operation, and the potential tailings resource from previous milling operations. The San Gonzalo Mine entered commercial production in October 2012, followed by reopening the Avino Mine in January 2015. The two mines feed a conventional flotation mill that has three separate circuits and a capacity of 1,500 t/d. Currently, there is no operation for the tailings resource.

17.2 AVINO VEIN

Prior to the mine shutting down in 2001, Avino operated a 1,000 t/d processing plant, producing a copper concentrate that was sold to a smelter in San Luis Potosi for approximately 27 years. From 1997 to 2001, the mill process rate averaged 1,000 t/d and achieved up to 1,300 t/d. The mine and mill operations were then suspended. Following several years of redevelopment, Avino completed the Avino Mine and mill expansion in Q4 2014. On January 1, 2015, full scale operations commenced and commercial production was declared effective April 1, 2016 following a 19 month advancement and test period.

The plant consists of a conventional three-stage crushing circuit with the tertiary crusher in closed circuit with a screen. The crushed material is fed to a ball mill and classified with a hydrocyclone at a grind size of approximately 65% passing 200 mesh. Lime is added in the ball mill to raise the flotation pH to about 10.5 to depress pyrite. Flotation reagents used include Aeroflot 208, 404 and Aerophine 3418, together with a glycol frother. The concentrates from the rougher and scavenger circuits are upgraded in a cleaner circuit with the final concentrate reporting to a dewatering circuit. The final concentrate is dewatered to approximately 8% moisture and then shipped to the smelter. Flotation tailings is pumped to the permitted tailings impoundment where decant water is reclaimed for process use.

A single stage of cleaning is used for the rougher and scavenger concentrates to produce a final copper concentrate grading 20 to 25% copper. Typical copper recoveries range from 85 to 90%, silver in the mid 80's, and gold between 60 and 70% depending on the source of the material. Process optimization should focus on reducing the bismuth content in the concentrate and on improving gold recovery.

A summary of the mill production and balance for 2015, 2016, and Q1 2017 is provided in Table 17.1.

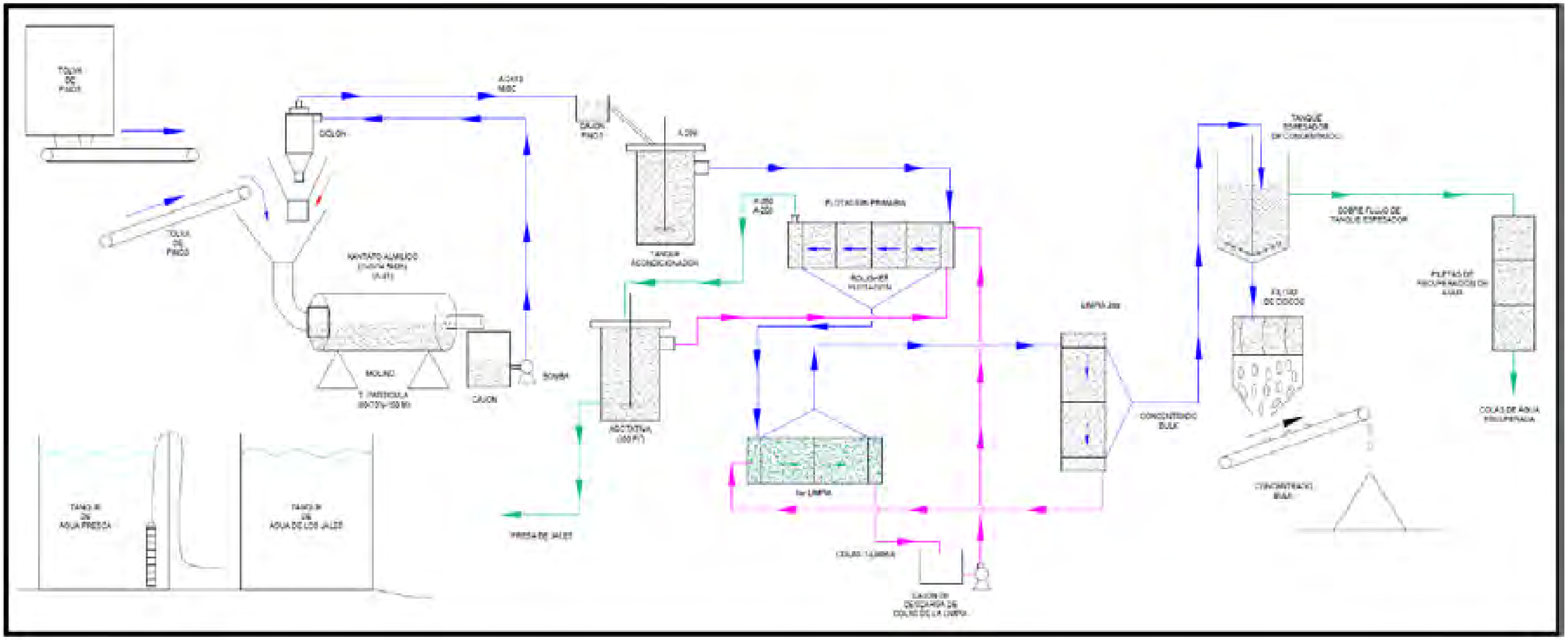
Table 17.1 Avino Vein Mill Production

Production Description	2015	2016	Q1 2017
Mill Feed Tonnage			
Tonnes Milled (t)	396,113	429,289	116,553
Feed Grade			
Silver (g/t)	65	67	61
Gold (g/t)	0.29	0.42	0.50
Copper (%)	0.62	0.50	0.44
Recovery			
Silver (%)	87	85	86
Gold (%)	75	64	67
Copper (%)	87	90	91
Total Metal Produced			
Silver Produced (oz)	717,901	789,372	195,562
Gold Produced (oz)	2,757	3,691	1,252
Copper Produced (lb)	4,743,691	4,206,585	1,024,853
Ag_Eq Produced (oz)	1,801,997	1,606,272	439,163

Source: Avino (2017a; 2017b)

The simplified flowsheet, including grinding and flotation circuits, is shown in Figure 17.1.

Figure 17.1 Simplified Flowsheet – Avino and San Gonzalo Veins



17.3 SAN GONZALO VEIN

The San Gonzalo Mine entered commercial production in October 2012. The current process plant consists of crushing and grinding facilities, followed by a flotation process circuit to recover and upgrade silver and gold from the feed material. Aeroflot 208 and Aerophine 3418, together with a glycol frother, are used within the flotation circuit. The flotation concentrate is thickened, filtered to approximately 8% moisture content, and sent to the concentrate stockpile for subsequent shipping to customers. A gravity concentrator has been incorporated into the grinding circuit to recover electrum and to improve the overall silver and gold recoveries.

The final flotation tailings is disposed of in the tailings pond. A summary of the material and metallurgical balances from April 2013 is outlined in Table 17.2. The process flowsheet is similar to the one used for the Avino vein as shown in Figure 17.1.

Table 17.2 San Gonzalo Vein Mill Production

Production Description	2012	2013	2014	2015	2016	Q1 2017
Mill Feed Tonnage						
Total Mill Feed (t)	19,539	78,415	79,729	121,774	115,047	20,133
Feed Grade						
Silver (g/t)	259	288	337	279	267	229
Gold (g/t)	1.04	1.34	1.88	1.48	1.25	1.19
Recovery						
Silver (%)	79	83	84	83	83	84
Gold (%)	70	73	78	75	74	76
Total Produced						
Silver (oz)	128,607	602,233	724,931	907,384	822,689	124,520
Gold (oz)	455	2,473	3,740	4,326	3,427	585
Ag_Eq Produced (oz)	151,372	751,462	958,702	1,218,351	1,073,062	165,480

Source: Avino (2017a; 2017b)

17.4 TAILINGS RESOURCES

There are two types of the tailings produced from the previous mining operations: oxide tailings and sulphide tailings. Currently there is no operation to recover metals from both the tailings resources.

This PEA focuses on the oxide tailings treatment for the recovery of silver and gold from the tailings dam. The sulphide tailings have been excluded from this study.

17.4.1 Oxide Tailings

Treatment Selection

A PEA was conducted in 2012 (Tetra Tech 2013) to compare three potential processing treatment routines for the oxide tailings retreatment project, including:

- cyanidation (tank leaching) of the oxide tailings without regrinding
- cyanidation (tank leaching) of the oxide tailings with regrinding
- heap leaching of the oxide tailings without regrinding.

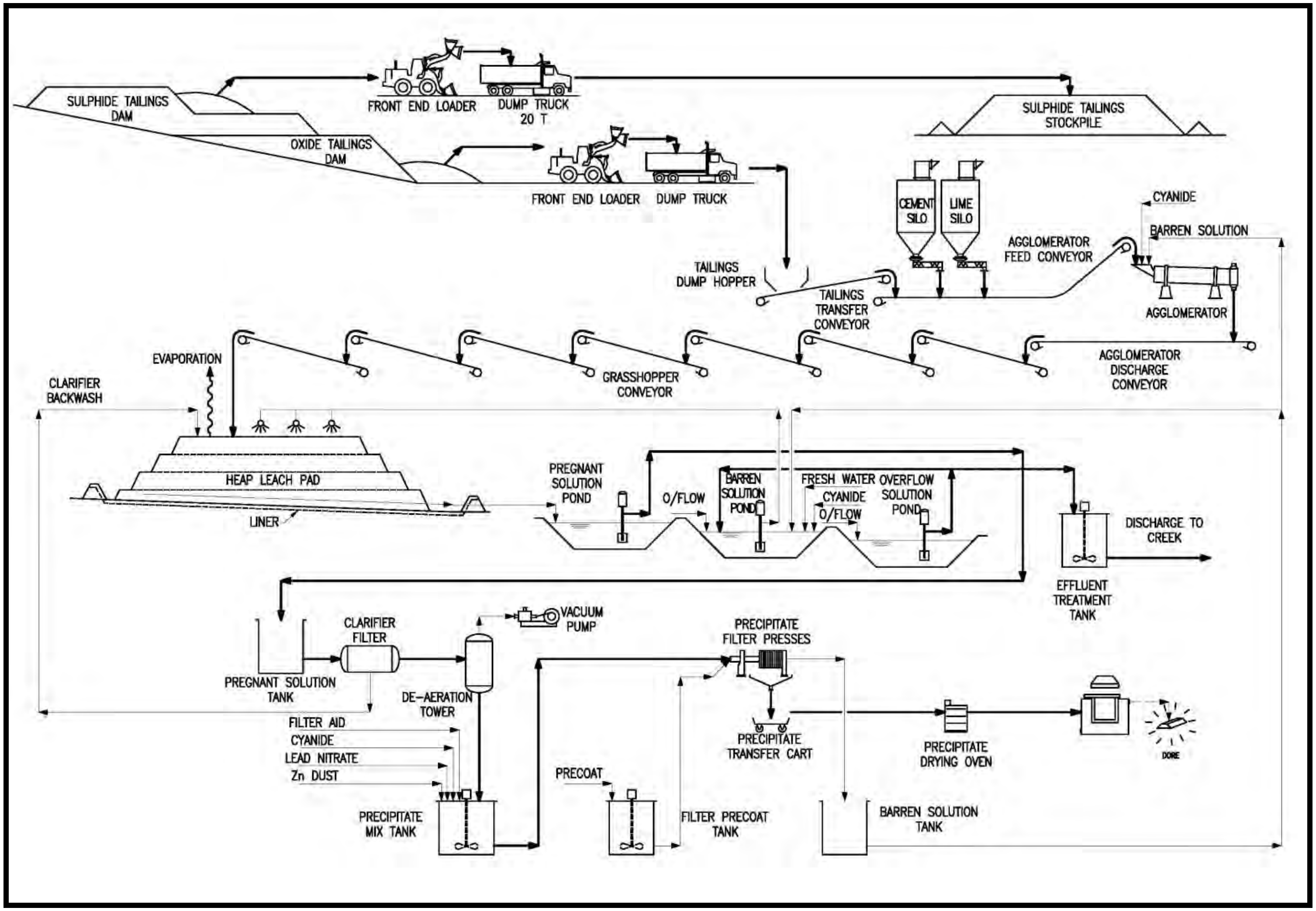
A preliminary economical evaluation, at a mill feed rate of 1,370 t/d, shows that heap leaching treatment is more favourable than the other two treatment options, in terms of initial capital cost and operating cost. This PEA update will be based on the heap leaching treatment technology that was used for the previous PEA (Tetra Tech 2013).

Process Flowsheet

The proposed treatment plant will consist of agglomeration and cyanide heap leaching, followed by a Merrill-Crowe process to recover silver and gold from pregnant solution. The process plant will operate on a 24 h/d, 365 d/a basis, with an overall utilization of 90%.

The simplified flowsheet is shown in Figure 17.2.

Figure 17.2 Simplified Process Flowsheet



MAJOR DESIGN CRITERIA

The heap leach has been designed to process 0.5 Mt/a of oxide tailings. This would be equivalent to a throughput rate of 1,370 t/d and equivalent to 63.4 t/h at a 90% running time.

The major criteria used in the design are outlined in Table 17.3.

Table 17.3 Major Design Criteria

Criteria	Unit	Number
Operating Year	d	365
Overall Plant Availability	%	90
Annual Processing Rate	t	500,000
Daily Processing Rate	t/d	1,370
Tailing Bulk Density	t/m³	1.605
Agglomerated Tailing Bulk Density	t/m³	1.24
Agglomerated Feed Size, P_{80} Passing	µm	225
Agglomerated Product Size, P_{80} Passing	mm	6 to 15
Moisture Content of Agglomerated Feed	%	12.5
Total Loading/Curing/Leaching/Rinsing Cycle	d	142
Cyanide Solution Strength	g/L	0.5

The design parameters are based on test work results obtained by PRA but directed by MMI, using the results from Huang (2005) and Slim (2005d).

PROCESS PLANT DESCRIPTION

For an oxide tailings treatment rate of 0.5 Mt/a, an equivalent throughput rate of 1,370 t/d or 63.4 t/h is required. This will give an overall Project duration of approximately seven years. This seven-year period will exclude the time required for site establishment and remediation of the heap after the leaching process has been completed.

The mining equipment will operate on a different schedule than the process plant. Loading operations will be conducted during one 8 h shift per day, 365 d/a. A 3.85 m³ rated (5.0 yd³) front-end loader will be used to load a 24 t articulated truck that will either deliver the sulphide tailings to the sulphide stockpile or the oxide tailings to the 160 t oxide tailings hopper. Once the hopper is filled, excess tailings will be stockpiled around the hopper to be loaded by the process plant group.

Certain areas of the tailings might contain high amounts of moisture that can lead to equipment getting stuck. To mitigate this challenge, wider, oversized tires with chains will be installed on the front-end loader. Also, the front-end loader bucket will be downsized to 3.06 m³ (4.0 yd³). This will lighten the load on the front tires preventing them from sinking into saturated material. The trucks will not enter the soft zones so there will be no modifications to the trucks.

A dribble chute will feed the tailings from the hopper onto a conveyor belt. Cement and lime will be added to the tailings at controlled addition rates. Although some operations add solid dry, flake cyanide to the agglomerator feed material, this option will not be exercised in this case. The cement and lime will be added from their respective bulk storage silos. A 50 t capacity cement storage silo equipped with a dust collection filter and a cement blower will be required, as well as a 30 t capacity lime storage silo similarly equipped with a dust collection filter and a lime blower. Each reagent delivery system will be controlled by a weightometer prior to feeding the reagents to the tailings material conveyor belt feeding the agglomerator drum. The design treatment rate will be 63.4 t/h of tailings material with an average moisture content of 10%. Water, or barren solution, will be added to the agglomerator to provide for an overall moisture content of approximately 12.5 to 15% to the leach pad feed material. Two 1 t capacity cyanide mixing and storage tanks will be positioned at the Merrill-Crowe facility. Cyanide preparation system will produce a cyanide solution with a strength of 20% sodium cyanide. The cyanide solution will then injected into the solution distribution system going to the heap pad and precipitation filter press.

The agglomerator will be a drum type unit with a diameter of 1.8 m and a length of 6.7 m rotating at 10.5 rpm and with a variable angle of 2.5, 5.0 or 7.5°. Agglomerated material will be discharged onto a conveyor belt, then on to a series of jump conveyors, and then deposited on the heap leach pad by a radial telestacker. A curing time of 5 d will be allowed before spraying of the agglomerates with cyanide-bearing leach solution commences.

There will be only one leach pad. The leach heap pad dimensions are estimated to be 288 m wide and 428 m long and includes a surrounding berm of 6.5 m in width. There will be four lifts over the seven-year treatment period. Each lift will be 6.5 m high giving the heap an overall height of 26 m.

