# MINERAL RESOURCE ESTIMATE FOR THE CRUZ DE MAYO PROPERTY, SONORA, MEXICO

## NI 43-101 TECHNICAL REPORT

# PREPARED FOR SILVERCREST MINES INC. AND SILVERCREST METALS INC.







EFFECTIVE DATE: AUGUST 15, 2015 AMENDMENT DATE: SEPTEMBER 15, 2015

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## **ACRONYMS & ABBREVIATIONS**

Ag silver

AgEq silver equivalent ASL above sea level

Au gold

BC British Columbia
BRT bottle roll test

CIM Canadian Institute for Mining, Metallurgy and Petroleum

DTM digital terrain model
EBA Tetra Tech EBA Inc.
First Majestic First Majestic Silver Corp
ID<sup>2</sup> inverse distance squared
P.Eng. Professional Engineer
P.Geo. Professional Geoscientist

Pb lead

QA/QC quality assurance and quality control

RC reverse circulation

S.A. de C.V. Sociedad Anónima de Capital Variable

SilverCrest Mines Inc.
SilverCrest Metals SilverCrest Metals Inc.

## **UNITS OF MEASUREMENT AND CONVERSIONS**

% percent

g/t grams per tonne gpt grams per tonne

Ha hectare (10,000 square meters)

Km kilometre
M million
m metre
mm millimetre
oz ounce (troy)
ppm parts per million

% difference =  $\frac{\left| samp_x - samp_y \right|}{\left( \frac{samp_x + samp_y}{2} \right)} | \times 100\%$ 

Contained oz  $= \frac{grade (g per tonne)}{31.1035 (g per oz)} x tonnes$ 

#### 1.0 EXECUTIVE SUMMARY

#### I.I Introduction

Tetra Tech EBA Inc. was contracted by SilverCrest Mines Inc. (SilverCrest) and SilverCrest Metals Inc. (SilverCrest Metals) to complete a Mineral Resource Estimate for their Cruz de Mayo Project in Sonora, Mexico. This report provides a summary of the work that has been completed on the Project since the timing of the last Technical Report that was filed on SEDAR in 2011, including details of the current Mineral Resource Estimate.

## 1.2 Property Description and Ownership

The Cruz de Mayo property is located in the State of Sonora, Mexico, approximately 22 km northwest of the town of Cumpas and 163 km north east of Hermosillo. The project is located 35 km directly northeast, and approximately 150 km total distance when travelled by paved road, of the Santa Elena mine.

The Property consists of two mineral concessions, Cruz de Mayo 2 and El Gueriguito, combining for a total area of 452 hectares. The property is to be transferred to SilverCrest Metals Inc. as part of the friendly acquisition of SilverCrest by First Majestic Silver Corp (First Majestic) as announced on July 27th, 2015. Transfer of property rights to SilverCrest Metals is currently underway. The shares of SilverCrest Metals are to be distributed to the shareholders of SilverCrest as a part of the First Majestic Transaction, resulting in SilverCrest Metals becoming the owner of the property as a separate, standalone company. When completed, SilverCrest Metals will hold a 100% ownership of the Cruz de Mayo 2 and El Gueriguito concessions through its wholly-owned subsidiary, Minera Llamarada S.A de C.V. The El Gueriguito concession is subject to a 2.5% NSR, to a maximum of \$1,000,000.

Surface rights are privately held by a local rancher.

#### 1.3 Geology and Mineralization

The Cruz de Mayo Project is located in the north-central part of the Sierra Madre Occidental, on the western flank of the Moctezuma River valley. The geology of the property consists of a sequence of felsic to intermediate volcanic and volcaniclastic rocks that have been thrust over andesite rocks in the footwall. The thrust sequence gives rise to the northwest trending ridge that is host to the deposit.

Mineralization is largely restricted to a series of discontinuous quartz veins that occupy the broad deformation zone created by the thrust fault. Cruz de Mayo is categorized as a low-sulphidation, epithermal silver deposit with minor gold, copper, and zinc. Mineralization occurs in banded quartz veins, stockwork and breccia and is commonly associated with silver sulfosalts, fluorite, calcite and minor sulphides. Iron oxides, including limonite, jarosite, goethite and hematite are also commonly associated with mineralization.

It is postulated that the structural deformation associated with the thrust fault provided a conduit system for mineralizing fluids, and was further enhanced by an increase in porosity and heterogeneity in the rhyolitic and volcaniclastic rocks.

## 1.4 Drilling and Exploration

The property has been the focus of small-scale exploration and mining efforts for over one hundred years. Records and local sources indicate that mining took place on the property prior to the Mexican Revolution in 1910, and on and off between 1945 and 1970. Unofficial reports suggest that approximately 5,000 tonnes of ore mined from the Cruz de Mayo deposit were shipped to the nearby La Caridad smelter for flux at a grade of 0.5 g/t gold and 150 g/t silver. No official records exist of this and no old tailings remain onsite.

Previously, SilverCrest carried out a number of exploration programs since acquiring the property in 2005, including over 15,000 metres of reverse circulation and diamond drilling. SilverCrest Metals has recently completed acquisition and assessment review of the exploration potential in the Concessions. The results of this work have been reviewed in detail as part of the resource update.

Four separate metallurgical test programs have been completed between 2007 and 2012 by SilverCrest. The results of these test programs indicate that the mineralized samples leached favourably with cyanide, however, the results pertaining to metal recovery are inconclusive at this stage. Silver recoveries ranged from 25% to 91% and gold recoveries ranged from 51% to 95%, depending on test work parameters and conditions.

#### 1.5 Mineral Resource Estimate

Tetra Tech EBA updated the resource estimate for Cruz de Mayo using Dessault Systemes Geovia GEMS v. 6.6 modelling software. The estimate includes drilling results up to the end of 2012. The Effective Date for this work is August 15, 2015.

For the purpose of defining a suitable grade cut-off, the resource estimate is contemplated to support an onsite coarse crushing heap leach operation with both open pit and underground resource potential. The project was previously contemplated (EBA, 2011) as a remote open pit operation feeding material to the newly expanded Santa Elena Mine heap leach and processing plant, however, this is no longer considered for the project.

The updated resource estimate includes an additional 74 diamond drill and reverse circulation holes (9,304.8 metres), and a total of 4,764 samples which have been collected across the property since the previous Technical Report. Drilling was completed in mid-2012.

The resource was constrained within a geological model and within a 15 g/t silver mineralized 3D wireframe. A block size of  $10 \text{ m} \times 10 \text{ m} \times 5 \text{ m}$  was chosen for the model, and grades interpolated into the blocks using the inverse distance squared methodology. Silver grades are capped at 700 g/t and gold grades are capped at 1 g/t.

The results of the 2015 re	esource estimate are i	provided in the table below:
THE RESULTS OF THE ZOLD TO	source estimate are p	provided in the table below.

	INDICATED									
Target	AgEq Cut- off gpt	SG	Tonnage	Ag gpt	Au gpt	AgEq gpt	Contained Ag oz	Contained Au oz	Contained AgEq oz	
Open Pit	45	2.544	396,000	114	0.17	131	1,457,000	2,000	1,663,000	
Underground	120	2.544	396,000	170	0.25	193	2,173,000	3,000	2,466,000	
Total Indicated		2.544	793,000	142	0.21	162	3,630,000	5,000	4,129,000	

	INFERRED									
Target	AgEq Cut- off gpt	SG	Tonnage	Ag gpt	Au gpt	AgEq gpt	Contained Ag oz	Contained Au oz	Contained AgEq oz	
Open Pit	45	2.544	76,000	77	0.29	105	189,000	1,000	257,000	
Underground	120	2.544	249,000	145	0.24	167	1,157,000	2,000	1,336,000	
Total Inferred		2.544	325,000	129	0.25	152	1,346,000	3,000	1,592,000	

#### Notes:

- Mineral resources are classified by Tetra Tech EBA and conform to NI 43-101 and CIM definitions for resources. Mineral Resources have been estimated from geological evidence and limited sampling;
- Mineral resources are not mineral reserves and do not have demonstrated economic viability. In addition, inferred mineral resources are highly speculative and have a high degree of uncertainty. It cannot be assumed that any part of the inferred resources will be upgraded to a higher category with additional work;
- AgEq calculations incorporate metal prices of US\$ 16/oz Ag and US\$ 1,100/oz Au, metal recoveries of 55% Ag and 75% Au for a Ag:Au metal value ratio of 93.75;
- Tonnage and contained ounces have been rounded to the nearest thousand; and
- Mineral Resources for Cruz de Mayo are reported using a base case of 45 gpt AgEq cut-off for open pit resources and 120 gpt AgEq for underground resources. Cut-off grades were estimated from metal prices and recoveries used for AgEq calculation and mining costs from similar mining projects in Mexico.

#### 1.6 Conclusions and Recommendations

The Cruz de Mayo property is host to a near-surface, low-sulphidation epithermal silver deposit, located in Sonora, Mexico. Additional drilling on the property warranted a re-examination of the previous Mineral Resource Estimate reported in 2007 and 2011, which is part of this 43-101 report. The estimate completed by Tetra Tech EBA show a significant upgrade in resources from the inferred to the indicated categories, while reducing the overall tonnage from previous estimate.

The following recommendations are suggested for further work at Cruz de Mayo:

- Evaluation of nearby potential acquisitions for expansion of resource.
- Carry out more metallurgical work to define optimal recoveries.
- Resampling of twinned hole programs in areas with assays obtained exclusively with 4 acid digest.
- Increase drillhole density in areas with potential to host high-grade shoots.

• Conduct regional exploration drilling for expansion of existing resources and to test for additional mineral potential in the area.

The following budget is suggested:

Recommendation	Future Work	Estir	mated Cost	
Phase I (12 months)				
Land Acquisition	Acquire additional concessions adjacent property	\$	20,000	
Drilling	Drill new target area for estimated 1,200m of drilling	\$	180,000	
Analysis	Analysis Geochemical analysis of drill samples		20,000	
	Total cost Phase I	\$	220,000	
Phase II				
Additional Drilling	Infill drilling program of estimated 5,000m	\$	750,000	
Analysis	Geochemical analysis of drill samples	\$	75,000	
Metallurgical Test Work	Amenability to leaching	\$	50,00	
Resource Estimation	Modeling and analysis	\$	50,00	
	Total cost Phase II	\$	925,00	

<sup>\*</sup>Based on results and success of Phase I

#### 2.0 INTRODUCTION AND TERMS OF REFERENCE

#### 2.1 Terms of Reference

Tetra Tech EBA was contracted by SilverCrest Metals Inc. (SilverCrest Metals) to complete a Mineral Resource Estimate for their Cruz de Mayo property (the Property) in Sonora Mexico. SilverCrest Metals is a separate entity to SilverCrest Mines Inc. (SilverCrest), as a result of the friendly acquisition of SilverCrest by First Majestic Silver Corp. (First Majestic) as announced on July 27th 2015.

This technical report has been prepared in accordance with National Instrument 43-101 (NI 43-101) and Form 43-101F1 (the Form). It provides the results of the resource estimate as well as additional exploration information acquired since the last technical report was filed in 2011. No mineral reserves have been established on the Property at this time.

The previous Technical Report (EBA, 2011) contemplated Cruz de Mayo as a satellite deposit which would feed material to the Santa Elena processing plant. The property is now a standalone project, and as such the project has been rescoped from the previous conceptual project.

## 2.2 Report Authors

This report has been completed by the following Independent Qualified Professionals:

James Barr, P.Geo., Senior Geologist, Tetra Tech EBA.

#### 2.3 Site visits

James Barr, P.Geo. conducted site visits to the Cruz de Mayo property on two separate occasions between May 2011 and May 2012, and to the Cruz de Mayo core storage facility on October 15-16, 2012. Mr. Barr's time was spent collecting verification samples and reviewing drill core, local geology, site layout and the geological databases relating to the property that is the subject of this report. The site visits were conducted under SilverCrest, the previous operators of the property. Through discussion with SilverCrest corporate and technical personnel, and review of SilverCrest's technical disclosure, it has been confirmed that no significant work has been conducted on the property since this time and it is understood that property conditions remain in similar condition.

#### 2.4 Sources of Information

The information, opinions, estimates, and conclusions contained herein are based on the following sources of information:

- Information available as of the effective date of this report.
- Assumptions, conditions, and qualifications as set forth in this report.
- Data, reports, and other information supplied by SilverCrest and other third party sources.
- Technical report covering the Resource for the Cruz de Mayo Property, Sonora, Mexico (December 2007) by SWRPA.

Technical report covering the Pre-Feasibility Study for the Santa Elena Project, Sonora, Mexico (August 2008) by Mr. Scott Wilson, Roscoe Postle and Associates (SWRPA). Technical report covering the Mineral Reserve Update for the Santa Elena Property and Preliminary Economic Assessment for Cruz de Mayo, Sonora, Mexico (May 2011) by Tetra Tech EBA.

#### 3.0 RELIANCE OF OTHER EXPERTS/DISCLAIMER

Title opinion for ownership of mineral concessions discussed in Section 4.2 has been provided in a letter dated September 15, 2015, by Mr. Abraham Urias, Practitioner of Foreign (Mexico) Law, employed by Urias Romero y Asociados, S.C., Mazatlan, Sinaloa, Mexico.

## 4.0 PROPERTY DESCRIPTION AND LOCATION

## 4.1 Cruz de Mayo Location

The Cruz de Mayo property is located in the State of Sonora, Mexico, approximately 22 km northwest of the town of Cumpas and 163 km north east of Hermosillo (Figure 4.1). The co-ordinates for the site are 30° 11′ N and 109° 51′ W. The project is located 35 km directly northeast of First Majestic Silver Corp's Santa Elena mine, but due the mountainous terrain, the distance increases to approximately 150 km when travelled by road.

## 4.2 Cruz de Mayo Mineral Concessions

The Project consists of two mineral concessions, Cruz de Mayo 2 and El Gueriguito, totalling a combined total of 452 hectares. The concessions have been surveyed by a registered land surveyor, and include the areas shown in Figure 4.2.

Ownership of the concessions is currently registered with the Mexico mines registry under Minera Looker, S.A. de C.V. (Cruz de Mayo 2) and Nusantara S.A. de C.V (El Gueriguito). Currently, title is being transferred to Minera Llamarada S.A de C.V (Llamarada) (Table 4.1). Llamarada is a wholly-owned Mexican subsidiary of SilverCrest Metals Inc., which on July 27th, 2015, pursuant to the announced acquisition of SilverCrest by First Majestic, purchased a 100% interest in the Cruz de Mayo 2 and El Gueriguito concessions. The transaction was in process at the time of this report, when complete SilverCrest Metals will have 100% ownership of the concessions. Legal opinion relied upon for this report was provided by SilverCrest Metals and seen by Tetra Tech EBA. No independent verification of these legal matters has been conducted by Tetra Tech EBA.