The heap leach process will operate with three solution ponds:

- a barren solution pond
- a pregnant solution pond
- an event or overflow pond.

Solution from the barren solution pond will be pumped to the leach heap. Concentrated cyanide solution will be added to the barren solution pond where it will be mixed to give a controlled cyanide concentration of approximately 0.5 g/L sodium cyanide strength. The pH will be maintained at 10.5. This solution will be distributed over the leach pad using irrigation pipes and drips for an overall solution feeding rate of approximately 7.3 L/h/m^2 (0.002 L/s/m^2). A total leaching duration of 130 d will be allowed, followed by a wash/rinse cycle of seven days resulting in a total loading, leaching and rinsing cycle of 142 d.

The total calculated amount of area of pad under irrigation per day will be approximately 22,000 m^2, with 1,210 m^2 being rinsed every day. The calculated volume of solution pumped to the heap will be 173 m^3/h of which a nominal 9 m^3/h will be rinse solution. A total solution evaporation loss of 10% is assumed.

The 173 m^3/h pregnant solution collected from the leach pad will be directed to the pregnant solution pond. The solution from the pregnant solution pond will be pumped to the Merrill-Crowe plant for silver and gold recovery by precipitation with zinc dust and filtration of the precipitate. The barren solution will then be returned to the barren solution pond. Solution from the pregnant solution pond can overflow into the barren solution pond should this be required. Solution from the barren solution pond can also overflow into the overflow solution pond. This overflow solution pond will also collect excess water and drainage solution from the heaps and the plant environs. The overflow solution pond will also supply make-up water to the process by pumping the water back to the barren solution pond. Alternatively, excess solution from this pond will be treated with calcium hypochlorite in an agitated treatment tank to reduce the cyanide levels to acceptable limits prior to discharging this water to the environment, or re-using this water as process water.

The Merrill-Crowe section will receive the pregnant solution, which will be pumped to the clarifier filter together with filter aid pre-coat and body feed. The slurry from the backwash cycles will be pumped to an inactive part of leach heap. The clarified solution will be pumped to the de-aeration tower where the solution will be de-oxygenated and a slurry of zinc dust, lead nitrate, cyanide and filter aid will be pumped into the de-aerated solution after the tower but ahead of the precipitate filters. The zinc dust, lead nitrate and filter aid will be made up into a slurry at the required dosage rate in the precipitate mixing tank and cyanide will be added as needed. The cementation reaction occurs at the point of introduction of the slurry to the de-aerated solution. This reaction normally requires approximately 2 to 5 minutes for completion. The reaction should be complete by the time the new-barren solution exits the precipitate filter to barren solution tank and from there it will flow into the barren solution pond where the pH will be adjusted to 10.5 with lime if necessary and then be pumped back to the heap pad for leaching after cyanide concentration is adjusted to approximately 0.5 g/L sodium cyanide.

The addition of zinc dust has been calculated on the basis of 10 g of zinc dust per 1 g of silver plus gold in order to ensure that the cementation reaction will be driven to completion. Although precipitation efficiencies are normally considered to be higher than 99.5%, in this case 96% has been selected since no test work has been conducted on the pregnant solution from this material. The cyanide concentration of the pregnant solution should be a minimum of about 100 mg/L as free cyanide, and will be monitored on a regular basis. The lead nitrate addition will be added to improve the precipitation efficiency and its dosage is based on approximately 2 mg lead nitrate per litre of solution. Approximately 50% of the total required amount of the lead nitrate will be added to the pregnant solution prior to the clarifier filter where impurities present in the solution will be removed by the clarifier filter. Although no anti-scalant reagents have been included in the study, any reagents of this nature should be tested to determine its effect on the precipitation efficiency.

The silver-rich precipitate which contains the gold and excess zinc will flow to the acid vat tank where the excess zinc can be dissolved by mixing with adequate amount of sulphuric acid and from there it will be pumped to the digest precipitate filter press. This precipitate from the filter press will be dried in an oven prior to being melted in a smelting furnace for doré production. It is anticipated that the total metal precipitate production per day will be approximately 420 kg (dry basis) with approximately 20% of silver and gold, or approximately 85 kg of silver and gold.

Heap Leach Layout

The heap layout, heap lift height, and number of lifts have been assumed for the purposes of this study and are detailed in the section above. The maximum height has been restricted to 26 m as a result of the proximity of the proposed heap leach facility to the community of San Jose de Avino and possibly weak compressive strength of the agglomerates. This proposed height for the heap would require geotechnical verification. The relatively low heap pad height proposed has resulted in a relatively large surface area being required for the leach pad. The site layout and available space, site drainage, and pad size have been designed according to the area topography and the best available information. However, the close proximity of the proposed heap leach facility to the community of San Jose de Avino, and its agricultural workings, may yet result in site and/or layout revisions.

17.5 Sulphide Tailings

Avino is not currently conducting mining activity on the sulphide tailings. Because some of the oxide tailings and sulphide tailings were co-deposited, and the oxide tailings are partially covered by younger unconsolidated sulphide tailings on the northwest side of the tailings storage dam, the sulphide tailings materials will be reclaimed as required during the oxide tailings reclamation. The reclaimed sulphide tailings are planned for storage in a separate sulphide tailings storage facility for further exploration. While some of the sulphide tailings could be used for constructing the heap leach pad and facilities for the oxide tailings retreatment, no quantities have been estimated at this stage. In addition, no recovery methods are currently proposed for the sulphide tailings. The sulphide tailings has been excluded from this study.

18.0 PROJECT INFRASTRUCTURE

18.1 INTRODUCTION

The history of operations at the Avino Mine provides ample evidence of sufficient infrastructure and services in the area. The San Gonzalo Mine entered commercial production in October 2012, followed by reopening the Avino Mine in January 2015. The two mines feed a conventional flotation mill that has three separate circuits and a capacity of 1,500 t/d. The existing tailings deposition facility has been upgraded and is fully permitted and operational for approximately another 500,000 t of tailings. The offices, miner's quarters, secured explosives storage facilities, warehouse, laboratory and other associated facilities are all in place.

The tailings leach facilities are planned to be located southeast of the existing tailings storage pond. The preliminary arrangement for these facilities are shown in Figure 18.1.

18.2 ACCESSIBILITY

The Property is easily accessible by road and is an important part of the local community from which skilled workers are available. Access is provided by Highway 40, a four-lane highway leading from Durango, past the airport and on to the city of Torreon in Coahuila. Successive turn-offs for the Property are at Francisco I Madero, Ignacio Zaragoza, and San Jose de Avino (Slim 2005d). The Avino mineral concessions are covered by a network of dirt roads which provide easy transport access between the San Gonzalo deposit and the mill at the main Avino Mine (Gunning 2009). In 2008, a 1.7 km road accessing to the San Gonzalo deposit was widened and upgraded so it would be suitable for use by the mineralized material haul trucks and heavy equipment.

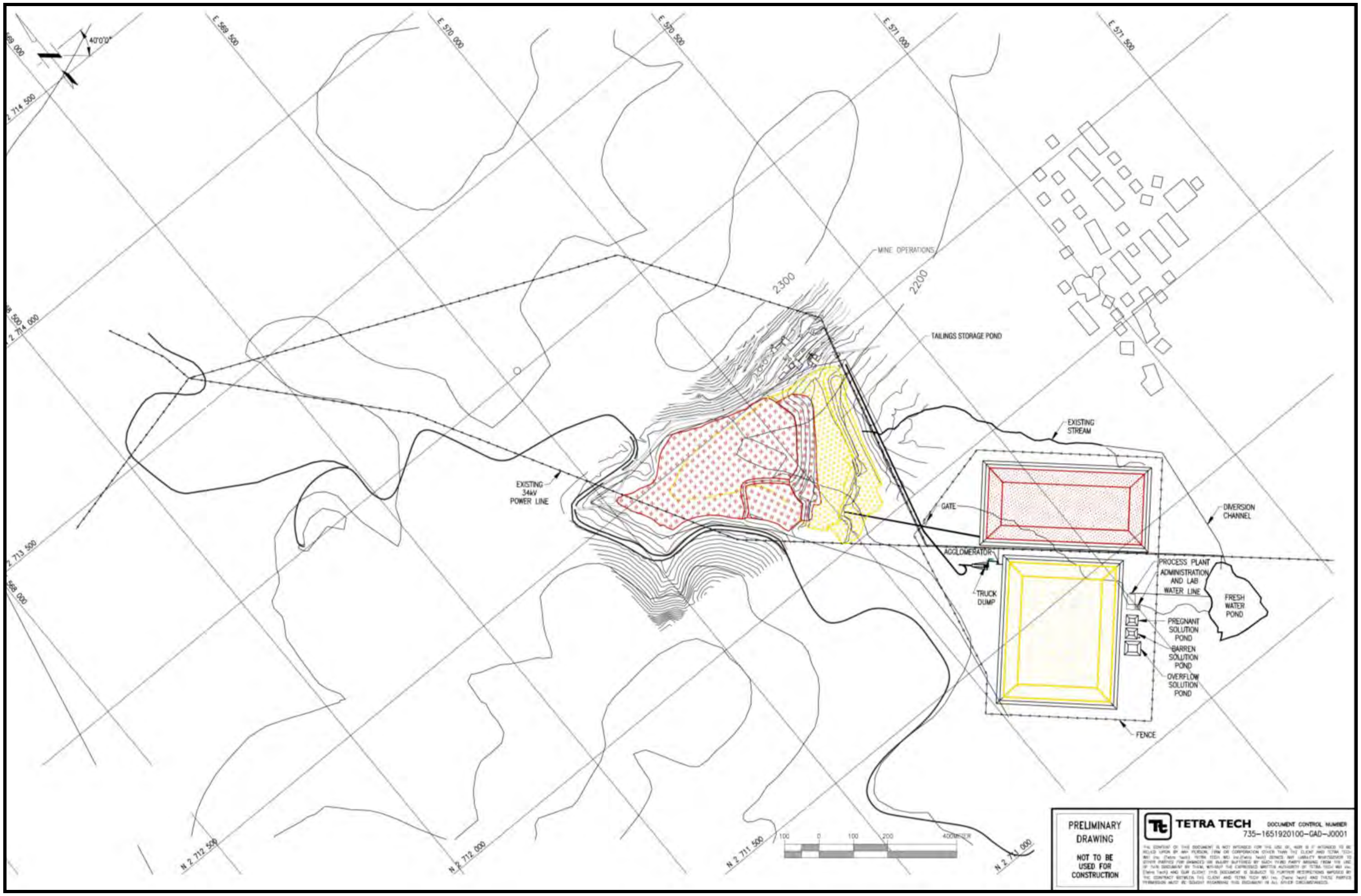
18.3 POWER

The Avino Mine was connected to the local power grid with a line capacity quoted at 4 MW when the mine last operated in 2001. With the shutdown, much of this excess power was diverted to the surrounding towns in the district. Before 2016, the existing power line provides only 1,000 kW of power with 500 kW servicing the mill, 400 kW for San Gonzalo and the balance for the well at Galeana, employee accommodation facility, and water reclaim from the tailings dam. The San Gonzalo power line was built in 2009 to replace the contractor's diesel generator used during mine development.

In June 2016, a newly constructed dedicated power line to the mine site was energized and tested on June 8th, 2016. The test was successful and the line was then fully functional at the design capacity of 5 MW. Current power consumption at the mine is approximately 2 MW, leaving sufficient additional power for potential future expansion projects, including the proposed oxide tailings retreatment project using heap leach followed by gold and silver recovery by Merrill-Crowe precipitation and possible expansion or upgrading of the processing plant. Additionally, the existing power line was left in place to service local communities and provide backup power for the mine.

A C-27 CAT diesel power generator, which produces 700 kW, is now used as backup.

Figure 18.1 Overall Tailings Heap Leach Facility Layout



18.4 WATER SUPPLY

While water supply was found to be limiting in the past, Avino has taken the necessary steps to secure adequate supply. To supplement the 1 Mm^3 dam built by Avino in 1989, a well (Galeana) was drilled to the west of the mine site in 1996 to a depth of 400 m and is reported to have a water level at 40 m below the collar. From this, a pipeline connection has been installed to the mine. Additionally, CMMA, in cooperation with the government, has repaired a government dam (El Caracol) and raised the dam wall by 6 m. A pipeline to the mine has also been installed. This dam is shared with the population of Pánuco de Coronado for their irrigation needs, as 60% for the mine and 40% for the town, with government setting the annual total take to which percent sharing applies. Mine site water use is from a combination of tailings water reclaim, El Caracol, and Galeana with preference given to mine site sources for which no water conservation charge was applicable (Slim 2005). The dewatered water from San Gonzalo and Avino underground mines are used as mill processing and agricultural irrigation.

18.5 WATER TREATMENT PLANT

Underground mine water at the Avino Mine is acidic. Since October 2012, dewatering of the Avino Mine began and a water treatment plant using lime to raise the pH and to precipitate the heavy metals was constructed and built. The water treatment facility is a typical Mexican design and the effluent water quality had to meet the agricultural standards for discharge. Test results to date show the results do meet the required agricultural standards and being discharged to the El Caracol Dam via gravity. Treatment of the Avino underground water had been completed with the commencement of production in 2015. The water treatment plant is in place for treating excess water before discharging to El Caracol Dam. The effluent is being monitored on a daily basis when the treatment plant is operational. Sludge, which is considered low density, is sent to the tailings dam.

19.0 MARKET STUDIES AND CONTRACTS

19.1 MINED MATERIAL HAULAGE FROM UNDERGROUND

Haulage of the materials from the San Gonzalo and Avino mines is contracted out and the contract terms are within industry norms.

19.2 FLOTATION CONCENTRATES

There is a ready market for both the San Gonzalo silver/gold flotation concentrate and the Avino copper, silver, and gold flotation concentrate. These concentrates are currently being sold under contract to Samsung C&T UK Ltd. The terms and conditions of these contracts are based on industry norms and the terms have been used to establish the revenues from both mining operations.

Under the terms of the agreement, the concentrates are delivered by truck to the Port of Manzanillo, located on the Pacific coast of Mexico, loaded into containers and shipped to smelters located overseas.

The metal prices used for the payable metals namely copper, silver and gold are based on the average market prices of the first month after the month of delivery to the loading port.

In 2016, Avino announced that the concentrate prepayment agreement with Samsung C&T UK Ltd. had been extended from July 2017 to July 2018.

19.3 GOLD-SILVER DORÉ

For the doré produced from the proposed oxide tailings retreatment project, in the absence of letters of interest or letters of intent from potential smelters or buyers of gold and silver doré, the following smelter terms for similar projects have been applied.

- gold – pay 99% on the gold less a refining charge of $8.00/accountable troy oz.
- silver – pay 95% on the silver less a refining charge of $1.00/accountable troy oz.

20.0 ENVIRONMENTAL STUDIES, PERMITTING, AND SOCIAL OR COMMUNITY IMPACT

20.1 ENVIRONMENTAL STUDIES

Avino has received all necessary permits to build the new tailings storage facility and construction planning with a contractor is underway. A new tailings storage facility is necessary to allow the existing tailings storage facility to be decommissioned, which will enable Avino to begin assessing the upper sulphide bench, as well as the lower oxide bench, in areas that are currently being used to store tailings from active operations.

The assessment work currently underway is part of the recommendations contained in the 2013 PEA (Tetra Tech 2013), intended to advance the tailings resource towards a production decision for a Merrill-Crowe precipitation heap leach operation.

In November 2015, in order to get a head start on the assessment work, Avino began a program of sampling the lower oxide bench in areas not in use. The program consisted of using a hydraulic drill with a 2 m split spoon auger to drill vertical holes to a depth of 20 to 30 m; 12 holes were drilled by the end of 2015 totalling 227 m. By the end of February 2016, a further 40 holes had been drilled, totalling over 650 m; assays have been received and are currently being compiled.

Once the new tailings storage facility is complete, Avino will decommission the current tailings storage facility and begin installing wells that will be used to pump out the retained water in the dam. This will speed up the sonic drilling program planned for the upper benches, provide samples for the metallurgical program, and increase confidence in the oxide resource located below the sulphide tailings.

20.1.1 ENVIRONMENTAL SETTING

Flora and fauna of the surrounding San Gonzalo Property is anticipated to be similar to what may be found in the area of oxide tailings, although presence of these species has not been confirmed at the oxide tailings site. Vegetation observed on the San Gonzalo Property at the time of permitting includes catclaw mimosa; cactus species, such as paddle cactus and desert christmas cactus; needle bush, gobernadora; and persimmon trees.