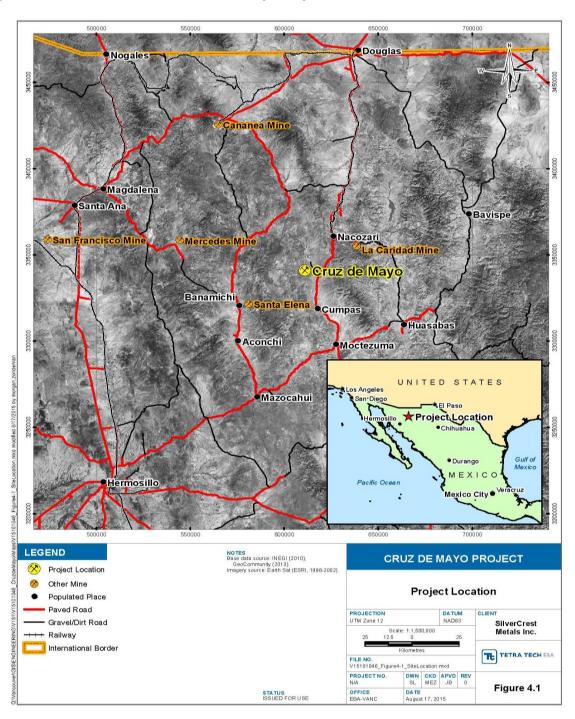


Figure 4.1 Location of the Cruz de Mayo Project, Sonora, Mexico

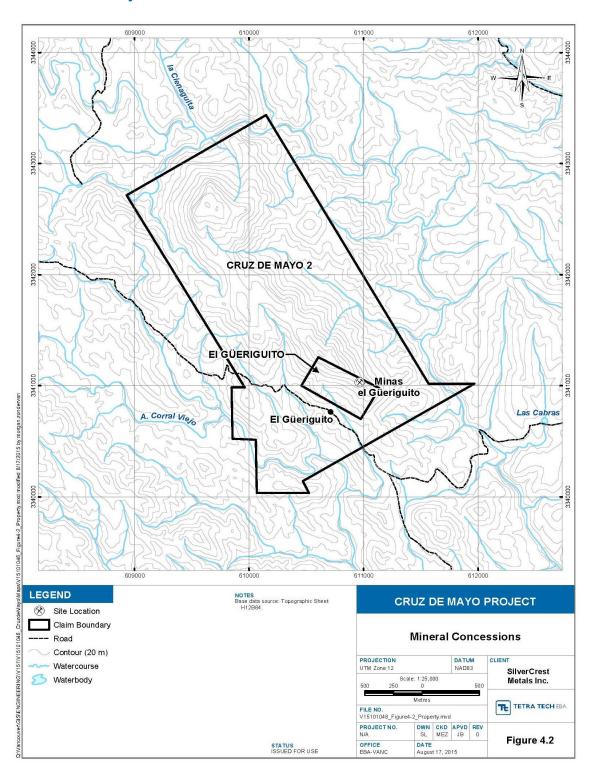


Figure 4.2: Cruz de Mayo Mineral Tenure

Table 4.1: Cruz de Mayo Concessions

Concession number	Inception date	Expiry date	Concession name	Registered Owner	Size
224223	April 2005	April 2055	Cruz de Mayo 2	Minera Llamarada	434 ha
165535	October 1979	October 2029	El Gueriguito	Minera Llamarada	18 ha

No obligations exist on the Cruz de Mayo 2 concessions; however, the El Gueriguito concession is subject to a 2.5% net smelter return in favour of Minera Looker, to a maximum of \$1,000,000. SilverCrest Metals has the right to make early payment with no additional consideration.

## 4.3 Surface Rights and Ownership

The surface rights to both concessions are held by a local rancher. Ownership of the mineral concessions provides the legal right to exploration on the concessions, however, SilverCrest has historically notified the land owner for permission and access to the property.

## 4.4 Environmental Liabilities and Permitting

The Cruz de Mayo Project requires exploration permits to continue with recommended drilling. Such permits will need to be in place before drilling begins.

The local economy of Sonora has traditionally been based on mining and agriculture, and it is considered a mining-friendly state. As such, excessive delays in permitting or unforeseen social issues are not anticipated.

No environmental liabilities are anticipated. Minor old workings and small waste dumps currently exist on the property. No further technical assessment has been completed on the property to assess suitability for infrastructure and development.

## 5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCUTRE, AND PHYSIOGRAPHY

## 5.1 Accessibility

The Cruz de Mayo Property is accessible year round by a network of government maintained paved and gravel roads. Paved road is available from Hermosillo to Ures via highway 14, and continuing along route 17 to the community of Los Hovos immediately north of the town of Cumpas (Figure 4.1). From Los Hovos, the property can be accessed via a network of privately held gravel and dirt roads that travels northwest up into the Sierra Madre for approximately 10 km (Figure 5.1). This road can currently be safely navigated with a ½ tonne truck, but it is anticipated that this road will need significant upgrades prior to any large equipment haulage from site in order to connect with the local highway grid. In addition, agreements with local property owners will be required and certain sections may need to be built up in order to protect from potential flooding during the rainy season.

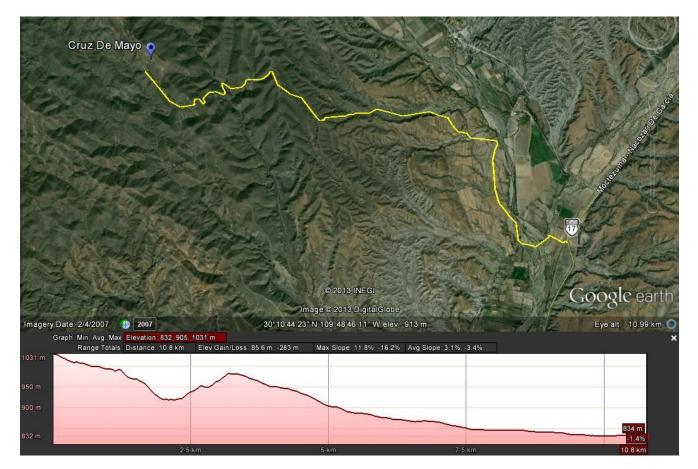


Figure 5.1: Gravel Road from Los Hovos to the Project Area, with Elevation Profile (Google Earth image)

#### 5.2 Climate

The Cruz de Mayo Property is located within the climatic region of the Sonoran desert. The climate is generally semi-desert with an average rainfall of 400 mm per year, the majority of which falls between July and September. Limited information is available for the site, but data for the town of Moctezuma 46 km to the southeast is assumed to be broadly comparable. The average annual temperature reported for Moctezuma is 20.7 °C, with an average high of 39°C in July and an average low of 2°C in January. The highest recorded temperature is 47°C and the lowest is -10°C. The average number of rainy days is 36 per year.

#### 5.3 Local Infrastructure and Resources

There is currently no electrical power or water supply on site.

Water can be sourced from a surface water reservoir located 24 km by road from the site; however, there is the possibility that groundwater water could be found closer to site. In addition, a small water reservoir is located approximately 3 km northwest of the property, currently being used for agricultural purposes. Drilling and groundwater tests have not been performed on the property. The main mineralized zone is

anticipated to be well above the groundwater level as indicated by the dry condition of historical adits located on the property, as described in Section 6.

The Property has several derelict buildings on site from previous operations that have historically been used for diamond drill core and reverse circulation (RC) drill chip sample storage. SilverCrest currently maintains a secure sample storage and processing facility off site in the nearby town of Cumpas.

Mining supplies are available from Cananea, North of Cruz de Mayo, and from Hermosillo, to the south west of the property. Tucson, Arizona is also located about 4 hours north of the Property. Northern Mexico, southern Arizona and Mexico in general are home to some the largest mines in North America, as such skilled and experienced workers are readily available.

#### 5.4 Physiography

The Cruz de Mayo Project is located in the north-central part of the Sierra Madre Occidental, on the western flank of the Moctezuma River valley. Elevations in the area increase from 800 m ASL on the valley floor to approximately 1,030 m ASL at site. Elevations continue to increase to the west, peaking at approximately 1,600 m ASL in the ranges located 20 km from the property.

The topography in the area generally comprises a series of northwest trending ridges separated by mainly dry drainage valleys. Typical ridge heights range from 50 to 200 metres above the valley floors. The Moctezuma valley is irrigated and generally used for ranching and agriculture.

Vegetation during the dry season is characteristically scarce, as is observed in most desert climates. During the wet season, an abundance of trees, grasses, and various blooming cactus are present in drainage areas. Photo 5.1 illustrates the topography of the project area and typical vegetation during the summer months. Also displayed in the photo are the numerous drill pad accesses on the property.



Photo 5.1: Northwest-Trending Ridge Host to the Cruz de Mayo Deposit (Looking Northwest).

#### 6.0 HISTORY

This section has been adapted from the two previous technical reports that were filed by SilverCrest Mine Inc. for the Cruz de Mayo property in 2007 and 2011. Fier and Wallis (2007) originally conducted much of the research into historical work and production on the property through archived company and government records. Tetra Tech EBA is not able to independently verify the reported historical grades or production values. The numbers reported here are provided for historical context and identify the exploration merit of the property only, and should not be relied upon. The reader is encouraged to examine the results of recent exploration and drill programs carried out by SilverCrest, as summarized in the current and previous NI 43-101 reports, in order to gain an accurate understanding of mineralization identified on the property.

During the late 19th to early 20th century, an unnamed company operated the Cruz de Mayo mine until it was abandoned at the onset of national instability due to the Mexican Revolution of 1910. During this period, underground development work was completed, including four adits (Uno, Dos, Tres, and Cuatro) totalling approximately 600 m of excavation (Photo 6.1). All existing adits except adit Dos are caved and inaccessible – however, cavity surveys were completed by SilverCrest in adit Dos and Uno (prior to caving).

Verbal accounts from local sources indicate that some small scale mining was undertaken on the Cruz de Mayo property between 1945 and 1970. Unofficial reports suggest that approximately 5,000 tonnes of ore mined from the Cruz de May Deposit were shipped directly to the nearby La Caridad smelter for flux at a grade of 0.5 g/t gold and 150 g/t silver. No official records exist of this.

Tetra Tech EBA has visited and conducted some geotechnical mapping of the level Dos excavation and is of the opinion that the historical excavations are volumetrically insignificant; however, the limited mapping and survey data previously acquired by SilverCrest for the accessible adits was factored into the current mineral resource estimation for the sake of completeness. Based on this information, Tetra Tech EBA estimates that at least 50,000 m<sup>3</sup> was excavated from the site during historical operations from adits Uno and Dos.

## 6.1 Historical Drilling and Sampling

During the 1970's and 1980's, Tormex Development Inc. (Tormex) of Toronto, Canada, drilled 16 core holes on the property in two separate programs. The first program consisted of five holes totalling 419.7 m and the second consisted of 11 holes totalling 452.2 m. Detailed core logs are available for the first five holes, complete with cross-sections. Composite assay results are available for the remaining 11 holes. Due to the data verification issues identified in s. 12.0, Tetra Tech EBA has not incorporated these results into the current resource estimate (refer to Section 12.0).

Underground channel sampling was completed by Minera Looker in the early 1990's and consisted of approximately 60 samples in Adit Dos. The average grade of these samples was estimated by Minera Looker at 0.45 g/t gold and 159 g/t silver. Sampling locations have not been verified at this time and have not been used in the current study. The property remained dormant from the early 1990's until 2005.

In April 2005, SilverCrest purchased the Cruz de Mayo 2 concession, which covers the Cruz de Mayo Deposit, for approximately \$10,000 from Mineral Cascabel, S.A. de C.V., a Mexican geological consulting company. SilverCrest conducted exploration work on the property continuously from 2005 to 2012, as detailed in Section 9.0 and 10.0 of this report.

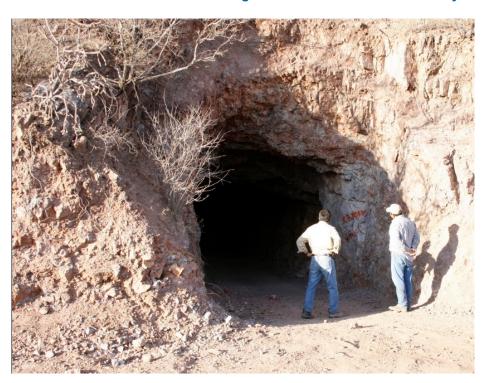


Photo 6.1: Portal of Old Underground Excavation at Cruz de Mayo

## 6.2 Historical Metallurgical Testwork

Four key metallurgical test programs have been completed for the Cruz de Mayo property. Two of these programs (2007, 2011) were completed at external laboratories and two of these (2011, 2012) were conducted internally under direction of the previous operator, SilverCrest Mines Inc. Samples were extracted from exposed mineralization within the Media Luna showing and within the Nivel 2.5 excavation (one of adits Uno or Dos), as shown in Figure 6.1.

Generally, the programs were designed to test recoveries at the Santa Elena mine mill. The program results are summarized and have not been incorporated into the current report due to the variability and inconclusive nature of the results with respect to a potential heap leach operation. These should not be relied upon until further metallurgical characterization is completed.

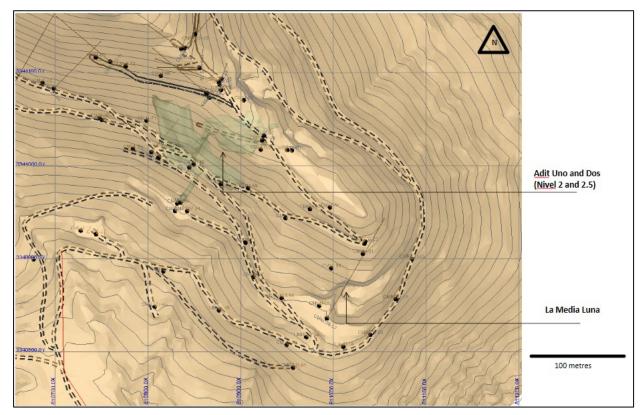


Figure 6.1: Location of Metallurgical Testwork Sample Collection Areas

### 6.2.1 Universidad de Sonora Laboratory (Sol and Adobe), 2007

In May, 2007, six samples were collected by SilverCrest from RC coarse rejects from storage at ALS Chemex in Hermosillo. Sol & Adobe Ingeniería completed initial bottle roll tests in the metallurgical laboratories at the Universidad de Sonora, Hermosillo. The average head analyses of the composites are presented in Table 6.1.

Table 6.1: Cruz de Mayo Project Head Analysis for Composites for Bottle Roll Tests, Sol and Adobe 2007

SAMPLE No.	Au	Ag
SAIVIPLE NO.	g/t	g/t
1CM-1	0.325	214.25
2CM-2	0.260	53.5
3CM-3	0.305	203
4CM-4	0.325	275
5CM-5	0.335	55.5
6CM-6	0.300	125.5

The results showed consumption of lime above 2 kg/tonne, and cyanide consumption, of the order of 1 kg/tonne. The most interesting feature was the strong variance on the silver extraction ranging from 25% up to 80%. The results are summarized in Table 6.2.

Table 6.2: Cruz de Mayo Project Metal Extraction and Reagents Consumption, Sol and Adobe 2007

Sample Id	Initial Cyanide Concentration	Extraction F	ercentage	Reagent Consumption			
	g/L	<b>A</b> u %	Ag %	Cyanide Consumption	Lime Consumption		
1CM-1		94.46	66.16	0.88	5		
2CM-2		89.10	59.91	0.96	5		
3CM-3		88.15	59.39	1.84	5		
4CM-4	1.0	93.04	80.35	0.56	5.5		
5CM-5	1.0	83.24	36.59	0.93	4		
6CM-6		81.89	25.72	1.06	4		
5CM-5R		84.00	47.97	1.13	2.3		
6CM-6R		84.02	29.62	1.38	2.3		

#### 6.2.2 Inspectorate Laboratory, 2011

A single composite was sent to Inspectorate in Vancouver, BC, to do one bottle roll test (BRT) as part of a metallurgical test program for expansion of the Santa Elena mine under direction of SilverCrest. The test was done at 3 g/L initial cyanide concentration,  $100 \mu m$  initial particle size and pH 10. Solution replacement with fresh solution after 10 hours of leaching was done to observe any effect on silver recovery. Silver recovery was 54% after 72 hours. Cyanide consumption was 2.76 kg/tonne whereas lime consumption remained at 0.3 kg/tonne as shown in Table 6.3.

Table 6.3: Cruz de Mayo Project Metal Extraction and Reagent Consumption, SilverCrest 2011

Comple	Initial Cyanide Concentration	Extraction Percentage			Reagent Consumption		
Sample Id	G/L	Au %	Ag %	Cu %	Cyanide Consumption Kg/T	Lime Consumption Kg/T	
CM Composite	3	51.2	54.1	NR	2.76	0.3	

## 6.2.3 Santa Elena Mine Laboratory, 2011

At the Santa Elena mine laboratory, BRT tests were conducted on two composite samples identified as (1) Media Luna and (2) Nivel 2.5, at different conditions of initial cyanide concentration, pH and particle size.

Table 6.4 provides the results obtained for the two samples at different initial cyanide concentration. It is shown that the higher the concentration of cyanide the higher the extraction of gold and silver. However, above 1,500 ppm such effect appears to be less pronounced. For all the other tests reported for these two samples an initial cyanide concentration of 1,500 ppm was chosen.

Table 6.4: Cruz de Mayo Project Metal Extraction and Reagent Consumptions at Different Initial Cyanide Concentrations. SilverCrest 2011

Comple	Initial Cyanide Concentration	Ext	raction Percen	tage	Reagent Consumption		
Sample - Id	G/L	Au %	Ag %	Cu %	Cyanide Consumption Kg/Ton	Lime Consumption Kg/Ton	
	0.25	85.93	60.12	16.47	0.96	2.30	
	0.50	88.13	73.65	16.48	1.20	1.80	
Media Luna	1.0	88.32	86.98	18.36	2.38	1.20	
	1.5	92.15	91.57	19.36	2.70	0.80	
	2.0	92.33	89.27	19.05	2.46	0.80	
	0.25	79.98	76.81	20.33	0.52	2.20	
	0.50	80.58	81.85	21.78	0.58	1.60	
Nivel 2.5	1.0	81.86	83.47	21.56	1.52	1.40	
	1.5	84.54	85.30	21.84	1.46	1.00	
	2.0	84.80	87.34	23.07	2.68	1.00	

The effect of initial pH is summarized in Table 6.5.

Table 6.5: Cruz de Mayo Project Metal Extraction and Reagent Consumptions at Different Initial pH, SilverCrest 2011

Sample Id		Extra	action Percent	Reagent Consumption		
	Initial pH	Au %	9		Cyanide Consumption Kg/Ton	Lime Consumption Kg/ton
Media Luna	9.75	95.26	91.35	17.10	2.24	0.10
	10.00	93.77	91.11	15.78	2.10	0.15
	10.50	93.82	88.64	15.07	1.62	1.30
	11.00	92.24	88.67	13.21	1.16	1.90
	9.75	90.57	88.76	21.48	2.42	0.10
Nivel 2.5	10.00	89.31	87.70	23.67	1.90	0.15
	10.50	92.50	84.22	19.33	1.16	1.70
	11.00	89.67	84.12	19.44	0.86	2.80

As pH is decreased, gold and silver extractions are increased. However, it should be recognized that in reality it is anticipated that other metals will also deport into solution as pH decreases.

The BRTs for different cyanide concentrations followed the standard procedure used in the Santa Elena laboratory, where the sample is ground in a pulverizer until 100% passes 150# (approximately 100  $\mu$ m). Pulverizing was carried out for a short period of time (less than 1 minute) in order to simulate the ball milling. All the other bottle roll tests were done following this procedure.

The effect of particle size is presented in Table 6.6. It is observed that the smaller the particle size the higher the gold and silver extraction. The difference between the Inspectorate results and all the others tests cannot be explained just on the particle size difference, nor can be attributed to the way grinding was done.

Table 6.6: Cruz de Mayo Project Metal Extraction and Reagent Consumption at Different Initial Particle Size, SilverCrest 2011

		EXTRA	CTION PERCE	NTAGE	REAGENT CONSUMPTION		
SAMPLE ID	Initial Particle Size	Au %	Ag %	Cu %	Cyanide Consumption Kg/ton	Lime Consumption Kg/ton	
	-1/4"	63.97	39.78	7.36	1.10	0.15	
Media Luna	-10#	83.37	42.17	8.79	1.00	0.15	
Media Luria	-150#	88.29	85.45	10.34	1.26	0.15	
	-200#	92.15	91.57	19.36	2.70	0.80	
	-1/4"	58.52	25.84	11.19	1.50	0.15	
Nivel 2.5	-10#	61.29	23.22	11.63	1.84	0.15	
Nivei 2.5	-150#	80.96	69.84	15.09	1.62	0.20	
	-200#	84.54	85.30	21.84	1.46	1.00	
Inspectorate	-100 (μm)	51.2	54.0	NR	2.76	0.30	

### 6.2.4 Santa Elena Mine Laboratory, 2012

BRTs were completed at the Santa Elena mine laboratory on drill core rejects from the 2012 exploration program from Cruz de Mayo. The conditions for the tests were:

33% solids,

pH 10,

Particle size, 100 μm,

Initial cyanide concentration: 1.5 g/L,

No solution replacement, and

Total leaching time: 72 hours.

Twenty composites were prepared from different core samples covering two silver grade ranges of below 60 g/t and above 60 g/t. The head grade analyses are presented in Table 6.7 In some samples, copper was present in quantities that might affect the cyanide leaching of precious metals although no apparent correlation was observed.

Table 6.7: Cruz de Mayo Project Head Analysis for Bottle Roll Tests, SilverCrest 2012

			Head Assay	
Silver Zone	Sample ID	Au	Ag	Cu
		G/T	G/T	%
	BRT-CM-CPS 1	0.48	547.5	0.106
	BRT-CM-CPS 2	1.12	508.5	0.04
	BRT-CM-CPS 3	0.47	167.6	0.146
	BRT-CM-CPS 4	0.22	125.3	0.018
High Grade Silver	BRT-CM-CPS 5	0.17	118.0	0.017
>60 g/t	BRT-CM-CPS 6	0.44	250.9	0.052
	BRT-CM-CPS 7	4.37	2718.0	0.187
	BRT-CM-CPS 8	2.92	2644.0	0.144
	BRT-CM-CPS 9	0.16	113.5	0.026
	BRT-CM-CPS 10	0.10	59.9	0.007
	BRT-CM-CPS 15	0.07	36.1	0.01
	BRT-CM-CPS 16	0.22	53.7	0.009
	BRT-CM-CPS 17	0.03	12.7	0.004
	BRT-CM-CPS 18	0.07	35.6	0.007
Low Grade Silver	BRT-CM-CPS 19	0.05	46.1	0.016
<60 g/t	BRT-CM-CPS 20	0.04	20.9	0.009
	BRT-CM-CPS 21	0.03	50.0	0.007
	BRT-CM-CPS 22	0.05	21.7	0.003
	BRT-CM-CPS 23	0.17	46.1	0.009
	BRT-CM-CPS 24	0.04	20.5	0.004

The results of the BRTs are shown in Table 6.8.

Table 6.8: Cruz de Mayo Project Metal Extraction and Reagent Consumption for Bottle Roll Tests, SilverCrest 2012

		Extra	action Perc	entage	Regent Consumption		
Silver Zone	Sample Id	Au %	Ag %	Cu %	Cyanide Consumption Kg/t	Lime Consumption Kg/t	
	BRT-CM-CPS 1	86.5	91.1	23.5	2.22	1.00	
	BRT-CM-CPS 2	93.8	90.3	15.6	1.42	1.20	
	BRT-CM-CPS 3	79.9	64.4	8.6	1.44	1.15	
	BRT-CM-CPS 4	93.0	70.4	22.2	1.32	1.15	
Cilver Crade > COalt	BRT-CM-CPS 5	78.7	88.7	15.6	0.82	1.20	
Silver Grade >60g/t	BRT-CM-CPS 6	89.0	83.1	14.9	1.38	1.10	
	BRT-CM-CPS 7	87.4	93.9	31.2	5.42	1.00	
	BRT-CM-CPS 8	89.6	93.8	30.4	3.80	1.05	
	BRT-CM-CPS 9	82.0	73.6	10.6	0.58	1.00	
	BRT-CM-CPS 10	82.8	74.2	23.8	0.88	1.25	
	BRT-CM-CPS 15		56.8	6.1	0.46	2.40	
	BRT-CM-CPS 16		53.8	4.0	0.46	2.00	
	BRT-CM-CPS 17		35.5	4.0	0.52	2.00	
	BRT-CM-CPS 18		71.1	9.4	0.52	2.90	
Silver Grade	BRT-CM-CPS 19		49.5	7.8	0.98	2.70	
<60 g/t	BRT-CM-CPS 20		57.1	10.2	0.96	2.50	
	BRT-CM-CPS 21		86.2	50.9	1.34	3.40	
	BRT-CM-CPS 22		48.2	10.8	0.96	2.95	
	BRT-CM-CPS 23		55.1	6.1	1.04	2.45	
	BRT-CM-CPS 24		54.4	15.8	1.00	3.40	

## Solution Replacement after 10 hour Leaching Evaluation

Based on the previous project concept, three of the 20 composites previously analyzed from the Cruz de Mayo 2012 exploration program were selected to be evaluated by BRT specifically at the SE Laboratory under the following conditions:

- 40% solids,
- pH > 10,
- Particle size, 100 μm (80% passing 150#),
- Initial cyanide concentration, 1.0 g/L,
- Solution replacement after 10 h leaching, and

#### Total leaching time, 72 hours.

The composites were sent to the Inspectorate laboratory in Vancouver, BC, to duplicate tests and verify results under the same conditions as the ones used in Santa Elena Lab. The three composites cover what was considered to be low, middle and high silver grade ores. Each of the three composites were evaluated under the conventional or standard BRT procedure and in additional, the middle grade composite was also analyzed with the solution replacement method (CPS 2R), making a total of four tests for comparison with previous results.

Table 6.9: 2012 Cruz de Mayo Exploration Program SE Lab - Inspectorate Head Analysis for Bottle Roll Tests

		S	E Lab - Head As	ssay	Inspectorate - Head Assay			
Project	Sample	Au	Ag	Cu	Au	Ag	Cu	
		g/t	g/t	(%)	g/t	g/t	(%)	
0	CM – CPS 2	1.06	573.0	0.040	1.47	582.6	0.041	
Cruz de Mayo	CM – CPS 6	0.37	252.0	0.048	0.32	252.1	0.045	
Wayo	CM - CPS 11	2.4	2083.0	0.183	3.61	3337.7	0.165	
		SE LAB - Calculated Head			INSPECTORATE - Calculated Head			
	CM – CPS 2	1.17	594.5	0.040	1.53	577.6		
Cruz de Mayo	CM – CPS 2R	0.94	552.4	0.043	1.83	597.2		
	CM – CPS 6	0.37	249.0	0.049	0.53	299.4		
	CM – CPS 11	1.99	2133.1	0.183	4.25	3469.5		

Table 6.10: 2012 Santa Elena Exploration Program Santa Elena Mine Lab - Inspectorate Bottle Roll Tests Summary

Sample ID L		Grind	Pulp		NaCN g/L	Recovery		Residue		Consumption (kg/t)											
	LAB	P80 μm	Density (%)	рН		Au (%)	Ag (%)	Au (g/t)	Ag (g/t)	NaCN	Lime										
CM CDC 6	SE	440	40	10.8	1.0	84.7	81.8	0.06	45.0	5.31	1.60										
CM - CPS 6 INSP	113	40	10.5	1.0	94.3	64.7	0.03	105.8	1.46	0.40											
CM - CPS 2 SE INSP	SE	122	40	10.8	1.0	87.3	87.0	0.15	78.0	0.98	1.40										
	INSP	122		10.5	1.0	90.8	67.2	0.14	189.7	1.54	0.45										
CM - CPS 2	SE	400	100	100	100	100	100	100	100	100	100	100	40	11	4.0	79.9	82.9	0.19	95.0	1.16	1.60
'R' INSF	INSP	122	40	10.5	0.5	92.9	69.7	0.13	180.9	1.76	0.45										
CM - CPS	SE	110	40	10.8	10.8 10.5	85.6	60.1	0.29	852.0	8.57	1.40										
11	INSP	113	40	10.5		93.4	63.0	0.28	1282.3	3.72	0.55										

#### **Other Metallurgical Studies**

SilverCrest carried out additional mineralogical analysis at the Inspectorate lab using a composite from the Media Luna location. The results indicate that silver is present mainly as argentite ( $Ag_2S$ ) and pyrargyrite-

proustite (Ag<sub>2</sub>Sb, AsS<sub>3</sub>) embedded in a silica matrix. Within silica native silver and electrum were also observed. The study also indicated that the high dense silica matrix would require intense grinding.

Hazen Research obtained the Bond crusher impact work index ( $CW_i$ ) and Bond Abrasion Index ( $A_i$ ) shown in Table 6.11. The Bond Mill index ( $W_i$ ) reported by Inspectorate is included.

Table 6.11: Cruz de Mayo Project Crushing, Abrasion and Bond Mill Indexes for Cruz de Mayo Composite

Crushing, Abrasion and Bond Mill Indexes for Cruz de Mayo Composite.							
Sample CW <sub>i</sub> , kWh/t A <sub>i</sub> , g W <sub>i</sub> , kWh/t							
CM Composite	13.59	1.1267	17.6				

#### 7.0 GEOLOGICAL SETTING AND MINERALIZATION

## 7.1 Regional Geology

Much of the geology of Northern Mexico can be attributed to the volcanism related to the east-directed subduction of the Farallon Plate beneath the North American Plate that began with the tectonic rifting of the supercontinent Pangea  $\sim$ 200 Ma ago (Rogers 2004). Delgado-Granados et. al., (2000) proposed that the subduction of the Farallon Plate occurred at a relatively shallow angle, resulting in continental uplift across northern Mexico and the development of accretionary terrains along the its western fringes. The shallow subduction angle is also thought to be responsible for the tectonics that produced the Basin and Range Province.

The continental margin became a depositional zone for a thick sequence of shallow marine shelf carbonate and siliciclastic rocks, which are overlain by later continental arc volcanism and volcaniclastic formations of the Late Cretaceous to early Cenozoic Lower Volcanic Complex. This latter continental arc volcanism culminated with the Laramide orogeny in the early to late Eocene (Alaniz-Alvarez et al., 2007). The waning of compression is believed to coincide with the first part of Basin and Range extension (Wark et al., 1990; Aguirre-Diaz and McDowell, 1991, 1993).

The NE-SE trending Sierra Madre Occidental extends a distance of over 1200 km from the USA-Mexican border to Guadalajara in the southeast, and has an average elevation of 2000 meters (Figure 7.1). The Sierra Madre Occidental was created by Cretaceous to Cenozoic magmatic episodes related to the subduction of the Farallon Plate under North America in a series of mainly silicic eruptive pulses.