Within the adjacent San Gonzalo Mine Project area, there were 15 species of major mammals, 51 species of birds, 10 species of reptiles, and 3 species of amphibious reported at the time of permitting. Of these species, four mammal species, 14 species of birds, 9 reptiles, and 3 amphibians species are listed by Official Mexican Standard NOM-059-SEMARNAT-2001 or in the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) (Ministry of Environment and Natural Resources [MENR 2008a) (Table 20.1 to Table 20.4).

Table 20.1 Mammal Species Listed by NOM-059-SEMARNAT-2001 or in CITES within the San Gonzalo Mine

Common Name	Gender and Species	Status under NOM-059-SEMARNAT-2001 or CITES
Squirrel*	*Sciurus aberti*	Resident. Endemic. Special Protection
Mouse	*Neotoma albigula*	Resident. Endemic. Threatened.
Desert Fox	*Vulpex velox*	Resident. Endemic. Threatened.
Badger	*Taxidea Taxus*	Resident. Threatened.

Notes: *No English Common Name translation
Source: MENR (2008a)

Table 20.2 Bird Species Listed by NOM-059-SEMARNAT-2001 or in CITES within the San Gonzalo Mine

Common Name	Gender and Species	Status under NOM-059-SEMARNAT-200 or CITES
Heron	*Ardea herodias*	Migratory. Special protection.
Cerceta aliazul	*Anas discors*	Migratory. Special protection. Hunting.
Black eagle	*Buteogallus anthracinus*	Resident. Special Protection. Indicator.
Red tailed eagle	*Buteo jamaicensis*	Resident. Indicator.
Owl with horns	*Bubo virginianus*	Resident. Threatened.
Cernicalo	*Falco sparverius*	Resident. Indicator.
Quail with flakes	*Callipepla squamata*	Resident. Endemic. Self-consume.
Blue mulato	*Melanotis caerulescens*	Resident. Endemic. Threatened. Esthetic.
Northern cenzontle	*Mimus polyglotos*	Resident. Esthetic.
Cuitlacoche with curved beak	*Toxostoma curvirostre*	Resident. Esthetic.
Gray capulinero	*Ptilogonys cinereus*	Resident. Endemic.
Golden vireo	*Vireo hypochryseus*	Resident. Endemic.
Desert cardinal	*Cardinalis sinuatus*	Resident. Esthetic.
Colorin seven colours	*Passerina ciris*	Migratory. Esthetic.

Source: MENR (2008a)

Table 20.3 Reptile Species Listed by NOM-059-SEMARNAT-2001 or in CITES within the San Gonzalo Mine

Common Name	Gender and Species	Status under NOM-059-SEMARNAT-2001 or CITES
Black iguana	*Ctenosaura pectinata*	Resident. Endemic. Threatened.
Chivilla *	*Xantusia bolsonae*	Resident. Endemic. Threatened.
Lizard *	*Sceloporus horridus*	Resident. Endemic.
Water snake	*Nerodia melanogaster*	Resident. Endemic. Threatened.
Chirrionera snake	*Pituophis deppei*	Resident. Endemic. Threatened.
Water snake	*Thamnophis eques*	Resident. Threatened.
Rattle snake	*Crotalus atrox*	Resident. Special protection.
Rattle snake	*Crotalus molossus*	Resident. Special protection.
Water turtle	*Chrysemys scripta*	Resident. Special protection.

Notes: *No English common name translation
Source: MENR (2008a)

Table 20.4 Amphibian Species Listed by NOM-059-SEMARNAT-2001 or in CITES within the San Gonzalo Mine

Common Name	Gender and Species	Status under NOM-059-SEMARNAT-2001 or CITES
Ajolote (Mexican mole lizard)	*Ambystoma rosaceum*	Resident. Endemic. Special protection.
Toad *	*Bufo mazatlensis*	Resident. Endemic.
Frog *	*Rana pustulosa*	Resident. Endemic. Special protection.

Notes: *No English common name translation
Source: MENR (2008a)

20.2 ENVIRONMENTAL PERMITTING

Permits and authorizations required for the Project operation include:

- an operating permit
- an application for surface tenures
- a waste water discharge registration
- a hazardous waste generator's registration.

An environmental impact assessment (EIA) or Evaluación de Impacto Ambiental under the Ley General del Equilibrio Ecológico y la Protección al Ambiente (LGEEPA), article 28 (General Law of Ecological Equilibrium and Environmental Protection), is required by the Ministry of Environment and Natural Resources (Secretaría de Medio Ambiente y Recursos Naturales (SEMARNAT)). Prior to this EIA, an authorization regarding environmental impact matters is required by the SEMARNAT.

Additional surface tenures will likely be required for the re-location of any tailings to areas outside of the current surface tenure rights.

20.2.1 CURRENT PERMITS FOR THE OXIDE TAILINGS

There are no current operating permits for the mining and exploitation of the oxide tailings. However, a conditionally approved Environmental Impact Statement (EIS) (Manifestación de Impacto Ambiental (MIA)) for the exploitation and associated transmission line is in place for the Avino Mine where the tailings are located. Changes to the operating methods may be required if mining of the tailings was not included in the original mining plan. Based on this information, revisions to the permits will be required. If new operating permits are required, an EIA and EIS (MIA) will be mandatory.

20.2.2 CURRENT PERMITS FOR THE SAN GONZALO MINE (ADJACENT)

In order to obtain an authorization regarding environmental impact matters, Avino must prepare an EIS or MIA. Avino prepared an EIS, known as "Manifestación de Impacto Ambiental, modalidad Particular" (MIA-P) for the San Gonzalo Mine and submitted it to the MENR in August of 2008. The applicable regulations fall under Federal jurisdiction, Article 28, sections II, III and VII of the LGEEPA and the Reglamento en Materia de Evaluacion del Impacto Ambiental (REIA), sections K, L and O (Environmental Impact Assessment Matter Regulation).

Given the planned activities for the site, the Ministry also required an assessment in "Environmental Impact Matter for Change of Land Use" (Materia de Impacto Ambiental para el Cambio de Uso de Suelo) for forested areas and mining infrastructure and electrification, for a surface area of 9.08 ha.

The authorization from the Ministry also requires the mine to present mitigation measures for all potential environmental impacts, as per Article 30, LGEEPA and Article 44, REIA, which Avino detailed in its EIS to the authorities.

Based on the information provided by Avino to the Mexican authorities, a conditional authorization was granted, subject to additional prevention and mitigation measures in order to avoid, minimize, or compensate for any environmental impacts during the different stages of the adjacent San Gonzalo Mine (Article 35, section II, LGEEPA), which include an assessment of the "Environmental Impact Matter for Change of Land Use" described above. This permit is valid for 11 years from the date it was issued, to perform various activities on-site. Any modification to the Project must be sent to the MENR in writing before commencing changes.

Aside from complying with all prevention, protection, control and mitigation measures laid out in the proposed MIA-P, Avino must develop an Environmental Quality Monitoring Program (EQMP) or 'Programa de Seguimiento de la Calidad Ambiental'. The proposed EQMP must be presented to the MENR within six months of receiving the conditional authorization. Once the MENR has assessed the monitoring program, Avino needs to deliver progress reports semi-annually for a period of at least five years. Lastly, Avino must obtain proper authorization from the MENR for "Change of Land Use" as well as the corresponding "Change of Use for Forested Ground to Mining Infrastructure".

It is important to note that the current conditional authorization can be cancelled for many reasons, one of them includes improper disposal of liquid/solid waste (hazardous or non-hazardous).

A second permit for “Change of Forest Land Use to Mining Infrastructure” (Cambio de Utilización de Terreno Forestal a Infraestructura Minera) was requested to the SEMARNAT and granted in September of 2008 for the adjacent San Gonzalo Mine. The corresponding legislation is Article 62, section IX of the “Ley General de Desarrollo Forestal Sustentable” (General Law for Sustainable Forest Development) and Article 27 of the Regulation. . In addition, the Official Mexican Standard NOM-060-SEMARNAT-1994 and NOM-061-SEMARNAT-1994 must be adhered to. As per the authorization, Avino must complete its change in land use within 18 months of the date of the permit.

20.2.3 APPLICABLE LEGISLATION

In order to remain in compliance with current permits for the San Gonzalo Mine, the following eight applicable Official Mexican Standards for the Project must be complied with:

- Official Mexican Standards NOM-001-SEMARNAT-1996, which establishes the maximum limits allowed for contaminants in waste water discharges in national waters and goods
- Official Mexican Standard NOM-041-SEMARNAT-1999; which establishes the maximum limits allowed for the emission of polluted gas generated from the exhaust pipe of automotive vehicles circulating, which utilize gas as fuel
- Official Mexican Standard NOM-043-SEMARNAT-1993, which establishes the maximum levels allowed for emissions from fixed sources of solid particles to the atmosphere
- Official Mexican Standard NOM-045-SEMARNAT-1996, which establishes the maximum levels of emission (smokes opacity) generated from of automotive vehicles circulating, which utilize diesel or mixtures that include diesel as fuel
- Official Mexican Standard NOM-052-SEMARNAT-2005, which establishes the characteristics, the process of identification, classification and listing of hazardous waste
- Official Mexican Standard NOM-054-SEMARNAT-1993, which establishes the procedure to determine the incompatibility between two or more types of residues considered as harmful by NOM-052-SEMARNAT-2005
- Official Mexican Standard NOM-059-SEMARNAT-2001, which regulates the environmental protection-Mexico’s native species of wild flora and fauna and specifications for their inclusion, exclusion or change-list of species in risk
- Official Mexican Standard NOM-060-SEMARNAT-1994, which establishes protection measures for forestry grounds.

In addition, other Official Mexican Standards regarding change in land use and mining must be followed and may include:

- Official Mexican Standard NOM-061-SEMARNAT-1994, which refers to the specifications to mitigate the adverse effects caused to the Wild Animals and Uncultivated Vegetation as a result of the forestry utilization, and which nomenclature was modified
- Official Mexican Standard NOM-062-SEMARNAT-1994 establishes specifications to mitigate adverse effects on biodiversity that are caused by change of land use in forested areas
- Official Mexican Standard NOM-120-SEMARNAT-1997 establishes environmental protection specifications for mining exploration activities in dry and temperate climate regions
- Official Mexican Standard NOM-141-SEMARNAT-2003 establishes requirements for tailings characterization, and specifications and criteria for site preparation, design, construction, operation and post-operation of tailings dams.

Dependent on the mining plan, additional Official Mexican Standards for mining operations will also be required for the Project:

- Official Mexican Standard NOM-147-SEMARNAT/SSA1-2004, which establishes criteria for determining the concentrations of remediation of soils contaminated with arsenic, barium, beryllium, cadmium, hexavalent chromium, mercury, nickel, silver, lead, selenium, thallium and/or vanadium; published in the Official Gazette on March 2, 2007
- Draft Official Mexican standard, PROY-NOM-XXX-SEMARNAT-2009, which establishes the elements and procedures to implement management plans for mining waste
- Draft Official Mexican Standard NOM-155-SEMARNAT-2007, which establishes environmental protection requirements for systems leaching gold and silver ores
- General Law for the Prevention and Management of Waste (Ley General para la Prevención y Gestión Integral de los Residuos (LGPGIR)) and applicable regulations, which regulated the following registrations and authorizations:
- Hazardous Waste Generator's Registration and other compliance documents; such as Manifest, Monthly Log of Hazardous Waste Generation; Ecological Waybills for the Importation and/or Exportation of hazardous Materials and Wastes; Semi-annual Report on Hazardous Wastes Sent to Recycling, Treatment or Final Disposition; and Accidental Hazardous Waste Spill Manifest
- LGEEPA
- Official Mexican Standard NOM-023-STPS-2003, which establishes standards for work in mines and health and safety conditions at these sites
- Official Mexican Standard NOM-055-SEMARNAT-2003, which establishes the requirements to be met by sites that will use a hazardous waste landfill

- Official Mexican Standard NOM-147-SEMARNAT/SSA1-2004, which establishes criteria for determining the concentrations of remediation of soils contaminated by arsenic, barium, beryllium, cadmium, chromium.

20.3 Environmental Monitoring and Reporting

The conditional authorization sets out the requirements for environmental monitoring and reporting, on a semi-annual basis, for a minimum of five years. Details are provided in Section 20.2.

20.4 Environmental Management

Brownfields, or site recycling as it is called within the Mexican environmental legislation, looks at the environmental liabilities (pasivos ambientales) as per Articles 68, 69 and 70 of the Ley General Para la Prevención y Gestión Integral de Residuos (LGPyGIR) or General Law for the Prevention and Comprehensive Management of Waste. It is based on the "polluter pay" principle, according to the LGEEPA, and the LGPyGIR. The federal government coordinates with both provincial and municipal authorities to manage the environmental liabilities, whether the sites are orphaned or not. The LGPyGIR requires complete clean-up of contaminated sites.

20.5 Water Management

Fresh water for the Project is available from a well drilled in 1996, west of the mine site and surface water from a dam which is divided 60%/40% with the town of Panuco de Coronado. The Project has previously been charged annually for water use. Piping infrastructure from these water sources is still in place.

Additional water was also obtained from underground workings, and re-circulation from the tailings. There is potential for the water from the underground workings to be acid producing (Slim 2005d). Treatment of water from the underground workings may be required prior to use depending on the water quality.

20.6 Sulphide Tailings Management

ABA tests have indicated that mild acid generation may already have started on the tailings dam. A gap analysis and additional tests to further characterize current conditions of the tailings should be completed to properly design a tailings management plan.

Three preliminary options have been identified for the management of the sulphide tailings:

- reprocessing the tailings
- retreating of the tailings on the heap
- re-location and treatment for remediation.

The feasibility of these options are not known at this stage.

The absence of complete sulphide tailings metallurgical information makes identification of feasibility of the options difficult. A detailed trade-off study should be undertaken to characterize current conditions of the tailings and to determine whether the retreatment of this material would contribute to the profitability of the Project. However, at this stage only limited metallurgical test data is available since no detailed metallurgical test work was undertaken on this material during the MMI 2004 test program.

Alternatively, the treatment of the sulphide tailings for gold recovery will afford an opportunity to recover silver and gold from the material as well as treating this material with the lime to ensure that this material will not be a net acid producer. Indications are that the sulphide tailings will also require treatment for environmental remediation purposes in the future. These costs could be partially or completely be off-set by treating this material separately or together with the oxide material by the heap leach process.

Re-locating the sulphide tailings may afford a more expedient option to address this potential environmental problem. For the purposes of this preliminary economic assessment, it will be assumed that the sulphide tailings will be moved to another location north-east of the proposed site for the leach pad.

20.7 MINE CLOSURE AND RECLAMATION

An updated mine closure plan and reclamation will be required for the Project. The mine closure plan should include information; such as:

- justification for the closure plan considering technical, environmental and legal aspects
- objectives and how they will be met
- photo evidence and details of the environmental situation prior to commencing closure activities
- schedule of activities
- the progressive reclamation of the site during the life of the operation
- the design of tailings disposal areas
- the reclamation and re-vegetation of the surface disturbances wherever practicable
- a cost estimate of the work required to close and reclaim the mine
- a plan for ongoing and post-closure monitoring and reporting at the site.

No cost estimates have been generated at this time to ensure the Project meets the environmental requirements once the processing of the heap material has been terminated.

As per federal regulations, under LGEEPA, both the SEMARNAT and Procuraduría Federal de Proteccíon al Ambiente (PROFEPA) (Federal Attorney for Environmental Protection) ministries require Avino to present in its first semi-annual report for a General Plan to Remediate the Site dates, activities, techniques, costs that will guarantee restoration of affected areas, considering complete reforestation of impacted sites, removal of foundations and infrastructure that is no longer useful, roads that no longer have any use, remove all rubbish and properly dispose of, closing off adits that are no longer needed and restoration of the tailings facility when its operational life is finished. Avino will also need to present a reforestation program for the entire surface area affected during mining operations. This program will include caveats to safeguard flora and fauna.

20.8 Socio-economic and Community Considerations

This socio-economic section of the PEA:

- identifies communities that may potentially be affected by the development of the Project
- identifies potential positive and adverse effects of the Project on local communities
- advises on further study requirements.

20.8.1 Project Location

The Project is located approximately 82 km northeast of the City of Durango, in the state of Durango. The Property lies between the communities of Panuco de Coronado and San Jose de Avino.

20.8.2 Consultation with Communities

The implementation of an effective community engagement program is fundamental to the successful environmental permitting of mining projects. As part of a comprehensive community engagement program, should be initiated as soon as possible. Consultation will include addressing concerns of the leap-leach pile that may be present within or adjacent to the Property.