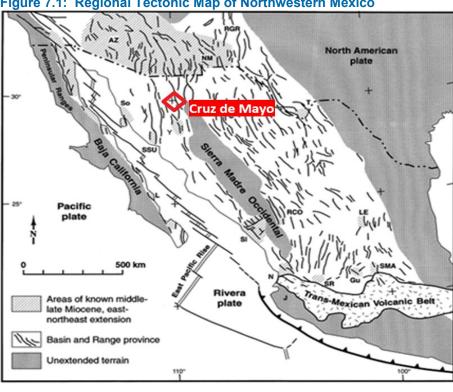


Figure 7.1: Regional Tectonic Map of Northwestern Mexico

The silicic volcanism is thought to be related to fractional crystallisation of mantle sourced basalts from subduction (Johnson, 1991; Wark, 1991). Subduction of the Farallon plate also caused the opening of Gulf of California (Ferrari et al 2007), most likely related to slab roll back and subsequent extension at the continental margin.

Ferrari et al (2007) summarises five main igneous deposits of the Sierra Madre Occidental;

- Plutonic/volcanic rocks Late Cretaceous Paleocene.
- Andesite and lesser dacite-rhyolite Eocene (Lower Volcanic Complex).
- Silicic ignimbrites Early Oligocene & Miocene (Upper Volcanic Complex).
- Basaltic-andesitic lava late stage of and after ignimbrites pulses.
- Repeat and episodic volcanism related to rifting of the Gulf of California (alkaline basalt and ignimbrite) emplaced to western flanks in Late Miocene Pliocene and Quaternary.

At the final stages of the deformation period during the Paleocene - Early Eocene, E-W and ENE-WSW extension occurred in the Lower Volcanic Complex that now hosts many porphyry deposits of the Sierra Madre Occidental. These porphyry deposits are hosted in Middle Jurassic to Tertiary aged intrusions, located at Cananea, Nacozari and La Caridad. (Ferrari et. al., 2007). The Early Eocene, E-W and ENE-WSW extensional directions are similar to the orientation of the vein at the nearby Santa Elena mine.

Early Oligocene extensional tectonics occurred along the eastern Sierra Madre Occidental flank, forming the typical basin and range province. By early to mid-Miocene extension migrated west into Northern Sonora and along the western flank of the Sierra Madre Occidental, forming NNW striking normal faults and creating tilted blocks. This extensional regime caused major deformation across the Sierra Madre Occidental, exhuming pre-Cambrian basement rocks especially in the Northern Sierra Madre Occidental (Ferrari et. al., 2007).

Northwest trending shear zones and associated faulting appear to be an important control on silver gold mineralization at Cruz de Mayo, and elsewhere in the Sonora region. The structural separation along the faults localized the conduits for mineral bearing solutions. The heat source for the mineralizing solutions was likely from the plutonic rocks that commonly outcrop in Sonora.

The Parallel Ranges and Valleys to the west of the Sierra Madre Occidental show structural similarities and extensional tectonic regimes to that of the Basin and Range Province further east.

## 7.2 Local Geology

The geology of the Cruz de Mayo property comprises a sequence of felsic to intermediate volcanic and volcaniclastic rocks that have been thrust over a predominantly andesitic footwall. Local silicification of the thrust sequence and adjacent wall rocks gives rise to the N-W trending ridge that hosts the deposit. Mineralization is largely restricted to a series of discontinuous quartz veins that occupy the broad deformation zone created by the thrust fault.

The primary rock types observed on the property are intact Tertiary andesite to rhyolitic flows, related volcaniclastic rocks including well bedded to graded ash and lapilli tuff, and silica hosted breccia comprised of the volcanic units within the thrust sequence (Figure 7.2). Andesite in the footwall strikes approximately N-S and dips consistently 18-25° west. In comparison, volcanic rocks in the hangingwall display evidence of rotation, possibly related to drag folding or other compressional movement along the thrust fault. Individual units in the hangingwall typically dip 20-30° to the east.

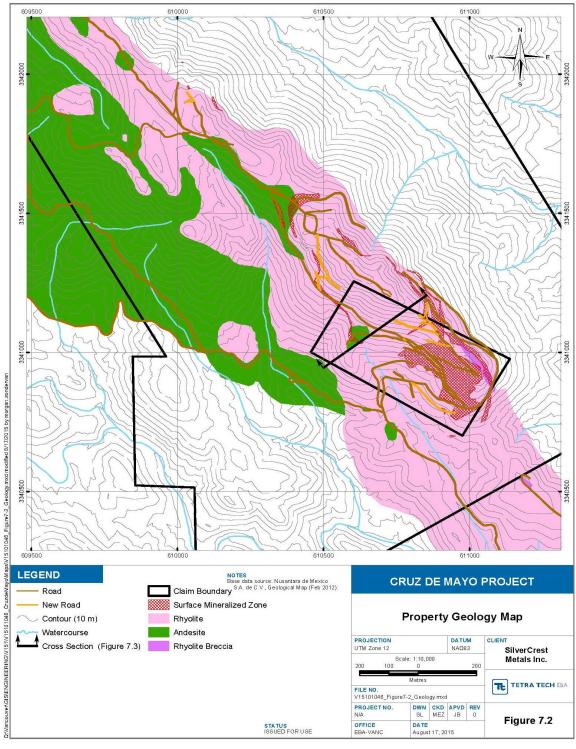
Alteration within the deposit is widespread and pervasive, and mainly consists of silicification, kaolinization, and chloritization. Kaolin has formed primarily along joints, fractures and contacts, which are deeply weathered and oxidized. Limonite within the oxide zone consists of a brick-red colour after pyrite, brown goethite and local yellow jarosite. Manganese occurs locally as pyrolusite and minor psilomelane. Gangue minerals consist of quartz, calcite, chlorite and fluorite. Analysis shows calcium content of up to 15% in the thrust fault gangue.

It is postulated that the structural deformation associated with the thrust fault provided a conduit system for mineralizing fluids, possibly causing hydrothermal brecciation, and was further enhanced by an increase in porosity and heterogeneity in the surrounding rhyolitic and volcaniclastic rocks. The deformation has been traced along strike for approximately 2.5 km, and ranges from one to 90 m wide ( $\sim$  30 m average). The zone dips from  $10^{\circ}$  to  $30^{\circ}$  to the southwest, and has been tested to a depth of approximately 200 m from surface. In addition to thrusting, there is also evidence that steeply-dipping N-S and N-E trending brittle faults bisect the thrust sequence and locally offset mineralization on the scale of 10's of metres.

Minor intrusive rocks have also been identified at Cruz de Mayo, and include andesite porphyry dikes and granodiorite stocks. While the volume of intrusive rocks is insignificant compared to the volcanic rocks, it is

likely that the heat from these intrusive events was the driving force behind the mineral-bearing fluids that permeated the area.

Figure 7.2: Local Geology of the Cruz de Mayo Property



## 7.3 Cruz de Mayo Mineralization

Cruz de Mayo is categorized as a low-sulphidation, epithermal silver deposit with minor gold and trace amounts of copper, lead and zinc. Silver is hosted primarily as acanthite-argentite with minor amounts of pyrargyrite-proustite and secondary cerargyrite. Mineralization occurs in banded quartz veins, stockwork and breccia and is commonly associated with silver sulfosalts, fluorite, calcite and trace sulphides. Iron oxides, including limonite, jarosite, goethite and hematite are also commonly associated with mineralization. Manganese oxides are also locally observed in the southeast part of the mineralized zone.

Mineralization is concentrated by a series of shallowly dipping tabular bodies that occur within or parallel to, the deformation zone resulting from thrusting (Figure 7.3). A total of four discrete mineralized zones ranging in thickness from 1-30 m were modelled based on available drill data. The four zones generally follow the geometry of the interpreted thrust fault, and comprise the bulk of the mineralization observed on the property. For the purposes of this study, these zones have been termed the Upper, Middle, Lower, and Northwest mineralized zones.

A second style of mineralization was observed in the central part of the ridge at Cruz de Mayo, occurring at the contact between easterly dipping volcanic flows located in the hangingwall. Well defined mineralized zones typically occur at the base of andesite flows and are likely related to permeability differences which likely acted as a barrier to fluid flow. In general, the easterly dipping mineralized zones are narrow relative to the main zones and volumetrically much less significant. For the purposes of this study, the easterly dipping mineralized zones are herein termed the Andesite and Northwest zones.

A possible third style of mineralization associated with steeply-dipping structures in the area is also postulated at Cruz de Mayo. Mineralization in the deposit is frequently both offset and augmented by several generations of steeply-dipping brittle faults that cut across the thrust sequence at an oblique angle. These structures form many of the small drainage valleys and linear topographic features observed adjacent to the main ridge. Some of these cross-cutting features may be responsible for the high grade shoots (greater than 500 g/t silver) observed, although their precise influence on the distribution of mineralization remains poorly understood. Based on several high grade mineralized intercepts located in the footwall, it is also postulated that potential exists for a steeply dipping "feeder" system at depth. Additional work is required before these zones can be modelled with any certainty.

The permeable nature of the fractured zones has allowed significant oxidation to occur to at least 150 vertical metres below the surface. The deepest core hole intersected the mineralized zone at approximately 150 vertical metres and shows oxidation. Metal zonation appears to correspond to northwest-trending regional lineaments that are intersected by northeast-trending structures that cross-cut the mineralized zone and form high grade shoots. No vertical zonation is apparent. Minor sulphides have been observed only in a few locations within the mineralized zone.

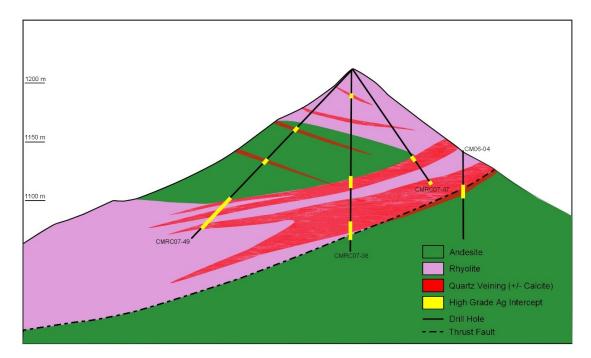


Figure 7.3: Schematic Cross-Section (~3,341,250 N) Showing Geometry of Deposit, View is Looking North

## 8.0 DEPOSIT TYPES

Mineralization at Cruz de Mayo occurs as a series of quartz veins and stockwork and is typical of volcanic dome, low-sulphidation deposits found in the Sierra Madre Occidental and elsewhere in the world, such as Santa Elena deposit in Sonora, Mexico. These deposits form in predominantly felsic sub-aerial volcanic complexes in extensional and strike-slip structural regimes. Samples collected by SilverCrest at Cruz de Mayo show a geochemical signature of Ag+Pb+Zn+Cu+Au+Ca+Mn, consistent with a high level low-sulphidation system.

The mineralization is the result of ascending structurally controlled low-sulphidation silica-rich fluids into a near-surface environment. Mineral deposition takes place as the fluids undergo cooling by fluid mixing, boiling and decompression. Brecciation of the mineralized zone appears to be due to explosive venting from nearby intrusions and volcanism, followed by mineral deposition by ascending fluids. A large intrusion (granodiorite to granite) located approximately 500 m west of Cruz de Mayo may be an associated source of mineralizing fluids on for the property.

#### 9.0 EXPLORATION

#### 9.1 Previous Exploration by SilverCrest

Reconnaissance and initial geological surveying of the property has occurred since 2005, consisting of prospecting and outcrop grab sampling, followed by core drilling holes near the upper elevation of the main ridge.

In 2006 and the first half of 2007, SilverCrest completed an exploration program at Cruz de Mayo, which included surface mapping and sampling, core drilling and RC drilling as presented in the following sections. Additional exploration RC drilling was carried out in 2008. Sampling was designed to follow up and confirm previous surface results reported by Tormex during the 1970's. A limited number of SilverCrest's results were consistent with Tormex results.

An airborne survey was flown by Eagle Mapping in 2007 to collect photos and topographic elevation data for the creation of a property DTM.

Mapping and continuous chip sampling was conducted within the two accessible excavations in 2010. The walls of the excavation were surveyed which provided the basis for the current excavation model used in GEMS modelling software.

## 9.2 Exploration by SilverCrest Metals

SilverCrest Metals has compiled and organized the existing data for the property which is to be used for further project development and regional assessment.

#### 10.0 DRILLING

Drilling on the project is limited to early campaigns from 1970 and 1980, which have not been verified and are not incorporated into the Mineral Resource Estimate, and more recent drilling completed by SilverCrest between 2005 and 2012. The SilverCrest drilling is now considered historical, however, has been verified as described in Section 12 and is the basis of the Mineral Resource Estimate.

## 10.1 Historical drill programs

SilverCrest carried out six drill programs between 2005 and 2012, completing a grand total of over 15,000 metres of drilling. Programs included both core and RC drilling, as summarized in Table 10.1 and discussed in the following sections. A map showing the distribution of drill holes is provided in Figure 10.1.

Table 10.1: Cruz de Mayo Drill Summary

Year	Company	Number of Holes Drilled	Drill Type	Core Type	Total metres	Included in 2007/2011 estimate	Included in current estimate
Early 1970's	Tormex	5	Diamond Drill		419.7	NO	NO
Early1980's	Tormex	11	Diamond Drill		452.2	NO	NO
2005	SilverCrest	3	Diamond Drill	NQ	379.4	YES	YES
2006	SilverCrest	20	Diamond Drill	NQ	1,812.90	YES	YES
2007	SilverCrest	27	Reverse Circulation		2,904	YES	YES
2008	SilverCrest	10	Reverse Circulation		1,818	NO	YES
2011	SilverCrest	17	Diamond Drill	NQ	1,474.40	NO	YES
2011	SilverCrest	7	Reverse Circulation		464.8	NO	YES
2012	SilverCrest	30	Reverse Circulation		4,208.20	NO	YES

Year	Company	Number of Holes Drilled	Drill Type	Core Type	Total metres	Included in 2007/2011 estimate	Included in current estimate
2012	SilverCrest	11	Diamond Drill	NQ	1,339.40		YES
Total		141			15,273		

#### 2005

SilverCrest completed a diamond drill program consisting of three holes totalling 379.4 m in early 2005. The NQ sized holes were drilled to test the down dip projection of mineralization identified on surface. Two holes were vertical (CM05-01, 02) and one hole (CM05-03) was angled from hole number 02 to utilize a single drill pad. Drilling was completed by Major Drilling de Mexico (Major), a subsidiary of Major Drilling Canada of Ontario, using a Longyear 38 drill and associated support equipment.

#### 2006

The Company carried out a diamond drill program comprised of 20 holes for a total of 1,812.9 m. Drilling was completed by Major, using a Longyear 38 drill and associated support equipment. Core holes (NQ size) were drilled on 100 m to 150 m sections along the northwest trending strike of the mineralized zone. All holes but one were drilled vertically. Periodic downhole surveys were completed to test deviation. Most of the holes were short and showed little to no change in orientation.

#### 2007

In the spring of 2007, the company completed a reverse circulation drill program consisting of 27 holes totalling 2,904 m. Drilling mainly targeted deep mineralization along the top of the ridge as well as the downdip extension of the zone to the southwest.

#### 2008

In 2008, 10 reverse circulation holes totalling approximately 2,000 metres were drilled, focussed on extending the main mineralized trend along the northwestern part of the ridge. No significant mineralization was intersected in most of this drilling, suggesting a northern limit to the mineralized zone or possible offset by the prominent north-south or northwest trending faults in that area. The only significant result from the program came from CMRC08-53, a hole drilled in the southern part of the resource area that returned 33 m of 83.7 g/t Ag.

## 2011

In 2011 the company drilled 7 reverse circulation holes totalling approximately 464 m and meters and an additional 17 diamond drill holes totalling 1,474 m. All of the holes, with the exception of CM11-76, were drilled vertically and mainly concentrated in the southern part of the property.

#### 2012

In 2012, the company completed a reverse circulation and diamond drill program totalling 5,547.6 m. Drilling comprised a series of fans drilled in the central part of the ridge in an effort to infill areas of known mineralization (refer Figure 10-1).

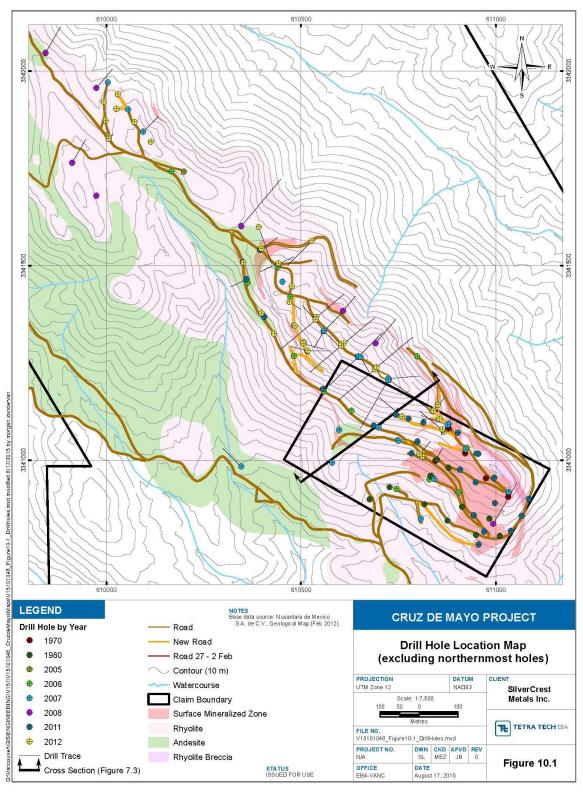


Figure 10.1: Cruz de Mayo Drillhole Location Map

## **10.2** Historical Drilling Results

Table 10.2 provides a breakdown of the significant intercepts returned from the SilverCrest drill programs. For the purposes of the current report, weighted averages were calculated for all intersections of two or more consecutive samples containing grades greater than 15 g/t Ag. Gold values typically fall below  $0.1 \, \text{g/t}$ , but increase and show a good correlation in higher silver grades. The intervals reported are downhole lengths and have not been corrected for true width.

**Table 10.2: Significant Drillhole Intercepts** 

DDH	From	То	Down hole Interval **	Weighted Average Silver	Weighted Average Gold
	m	m	m	g/t	g/t
CM05-02	40.7	99.6	58.9	110.90	0.10
CM05-03	53.1	81.3	28.2	70.80	0.04
CM06-08	42	68.3	26.2	77.00	0.09
CMRC07-24	25.5	33	7.5	29.20	0.00
CMRC07-25	30	40.5	10.5	106.40	0.09
CMRC07-26	15	25.5	10.5	77.50	0.05
CMRC07-27	9	13.5	4.5	16.30	0.03
CMRC07-28	31	54	23	97.20	0.12
CMRC07-31	40.5	43.5	3	38.00	0.01
CMRC07-32	46.5	60	13.5	167.70	0.79
CMRC07-33	48	78	30	56.00	0.08
CMRC07-33	96	100.5	4.5	53.00	0.02
CMRC07-34	145.5	155	9.5	39.80	0.00
CMRC07-35	115.5	202.5	87	62.00	0.05
CMRC07-36	85.5	88.5	3	29.50	0.06
CMRC07-38	88.5	93	4.5	43.70	0.04
CMRC07-38	130.5	142.5	12	169.50	0.11
CMRC07-39	40.5	46.5	6	156.50	0.11
CMRC07-40	54	63	9	78.80	0.07
CMRC07-41	54	60	6	41.00	0.04
CMRC07-42	3	51	48	34.90	n/a*
CMRC07-43	16.5	96	79.5	52.80	0.05
CMRC07-44	33	37.5	4.5	26.30	0.02
CMRC07-44	75	88.5	13.5	38.90	0.03

DDH	From	То	Down hole Interval **	Weighted Average Silver	Weighted Average Gold
	m	m	m	g/t	g/t
CMRC07-48	108	151	43	46.60	n/a*
CMRC07-49	152	189.5	37.5	30.58	n/a*
CMRC07-50	112.5	118.5	6	76.50	n/a*
CMRC08-53	3	36	33	83.73	0.00
CM11-62	11.6	17.85	6.3	52.51	0.09
CM11-63	0	14.45	14.5	25.38	0.04
CM11-64	21.12	32.93	11.8	87.44	0.18
CM11-66	39	72	33.0	47.89	0.04
CM11-67	0	9	9.0	36.03	0.04
CM11-70	26	50	24.0	47.51	0.06
CM11-78	101	112	11.0	50.69	0.26
CMRC11-02	13.72	16.77	3.1	39.02	0.18
CMRC11-03	15.25	24.4	9.2	41.79	0.03
CMRC11-04	0	4.57	4.6	47.83	0.14
CMRC11-06	0	7.62	7.6	31.41	0.11
CMRC11-07	10.67	18.3	7.6	17.40	0.04
CM-12-80	54	60	6.0	348.85	0.73
CM-12-81	112	126	14.0	836.14	0.12
CM-12-83	97	135	38.0	84.67	0.06
CM-12-84	108	143.3	35.3	69.97	0.06
CMRC12-08	12.19	41.44	29.3	94.34	0.13
CMRC12-09	25.91	41.15	15.2	50.22	0.11
CMRC12-09	86.86	106.68	19.8	24.80	0.01
CMRC12-10	9.14	42.67	33.5	40.02	0.06
CMRC12-11	70.1	77.72	7.6	19.20	0.03
CMRC12-12	24.38	53.34	29.0	21.23	0.09
CMRC12-12	73.15	77.72	4.6	26.01	0.06
CMRC12-14	30.48	35.05	4.6	23.01	0.06
CMRC12-16	0	3.04	3.0	60.50	0.47
CMRC12-16	18.28	38.1	19.8	33.98	0.10
CMRC12-17	18.28	33.52	15.2	49.36	0.19

DDH	From	То	Down hole Interval **	Weighted Average Silver	Weighted Average Gold
	m	m	m	g/t	g/t
CMRC12-20	94.48	102.1	7.6	486.16	0.12
CMRC12-21	6.09	10.68	4.6	115.01	0.19
CMRC12-24	74.67	86.86	12.2	162.65	0.18
CMRC12-25	53.34	68.58	15.2	137.84	0.63
CMRC12-26	67.05	70.1	3.1	192.36	0.21
CMRC12-90	141	145.5	4.5	205.30	0.12
CMRC12-90	189.00	202.50	13.50	145.88	0.47
CMRC12-91	81	93	12.0	68.33	0.08
CMRC12-94	31.5	45	13.5	64.79	0.10
CMRC12-94	55.5	63	7.5	138.06	0.12
CMRC12-95	147	159	12.0	1949.64	2.47
Incl.	148.5	154.5	6.0	3682.50	4.70
CMRC12-96	12.00	15.00	3.00	41.05	0.08

<sup>\*</sup> Samples not analyzed for gold

## 10.3 Surveying and mapping topography

All surveying, including drill hole collars, was completed by SilverCrest personnel using a handheld GPS. Drill collars were marked in the field with a concrete cap or PVC pipe.

Eagle Mapping of Vancouver B.C. completed an aerial flight in 2007 with detailed (2 m) contouring of the project. An average vertical discrepancy of 2.54 metres was observed between the DTM and ground surveyed co-ordinates, however, there was a variance between 0.60 and 5.74 metres. Due to this variance, all drill pads and drillhole collar elevations were validated and adjusted to match the new DTM topography elevations.

To ensure that all interpretations are accurate, Tetra Tech EBA requested that an independent professional surveyor be commissioned to resurvey the drillhole collars to ensure correct locations were used in modelling and assay interpretations. This resurvey was carried out on the 2011-2012 drillhole collar locations independently by the onsite operations surveyor from the Santa Elena mine and reaffirmed the drill hole coordinates to an acceptable level of confidence. This data was thereafter used in Tetra Tech EBA's site interpretations and reporting. Some uncertainty does exist for previous year's holes (i.e. 2007 and 2008) as many of the cemented collar locations were not located on the property, however, previous independent review and evidence of drill pad set-ups support the existence of these holes.

<sup>\*\*</sup> Interval length are downhole length, true lengths have not been calculated

## 10.4 Drilling by SilverCrest Metals Inc.

No drilling has been conducted on the property by SilverCrest Metals Inc.

## 11.0 SAMPLE PREPARATION, ANALYSIS AND SECURITY

## **II.I** Sample Collection Methods

## 11.1.1 Historic Sample Collection Methods

Knowledge of the sampling methodology for work completed prior to 2005 is limited. All underground sampling completed by Minera Looker was inadequately documented and Tetra Tech EBA was unable to determine the approach.

## 11.1.2 2005-2006, Sample Collection Methods

During the 2005 and 2006 drill program, core was collected in plastic core boxes and labelled for hole identification and location. Each day, the core boxes were collected and delivered to the laydown area located on the property. The core was measured for further identification and recovery and then geologically logged. After identifying the mineralized zone, core was selected for splitting in half with a hydraulic hand splitter.

Sample intervals were determined geologically. Once split, the core was placed in a plastic bag with a label and marked with the sample number. The remaining core was stored on the property in an enclosed area at the camp site or in the yard (under cover) at the exploration office in Cumpas.

## 11.1.3 2007, Sample Collection Methods

Sampling during the 2007 RC drill program consisted of collecting rock chips in plastic bags at one metre intervals and labelling each with a sample number. Duplicate samples were collected for each interval with a small amount of chips collected in plastic chip boxes for geological logging. Every day, the marked plastic bags and chip boxes were collected and delivered to the camp located on the property, where the individual bags were prepared for shipping.

All surveying, including drillhole collars, was completed by Nusantara personnel using GPS. The drill collars are marked in the field with a concrete cap or PVC pipe. Eagle Mapping of Vancouver B.C. completed an aerial flight in 2007 with detailed (1 to 2 m) contouring of the project. All drill pads and holes were validated using the new surface topography. The drill collars were marked in the field with a concrete cap.

#### 11.1.4 2008, Sample Collection Methods

Sample collection methods were undocumented for the 2008 RC drilling program. It is anticipated that similar methods to the 2007 RC campaign were employed.

## 11.1.5 2011 - 2012, Sample Collection Methods

Core samples recovered during the 2011 drilling program were placed in plastic core boxes and labelled for hole identification and location. Each day, the core boxes were collected and delivered to the core storage facility located in Cumpas. Core recovery and RQD was measured and then core geologically logged.

Sampling intervals between 1 and 3 metres were marked with tags by the project geologist and then cut in half with a diamond saw. Occasional hand split samples were noted to occur in the sample boxes. Half of the core was individually bagged and labelled in preparation for shipping. The remaining core was stored onsite in a core rack in Cumpas.

Sampling during the 2011-2012 RC drill program consisted of collecting rock chips representing approximately 1.5 metre runs from the cyclone in buckets and after separated using the riffle splitter and taken two samples weighing approximately 15 kg each. Of these, one was sent to the lab and the other was transferred to a labelled plastic bag for storage in Cumpas.

Initial collar surveying was completed by SilverCrest personnel using handheld GPS and later by the onsite operations surveyor from the nearby SilverCrest Santa Elena mine. The drill collars were marked in the field with a concrete cap and/or PVC pipe. The collar locations were validated and adjusted vertically using the Eagle Mapping surface topography collected in 2007.

## 11.2 Sample Preparation and Analysis Methods

#### 11.2.1 2005 - 2006, Sample Preparation and Analysis Methods

Drill core samples were received at the ALS-Chemex laboratory in Hermosillo, Sonora, Mexico. The samples were crushed, riffle split and pulverized to 85% under 75 microns.

All samples were analyzed with multi-element ICP41. Silver was tested using aqua regia digestion with ICP finish (method Ag-AA46) and compared with four-acid digestion with ICP finish (method Ag-AA62). Gold was tested using fire assay fusion and AA finish.

SilverCrest did not insert standards or blanks within the sample population for this program. Quality control was not able to be conducted on these samples.

Security for the samples was completed using typical tagging and tracking of samples up to delivery to the laboratory.

## 11.2.2 2007, Sample Preparation and Analysis Methods

Rock chip samples were received at the ALS-Chemex laboratory in Hermosillo, Sonora, Mexico. The samples were crushed, riffle split and pulverized to 85% under 75 microns.

Sampling records indicate that silver was tested using four-acid digestion with ICP finish (method Ag-AA62). Gold was tested using fire assay fusion and AA finish.

Standards and blanks were not inserted within the sample population during this program. Quality control was not able to be conducted on these samples.

#### 11.2.3 2008, Sample Preparation and Analysis Methods

Rock chip samples were received at the ALS-Chemex laboratory in Hermosillo, Sonora, Mexico. The samples were crushed, riffle split and pulverized to 85% under 75 microns.

All samples were analyzed with multi-element ICP41. Silver was tested using aqua regia digestion with ICP finish (method Ag-AA46) for holes CMRC08-52 and CMRC08-54, and selectively in well mineralized intervals with four-acid digestion with ICP finish (method Ag-AA62) for hole CMRC08-53 and CMRC08-55 to 60. Gold was tested using fire assay fusion and AA finish.

Standards and blanks were not inserted within the sample population during this program. Quality control was not able to be conducted on these samples.

## 11.2.4 2011 - 2012, Sample Preparation and Analysis Methods

Samples that were determined by the project geologist to be mineralized were sent directly to the ALS Chemex preparation facility located in Hermosillo. The pulps were then sent to their analytical facility located in North Vancouver, British Columbia. The remaining samples were sent to the Nusantara lab at the nearby Santa Elena mine site. Were significant mineralization was noted in samples at the Nusantara facility, the pulps were sent directly to ALS Chemex for verification analysis.

Individual laboratory procedures are described below.

SilverCrest inserted some standards and blanks into the sample population.

#### 11.2.4.1 Santa Elena Mine, Laboratory Methods

The samples were dried, crushed and riffle split to approximately 250g, and then pulverized to <90% of -150 mesh before being digested using aqua regia and analysed with atomic absorption finish for silver and by fire assay fusion and atomic absorption finish or gravimetic analysis for gold.

The laboratory facility operates at the Santa Elena Mine and was owned and operated by the SilverCrest subsidiary Nusantara de Mexico S.A. de C.V. when the samples were analyzed.