Consultation and the development of a working relationship with local communities typically involves the development of a series of agreements that lay the groundwork for conversations. These include:

- memorandums of understanding
- protocol agreements
- community consultation/participation agreements.

As project exploration and development proceeds, other agreements will become necessary, including:

- socio-economic/community economic benefits agreements
- environmental monitoring agreements
- training agreements
- accommodation/impact benefit agreements.

Potential Positive Effects on Local Communities

Potential positive effects of the proposed project development include:

- long-term, meaningful employment in mining operations and related positions (e.g., environmental monitors, service industry sector)
- economic development and contract opportunities for local communities (existing and new businesses), and community infrastructure improvements.

Potential Adverse Effects on Local Communities

For potential adverse effects of the proposed project development, it will be assumed that the sulphide tailings will be moved to another location northeast of the proposed site for the leach pad. Again, it should also be mentioned that this proposed site is very close to the town of San Jose de Avino and this may result in objections from the local community.

21.0 CAPITAL AND OPERATING COSTS

The estimated capital costs for the construction of the heap leach pad and the treatment facilities has been calculated to be US$28.8 million (US$24.4 million of initial capital plus US$4.4 million sustaining capital) and the estimated operating cost is US$15.06/t.

21.1 CAPITAL COSTS

21.1.1 INTRODUCTION

The updated capital costs for the Project have been developed based on 1,370 t/d or 500,000 t/a treatment of oxide tailings and construction of the heap leach pad in two phases.

The updated capital cost estimate includes the following items:

- An updated equipment list was generated with process engineering and new quotations for major equipment were obtained and replace the previous costs.
- Other items in the previous estimate in 2012 were escalated to reflect the current costs.

21.1.2 BASIS OF ESTIMATE

This estimate is a PEA, Class IV estimate prepared in accordance with industry standard. The accuracy of the estimate is -25%/+40% which is suitable for client review and a NI 43-101 report.

PRICING AND CURRENCY

This PEA estimate is prepared with a base date of Q4 2016 and has not included any escalation beyond this date.

For major equipment, costing is based on budgetary quotations from vendors. Other mechanical equipment costs are based on in-house data.

All capital costs are expressed in US dollars. No provision was made for fluctuations in the currency exchange rates.

The currency exchange rates used in the estimate are shown in Table 21.1.

Table 21.1 Currency Exchange Rate

Currency	Exchange
CDN$1.00	US$0.7454
MXN$19.23	US$1.0000

Construction Labour Rates

A blended labour rate of US$13.50/h has been used used and calculated based on the assessment of current labour conditions as compared to the labour rate of US$12.68 in the previous estimate from 2012.

Inflation Rate

An inflation rate has been applied to reflect the current cost of the Project (Table 21.2). The escalation is based on inflation rate (consumer prices) in Mexico (Trading Economics 2016 www.tradingeconomics.com).

Table 21.2 Inflation Rates in Mexico

Year	Rate (%)
2013	4.4
2014	5.6
2015	2.7
2016	3.5

An average rate of inflation from 2012 to 2016 is 17%. Due to a combination of factors such as inflation, supply/demand, and other effects such as environmental, technological, and political changes, an escalation of 2% per year was applied in the updated capital cost estimate.

Direct Costs

The equipment list has been updated based on the process flow diagram document. The cost of equipment was estimated based on changes to the process flow diagram.

Disciplines other than mechanical equipment used costs from the previous cost estimate, with escalation applied only.

Indirect Costs

All indirect costs were estimated based on a percentage of direct costs.

CONTINGENCY AND RISK

A contingency assessment was completed and applied to various areas of the direct and indirect costs to meet anticipated, foreseen, but incompletely defined costs to satisfy the approved scope.

Table 21.3 Contingency by Area

Contingency (%) by Area
12.0% of Mining, Agglomeration & Pad Loading
20.0% of Process Facilities
15.0% of Reagents / Auxiliary Services
15.0% of Buildings
30.0% of Leach Pad & Infrastructure
20.0% of Power Supply and Distribution
15.0% of EPCM & Vendor Representatives
15.0% of Freight & Construction Indirects
10.0% of Owners Costs

21.1.3 CAPITAL COST SUMMARY

The capital cost for the Project has been assessed at US$28.8 million (including initial capital of US$24.4 million) and is summarized in Table 21.4.

Table 21.4 Capital Cost Summary

Item/Description	Total Initial Capital Cost (US$000)	Total Sustaining Capital Cost (US$000)
Direct Costs		
Mining, Agglomeration, and Pad Loading	2,899	818
Process Facilities	3,979	
Reagents/Auxiliary Services	526	
Buildings	1,003	
Leach Pad and Infrastructure	4,522	1,819
Power Supply and Distribution	1,571	
Total Direct Costs	**14,500**	**2,637**
Indirect Costs		
Engineering, Procurement, Construction Management, Quality Assurance and Vendor Representatives	2,338	386
Freight and Construction Indirects	2,898	430
Owner's Costs	725	132
Contingency	3,902	767
Total Indirect Costs	**9,863**	**1,715**
Total Capital Costs	**24,363**	**4,352**

Mining, Agglomeration and Pad Loading

These costs include the facilities required for transferring the tailings from the existing tailing dam to the dump bin for oxide tailings and to the sulphide stockpile for the sulphide tailings, using the front-end loader and trucks. It also includes the facilities required for the loading of the tailings into a bin to feed the conveyor to the agglomerator, and includes the agglomerator and its structural supports as well as the ancillary equipment. These costs also includes the lime and cement silos.

Process Facilities

The costs in this section include the various items of equipment, the tanks and their attendant pumps and agitators (if equipped), the Merrill-Crowe circuit (supplied as a modular package unit) and other miscellaneous process-related equipment. The process equipment is estimated as new cost items.

Reagents and Auxiliary Services

The costs derived for this section include reagent preparation and holding tanks and related equipment as well as civil construction costs. Water will be supplied from the existing sources, namely from the dams and/or the wells. The costs shown for the fresh water supply includes the refurbishing of the equipment and pumps. Safety items related to reagent handling have also been included.

Buildings

The existing buildings and offices of the Avino Mine will be utilized for the Project. An allowance has been included for the refurbishment of these facilities. No costs have been allocated for the truck shop since it is intended to have a transport contractor to provide all the transportation needs for the Project. An allowance has been included for the procurement/refurbishing of laboratory equipment. The costs for constructing building to house the Merrill-Crowe circuit and reagent preparation related equipment have been included in the cost estimates.

Leach Pad and Infrastructure

The civil construction costs of upgrading the roads and constructing the leach pad and ponds are given in this section. The leach pad with liners and a leak detection system will be constructed in two phases. The barren, pregnant and event solution ponds will all be lined. Also included is the cost of fencing off the plant area, the telephone system, sewage disposal, water supply and treatment, and fuel storage facilities. The existing fuel storage facilities will be used but this will require refurbishing and this cost has been provided in this section.

Power Supply and Distribution

The refurbishing and expanding of the existing electrical power supply system, along with lighting, has been included in this section. It also includes power to the agglomerated area and the Merrill-Crowe area.

Indirect Costs

Indirect costs have been included as costs associated with construction services, consulting services, spare parts, and freight. Contingency has been included in the indirect costs.

No sunk costs or taxes have been added to the capital cost estimate.

21.2 Operating Costs

The LOM overall operating costs for the Project, including the costs for mining, process and G&A, have been estimated to be approximately $15.06/t milled. Table 21.5 gives the LOM overall unit operating cost summary, based on a nominal processing rate of 1,370 t/d. The operating cost estimate is reported in US dollar with an exchange rate of Mexican Peso to US Dollar at 19.23.

Table 21.5 LOM Unit Operating Cost Estimate Summary

Description	Personnel	Unit Cost (US$/t treated)
Mining	15*	1.13
Process	39	12.53
G&A	11	1.41
Total Operating Cost	**65**	**15.06**

Note: *labour requirement for trucking of the tailings and waste is excluded as it will be by a contractor.

21.2.1 Mining Operating Costs

Mining production cycle consists of loading, hauling and unloading, no drilling or blasting is required. Oxide tailing materials will be loaded using a 3.8 m^3 wheel loader and hauled to the leach pad using a 24 t articulated truck. Sulphide tailing materials are treated as waste and will be hauled to the waste dump. Trucking of oxide and sulphide materials will be performed by a contractor. Table 21.6 summarizes the mining operating costs.

Table 21.6 Mining Cost Summary

Mining Cost Item	LOM Cost* (US$ 000)	Unit Cost (US$/t mined)
Loading	226	0.037
Hauling	969	0.160
Support Equipment	649	0.107
Ancillary Equipment	274	0.045
Dewatering	252	0.042
Labour	1,153	0.190
Total Costs	**3,523**	**0.581**

Note: *excludes pre-production costs

21.2.2 PROCESS OPERATING COST ESTIMATE

The process operating cost for the Project includes the costs for agglomeration, heap leaching, solution handling and Merrill-Crowe refinery plant to produce a silver/gold doré.

Table 21.7 gives the overall LOM process operating cost summary based on a nominal processing rate of 1,370 t/d with an availability of 90% and 365 operating days per year.

The LOM annual average operating cost for the process facilities is estimated to be US$6.0 million per year or US$12.53/t of tailings treated.

Table 21.7 LOM Process Operating Cost

Description	Personnel	Annual Cost (US$)	Unit Cost (US$/t treated)
Process Manpower			
Maintenance Labour	7	105,200	0.221
Operations Labour	25	318,100	0.667
Laboratory	7	89,600	0.188
Subtotal	***39***	***512,900***	***1.076***
Process Supplies			
Operating Supplies	-	4,617,600	9.679
Maintenance Supplies	-	569,000	1.193
Power Supply	-	276,900	0.581
Subtotal	-	***5,463,500***	***11.453***
Total Process Operating Costs	**39**	**5,976,400**	**12.529**

The annual operating cost includes the following:

- staffing and maintenance manpower complements, and base salaries including an average burden of 60% (salary information is based on staffing complements, similar project salary costs as supplied by Avino, and Tetra Tech in-house data)
- power consumption based on the estimated power drawn by the equipment
- reagent consumption rates and associated costs have been based on test work results and recent prices received from reagent suppliers
- estimated maintenance costs based on approximately 10% of equipment costs.

MANPOWER

Table 21.8 shows the estimated operating and maintenance manpower requirements for the process plant.

The manpower operating costs have been determined using the operating plant complement required to run and maintain the plant facilities. The base salaries include an average burden of approximately 60%.

Table 21.8 Process Plant Manpower Requirements

Description	Manpower	Loaded Annual Salary (US$)	Total Annual Cost Payroll (US$)	Unit Cost (US$/t milled)
Plant Maintenance				
Maintenance Manager	1	42,162	42,162	0.088
Leach Plant Maintenance Foreman	1	19,443	19,443	0.041
Mechanics	1	8,382	8,382	0.018
Welders	1	8,382	8,382	0.018
Electricians	1	10,059	10,059	0.021
Apprentices	2	8,382	16,765	0.035
Subtotal	**7**		**105,194**	**0.221**
Operations				
Plant Superintendent	1	58,446	58,446	0.123
Engineering and Planning Manager	1	42,162	42,162	0.088
Plant Shift Foremen	3	19,443	58,330	0.122
Plant Operator: Agglomerator/Conveyors	6	7,960	47,762	0.100
Plant Operator: Merrill Crowe	6	7,960	47,762	0.100
Day Crew Reagents	2	7,960	15,921	0.033
Day Crew Heap Piping	6	7,960	47,762	0.100
Subtotal	**25**		**318,146**	**0.667**
Laboratory				
Chief Assayer	1	17,110	17,110	0.036
Assayer	6	12,074	72,444	0.152
Subtotal	**7**		**89,554**	**0.188**

Electrical Power and Supplies

Table 21.9 gives the annual electrical power requirement for the process facility based on the preliminary load list and operating hours. The unit cost of electrical power used for the estimate is US$0.070/kWh as provided by Avino. LOM average unit operating cost for the power consumed is estimated to be US$0.58/t of tailings processed.

Table 21.9 Process Power Supply

Plant Power Supply	~500 kW Running			
	kWh/a	Unit Cost (US$/kWh)	Total Cost (US$/a)	Unit Cost (US$/t milled)
Plant Power	3,955,975	0.070	276,918	0.581
Total Power Supply	-	-	276,918	0.581

The annual maintenance supplies requirement for the process plant has been estimated for each of the process facilities based on approximately 10% of equipment costs. These costs are shown in Table 21.10. The process plant cost of maintenance supplies has been estimated to be US$569,000 per year, or US$1.19/t of oxide tailings treated.

Table 21.10 Process Maintenance Supplies

Area	Total Cost (US$/a)	Unit Cost (US$/t milled)
Conveyors	183,000	0.384
Agglomerator	90,000	0.189
Leach Plant and Refinery Supplies, and Maintenance	246,000	0.516
Others	50,000	0.105
Total Maintenance Supplies	**569,000**	**1.193**

The annual estimated process plant operating supplies requirements are provided in Table 21.11. The total annual cost of operating supplies for the process plant has been determined to be US$4.6 million, or US$9.68/t of tailings treated. The main operating supply cost is the expenditure for the reagents,

Table 21.11 Plant Operating Supplies

Supplies	Consumption (kg/t milled)	Unit Cost (US$/kg)	Total Cost (US$/a)	Unit Cost (US$/t milled)
Reagents				
Cement	10.90	0.13	675,955	1.417
Lime	6.87	0.10	327,483	0.687
Cyanide	0.93	2.25	996,044	2.088
Zinc Dust	0.96	4.00	1,831,806	3.840
Lead Nitrate	0.19	3.74	338,979	0.711
Filter -Aid	0.10	0.73	34,823	0.073
Pre-Coat	0.10	0.09	4,293	0.009
Sodium Hydroxide	0.09	0.80	34,346	0.072
Sulphuric Acid	0.76	0.42	152,269	0.319
Calcium Hypochlorite	0.05	3.00	71,555	0.150
Subtotal Reagents			**4,467,555**	**9.365**
Other Operating Supplies			150,000	0.314
Subtotal Other Supplies			**150,000**	**0.314**
Total Operating Supplies	-	-	**4,617,555**	**9.679**

21.2.3 G&A Cost Estimate

Average LOM G&A operating cost is estimated to be US$672,000 per year, or US$1.41/t of tailings treated. Table 21.12 and Table 21.13 detail the manpower requirement estimates, annual G&A expenses and LOM unit G&A expenses operating cost.

Table 21.12 G&A Manpower Requirements

Description	Manpower	Annual Cost/ Employee (US$)	Total Annual Cost Payroll (US$)	Unit Cost (US$/t milled)
General Manager	1	64,514	64,515	0.135
Administration Manager	1	35,574	35,574	0.075
First Aid Attendant	1	10,821	10,821	0.023
Purchasing Agent	1	17,380	17,380	0.036
Office Clerk	1	9,623	9,623	0.020
Computer Technician	1	9,623	9,623	0.020
Safety and Security	2	22,650	45,300	0.095
Warehouse Staff	2	10,663	21,325	0.045
Environmental Supervisor	1	22,650	22,650	0.047
Total G&A Manpower	**11**	-	**236,811**	**0.496**

Table 21.13 G&A Expenses

Description	Total Cost (US$/a)	Unit Cost (US$/t milled)
Communications	36,000	0.076
Consulting	30,000	0.063
Human Resources and Employee Costs	10,000	0.021
Vehicle Costs	15,000	0.032
Site Costs	24,000	0.050
Office Costs	24,000	0.050
Safety and Security	24,000	0.050
Travel	36,000	0.076
Water Costs	24,000	0.050
Housing Costs	30,000	0.063
Insurance	60,000	0.126
General & Others	50,000	0.105
Environmental		
Consumables and Supplies	24,000	0.050
Permitting	24,000	0.050
Water Analysis	24,000	0.050
Total G&A Expenses	435,000	0.912

21.3 AVINO AND SAN GONZALO VEINS

Avino is currently conducting mining activity on the Avino and San Gonzalo Veins. There is no cost estimate applicable and all costs below are based on actual expenditure.

Avino has not based its production decisions on a Feasibility study or Mineral Reserves demonstrating economic and technical viability, and as a result there is increased uncertainty and multiple technical and economic risks of failure, which are associated with these production decisions. These risks, among others, include areas that would be analyzed in more detail in a Feasibility study, such as applying economic analysis to Mineral Resources and Mineral Reserves, more detailed metallurgy, and a number of specialized studies in areas such as mining and recovery methods, market analysis, and environmental and community impacts.