#### 11.2.4.2 ALS - Chemex, Laboratory Methods

Samples were sent to the ALS-Chemex preparation facility located in Hermosillo, Sonora, where they were dried, crushed, and pulverized to 85% under 75 microns, or better. The pulps were then sent to their analytical facility located in North Vancouver, British Columbia, where they were digested with aqua regia and analysed using ICP-AES for silver (ME-ICP41), and digested with fire assay and analysed with atomic absorption for gold (Au-AA23). Ore grade analysis (Ag-OG46) was conducted on samples assaying greater than 100 gpt silver.

ALS Chemex (ALS Global) facilities are currently ISO 17025:2005 accredited around the world and are independent of SilverCrest and SilverCrest Metals.

#### 11.2.5 Blank Sample Insertion

SilverCrest personnel inserted blank samples at approximately 30 metre increments during the 2012 RC drilling campaign. Records of these insertions for holes CMRC-12-22 through CMRC-12-28 and CMRC-12-90 to CMRC-12-91 were recovered and plotted by Tetra Tech EBA. The source material was derived from unmineralized RC chips that had previously been assayed with null results. Figure 12.1 shows the source grade of the blank sample and the resulting grade after analysis as a blank with new RC material.

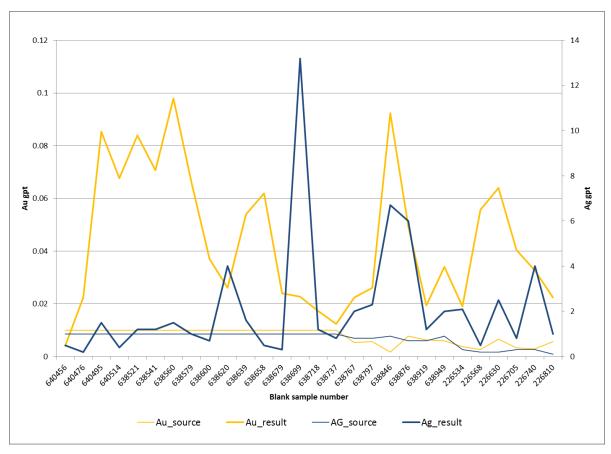


Figure 11.1: SilverCrest Blank Sample Insertions Assay Results

The results suggest that the blank material returned higher grades for both silver and gold when resampled at the lab as a blank material compared to their initial analysis. The maximum result for gold is 0.098 g/t and for silver is 13.2 g/t. Although, the returned values do not provide a margin of economic mineralization under the current study, they are anomalously high and suggest an error in analysis or that the source RC chips material being used was heterogeneous and inappropriate for use as a quality control measure.

#### 11.3 Tetra Tech EBA Statement

Tetra Tech EBA is of the opinion that the sample collection approach and analytical methodologies undertaken by SilverCrest during their drilling campaigns meet accepted industry standards; consideration for the sample digestion method is important in assessing the project. A lack of analytical quality control during drilling campaigns has required extensive data verification (Section 12) to provide confidence in the integrity of the data. Based on review of the data, it is felt that the sample collection and analysis is appropriate for the style of deposit and for use in mineral resource estimation.

#### 12.0 DATA VERIFICATION

#### **12.1** Historical Data Verification

Information in the following subsections are adapted from the previous SWRPA (2007) and EBA Engineering (now Tetra Tech EBA) (2011) technical reports for the Cruz de Mayo property, and have been reviewed by Tetra Tech EBA in support of the Data Verification process.

## 12.1.1 Check Sampling

As part of the initial resource estimate for Cruz de Mayo in 2007, SWRPA collected select samples for verification, including a surface channel sample and quarter splits of drill core. Samples were dried, crushed, split and pulverized to 90% passing minus 150 mesh. Gold was determined by a 30 g fire assay with an AA finish and re-run with a gravimetric finish if the value was greater than 0.1 g/t. All silver assays were 30 g fire assay with an aqua regia finish. Comparison of the SWRPA and SilverCrest results are shown in Table 12.1. SWRPA concluded that the grade comparisons were considered to be within acceptable ranges for the type of deposit.

Table 12.1: 2006 Check Sample Results

Table 12.1.	2000 0110	ck campic i	tosuits				
Location	Company	Sample Number	Length	Gold	Silver	Gold	Silver
			m	g/t	g/t	% diff	% diff
Media de	SilverCrest	590911	2.5	0.09	53.5		
Luna (Surface)	SWRPA	H038627	2	0.124	44.3	-27	21
Oasis stock	SilverCrest	585084	2	0.007	0.5	40	-17
work	SWRPA	H038628	2	0.005	0.6	40	-17
DH CM05-	SilverCrest	560844	1.85	0.09	135		
02, 42.35 to 44.2m	SWRPA	H038629	1.85	0.109	103	-17	31

## 12.1.2 Analytical Methods

As part of the verification process, SWRPA recommended that all mineralized samples be re-analyzed for silver using a four-acid digest analytical method. This method for silver analysis is standard practice for most silver deposits in Northern Mexico and Southwest U.S.A. The justification was based on the premise that silver mineralization is not fully digested under standard fire/AA finish or ICP analysis using aqua regia, thereby giving artificially low silver values. A specific case history for this silver geochemistry and impact on silver grades was presented by Minefinders Corp. Ltd. (Minefinders) for the Dolores Project also located in Northern Mexico (refer to Minefinders' website for more information). At Dolores, re-analysis increased the average silver grades by over 30%.

Selected results for the ICP versus four-acid digest methods for SilverCrest's samples are presented in Table 12.2, along with QA/QC for duplicate analysis of the four-acid digest method. For QA/QC, analyses were completed at ALS Chemex and ACME in Vancouver on ALS Chemex pulps from core sampling.

Table 12.2: Comparison of 4-Acid vs. Aqua Regia Methods

Sample #	ALS ICP41 Silver	Chemex 4Acid Silver	ACME 4 Acid Silver	ALS ICP vs ALS 4 Acid	ALS ICP vs ACME 4 Acid	ALS- ACME	ALS- ACME > 10g/t
	ppm	Ppm	g/t	% change	% change	% change	% change
560506	11.2	35	35	213	213	0	0
560511	20.7	48	44	132	113	8	8
560516	6.3	20	21	217	233	-5	-5
560524	0.5	1	1	100	100	0	
560530	1.6	5	5	213	213	0	
560535	2.3	6	4	161	74	33	
560540	0.8	2	3	150	275	-50	
560568	1.3	2	1	54	-23	50	
560577	3.6	7	5	94	39	29	
560588	147	230	207	56	41	10	10
560593	1.7	2	4	18	135	-100	
560608	9.6	18	17	88	77	6	6
665329	5.8	12	11	107	90	8	8
665334	1	1	1	0	0	0	
666432	1.5	6	4	300	167	33	
666437	1.2	3	3	150	150	0	
666442	1	1	1	0	0	0	
666508	1	1	1	0	0	0	
666513	0.2	1	1	400	400	0	
666518	0.5	3	1	500	100	67	
666523	0.3	3	1	900	233	67	
666577	1.7	5	4	194	135	20	
666582	1.8	7	6	289	233	14	
666598	3.7	9	9	143	143	0	
666607	4.2	8	9	90	114	-13	
666612	2.8	8	9	186	221	-13	
666617	0.6	1	1	67	67	0	
666622	1	3	1	200	0	67	
666627	6.3	22	19	249	202	14	14
666632	0.8	3	3	275	275	0	
666637	0.5	2	1	300	100	50	
666642	0.7	2	1	186	43	50	
666647	0.6	2	1	233	67	50	
666652	1.4	4	3	186	114	25	
666669	0.3	2	1	567	233	50	
666712	0.7	4	1	471	43	75	
666717	247	501	372	103	51	26	26
666722	1.7	10	12	488	606	-20	-20

Sample #	ALS ICP41 Silver	Chemex 4Acid Silver	ACME 4 Acid Silver	ALS ICP vs ALS 4 Acid	ALS ICP vs ACME 4 Acid	ALS- ACME	ALS- ACME > 10g/t
	ppm	Ppm	g/t	% change	% change	% change	% change
666778	3.2	13	12	306	275	8	8
666783	1	6	6	500	500	0	
666795	24.6	63	67	156	172	-6	-6
666878	3.1	14	11	352	255	21	21
666883	9.4	31	32	230	240	-3	-3
666888	10.9	25	27	129	148	-8	-8
666989	1.6	6	8	275	400	-33	
666999	1.5	4	1	167	-33	75	
621507	1.5	5	3	233	100	40	
621512	1.6	5	7	213	338	-40	
666932	0.7	3	1	329	43	67	
621522	1	1	1	0	0	0	
621533	0.5	2	1	300	100	50	
621538	0.4	2	3	400	650	-50	
621543	5.7	17	11	198	93	35	35
621548	0.2	2	1	900	400	50	
621559	3.7	7	13	89	251	-86	-86
621579	1.8	5	5	178	178	0	
621592	2	6	4	200	100	33	
Mean	19.6	42	35.8				
Ave	rage Differe	ence	-	232	166	12	0

The results for both labs are consistent in showing significantly higher silver grades when using the four-acid digestion method of analysis. Although the ACME results have a higher detection limit, the limited results on the duplicate pulps show consistent overall correlation of grades. Based on these results, SWRPA determined that the four-acid digest analytical method provided a more complete picture of actual silver mineralization and utilized this data for the previous estimate completed in 2007.

## 12.1.3 2006 - 2007 Twin Drill Program

Twin holes were completed for several of the historical core holes drilled by Tormex in 1970 and 1980. The purpose of this exercise was to verify the significant silver intercepts as well as address the potential recovery effects on reported grades. Core recoveries from the SilverCrest's 2006 drill program were also considered to be poor in the mineralized zone, ranging from nil to +80%. As part of the twin program, both diamond and RC drilling was completed to collect representative samples to determine the influence that poor recoveries had on grade. Tables 12.3 and 12.4 provides the results of this work.

Table 12.3: 2006 Twin Drill Program Results

SilverCrest Drill Hole Number	From	То	Interval	Weighted Average Silver	Tormex Drill Hole Number	From	То	Interval	Weighted Average Silver
	m	m	M	g/t		m	m	m	g/t
CM06-05	10	13.4	3.4	78.3	CM-01	6.8	30.8	24	35
CM06-06	27.1	40.8	13.8	26.9	CM-04	4	42	38	42.6
CM06-07	14.8	25.6	10.8	55.8	CM-02	13.9	31.9	18	93.3
CM06-09	10.3	32.6	22.3	6	CM-05	9.55	29.6	20	159

Table 12.4: 2007 Twin Drill Program Results

SilverCrest Drill Hole Number	From	То	Interval	Weighted Average Silver	Tormex Drill Hole Number	From	То	Interval	Weighted Average Silver
	m	m	m	g/t		m	m	m	g/t
CMRC07-27	9	13.5	4.5	16.3	CM-01	6.8	30.8	24	35
CMRC07-25	30	40.5	10.5	106.4	CM-04	4	42	38	42.6
CMRC07-26	15	25.5	10.5	77.5	CM-02	13.9	31.9	18	93.3
CMRC07-24	25.5	33	7.5	29.2	CM-05	9.55	29.6	20	159

Overall, the results show a high degree of variability in both grade and thickness in the all drilling. Although the SilverCrest twin holes intersected significant silver mineralization, the actual grades were highly variable and generally inconsistent with historical values. In addition, with the exception of CM06-09, all of the SilverCrest twin holes returned interval widths that were significantly less than previously reported, often by more than double.

Based on these results, the twin drillhole program was successful in confirming silver mineralization but failed to reproduce the historical intercepts. Differences in grade may in part be explained by the nuggety nature of the deposit, or by differing analytical methods between past and present. However, the mineralized intervals reported by Tormex drilling do not appear to be reproducible. Due to these inconsistencies, the historical drilling from 1970 and 1980 was excluded from the 2007, as well as the current, resource estimation.

#### 12.2 Tetra Tech EBA Data Verification

## 12.2.1 Site Visit and Assay Verification

Site visits to the property and the core storage facility was conducted by James Barr, P.Geo, on May 10, 2011, May 12, 2012, and Oct 15-16, 2012. Basic site mapping was undertaken during the May 2012 trip and verification samples were collected during the Oct 2012 trip.

Verification sampling was conducted on drill core that was available within the gated storage facility located in Cumpas, Sonora, Mexico, located 20 kilometres south of the property. RC chips from the 2011-2012 campaign were stored at the facility, however, the plastic bags were sun damaged and in a state of degradation and no attempt was made to resample this material. Table 12.5 outlines the results of the independent sample checks. All samples were delivered to the ALS Chemex facility in Hermosillo, Sonora, for preparation and analyzed at the ALS Minerals facility located in North Vancouver, British Columbia. Analysis for gold was not undertaken due to the generally low concentrations of the metal noted in previous sampling.

Table 12.5: Tetra Tech EBA Verification Sampling, Oct 2012

Hole	From (m)	To (m)		Sample Numbers	Ag (g/t)*	Au (g/t)	SG*
CM-12-83	106	107	SVL	638216	231.1	0.14	
			EBA	500433	202	n/a	2.66
CM 12 92	107	100	SVL	638217	102.4	0.16	
CM-12-83	107	108	EBA	500434	113	n/a	2.69
CM 42 02	422	400	SVL	638242	298.1	0.09	
CM-12-83	132	133	EBA	500435	100	n/a	2.67
OM 40 04	404	400	SVL	638341	240.3	0.14	
CM-12-84	121	122	EBA	500436	730	n/a	2.64
OM 40 70	70	7.4	SVL	501275	12	0.02	
CM-12-72	73	74	EBA	500437	6.7	n/a	2.73
014 40 70	00	0.4	SVL	501285	14.7	0.03	
CM-12-72	83	84	EBA	500438	9.2	n/a	2.74
Reference	CDN-ME-1	9	CDN	n/a	103 +/-7	0.62 +/- 0.62	-
Standard			EBA	500439	104	n/a	2.92
CM 12 90	E4	55	SVL	637989	1152	1.6	
CM-12-80	54	55	EBA	500440	>1500	n/a	2.75

<sup>\*</sup> Reporting Ag grades from aqua regia digestion with ICP AES finish (ALS method Ag-OG46, same as Ag-AA46)

## 12.2.2 **Duplicate Sample Verification**

Following a review the internal sampling QA/QC protocol in 2012, Tetra Tech EBA conducted an audit of current and historic sample processing methods and recommended areas where a greater level of QA/QC

<sup>\*\*</sup> by ALS method OA-GRA08b, pycnometer testing from pulp, may be higher than bulk density of core or in situ material

protocol should be introduced into the SilverCrest sampling process. The results of standard insertions by onsite company personnel during the drilling programs were determined to provide inconclusive support that no bias was introduced at the sampling or analysis stages. The recommendations included a proposal for a duplicate resampling program designed to cross check SilverCrest laboratory results against that of an independent laboratory to correlate and confirm assay results and to verify the reproducibility of silver and gold grades using original cut/split drill core material from the company's core storage facility. In addition, Tetra Tech EBA recommended a rigorous QA/QC protocol be introduced, including insertion of reference standards and blanks for future programs, in order to increase overall confidence in the data.

Duplicate samples were chosen randomly by Tetra Tech EBA and are believed to be an accurate representation of the range in rock types and mineralization styles observed on the property. The samples were delivered to the ALS Chemex facility in Hermosillo, Sonora, for preparation and analyzed at the ALS Minerals facility located in North Vancouver, British Columbia.

Table 12.7 presents the selected samples, and duplicate results for Ag (g/t) obtained from ALS Chemex. Figures 12.1 through 12.3 plot the results.