21.3.1 CAPITAL COSTS

The actual capital expenditures to date on the Avino and San Gonzalo Veins are summarized in Table 21.14 and Table 21.15, respectively.

Mine and mill capital costs were attributed to equipment purchases.

Table 21.14 Capital Costs for the Avino Vein (US$)

Description	Q1 2017	2016	2015	2014
Office Furniture	5,531	8,625	7,093	6,521
Computer Equipment	1,415	14,913	17,233	33,178
Mill Machinery and Processing Equipment	3,315	70,653	525,067	2,832,627
Mine Machinery and Transportation Equipment	106,659	1,985,446	1,918,764	2,125,229
Buildings and Construction	99,334	485,757	590,639	313,875
San Gonzalo Vein Mineral Property	0	0	0	0
Elena Toloso Mineral Property	233,772	4,330,125	0	0
Total Capital Costs	**450,026**	**6,895,518**	**3,058,796**	**5,311,429**

Source: Avino

Table 21.15 Capital Costs for the San Gonzalo Vein (US$)

Description	Q1 2017	2016	2015	2014
Office Furniture	5,212	7,248	3,725	6,521
Computer Equipment	1,368	12,575	17,233	32,937
Mill Machinery and Processing Equipment	139,499	188,884	100,537	264,178
Mine Machinery and Transportation Equipment	143,758	40,294	133,248	646,981
Buildings and Construction	101,559	443,135	55,819	356,300
San Gonzalo Vein Mineral Property	133,723	1,080,889	577,462	697,107
Elena Toloso Mineral Property	0	0	0	0
Total Capital Costs	**525,119**	**1,773,024**	**888,024**	**2,004,023**

Source: Avino

21.3.2 Operating Costs

The mine and milling costs included operating and maintenance labour together with the operation associated consumable supplies. The cost for electrical power was included in the milling costs. The geological component was mostly related to technical labour.

Table 21.16 Operating Costs for the Avino Vein (US$)

Description	Q1 2017	Q4 2016	Q3 2016	Q2 2016
Mining Cost	1,711,570	1,402,941	2,232,967	1,670,300
Milling Cost	947,743	922,639	1,082,387	942,560
Geological and Other	710,786	711,391	847,942	740,911
Royalties	160,468	202,790	219,658	188,349
Depletion and Depreciation	367,658	301,433	354,249	264,074
Total Direct Costs	3,898,225	3,541,194	4,737,202	3,806,193
G&A	777,487	742,572	1,516,352	558,332
Total Operating Costs	**4,675,712**	**4,283,766**	**6,253,555**	**4,364,525**

Source: Avino

Table 21.17 Operating Costs for the San Gonzalo Vein (US$)

Description	Q1 2017	Q4 2016	Q3 2016	Q2 2016	Q1 2016
Mining Cost	451,288	1,798,503	793,057	1,419,545	313,684
Milling Cost	70,962	212,467	208,665	358,227	221,803
Geological and Other	149,192	318,843	141,618	200,997	103,299
Royalties	0	0	0	0	0
Depletion and Depreciation	97,352	485,732	148,105	271,972	72,053
Total Direct Costs	768,794	2,815,545	1,291,445	2,250,740	710,839
G&A	293,096	607,351	635,649	281,192	666,121
Total Operating Costs	**1,061,890**	**3,422,897**	**1,927,094**	**2,531,933**	**1,376,960**

Source: Avino

21.4 Sulphide Tailings

Avino is not currently conducting mining activity on the sulphide tailings portion of the Property. No capital or operating costs have been estimated for any potential mining activity on the sulphide tailings portion of the Property.

22.0 ECONOMIC ANALYSIS

22.1 INTRODUCTION

A PEA should not be considered to be a Prefeasibility or Feasibility study, as the economics and technical viability of the Project have not been demonstrated at this time. The PEA is preliminary in nature and includes Inferred Mineral Resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as Mineral Reserves. Furthermore, there is no certainty that the conclusions or results reported in the PEA will be realized. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

No economic analysis has been performed for the Avino Vein, the San Gonzalo Vein or the sulphide tailings. Tetra Tech prepared an economic evaluation for the oxide tailings retreatment based on a pre-tax financial model. Metal prices used in the base case were:

- gold – US$1,250/oz
- silver – US$18.50/oz.

The pre-tax financial results are:

- 48.4% IRR
- 2.0-year payback period
- US$40.5 million NPV at an 8% discount rate.

Avino commissioned PwC in Vancouver to prepare the tax component of the model for the post-tax economic evaluation for this updated PEA with the inclusion of applicable income and mining taxes.

The following post-tax financial results were calculated:

- 32% IRR
- 2.6-year payback period
- US$22.2 million NPV at an 8% discount rate.

22.2 PRE-TAX MODEL

22.2.1 MINE/METAL PRODUCTION IN FINANCIAL MODEL

The life-of-project average material tonnages, grades and metal production are shown in Table 22.1.

Table 22.1 Metal Production from the Avino Mine Tailings Retreatment

Description	Value
Total Tonnes to Mill (000 t)	3,122
Annual Tonnes to Mill (000 t)	500
Mine Life (years)	7
Average Grades	
Gold (g/t)	0.43
Silver (g/t)	87.75
Total Production	
Gold (000 oz)	33
Silver (000 oz)	6,173
Average Annual Production	
Gold (000 oz)	4.66
Silver (000 oz)	881.92

Note: Excluding one-year pre-production period.

22.2.2 BASIS OF FINANCIAL EVALUATIONS

The production schedule has been incorporated into the 100% equity pre-tax financial model to develop annual recovered metal production from the relationships of tonnage processed, head grades, and recoveries.

Gold and silver payable values were calculated based on base case metal prices. Net invoice value was calculated each year by subtracting the applicable refining charges from the payable metal value. At-mine revenues are then estimated by subtracting transportation and insurance costs. Operating costs for mining, processing, and G&A were deducted from the at-mine revenues to derive annual operating cash flow.

Initial and sustaining capital costs as well as working capital have been incorporated on a year-by-year basis over the mine life. Salvage value and mine reclamation costs are applied to the capital expenditure in the last production year. Capital expenditures are then deducted from the operating cash flow to determine the net cash flow before taxes.

Initial capital expenditures include costs accumulated prior to first production of doré. Sustaining capital includes any capital expenditures required during the production period. Initial and sustaining capital costs applied in the economic analysis are US$24.36 million and US$4.35 million, respectively.

Working capital is assumed to be three months of the annual operating cost and fluctuates from year to year based on the annual cost. The working capital is recovered at the end of the mine life.

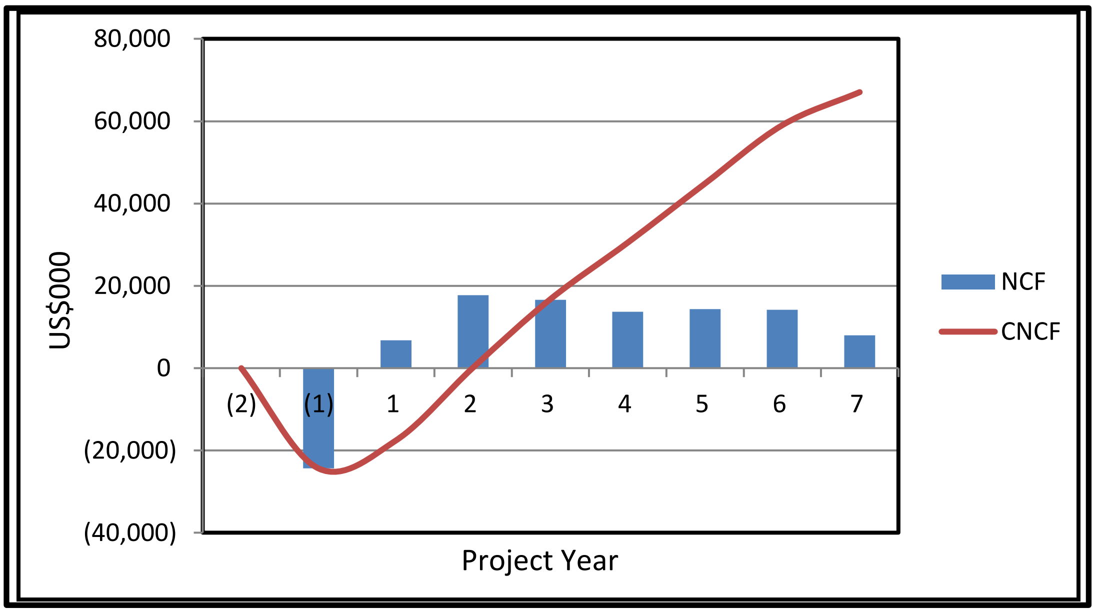
The salvage value is assumed to be 3% of the capital costs and recovered at the end of mine life.

Mine closure and reclamation is assumed to be US$0.10/t mined and incurred at the end of mine life.

Pre-production period is assumed to be one year. NPV and IRR reported in this section are estimated at the start of this one-year period.

The undiscounted annual net cash flow (NCF) and cumulative net cash flow (CNCF) are illustrated in Figure 22.1.

Figure 22.1 Undiscounted Annual and Cumulative Net Cash Flow



22.3 SUMMARY OF FINANCIAL RESULTS

Tetra Tech evaluated the base case using gold and silver prices of US$1,250/oz and US$18.50/oz, respectively.

The pre-tax financial model was established on a 100% equity basis, excluding debt financing, and loan interest charges. The financial results for the base case are presented in Table 22.2.

Table 22.2 Summary of Pre-tax Financial Results

Description	Base Case
Gold Price (US$/oz)	1,250
Silver Price (US$/oz)	18.5
Total Payable Metal Value (US$000)	148,892
Refining (US$000)	6,123
Transportation, Insurance (US$000)	214
At-mine Revenue (US$000)	142,555
Operating Costs (US$000)	47,034
Operating Cash Flow (US$000)	95,521
Initial Capital (US$000)	24,363
Sustaining Capital (US$000)	4,352
Salvage Value (US$000)	-861
Reclamation Cost (US$000)	606
Total Capital Expenditure, Including Reclamation and Salvage (US$000)	28,460
Net Cash Flow (US$000)	67,061
Discounted Cash Flow NPV (US$000) at 5.00%	48,922
Discounted Cash Flow NPV (US$000) at 8.00%	40,554
Discounted Cash Flow NPV (US$000) at 10.00%	35,786
Payback (years)	2.0
IRR (%)	48.4

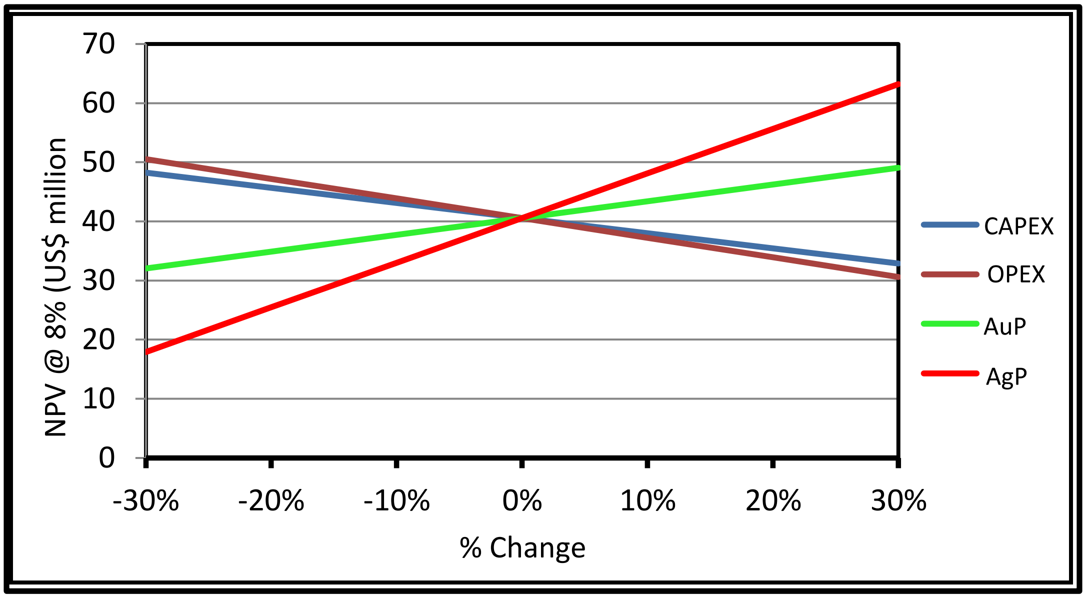
22.4 SENSITIVITY ANALYSIS

Sensitivity of the Project's NPV, IRR and payback period to the Project key variables was investigated. Using the base case as a reference, each of the key variables was changed between -30%/+30% at 10% intervals, while holding the other variables constant. The following are the key variables investigated:

- capital costs (CAPEX)
- operating costs (OPEX)
- gold price (AuP)
- silver proce (AgP)

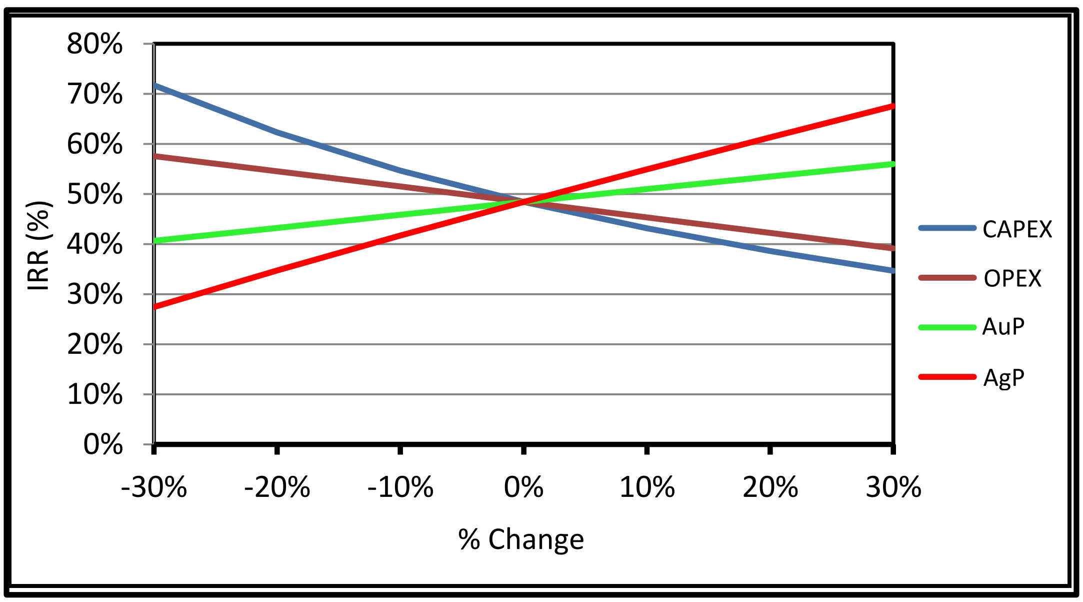
As shown in Figure 22.2, the Project NPV, calculated at an 8% discount, is most sensitive to the silver price and, in decreasing order, operating costs, gold price, and capital costs.

Figure 22.2 NPV Sensitivity Analysis



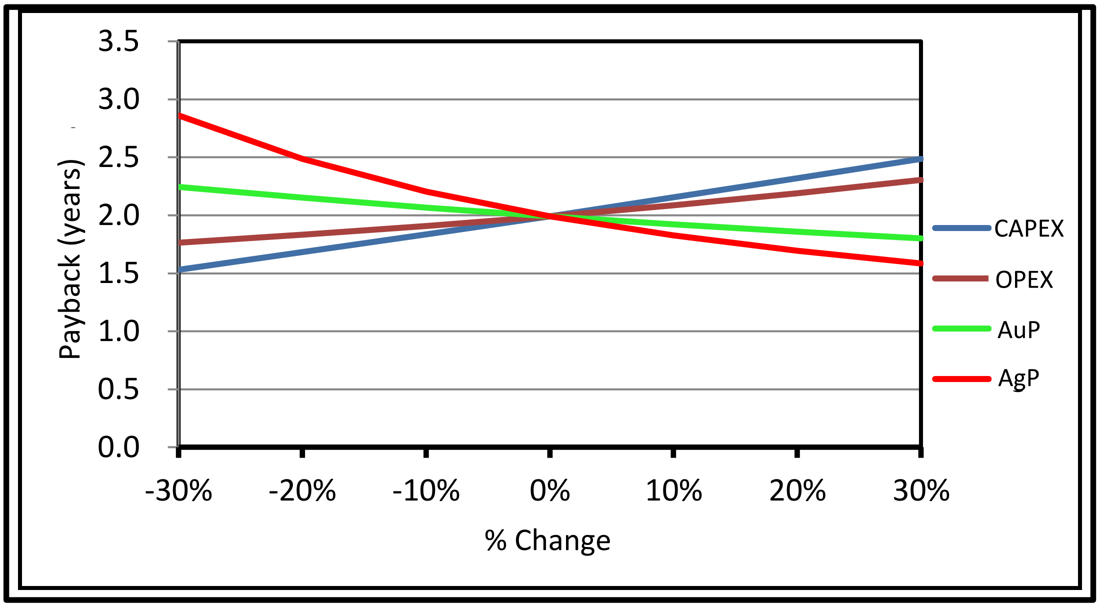
As shown in Figure 22.3, the Project IRR is most sensitive to capital costs and silver price, followed by operating costs and gold price.

Figure 22.3 IRR Sensitivity Analysis



As shown in Figure 22.4, the payback period is also most sensitive to the silver price, followed by capital costs, operating costs, and the gold price.

Figure 22.4 Payback Period Sensitivity Analysis



22.5 Post-tax Economic Analysis

Avino commissioned PwC in Vancouver to prepare the tax component of the model for the post-tax economic evaluation for this updated PEA, with the inclusion of applicable income and mining taxes.

The following general tax regime was recognized as applicable at the time of report writing.

22.5.1 Mexican Income Tax Regime

Federal income taxes in Mexico are calculated using the currently enacted corporate rate of 30%.

Taxable income is gross income, which includes any kind of income unless specifically excluded, less allowed deductions and unexpired net operating loss carryovers from prior years.

In general terms, all "strictly indispensable", fully documented business expenses are deductible, with the restrictions, exceptions and special requirements for specific expenses established in the tax law and its regulations. For purposes of this model there is no determination of any non-deductible expense incurred as part of the operating costs.

The government's fiscal year is the calendar year, which must also be used by all taxpayers for corporate, legal, and income tax purposes.

An operating loss declared for a tax purposes can be carried forward and deducted from otherwise taxable profits of the ten subsequent years. Such deductible loss carried forward will also be indexed (increased) for inflation. Operating loss carry back is not allowed.

The income tax law allows the deduction of the costs of investments in tangible property or intangible assets only through annual charges for depreciation or amortization. The straight-line method, without recognition of estimated salvage values, is the only acceptable method for tax purposes.

In general, all types of fixed assets except land are depreciable for tax purposes, as long as they can be shown to have been acquired for the business purposes of the corporation itself.

The rates used for a tax purposes may be less than the legal maximum straight-line rates but, once adopted, may be changed only once in a five-year period. Depreciation may commence in the fiscal year in which the assets are placed in use or in the following year, at the election of the taxpayer.

When an asset is disposed of or becomes useless the remaining undepreciated historical cost may also be deducted after application of the appropriate inflation adjustment factor to the undepreciated historical cost.

Straight-line depreciation computed at the rates specified by the Law, based on the estimated useful lives of the different types of assets, may be increased by the application of the percentage increases in the National Consumer Price Index since the month of acquisition of the asset. For purposes of the tax model the average inflation per year either for the tax losses or the depreciation is 3%, which is consistent with the Mexican inflation rate in recent years. Also, specific annual depreciation rates are established for certain industries. Machinery and equipment are amortized at 12% straight-line in the mining industry. The top percentage authorized for other constructions (buildings) is 5%.

Exploration and development expenses and the cost of mining claims incurred prior to the commencement of commercial operations of a mine are treated as pre-operating expenses which are amortizable at 10% per annum.

For purposes of the model, depreciation and inflation for the additions were determined based on full years.

Interest on loans can be deducted if the proceeds of the loans have been invested in the business of the company and proper withholding taxes, if applicable, have been paid. Based on the model, there is not intercompany interest expense to be considered.

The Mexican Labor Law has a mandatory requirement whereby employers must share 10% of their profits with employees. However, to mitigate this requirement, companies have traditionally set up two separate entities in Mexico: one to run the business with limited employees and the other one to hire and lease out employees to the business. For purposes of the model we are not determining any profit sharing to be distributed.

22.5.2 Mexican Mining Duties Regime

A special mining duty (SMD) of 7.5% is applied to net profits derived by a concession holder from the sale or transfer of extraction activities. Profits for purposes of the SMD are determined in a manner similar to the calculation of general taxable income, with some exceptions (e.g. interest is not included in income and deductions are not available for interest and investments in fixed assets other than exploration expenses). The SMD must be paid annually by the last business day of March of the year following the tax year. The SMD payment is deductible for tax purposes, resulting in an effective tax rate of 5.25%.

Owner of mining concessions are also required to pay an additional 0.5% tax on gross income derived from the sale of gold, silver and platinum. This extraordinary mining duty is due annually by the last business day of March of the year following the tax year. This duty is also deductible for tax purposes so that the effective rate is 0.35%.

22.5.3 Taxes and Post-tax Financial Results

At the base case gold and silver prices used for this study, total estimated taxes payable are $26.32 million over the seven-year LOM, as shown in Table 22.3.

Table 22.3 Components of the Various Taxes Applicable

	Unit	Base Case
Gold	US$/oz	1,250.00
Silver	US$/oz	18.50
Extraordinary Mining Duty	US$ million	0.714
Special Mining Duty	US$ million	7.164
Income Tax	US$ million	18.440
Total Tax	US$ million	26.318

Post-tax financial results are summarized in Table 22.4.

Table 22.4 Summary of Post-tax Financial Results

	Unit	Base Case
Gold	US$/oz	1250.00
Silver	US$/oz	18.50
Undiscounted NCF	US$ million	40.743
NPV (at 5%)	US$ million	28.006
NPV (at 8%)	US$ million	22.187
NPV (at 10%)	US$ million	18.892
IRR	%	32.0
Payback	years	2.6

22.6 ROYALTIES

Avino advised that there is no private royalties applicable to this project. Therefore, no royalties are considered in this economic analysis.

22.7 SMELTER TERMS

In the absence of letters of interest or letters of intent from potential smelters or buyers of gold and silver doré, smelter terms for similar projects have been applied.

- gold – pay 99% on the gold less a refining charge of $8.00/accountable troy oz.
- silver – pay 95% on the silver less a refining charge of $1.00/accountable troy oz.

22.8 TRANSPORTATION LOGISTICS

Transportation costs for gold and silver doré are assumed to be included in the refining charges.

22.8.1 INSURANCE

An insurance rate of 0.15% was applied to the provisional invoice value of the doré.

23.0 ADJACENT PROPERTIES

There are no material properties adjacent to the Property.

24.0 OTHER RELEVANT DATA AND INFORMATION

There is no additional information or explanation necessary to make the technical report understandable and not misleading.

25.0 INTERPRETATION AND CONCLUSIONS

25.1 GEOLOGY

The Property is located in Durango State in North Central Mexico, within the Sierra Madre Silver Belt, and 82 km northeast of Durango City. The current Property is comprised of 23 mineral concessions, totalling 1,103.934 ha.

The Property is located within a large caldera which hosts numerous epithermal veins and breccias, grading into a "near porphyry" environment. The dominant rock types in the region of the Avino Mine include andesitic, rhyolitic and trachytic pyroclastic rocks. The area was intruded by monzonite dykes and stocks, which appear to be related to mineralization. Silver- and gold-bearing veins crosscut the various lithologies and are generally oriented north-northwest to south-southeast and northwest to southeast. The rocks have been weathered and leached in the upper sections from contact with atmospheric waters, resulting in an oxidized and a reduced, or sulphide, portion of the mine.

Four deposits are present on the Property: the Avino Vein, the San Gonzalo Vein, and the tailings dam (which includes an oxide and a sulphide portion). Current Mineral Resource estimates are reported in this study for the Avino and San Gonzalo veins, as well as the oxide tailings.

25.2 RESOURCE ESTIMATES

The Mineral Resources of the Property are summarized in Table 25.1.

It must be noted that no Mineral Resource has been estimated for the sulphide tailings portion of the Property.

A PEA should not be considered to be a Prefeasibility Study or Feasibility Study, as the economics and technical viability of the Project have not been demonstrated at this time. The PEA is preliminary in nature and includes Inferred Mineral Resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as Mineral Reserves. Furthermore, there is no certainty that the conclusions or results reported in the PEA will be realized. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

Table 25.1 Mineral Resources at the Avino Mine Property

Resource Category	Deposit	Cut-off (Ag_Eq g/t)	MTonnes (t)	Grade				Metal Contents		
				Ag_Eq (g/t)	Ag (g/t)	Au (g/t)	Cu (%)	Ag (million tr oz)	Au (thousand tr oz)	Cu (t)
Avino Mine: Measured & Indicated Mineral Resources										
Measured	Avino System	55	950,000	143	74	0.33	0.69	2.3	10.0	6,550
Measured	San Gonzalo System	125	170,000	357	272	1.50	0.00	1.5	8.2	0
Total Measured	**All Deposits**	**-**	**1,120,000**	**176**	**105**	**0.51**	**0.58**	**3.8**	**18.2**	**6,550**
Indicated	Avino System	55	500,000	129	68	0.36	0.56	1.1	5.7	2,800
Indicated	San Gonzalo System	125	320,000	310	237	1.30	0.00	2.4	13.3	0
Indicated	Oxide Tailings	50	1,330,000	124	98	0.46	0.00	4.2	19.8	0
Total Indicated	**All Deposits**	**-**	**2,150,000**	**152**	**111**	**0.56**	**0.13**	**7.7**	**38.8**	**2,800**
Total Measured & Indicated	**All Deposits**	**-**	**3,270,000**	**160**	**109**	**0.54**	**0.29**	**11.5**	**57.0**	**9,350**
Avino Mine: Inferred Mineral Resources										
Inferred	Avino System	55	5,790,000	155	81	0.57	0.58	15.1	105.8	33,550
Inferred	San Gonzalo System	125	540,000	403	314	1.58	0.00	5.5	27.5	0
Inferred	Oxide Tailings	50	1,810,000	113	88	0.44	0.00	5.1	25.6	0
Total Inferred	**All Deposits**	**-**	**8,140,000**	**162**	**98**	**0.61**	**0.41**	**25.6**	**158.9**	**33,550**

Notes: Figures may not add to totals shown due to rounding.
Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
The Mineral Resource estimate is classified in accordance with the CIM Definition Standards
For Mineral Resources and Mineral Reserves incorporated by reference into NI 43-101 Standards of Disclosure for Mineral Projects.
Mineral Resources are reported at cut-off grades 50 g/t, 55 g/t, and 125 g/t silver equivalent grade.
Silver equivalent grades were calculated using conversion formulas Ag_Eq = Ag + 55.9 * Au + 72.99 * Cu for Avino Vein and Ag_Eq = Ag + 56.38 * Au for San Gonzalo Vein System and oxide tailings.
Cut-off grades were calculated using current costs, silver price of US$19.50/oz., gold price of US$1,250/oz. and copper price of US$2.10/lb.

25.3 Mineral Processing

Avino is currently conducting mining activities on the Avino Vein and the San Gonzalo Vein, including processing of the materials from both the properties at the flotation processing plant at the Avino Vein site. Production decisions for both the existing operations were being made without Mineral Reserves or any studies of economic viability that have been prepared in accordance with NI 43-101. As a result there is increased uncertainty and multiple technical and economic risks of failure, which are associated with these production decisions. These risks, among others, include areas that would be analyzed in more detail in a Feasibility study, such as applying economic analysis to Mineral Resources and Mineral Reserves, more detailed metallurgy, and a number of specialized studies in areas such as mining and recovery methods, market analysis, and environmental and community impacts.

For the oxide tailings, the preliminary test results indicate that the tailings samples responded well to cyanide leaching, including column leaching treatment. The processing method was developed according to the preliminary test work. The proposed gold and silver extraction is by heap leaching. The treatment plant will consist of agglomeration and cyanide heap leaching, followed by a Merrill-Crowe process to recover silver and gold from pregnant solution. The process plant will operate on a 24 h/d, 365 d/a basis, with an overall utilization of 90%.

For the sulphide tailings, Avino is not currently conducting mining activity on the tailings. No recovery methods are currently proposed for the sulphide tailings. The gold and silver recovery from the sulphide tailings has been excluded from this study.

25.4 Mining

Avino is currently conducting mining activity on the San Gonzalo and the Avino Veins. Both cut and fill and shrinkage stoping are used to feed the mill (more information can be found in Section 16.0).

The oxide tailings Mineral Resource will be mined/moved using a conventional truck/loader surface mining method. The production cycle will consist of loading and trucking. The production schedule has been developed for the oxide tailings based on a treatment rate of 500 kt/a; this would be equivalent to a throughput rate of 1,370 t/d.

25.5 Capital and Operating Costs

25.5.1 Oxide Tailings

Capital Costs

The capital cost for the oxide tailing tailings part of the Property has been developed based on the treatment of 1,370 t/d, or 500,000 t/a of oxide tailings. A total initial capital cost of US$24.4 million, including contingency, was estimated for the oxide tailings retreatment by the proposed heap leaching processing. The breakdown of the estimate is shown in Table 25.2. The exchange rate used for the cost estimates is Mexican Peso to US Dollar at 19.23.

Table 25.2 Capital Cost Summary

Item/Description	Total Initial Capital Cost (US$ 000)	Total Sustaining Capital Cost (US$ 000)
Direct Costs		
Mining, Agglomeration, and Pad Loading	2,899	818
Process Facilities	3,979	
Reagents/Auxiliary Services	526	
Buildings	1,003	
Leach Pad and Infrastructure	4,522	1,819
Power Supply and Distribution	1,571	
Total Direct Costs	**14,500**	**2,637**
Indirect Costs		
Engineering, Procurement, Construction Management, Quality Assurance and Vendor Representatives	2,338	386
Freight and Construction Indirects	2,898	430
Owner's Costs	725	132
Contingency	3,902	767
Total Indirect Costs	**9,863**	**1,715**
Total Capital Costs	**24,363**	**4,352**

Operating Costs

The LOM overall operating cost for the oxide tailings retreatment, including costs for mining, process and G&A, has been estimated to be approximately US$15.06/t milled and is detailed in Table 25.3. The LOM overall unit operating cost estimate is based on a nominal processing rate of 1,370 t/d.

Table 25.3 LOM Unit Operating Cost Estimate Summary

Description	Personnel	Unit Cost (US$/t treated)
Mining	15*	1.13
Process	39	12.53
G&A	11	1.41
Total Operating Cost	**65**	**15.06**

Note: *labour requirement for trucking of the tailings and waste is excluded as it will be by a contractor.

25.5.2 Avino Vein and San Gonzalo Vein

Avino is currently conducting mining activity on the Avino and San Gonzalo veins. There is no cost estimate applicable and all costs are based on actual expenditures. The capital and operating costs are detailed in Section 21.0.

Avino has not based its production decisions on a Feasibility study or Mineral Reserves demonstrating economic and technical viability, and as a result there is increased uncertainty and multiple technical and economic risks of failure, which are associated with these production decisions. These risks, among others, include areas that would be analyzed in more detail in a Feasibility study, such as applying economic analysis to Mineral Resources and Mineral Reserves, more detailed metallurgy, and a number of specialized studies in areas such as mining and recovery methods, market analysis, and environmental and community impacts.

25.5.3 Sulphide Tailings

Avino is not currently conducting mining activity on the sulphide tailings portion of the Property. No capital or operating costs have been estimated for any potential mining activity on the sulphide tailings portion of the Property.

25.6 Economic Analysis

No economic analysis has been performed for the Avino Vein, the San Gonzalo Vein or the sulphide tailings. Tetra Tech prepared an economic evaluation for the oxide tailings retreatment based on a pre-tax financial model. Metal prices used in the base case were:

- gold – US$1,250/oz
- silver – US$18.50/oz.

The pre-tax financial results are:

- 48.4% IRR
- 2.0-year payback period
- US$40.5 million NPV at an 8% discount rate.

Avino commissioned PwC in Mexico to prepare the tax component of the model for the post-tax economic evaluation for this updated PEA with the inclusion of applicable income and mining taxes.

The following post-tax financial results were calculated:

- 32.0% IRR
- 2.6-year payback period
- US$22.2 million NPV at an 8% discount rate.

26.0 RECOMMENDATIONS

26.1 INTRODUCTION

Tetra Tech recommends that Avino proceed with the next phase of work in order to identify potential cost savings and additional revenue generating opportunities, and to further assess the viability of the tailings retreatment project.

26.2 GEOLOGY

Aranz's recommendations are itemized in the following subsections. These recommendations are not required for continued mine development on the Property, and therefore a cost estimate for this work is not provided.