Table 12.6: Tetra Tech EBA Verification Sampling, Analytical Method Comparison, Oct 2012

Hole ID	Sample	Original Lab	Duplicate Lab	Origina	l Assay	•	e Sample LS)	Silver	Gold
	Number			Ag (g/t)	Au (g/t)	Ag (g/t)	Au (g/t)	% diff	% diff
CM11-63	501011	ALS	ALS	89.5	0.10	27.8	0.06	-69	-40
CM11-64	501042	ALS	ALS	164	0.44	57.9	0.31	-65	-29
CM11-70	501190	ALS	ALS	2.2	0.01	2.2	0.01	0	-50
CM11-70	501199	ALS	ALS	93.5	0.22	153	0.22	64	-1
CM11-72	501254	ALS	ALS	3.4	0.01	3	0.01	-12	30
CM11-72	501256	ALS	ALS	15.4	0.23	10.3	0.10	-33	-58
CM11-73	637507	NUS	ALS	70.2	0.08	27.3	0.07	-61	-19
CM11-78	637812	NUS	ALS	134.6	0.33	124	0.26	-8	-20
CM11-78	637865	NUS	ALS	1.3	0.04	1	0.01	-23	-85
CM-12-81	638115	NUS	ALS	1585	0.64	364	0.65	-77	2
CM-12-82	638138	NUS	ALS	6.9	0.01	1.2	<0.005	-83	0
CM-12-83	638147	NUS	ALS	9.6	0.02	2.5	0.03	-74	55
CM-12-83	638183	NUS	ALS	0.5	0.00	1.4	<0.005	180	0
CM-12-83	638207	NUS	ALS	151.3	0.17	6.7	0.01	-96	-95
CM-12-83	638209	NUS	ALS	80.7	0.08	115	0.09	43	7
CM-12-84	638263	NUS	ALS	66	0.02	67.5	0.19	2	835
CM-12-84	638341	NUS	ALS	240.3	0.14	209	0.11	-13	-24
CM12-88	720084	NUS	ALS	1.3	0.04	2.1	0.01	62	-88



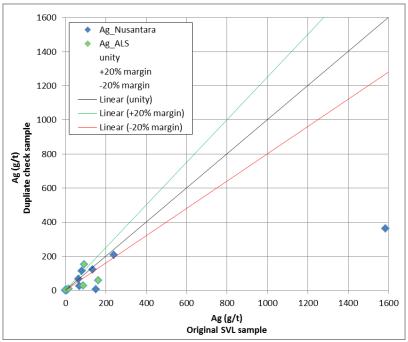
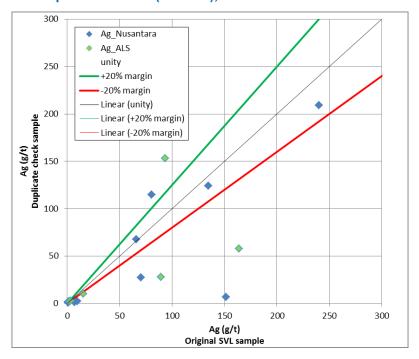


Figure 12.2: Duplicate Sample Verification (in detail), Silver



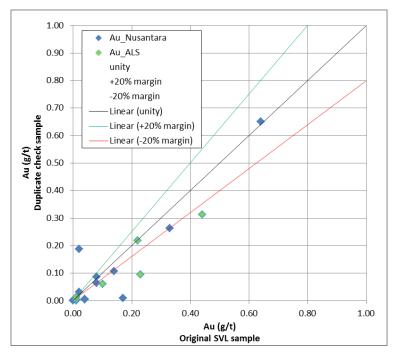


Figure 12.3: Duplicate Sample Verification, Gold

The results of the study indicated that the duplicate samples did not reproduce well, however, bias is noted in favour of both the original and the duplicate samples. This is suggestive of a high nugget effect on the scale of individual samples. The results also indicated there was no particular bias introduced by the individual laboratories upon initial analysis.

## 12.2.3 Analytical Method

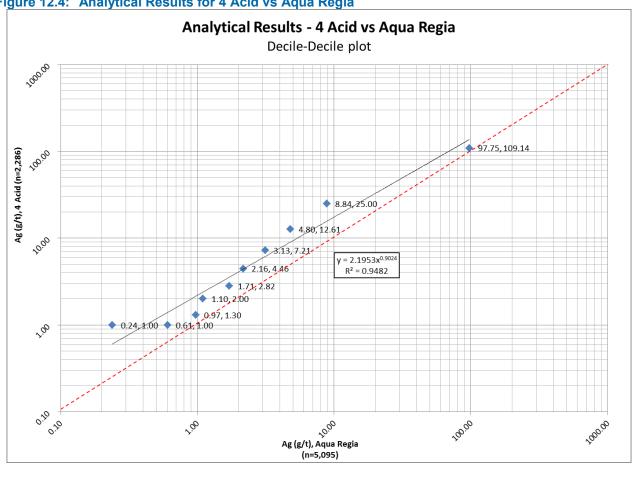
As discussed in section 12.1.2, previous report authors determined the most accurate analytical method of determining the actual silver content in a sample was through the use of four-acid digestion. Since the previous work was completed, metallurgical test work has shown that a significant portion of the mineralization at Cruz de Mayo is encapsulated within a silica phase and that the release of some silver bearing mineralization by aggressive 4-acid digestion methods may not be representative of a cyanide leach release mechanism. Table 12.6 shows a digestion method comparison using the independent samples collected by Tetra Tech EBA and analyzed by ALS Minerals, North Vancouver, British Columbia. Additional comparison using the 2011-2012 drilling data was completed which supported a positive grade bias to the 4-acid digestion methods as depicted in Figure 12.4.

**Table 12.7:** Tetra Tech EBA Verification Sampling, Analytical Method Comparison, Oct 2012

	WEI-21	Ag-GRA21 (fire assay)	Ag-OG62 (4-acid)	ME-ICP41 (aqua regia)	Ag-OG46* (aqua regia)	OA- GRA08b	
Sample	Recvd Wt. (kg)	Ag (ppm)	Ag (ppm)	Ag (ppm)	Ag (ppm)	S.G.	Rock Description
	0.02	5	1	0.2	1	0.01	
500433	1.86	246	279	>100	202	2.66	
500434	1.74	134	157	>100	113	2.69	
500435	0.73	236	251	>100	100	2.67	
500436	1.83	684	694	>100	730	2.64	
500437	2.14	18	27	6.7	n/a	2.73	
500438	1.71	25	32	9.2	n/a	2.74	
500439	0.07	100	104	>100	104	2.92	
500440	1.94	1595	>1500	>100	>1500	2.75	

<sup>\*</sup>Denotes methods used for input grades of SVL samples into the Mineral Resource estimation

Figure 12.4: Analytical Results for 4 Acid vs Aqua Regia



SilverCrest opted during the 2011 - 2012 drilling campaign to digest samples using aqua regia solution rather than the more aggressive dissolution using the 4-acid method as it was felt the former provided a more representative result and was akin to the cyanide leach process as part of the Santa Elena processing circuit. As a result, the assay grades obtained with aqua regia digestion were used in the current resource estimate. Where available, assays results in the database for aqua regia digestion for previous SilverCrest drilling where used in the resource estimate instead of grades reported by 4-acid digestion. Generally, the 2007 RC samples did not have aqua regia data and were only dataset to have been included using the 4-acid results. This equals approximately 23% of the overall raw assay database.

## 12.2.4 Verification of Drilling Methodology

There was no significant, or observable, grade bias introduced by either RC drilling or core drilling techniques based on a Q-Q comparison in Figure 12.5, however, it is worth to note that core recovery was noted to be quite low. Chip recovery from RC drilling was not measured.

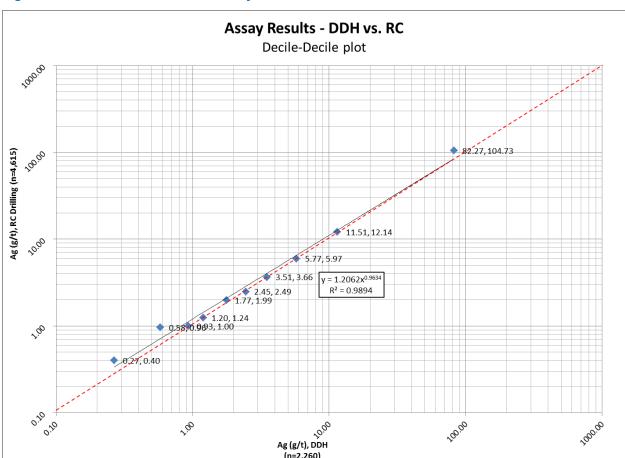


Figure 12.5: Verification of Assay Results

#### 12.3 Drill Hole Location Verification

As discussed in Section 10, all surveying, including drill hole collars, was completed by Nusantara personnel using a handheld GPS and later surveyed by the operations surveyor from the Santa Elena mine. An average discrepancy of 2.54 metres was observed between the DTM and ground surveyed co-ordinates, however, there was a variance between 0.60 and 5.74 metres. Due to this variance, all drill pads and hole collar elevations were validated and adjusted to fit the Eagle Mapping DTM surface. Recent drill collar locations were located by using the surveyed drillhole database and a handheld GPS. The reported locations were well within the accuracy limits of the GPS unit.

#### 12.4 Tetra Tech EBA Statement on Data Verification

Tetra Tech EBA has conducted review of the historical sampling procedures and it has undertaken tests to verify that the reported grades are reliable for mineral resource estimation. Most notably, the internal quality control and assurance methods implemented on the Cruz de Mayo project by SilverCrest do not meet industry standard and should be improved for future work on the property. Observations have been noted that indicate a significant amount of variation exists in reported silver grades from independent duplicate sampling within the higher grade ranges, however, no significant bias towards SilverCrest sampling versus the duplicate sampling is shown to exist. No bias was noted to occur on samples that were prepared at the Nusantara lab versus ALS. The discrepancy is likely due to significant nugget effect on the scale of sample size, and possibility related to barren volcaniclastic clasts within the breccia.

As noted by previous report authors, laboratory sample digestion methodology can result in different grade populations for the mineralized material, notably fire assay and 4-acid acid digestion methods typically report higher assay grades for silver values above 100 gpt than assays reported by aqua regia digestion. Tetra Tech EBA has used only aqua regia assay results in the current Mineral Resource Estimate, with the exception of the 2007 RC drilling data where only 4-acid digestion data was available. The previous resource estimate incorporated grades reported from 4-acid digestion where data was available.

## 13.0 MINERAL PROCESSING AND METALLURGICAL TESTINGS

Metallurgical testwork completed on the property in 2007, 2011, and 2012 is considered to be incomplete and inconclusive at this stage. The work is therefore considered to be historical and the reader is cautioned that it has not been relied upon for estimation of mineral resources.

## 14.0 MINERAL RESOURCE ESTIMATES

#### 14.1 Previous Resource Estimates

A previous Mineral Resource Estimate for the Cruz de Mayo property was completed in 2007 by N. Eric Fier, C.P.G., P.Eng, President and Chief Operating Officer of SilverCrest and reviewed by C. Stewart Wallis, P.Geo, then of SWRPA. The mineral resource was revised in 2010 to include gold in the estimate, with silver estimate remaining unchanged. The results of the previous estimate are summarized below. For more detailed information on the key assumptions and parameters used, the reader is referred to the original technical

report by Fier and Wallis filed by SilverCrest in 2007 and the report supporting the results of the PEA filed in 2011. The resource is now considered to be outdated and should no longer be relied upon.

The previous estimate was based on assay data collected between 2005 to 2007, comprising a total of 5,893 metres in 50 drill holes. Silver and gold assay grades reported using 4-acid digestion methods were used as the basis for the assay database. A block model was constructed using Gemcom Software (GEMS) with a block size of  $10 \times 10 \times 5$  metres. No rotation was applied to the model. Grades for silver and gold were interpolated into the blocks using the Ordinary Kriging (OK) algorithm.

Wireframe models were constructed of the topographic surface and the two principal mineralized zones identified by the authors. The topographic digital terrain model (DTM) was used to clip the mineralized zones at surface, and rock codes assigned to both the blocks and the sample composites. The mineralized zone wireframe shapes were constructed from geological knowledge of the deposit and through the use of a 15 g/t silver lower cut-off constraint. Results of the estimation are provided in Table 14.1.

Table 14.1: Previous Estimate for the Cruz de Mayo Property (May 2011)

Classification	Resource	Silver	Contained Silver	Gold*	Contained Gold*
	T	g/t	OZ	g/t	OZ
Indicated	1,141,000	64.2	2,353,400	0.06	2,300
Inferred	6,065,000	66.5	12,967,100	0.07	13,300

#### Notes:

Conforms to NI 43-101 and CIM definitions for Mineral Resources and Reserves. All numbers are rounded. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

Based on a 30 g/t Ag cut-off grade

This estimate is superseded by the mineral resource estimate presented in the current report and should no longer be relied upon.

#### **14.2** Basis of Current Estimate

The Mineral Resource Estimate for the Cruz de Mayo property described below has been prepared by Tetra Tech EBA with Effective Date of August 15, 2015, to conform to the guidelines set forth by National Instrument 43-101, and incorporates terms as defined by the Canadian Institute of Mining, Metallurgy and Petroleum Standards on Mineral Resources and Reserves: Definitions and Guidelines. Tetra Tech EBA estimated mineral resources for the Project to incorporate additional drill data acquired after 2007 drilling program. Since the timing of the last estimate, SilverCrest drilled an additional 74 holes (9,304.8 metres), and collected a total 4,764 samples up to the end of 2012. Table 14.2 provides a breakdown of all the sample data incorporated into the current estimate. Like the previous estimate, historical data from the 1970 and 1980 Tormex drill programs was excluded due to the inconsistencies and the inability to reproduce the results in the 2006 and 2007 twin drilling program. In total, data excluded from the current estimate comprises 872 metres in 16 drill holes.

<sup>\*</sup>Presented in the 2011 Technical Report.

**Table 14.2: Drill Data Used in Current Estimate** 

Data	# of Drill Holes	# of Samples	Metres Sampled
CM05-01 to 03	3	208	376
CM06-04 to 23	20	597	1,221.2
CMRC07-24 to 50	27	1,874	2815
CMRC08-52 to 60	9	233	699
CMRC11-1 to 7	7	305	459.3
CM11-62 to 78	17	675	1,473.8
CMRC12-08 to 29	22	1,684	2,577.3
CMRC12-90 to 97	8	1,077	1,615.5
CM12-79 to 89	11	790	1,335.2
Total	124	7,443	12,572.3

Lithological and analytical information from the data listed above were used as the basis for geological interpretation and the construction of the mineralized wireframe solids and block model using Gemcom GEMS v. 6.5 software. Details of the parameters and methodologies used in the estimation process are provided in the following sections.

## 14.3 Geological Model

Preparation of a geological model for the Cruz de Mayo deposit was completed by Tetra Tech EBA following a detailed review of existing datasets, onsite investigations by Tetra Tech EBA's qualified persons, and through consultation with SilverCrest personnel.

The primary goal of geological modelling is to characterize the geometry and grade of the deposit for use in constraining the interpolation of the block model. Mineralized solids were constructed based on geological interpretation and internal grade domains were identified. Solids were defined using a lower threshold of 15 g/t Ag in order to limit the inclusion of lower grade material. Solid boundaries were extended 50 metres beyond the last point of mineralization in order to define the outer limits of the solids, with an exception being made where continuity of the zone was reasonably established in drillholes spaced on sections spaced in excess of 50 metres along strike or dip.