26.2.1 DATABASE MANAGEMENT

Tetra Tech has the following recommendations regarding Avino database management:

Tetra Tech (2013) previously recommended that all drillhole data (including collar, survey, assay, geology, and specific gravity data) should be maintained in a single, compiled database for both the Avino and San Gonzalo Veins. The data has been not consolidated to date. Aranz reiterates this recommendation but goes further to recommend that tailings sampling data also be included.

Aranz recommends that underground channel sampling and QA/QC data be incorporated into the same unified system together with the exploration drilling data to form a single repository or "version of the truth".

Avino currently possess Surpac™ software that should be adequate to manage a more centralized database. The ability to select data by type and location for assaying and logging should be managed through the judicious use of codes to allow selective extraction and summarization as and when required.

26.2.2 UNDERGROUND SAMPLING

Aranz has the following recommendations regarding Avino geology data and interpretation:

Aranz recommends that channel sampling strategy at the Avino Vein be revised. Currently the face sampling of the development drifts is sampled across the width (4 m wide) during the initial development. This information is used to make decisions on whether or not to consider the development muck to be mineralized and also for resource estimation. The Avino Vein is very wide (in excess of 30 m in places) and subsequent to development, sampling of the ledging to expose the full width of the orebodies, prior to stoping is less systematic. There is a risk of sampling bias towards the hanging and footwall drifts. A preliminary suggestion is that a scissor truck could provide access to the hanging wall, would enable sampling access to the entire hanging wall of the exposed vein. Sampling 30 m of channel samples one metre at a time by means of manual maul and hammer chipping is exhausting and is likely to result in poor sampling, so mechanical assistance such as a rock saw (compressed air-driven or electrical) should be considered.

The stratigraphy of the country rock on the margins of the Avino and San Gonzalo should be determined using multi-element analyses to provide geochemical signatures for the volcanic units. This would help to identify vertical intervals where the development of the veining and mineralization is likely to have been affected favourably or unfavourably by the geochemistry and thus to assist in prospecting for vein extensions or blind veins not intersected in the underground development. Grab samples from the underground exposures could be obtained rapidly to make a start. There may be an advantage to seek involvement with an academic researcher (for example at the University of British Columbia) to get work done relatively cheaply using the latest techniques.

26.2.3 Survey Data

Aranz recommends that survey data be reviewed during the course of drilling campaigns to avoid duplication in the database.

26.2.4 Specific Gravity Sampling and Analysis

Aranz recommends that Avino continues to develop the database for specific gravity data using drill cores. Aranz also recommends that grab samples from controlled underground exposures (location, and lithology description) be used to supplement the data. Aranz further recommends that some large samples be cut from the faces of the oxide tailings deposit weighed and measured to determine specific gravity for the deposit.

26.2.5 QA/QC Sampling

Aranz recommends that standards and blank submissions be included in the master database for the Property to avoid the difficulty of locating such data when it is resides in separate spreadsheet reports.

Aranz recommends that QA/QC performance graphs be updated on a monthly basis to allow questionable sample batches to be repeated timeously.

26.2.6 Sulphide Tailings Drilling

Drill the sulphide tailings when it has been dewatered. A hole spacing of 80 to 100 m (based on experience with the oxide tailings) should be sufficient to allow an Inferred Mineral Resource to be declared, provided sufficient mineralization is present.

26.2.7 Density Measurements

The current density measurements are sparse and not well distributed enough to provide the basis for meaningful spatial density estimation in the opinion of Aranz. Aranz recommends that further density measurements be generated. Access to most of the levels in the Avino Mine and San Gonzalo Mine provides the opportunity to rapidly supplement density measurements from underground exposures in the form of grab samples from known positions for the major vein units. Density measurements from the accessible oxide tailings heap can be obtained by carefully removing and measuring volumes of material and drying and weighing the material. Aranz suggests representative volumes of 0.5 m x 0.5 m x 0.5 m adjacent to the collars of every second drill hole should be captured.

26.2.8 Resource Estimation

A Mineral Resource estimate for the sulphide tailings should be completed for mine planning purposes, in addition to an updated oxide tailings Mineral Resource estimate following the drilling program recommended above (Section 26.2.6).

An internal capacity to perform mineral resource estimation, using geostatistical methods should be developed. The Surpac™ software should provide the tools to be able to do this in the long term.

26.2.9 Strategic Exploration Assessment

Aranz recommends that a global assessment of the potential of the secondary veins such as La Estella, San Jorge, Guadalupe and Santa Ana be carried out and compiled into a long-term exploration plan. This will enable a pipeline of opportunities to be generated and inform strategic decision-making to take full advantage of existing infrastructure and help to optimize cash flow in the face of fluctuating metal prices.

26.3 Process

26.3.1 Avino and San Gonzalo Veins

Avino is currently conducting mining activities on the Avino and San Gonzalo veins, including metal recovery using flotation processes. Tetra Tech recommends that Avino further optimize the processing conditions, including further metallurgical tests, to improve metallurgical performances for both the Avino and San Gonzalo vein mill feeds.

26.3.2 OXIDE AND SULPHIDE TAILINGS

Further tests are recommended to evaluate the metallurgical performances of the tailings samples, including the sulphide tailings samples. The test work should be conducted on samples that better represent the tailings Mineral Resources. The test work should include:

- head characterization and mineralogical determination
- leaching condition optimization, including cyanide concentration, leaching retention time, agglomeration binding material types and dosages
- determination of the effect of the particle size distribution on metal extraction and agglomeration
- further confirmation of the effect of flotation pre-concentration on improving overall metal recovery
- residual cyanide management tests, including residual cyanide management and valuable metal recoveries from the barren solution.

For the sulphide tailings, systematic test work should be conducted to effectively recover silver and gold values from the tailings, including co-processing of the sulfide tailings with the oxide tailings.

The estimated costs for the test work, excluding sampling, is approximately Cdn$150,000.

26.3.3 REFURBISHED EQUIPMENT

The suitability and/or the possibility of refurbishing the existing equipment at the Avino Mine needs to be further evaluated. Some water pumps and possibly some conveyors could be returned to service, and some of the existing tanks could be used for water storage/supply. The general availability of used equipment from other locations in the Durango district, or in Mexico, would need to be investigated.

26.4 ENVIRONMENTAL

The cost of permitting has not been considered at this stage of the Project. Government agencies should be consulted prior to the permitting process to determine if current permits for the San Gonzalo Mine can been revised. The cost of expropriating agricultural land for the leach pad, and the cost of water which would have to be redirected to the heap leach project but which is currently used for agricultural purposes have also not been assessed. Once the mine plan, site layout and tailings management plan are further along and have definitive locations, the cost of these factors should be addressed. The cost for monitoring environmental effects post mine closure needs to be estimated.

A detailed trade-off study should be undertaken to characterize current conditions of the sulphide tailings and to determine whether the re-treatment of this material would contribute to the profitability of the Project.

26.5 MINING

Potential for handling sulphide tailings as a mineralized material, rather than waste material, should be investigated based on appropriate metallurgical tests. Further optimization of the mine plan for the oxide tailings should be conducted.

26.6 PROJECT DEVELOPMENT

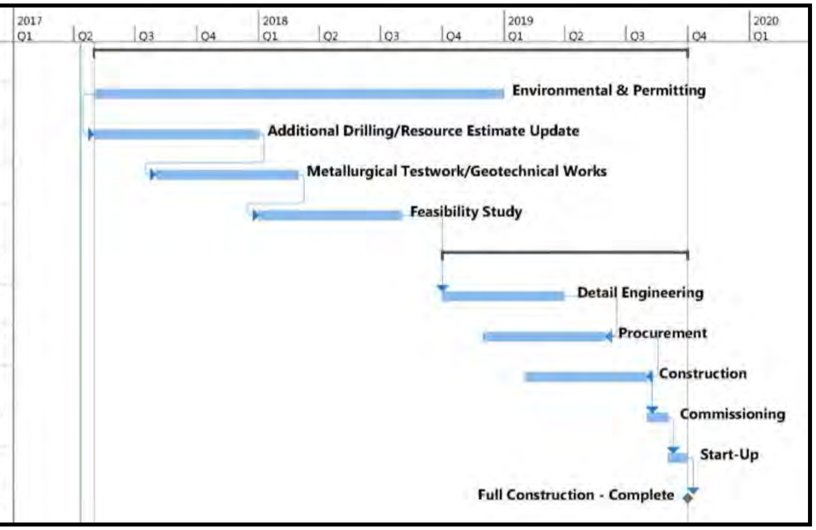
Tetra Tech recommends that a preliminary economic assessment be completed for the entire Property, including the Avino Vein, the San Gonzalo Vein, the oxide tailings, and the sulphide tailings.

26.7 PROJECT SCHEDULE

A suggested high-level schedule of the oxide tailings retreatment project execution plan has been prepared and is provided in Figure 26.1.

Figure 26.1 Tailings Retreatment Project Suggested High-level Schedule

ID	Task Mode	Task Name	Duration	Start	Finish
1		**Avino Tailings Retreatment PEA Update**	**883 days**	**May 1 '17**	**Sep 30 '19**
2		Environmental & Permitting	610 days	May 1 '17	Dec 31 '18
3		Additional Drilling/Resource Estimate Update	245 days	May 1 '17	Dec 31 '17
4		Metallurgical Testwork/Geotechnical Works	212 days	Aug 1 '17	Feb 28 '18
5		Feasibility Study	212 days	Jan 1 '18	Jul 31 '18
6		**EPCM**	**365 days**	**Oct 1 '18**	**Sep 30 '19**
7		Detail Engineering	182 days	Oct 1 '18	Mar 31 '19
8		Procurement	182 days	Dec 1 '18	May 31 '19
9		Construction	181 days	Feb 1 '19	Jul 31 '19
10		Commissioning	31 days	Aug 1 '19	Aug 31 '19
11		Start-Up	30 days	Sep 1 '19	Sep 30 '19
12		Full Construction - Complete	0 days	Sep 30 '19	Sep 30 '19



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28.0 CERTIFICATES OF QUALIFIED PERSONS

28.1 MICHAEL F. O'BRIEN, P.GEO., M.SC., PR.SCI.NAT., FAUSIMM, FSAIMM

I, Michael F. O'Brien, P.Geo., M.Sc., Pr.Sci.Nat., FAusIMM, FSAIMM, of Vancouver, British Columbia, do hereby certify:

- I am a Senior Principal Consultant with Aranz Geo Expert Services located at 506-1168 Hamilton Street, Vancouver, British Columbia, V6B 2S2.
- This certificate applies to the technical report entitled "Technical Report on the Avino Property, Durango, Mexico" dated 11th April 2017 (the "Technical Report").
- I am a graduate of the University of Natal, (B.Sc. Hons. Geology, 1978) and the University of the Witwatersrand (M.Sc. Engineering, 2002). I am a member in good standing of the Association of Professional Engineers and Geoscientists of British Columbia (#41338). I am a member in good standing of the South African Council for Natural Scientific Professions (South Africa, 400295/87). My relevant experience is 36 years of experience in operations, mineral project assessment and I have the experience relevant to Mineral Resource estimation of metal deposits. I have estimated Mineral Resources for greenstone-hosted gold, diatreme complex epithermal gold deposits, porphyry copper-gold, volcanogenic massive sulphide deposits and shear zone-hosted deposits. I am a "Qualified Person" for the purposes of National Instrument 43-101 (the "Instrument") under the Accepted Foreign Associations and Membership Designations (Appendix A).
- My most recent personal inspection of the Property was June 6 to 7, 2016 inclusive. To the best of my knowledge, there has been no further technical work carried out on the tailings material which is the subject of this Technical Report.
- I am responsible for Sections 1.2, 1.3, 1.4, 3.0, 4.0, 5.0, 6.0, 7.0, 8.0, 9.0, 10.0, 11.0, 12.0, 14.0, 23.0, 25.1, 25.2, 26.2, 27.0, and 28.1 of the Technical Report.
- I am independent of Avino Silver & Gold Mines Ltd. as defined by Section 1.5 of the Instrument.
- I have prior involvement with the Property that is the subject of the Technical Report. I co-authored the report entitled "Amended Resource Estimate Update for the Avino Property Durango, Mexico" and dated October 27, 2016.
- I have read the Instrument and the sections of the Technical Report that I am responsible for have been prepared in compliance with the Instrument.
- As of the date of this certificate, to the best of my knowledge, information and belief, the sections of the Technical Report that I am responsible for contains all of the scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Signed and dated this 18th day of May 2017 at Vancouver, British Columbia.

"Original document signed and sealed by Michael F. O'Brien, P.Geo., M.Sc., Pr.Sci.Nat., FAusIMM, FSAIMM

Michael F. O'Brien,
P.Geo., M.Sc., Pr.Sci.Nat., FAusIMM, FSAIMM
Senior Principal Consultant
Aranz Geo Expert Services

28.2 HASSAN GHAFFARI, P.ENG.

I, Hassan Ghaffari, P.Eng., of Vancouver, British Columbia, do hereby certify:

- I am a Director of Metallurgy with Tetra Tech Canada Inc. located at Suite 1000, 10th Floor, 885 Dunsmuir Street, Vancouver, British Columbia, V6C 1N5.
- This certificate applies to the technical report entitled "Technical Report on the Avino Property, Durango, Mexico" dated 11th April 2017 (the "Technical Report").
- I am a graduate of the University of Tehran (M.A.Sc., Mining Engineering, 1990) and the University of British Columbia (M.A.Sc., Mineral Process Engineering, 2004). I am a member in good standing of the Association of Professional Engineers and Geoscientists of British Columbia (#30408). My relevant experience includes 27 years of experience in mining and plant operation, project studies, management, and engineering. As the lead metallurgist for the Pebble Copper/Gold Moly Project in Alaska, I am coordinating all metallurgical test work and preparing and peer reviewing the technical report and the operating and capital costs of the plant and infrastructure for both the scoping and prefeasibility studies. For the Ajax Copper-Gold Project in BC, I was the Project Manager responsible for the process, infrastructure and overall management of the 60,000 t/d mill. As well, I was the Project Manager responsible for ongoing metallurgical test work and technical assistance for the La Joya Project Copper/Silver/Gold Project in Durango, Mexico. I am a "Qualified Person" for the purposes of National Instrument 43-101 (the "Instrument").
- My most recent personal inspection of the Property that is the subject of this Technical Report was March 30, 2011 for one day.
- I am responsible for Sections 1.1, 1.7, 1.8, 1.9, 1.11, 2.0, 3.0, 18.0, 19.0, 20.0, 21.1, 21.3, 21.4, 24.0, 25.5, 26.1, 26.4, 26.6, 26.7, 27.0, and 28.2 of the Technical Report.
- I am independent of Avino Silver & Gold Mines Ltd. as defined by Section 1.5 of the Instrument.
- I have prior involvement with the Property that is the subject of the Technical Report. I co-authored the report entitled "Amended Resource Estimate Update for the Avino Property Durango, Mexico" and dated October 27, 2016.
- I have read the Instrument and the sections of the Technical Report that I am responsible for have been prepared in compliance with the Instrument.
- As of the date of this certificate, to the best of my knowledge, information and belief, the sections of the Technical Report that I am responsible for contains all of the scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Signed and dated this 18th day of May 2017 at Vancouver, British Columbia.

*"Original document signed and sealed by
Hassan Ghaffari, P.Eng."*

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Hassan Ghaffari, P.Eng.
Director of Metallurgy
Tetra Tech Canada Inc.

28.3 SABRY ABDEL HAFEZ, PH.D., P.ENG.

I, Sabry Abdel Hafez, Ph.D., P.Eng., of Vancouver, British Columbia, do hereby certify:

- I am (formerly) a Senior Mining Engineer with Tetra Tech Canada Inc. located at Suite 1000, 10th Floor, 885 Dunsmuir Street, Vancouver, British Columbia, V6C 1N5.
- This certificate applies to the technical report entitled "Technical Report on the Avino Property, Durango, Mexico" dated 11th April 2017 (the "Technical Report").
- I am a graduate of Assiut University (B.Sc Mining Engineering, 1991; M.Sc. in Mining Engineering, 1996; Ph.D. in Mineral Economics, 2000). I am a member in good standing of the Association of Professional Engineers and Geoscientists of British Columbia (#34975). I have more than 23 years of experience in the evaluation of mining projects, advanced financial analysis, and mine planning and optimization. My capabilities range from the conventional mine planning and evaluation to the advanced simulation-based techniques that incorporate both market and geological uncertainties. I have recently been involved in the technical reports for the Copper Fox's Schaft Creek project feasibility study, Pretium Resources' Brucejack project feasibility study, AQM's Zafranal PEA, Castle Resources' Granduc project PEA study and Seabridge's KSM project prefeasibility study. I have been involved in the technical studies of several base metals, gold, coal, and aggregate mining projects in Canada and abroad. I am a "Qualified Person" for purposes of National Instrument 43-101 (the "Instrument").
- I have not completed a personal inspection of the Property that is the subject of this Technical Report.
- I am responsible for Sections 1.6, 1.10, 15.0, 16.0, 21.2.1, 22.0, 25.4, 25.6, 26.5, and 28.3 of the Technical Report.
- I am independent of Avino Silver & Gold Mines Ltd. as defined by Section 1.5 of the Instrument.
- I have prior involvement with the Property that is the subject of the Technical Report. I co-authored the report entitled "Amended Resource Estimate Update for the Avino Property Durango, Mexico" and dated October 27, 2016.
- I have read the Instrument and the sections of the Technical Report that I am responsible for have been prepared in compliance with the Instrument.
- As of the date of this certificate, to the best of my knowledge, information and belief, the sections of the Technical Report that I am responsible for contains all of the scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Signed and dated this 18th day of May 2017 at Vancouver, British Columbia.

"Original document signed and sealed by Sabry Abdel Hafez, Ph.D., P.Eng."

Sabry Abdel Hafez, Ph.D., P.Eng.

28.4 JIANHUI (JOHN) HUANG PH.D., P.ENG.

I, Jianhui (John) Huang, Ph.D., P.Eng., of Coquitlam, British Columbia, do hereby certify:

- I am a Senior Metallurgist with Tetra Tech Canada Inc. located at Suite 1000, 10th Floor, 885 Dunsmuir Street, Vancouver, British Columbia, V6C 1N5.
- This certificate applies to the technical report entitled "Technical Report on the Avino Property, Durango, Mexico" dated 11th April 2017 (the "Technical Report").
- I am a graduate of North-East University, China (B.Eng., 1982), Beijing General Research Institute for Non-ferrous Metals, China (M.Eng., 1988), and Birmingham University, United Kingdom (Ph.D., 2000). I am a member in good standing of the Association of Professional Engineers and Geoscientists of British Columbia (#30898). My relevant experience includes over 30 years involvement in mineral processing for base metal ores, gold and silver ores, and rare metal ores. I am a "Qualified Person" for purposes of National Instrument 43-101 (the "Instrument").
- I have not completed a personal inspection of the Property that is the subject of this Technical Report.
- I am responsible for Sections 1.5, 2.0, 13.0, 17.0, 21.2.2, 21.2.3, 25.3, 26.3, and 28.4 of the Technical Report.
- I am independent of Avino Silver & Gold Mines Ltd. as defined by Section 1.5 of the Instrument.
- I worked on two test work programs for the samples from the properties, one in 2003 and the other in 2005.
- I have read the Instrument and the sections of the Technical Report that I am responsible for have been prepared in compliance with the Instrument.
- As of the date of this certificate, to the best of my knowledge, information and belief, the sections of the Technical Report that I am responsible for contains all of the scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Signed and dated this 18th day of May 2017 at Vancouver, British Columbia.

*"Original document signed and sealed by
Jianhui (John) Huang, Ph.D., P.Eng."*

Jianhui (John) Huang
Senior Metallurgist
Tetra Tech Canada Inc.

APPENDIX A

LEGAL TITLE OPINION

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February 3, 2017

Manning Elliott LLP,
Chartered Accountants
11th Floor
1050 West Pender Street
Vancouver BC
Canada V6E 3S7

Attention: **Kristina Mishina, CA**
Email kmishina@manningelliott.com

"Privileged and Confidential"

Dear Sirs/Madames:

Re: Avino Mexican Mineral Properties (the "Properties")

Pursuant to the request of Malcolm Davidson, Chief Financial Officer of **Avino Silver & Gold Mines Ltd.**, and in connection with the preparation and audit of its financial statements for the fiscal period ended December 31, 2016, and with respect to its Mexican subsidiary Compañía Minera Mexicana de Avino, S.A. de C.V. (the "**Company**"), we are providing hereinbelow with our opinion, which is effective at December 31, 2016, regarding title to the Properties owned by the Company and other related matters.

1. **The Company.**

1.1 The Company is a *sociedad anónima de capital variable* (limited liability stock company) organized under the laws of the United Mexican States ("**Mexico**").

1.2 The Company has been incorporated under the corporate name "Compañía Minera Mexicana de Avino" in the terms of Public Instrument No. 32,701 dated September 7, 1970, attested and certified by Mr. Francisco Vazquez Perez, at that time Notary Public No. 74 for Mexico City.

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1.3 The Company: (a) has a corporate purpose that provides, among other things, for the exploration or exploitation of minerals or substances subject to the application of the Mining Law; (b) has its legal domicile within Mexico[1]; and c) has participation by foreign investors that complies with the provisions of the Foreign Investment Law[2].

1.4 The Company has been duly recorded in the Public Registry of Commerce for Durango, State of Durango, Mexico[3], under Electronic Folio 14221*1; and under number 93 at pages 116 back and 117 back of volume XVI of the General Companies Book of the Public Registry of Mining ("**PRM**").

2 The Properties.

The information provided with respect to the Properties is based on research for that purpose done on February 2, 2017 at the General Mining Bureau ("**GMB**") within the Ministry of Economy at Mexico City.

The Company is duly recorded in the PRM within the GMB as legal holder of the following Properties:

2.1 **"Ana Maria"**: Title Certificate No.215702; Area: 733.3756 hectares; Location: Municipalities of Gomez Palacio and Lerdo, State of Durango, Mexico; Effective term: From March 5, 2002 to August 2, 2052[4].

2.2 **"Ana Maria 2":** Title Certificate No. 211271; Area: 8.3356 hectares; Location: Municipality of Gomez Palacio, State of Durango, Mexico; Effective term: From April 28, 2000 to April 27, 2050.

2.3 **"Ana Maria 3"**: Title Certificate No. 211741; Area: 87.6644 hectares; Location: Municipality of Gomez Palacio, State of Durango, Mexico; Effective term: From June 30, 2000 to June 29, 2050.

[1] Its corporate domicile is in the city of Durango, State of Durango, Mexico.
[2] Requirements set forth by Article 11 of the Mining Law in order to be a holder of mineral properties.
[3] Corporate domicile of the Company.
[4] It should be March 4, 2052

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2.4 <u>"Ana Maria 4":</u> Title Certificate No. 212385; Area: 315.1465 hectares; Location: Municipality of Gomez Palacio, State of Durango, Mexico; Effective term: From October 04, 2000 to October 03, 2050.

2.5 <u>"Ana Maria 6":</u> Title Certificate No. 213291; Area: 28.0000 hectares; Location: Municipality of Gomez Palacio, State of Durango, Mexico; Effective term: From April 20, 2001 to April 19, 2051.

2.6 <u>"Ana Maria 5":</u> Title Certificate No. 213811; Area: 90.0000 hectares; Location: Municipality of Lerdo, State of Durango, Mexico; Effective term: From July 3, 2001 to July 2, 2051.

2.7 <u>"Ana Maria 5 Fracc.":</u> Title Certificate No. 213812; Area: 28.7016 hectares; Location: Municipality of Lerdo, State of Durango, Mexico; Effective term: From July 3, 2001 to July 2, 2051.

2.8 <u>"Ana Maria Reduc. Frac. 1":</u> Title Certificate No. 215703; Area: 293.9276 hectares; Location: Municipalities of Gomez Palacio and Lerdo, State of Durango, Mexico; Effective term: From March 5, 2002 to March 4, 2052.

2.9 <u>"Ana Maria Reduc. Fracc. 2":</u> Title Certificate No. 215704; Area: 963.8957 hectares; Location: Municipalities of Gomez Palacio and Lerdo, State of Durango, Mexico; Effective term: From March 5, 2002 to August 2, 2049.

2.10 <u>"Ampl. de la Potosina":</u> Title Certificate No.185326; Area: 84.0000 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From December 14, 1989 to December 13, 2039.

2.11 <u>"Ampl. a San Gonzalo":</u> Title Certificate No. 191837; Area: **5.**8495 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From December 19, 1991 to December 18, 2041.

2.12 <u>"Ampl. La Malinche":</u> Title Certificate No.204177; Area: 6.0103 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From December 18, 1996 to December 17, 2046.

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2.13 "El Potrerito": Title Certificate No.185328; Area: 9.0000 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From December 14, 1989 to December 13, 2039.

2.14 "La Malinche": Title Certificate No. 203256; Area: 9.0000 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From June 28, 1996 to June 27, 2046.

2.15 "Potosina": Title Certificate No. 185336; Area: 16.0000 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From December 14, 1989 to December 13, 2039.

2.16 "San Gonzalo": Title Certificate No.190748; Area: 12.0000 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From April 29, 1991 to April 28, 2041.

2.17 "Yolanda": Title Certificate No.191083; Area: 43.4577 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From April 29, 1991 to April 28, 2041.

2.18 "San Jose": Title Certificate No. 164985; Area: 8.0000 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From August 13, 1979 to August 12, 2029.

2.19 "El Trompo": Title Certificate No.184397; Area: 81.5466 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From October 13, 1989 to October 12, 2039.

2.20 "Gran Lucero": Title Certificate No.189477; Area: 161.4684 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From December 5, 1990 to December 4, 2040.

2.21 "Purisima Chica": Title Certificate No.155597; Area: 136.7076 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From September 30, 1971 to September 29, 2021.

2.22 "San Carlos": Title Certificate No.117411; Area: 4.4505 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From February 5, 1961 to December 16, 2061.

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2.23 "San Pedro y San Pablo"; Title Certificate No.139615; Area: 12.0000 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From June 22, 1959 to June 21, 2061.

2.24 "Aguila Mexicana": Title Certificate No. 215733; Area: 36.7681 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From March 12, 2002 to June 29, 2044.

2.25 "Aranjuez"; Title Certificate No. 214612; Area: 96.0000 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From October 2, 2001 to October 1, 2051.

2.26 "Avino Grande IX": Title Certificate No. 216005; Area: 19.5576 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico. Effective term: From April 2, 2002 to April 1, 2052.

2.27 "Avino Grande VIII": Title Certificate No. 215224; Area: 22.8816 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From February 14, 2002 to February 13, 2052.

2.28 "El Caracol": Title Certificate No. 215732; Area: 102.3821 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From March 12, 2002 to April 28, 2044.

2.29 "El Fuerte": Title Certificate No. 216103; Area: 100.3274 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From April 9, 2002 to December 14, 2048.

2.30 "Fernando": Title Certificate No. 205401; Area: 72.1287 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From August 29, 1997 to August 28, 2047.

2.31 "La Cruz": Title Certificate No. 215672; Area: 16.0000 hectares; Location: Municipality of Durango, State of Durango, Mexico; Effective term: From March 5, 2002 to March 4, 2052.

2.32 "Estela": Title Certificate No.179658; Area: 14.0000 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From December 11, 1986 to December 10, 2036.

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2.33 <u>"Los Angeles":</u> Title Certificate No.154410; Area: 23.7130 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From March 25, 1971 to March 24, 2021.

2.34 <u>"Negro Jose":</u> Title Certificate No. 218252; Area: 58.0000 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From October 17, 2002 to October 16, 2052.

2.35 <u>"San Martin de Porres":</u> Title Certificate No. 222909; Area: 30.0000 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From September 15, 2004 to September 14, 2054.

2.36 <u>"Santa Ana":</u> Title Certificate No. 195678; Area: 136.1823 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From September 14, 1992 to September 13, 2042.

2.37 <u>"El Laberinto":</u> Title Certificate No. 218799; Area: 91.7097 hectares; Location: Municipality of Panuco de Coronado, State of Durango, Mexico; Effective term: From January 17, 2003 to January 16, 2053.

2.38 <u>"El Hueco":</u> Title Certificate No. 224519; Area: 602.8965 hectares; Location: Municipality of Santiago Papasquiaro, State of Durango, Mexico; Effective term: From May 17, 2005 to May 16, 2055.

2.39 <u>"El Hueco 2":</u> Title Certificate No. 210421; Area: 595.1978 hectares; Location: Municipality of Santiago Papasquiaro, State of Durango, Mexico; Effective term: From October 8, 1999 to October 7, 2049.

2.40 <u>"El Hueco 2 Frac.":</u> Title Certificate No. 210422; Area: 95.2385 hectares; Location: Municipality of Santiago Papasquiaro, State of Durango, Mexico; Effective term: From October 8, 1999 to October 7, 2049.

2.41 <u>"El Hueco 3":</u> Title Certificate No. 213004; Area: 15.0000 hectares; Location: Municipality of El Oro, State of Durango, Mexico; Effective term: From February 20, 2001 to February 19, 2051.

2.42 <u>"El Hueco 4":</u> Title Certificate No. 213021; Area: 5.0000 hectares; Location: Municipality of El Oro, State of Durango, Mexico; Effective term: From March 2, 2001 to March 1, 2051

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In accordance with the PRM records all the Properties are in force, and except for the notation related to the "Purisima Chica", "San Jose" and "San Carlos" Properties[5], they are free of liens and encumbrances.

3. Mining Obligations.

The obligations with which holders of mineral properties must comply in order to maintain their properties in full force and effect, pursuant to the mining legislation and the Federal Fees Law of Mexico are as follows:

3.1 During the month of May of each year, they must file with the GMB, the work assessment report made on each property or group of properties for the immediately preceding calendar year. The Regulations to the Mining Law establish the tables containing the minimum investment amounts that must be made on a property. The amount will be updated annually in accordance with the variation to the Consumer Price Index.

3.2 During the months of January and July of each year, they must pay in advance the mining taxes (technically called "mining duties"), which are based on the surface of the property and the number of years that have elapsed since its certificate is being issued.

3.3 Annually they must pay: i) the special mining duty, applying a 7.5% rate on certain income derived from the alienation or sale of ores; and (ii) the extraordinary mining duty, applying a 0.5% rate to income derived from the alienation of gold, silver and platinum.[6]

4. Opinion.

Based on that stated in paragraphs 1 and 2 above, we are of the opinion that:

4.1 The Company, having been validly incorporated pursuant to the commercial and mining legislation of Mexico, and since it: (a) has a corporate purpose that provides, among other things, the exploration or exploitation of minerals

[5] The PRM has a notation on an Exploration Agreement entered with the Mineral Resources Council (presently Mexican Geologic Survey) registered on August 14, 1980. The PRM has no evidence of termination of this Agreement, because its file was lost as a consequence of the 1985 Mexico City earthquake. Proceedings for cancelation of said notation are still in process.

[6] Articles 268 and 270 of the Federal Fees Law

or substances subject to the application of the Mining Law; (b) has its legal domicile within Mexico; and (c) has participation by foreign investors that complies with the provisions of the Foreign Investment Law, it is our opinion that the Company is legally qualified to hold the Properties.[7]

4.2 Representatives of the Company have provided us with copy of the exploitation work assessment reports duly filed on May 30, 2016 with respect to the Properties. This evidences fulfilment of the obligation to which paragraph 3.1 above refers.

4.3 Based on our research done at the GBM, and in accordance with copy of banking payment receipts provided to us by representatives of the Company, it is evidenced that the surface mining taxes pertaining to the Properties were paid covering the period ending December 31, 2016. This confirms fulfilment of the obligation to which paragraph 3.2 above refers.

4.5 No opinion is given regarding the obligation to pay the taxes or mining duties referred to in paragraph 3.3 above, due to the fact that in our review we did not have access to the Company's mineral sales information.

4.6 Based on our research done at the GBM, it is our opinion that the Properties are in good standing, free of any liens or encumbrances[8], and currently valid for purposes of exploitation of the properties covered by their certificates issued by the GBM, pursuant to the Mexican mining legislation.

This opinion shall be governed by and construed in accordance with the federal laws of Mexico, and is solely for the benefit of the addressee and its auditors Manning Elliott LLP, Chartered Accountants, and no other entity or person shall be entitled to rely on its contents without the express written consent of Avino Silver & Gold Mines Ltd., and/or Bufete Gonzalez Olguin, S.C.

[7] Pursuant to Article 11 of the Mining Law

[8] Except for the non canceled notation mentioned in foot note 4 above.

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Should you have any questions with respect to this matter, please do not hesitate to call on us.

Yours truly,

Bufete Gonzalez Olguin, S.C.

By: Juan Manuel Gonzalez Olguin

cc. Avino Silver & Gold Mines Ltd.
Attention: Malcolm Davidson