Examination of drill data indicates at least two styles of mineralization are present on the Cruz de Mayo property, as discussed in Section 7.3. Thrust-related mineralization was interpreted on the basis of lithological and structural information provided in the drill logs. This style of mineralization is characterized by a series of semi-continuous quartz and quartz-carbonate veins that typically occupy a broad deformation zone between the rhyolite hanging wall and andesite footwall. While grades appear highly variable, the thrust-related mineralization typically displays a high degree of continuity from section to section. As discussed in Section 7.3, the four interpreted tabular bodies that define this style of mineralization include the Lower, Middle, Upper, and Northwest mineralized zones (Figures 14.1 and 14.2).

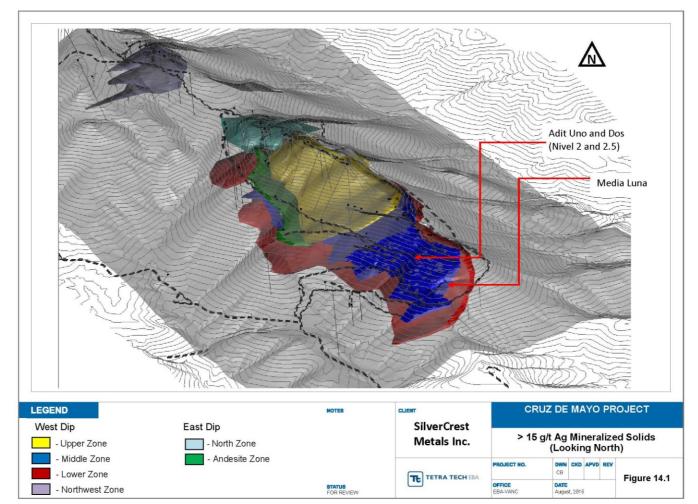


Figure 14.1: Mineralized Wireframes used to Constrain the Block Model

Separate mineralized solids were also established for a second style of mineralization found exclusively within the hangingwall of the thrust sequence. A total of two solids determine the extents easterly dipping mineralized zones. As previously discussed, this style of mineralization is narrower than and not as prevalent as the previous. The two solids, the North and Andesite zones, are displayed in Figures 14.3.

No solids were created for the steeply dipping ore shoots or deep footwall mineralization, as both styles of mineralization are poorly defined at the present time and no continuity could be established. The addition of these styles of mineralization to the model should continue to be examined in the future as additional exploration information becomes available. The deep footwall mineralization may represent a feeder conduit or stockwork related the mineralizing fluids.



Figure 14.2: Mineralized Wireframes used to Constrain the Block Model

**CRUZ DE MAYO PROJECT** LEGEND **SilverCrest** Easterly Dipping Mineralized Solids (Looking Northwest) Metals Inc. PROJECT NO. DWN CKD APVD REV TETRA TECH EBA Figure 14.2 DATE August, 2015 STATUS

Figure 14.3: Mineralized Wireframes for East-Dipping Mineralization used to Constrain the Block Model

## **14.4** Descriptive Statistics

Mineralized drill intercepts were constrained by the boundaries of the solid in which they occurred, effectively creating a hard boundary for resource modelling. A point area was created for each sample contained within the six modeled mineralized solids. In total, 1,613 raw sample points were identified as representing the mineralization in the deposit and were used in resource estimation. Descriptive statistics for the raw sample points by individual solid are provided in Table 14.3.

Table 14.3: Descriptive Statistics for the Raw Cruz de Mayo Drillhole Sample Data

Raw Data	ALL	Upper	Middle	Lower	Andesite	North	Northwest
Mean	47.60	48.93	56.86	44.61	23.06	32.27	48.78
Standard Error	5.27	6.99	17.31	4.41	6.67	14.03	11.02
Median	13.40	14.00	12.00	17.05	8.95	3.40	11.00
Mode	3.00	3.00	2.00	4.00	0.40	1.00	1.00
Standard Deviation	211.61	122.41	361.43	108.53	48.12	138.88	117.65
Sample Variance	44,780	14,985	13,629	11,777	2,316	19,286	13,840
Kurtosis	290.42	53.48	123.07	87.02	28.10	51.71	22.60
Skewness	15.48	6.41	10.87	8.05	4.88	7.06	4.45
Range	4790.00	1370.00	4790.00	1584.80	317.00	1151.80	836.00
Minimum	0.00	0.00	0.00	0.20	0.00	0.20	0.00
Maximum	4790.00	1370.00	4790.00	1585.00	317.00	1152.00	836.00
Count	1613	307	436	606	52	98	114

## 14.5 Compositing

Compositing was performed on the samples contained within the individual solid respecting the interpreted contacts, rather than the entire hole. A composite length of 2 metres was chosen based on average sample length and for consistency with the previous estimate. The results were compared with those using one and three metre composite lengths in order to ensure no sample bias was being introduced. Compositing resulted in a total of 1,425 composite samples created, with the breakdown by solid provided in Table 14.4. Each was assigned a rock code that corresponds to the mineralized solid in which it occurred. In addition, each composite was used for the interpolation of grades to block within the individual solid only, placing additional constraints on the model.

Table 14.4: Cruz de Mayo Composite Samples Descriptive Statistics

2m Composites (Uncut)	ALL	Upper	Middle	Lower	Andesite	North	Northwest
Mean	42.61814035	46.715814	50.7736508	41.0203352	19.0481633	22.1275789	40.9475
Standard Error	4.629742373	6.58545601	15.8969461	3.27622265	4.84194011	7.86732632	8.37548303
Median	13.45	14.525	12.08	17.48	6.18	4.62	11
Mode	0	0.4	0	0	0	1	1
Standard Deviation	174.768942	105.778086	309.071957	75.9207607	33.8935807	76.6812117	87.0405729
Sample Variance	30544.18308	11189.0036	95525.4746	5763.9619	1148.77482	5880.00823	7576.06133
Kurtosis	321.8721874	42.1278557	122.052758	35.5675123	12.9480384	49.181374	15.5798786
Skewness	16.4060958	5.74823517	10.8558691	5.15065905	3.38563277	6.76586783	3.7494454
Range	3766.79	1064.37	3766.79	786.76	184.12	635.26	547.33
Minimum	0	0.2	0	0	0	0	0
Maximum	3766.79	1064.57	3766.79	786.76	184.12	635.26	547.33
Count	1425	258	378	537	49	95	108

**Figure 14.4:** Log AG Histogram 6 ΑG count 1425 min 0.00 max 3766.79 Frequency (% of 1425) stdey 174 77 skewness kurtosis 322.3 variance 30544 CV 4.10 geom mean 2 0.1 100 1000 AG (gpt)

Log Histogram of Uncapped 2 metre Composite Silver Data

#### **Grade Capping** 14.6

Tetra Tech EBA examined the 2 metre composite data and determined that high grade capping was warranted due to the presence of significant outliers. The histogram for silver grade distribution was used to evaluate the extent of anomalous grades and determine the appropriate capping level (Figure 14.5).

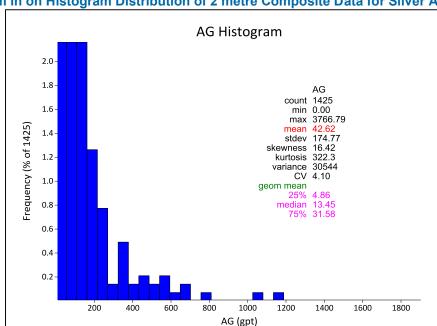
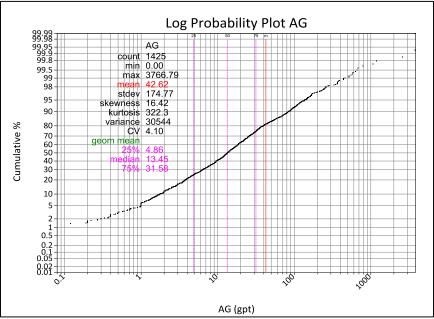


Figure 14.5: Zoom in on Histogram Distribution of 2 metre Composite Data for Silver Assay





Based on the histogram and probability plots, it was determined that 700 g/t silver (99.5th percentile) was appropriate for use as a high grade cap on the overall dataset. Capping strategies were not applied to individual domains. In total, 5 of the 1425 composite samples were capped at a maximum value of 700 g/t silver. As a result of applying a cap, the mean sample grade dropped by 10 g/t while the median remain unchanged (Table 14.5).

Table 14.5: Descriptive Statistics for 2 metre Composites Capped at 300 g/t Ag.

2 m Comps - capped at 300 g/t Ag	All	Lower	Middle	Upper	Andesite	North	Northwest
Mean	36.34	41.15	28.30	45.30	19.05	22.13	40.9475
Median	13.45	17.75	12.00	14.52	6.18	4.62	11
Standard Deviation	79.35	74.54	77.29	93.71	33.89	76.68	87.04
Sample Variance	6,297	5,556	5,973	8,8782	1,148	5,880	7,576
CV	2.18	1.81	2.73	2.06	1.74	3.45	2.11
Kurtosis	38.91	33.9	62.49	26.83	12.95	49.18	15.58
Skewness	5.47	4.87	7.39	4.56	3.39	6.77	3.75
Range	700	700	700	700	184.12	635.26	547.33
Minimum	0	0	0	0	0	0	0
Maximum	700	700	700	700	184.12	635.26	547.33
Count	1425	537	378	258	49	95	108

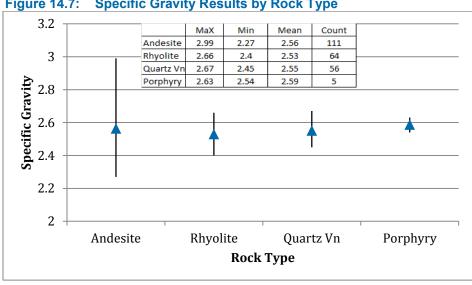
## 14.7 Specific Gravity

The previous estimate for Cruz de Mayo used a specific gravity of 2.54, which was based exclusively on analysis of four mineralized core samples done at the University of Sonora. In order to better characterize variation in specific gravity throughout the various geological units that occur on the property, in-situ measurements were collected routinely throughout the 2011 drill program. A total of 237 measurements were taken, distributed amongst the various rock types as outlined in Table 14.6 below.

Table 14.6: Distribution of Specific Gravity Measurements by Rock Type

	All	Andesite	Rhyolite	Quartz Vein	Porphyry
Mean	2.5529	2.5644	2.5308	2.5521	2.5880
Median	2.55	2.56	2.54	2.55	2.6
Mode	2.57	2.53	2.55	2.54	#N/A
Standard Deviation	0.0667	0.0825	0.0508	0.0382	0.0409
Range	0.72	0.72	0.26	0.22	0.09
Minimum	2.27	2.27	2.4	2.45	2.54
Maximum	2.99	2.99	2.66	2.67	2.63
Count	237	111	64	56	5

There are some limitations on the data presented above. Specific gravity measurements were mainly restricted to the dominant rocks types in the area, and the sample frequency is broadly reflective of the prevalence of each unit (andesite being the most common followed by rhyolite and the porphyry). The distribution of results may be influenced by the number of samples collected for each unit, with the greatest variance observed in andesite and steadily decreasing in subsequent units with a decrease in total sample count (Figure 14.7).



**Figure 14.7: Specific Gravity Results by Rock Type** 

The sample data was then segregated by mineralized solid in order to address this sample bias as well as assign an average specific gravity to each individual solid. Of the 237 SG measurements collected during the 2011 program, a total of 81 occurred within the mineralized solids established in the current geological modelling. However, due to the distribution of the 2011 drilling only the three largest mineralized solids actually contained data. The remainder of the samples fall in what can be broadly classified as unmineralized volcanic rocks.

The specific gravity results segregated according to mineralized solid are shown in Figure 14.8. Overall, the results from sampling from within the modelled zones display much less variation than those samples collected outside the zone, consistently averaging 2.54 in all three solids. Another potential shortcoming with the specific gravity data is that the second mineralized domain comprising the easterly dipping mineralized solids is not represented in the results. Only one sample from 2011 actually fell within these zones.

Based on the information collected in 2011, the specific gravity of 2.54 achieved from the previous laboratory results in 2007 appears reasonable for mineralized material. Given the consistency in results, a value of 2.54 was assigned to all mineralized solids for the purpose of the current resource estimate. In addition, the mean value of 2.56 was assigned to all material falling outside of the mineralized zones.

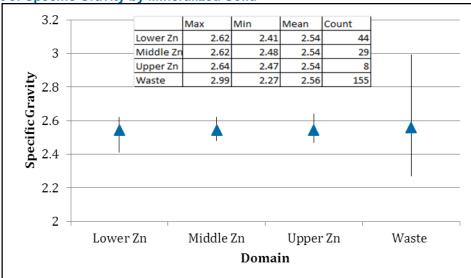


Figure 14.8: Plot of Specific Gravity by Mineralized Solid

## 14.8 Geostatistical Analysis - Variographic Study

The limited and erratic distribution of sample data in some of the smaller mineralized solids meant that variography was not able to be carried out on an each individual solid basis. Rather, point data for each solid was grouped into like domains and variography performed as a whole. Two domains were established, corresponding to the west and east dipping zones. The west dipping domain provided useable results with the variogram for the major axis illustrated in Figure 14.9 below.



Figure 14.9: Variogram of Major Axis for Westerly Dipping Mineralized Zones.

Even with the grouping of the data, variography did not prove effective for the east dipping domain. As a result, the orientation of the search ellipse for the domain was established by applying a "best fit" model to the geological interpretation. For consistency, the search ranges acquired through variography for the west domain were applied to the ellipse for the east. Parameters for both search ellipses are provided in Table 14.7.

**Table 14.7. Search Ellipse Parameters** 

Domain	Principal Azimuth	Principal Dip	Intermediate Azimuth	Major Axis Range	Semi-major Range	Minor axis range
West Dip	302	-15.5	27	75	75	25
East Dip	69	-15	159	75	75	25

#### 14.9 Block Model

Tetra Tech EBA created a new block model to encompass the known areas of mineralization at Cruz de Mayo. The model was rotated 45 degrees to the northwest in order to align with the strike direction of the main mineralized domain parallel to the. A block size of  $10 \text{ m} \times 10 \text{ m} \times 5 \text{ m}$  was chosen based, in part, on the average spacing between drill holes and the estimated minimum bench height achievable on the property. The model extents are primarily a factor of concession boundaries and geometry of the modelled mineralized solids (Table 14.8)

**Table 14.8: Block Model Geometry** 

	610,950 E			
Origin	3,340,500 N			
	1240 m elev			
Size	10 X			
	10 Y			
	5 Z			
Rotation	45			
	60 X			
No. of Blocks	184 Y			
	68 Z			

### 14.9.1 Interpolation and Modelling Parameters

Silver and gold grade interpolation for the block model was completed using the inverse distance squared (ID2) methodology of the 2 m composited data. A minimum of 2, and maximum 12 composites were used

to define the grade of each block, with no more than 4 composites included from any one drill hole. Interpolation of grades was done according to solid precedence in order to restrict the influence from the surrounding samples. Results of the interpolation for all mineralized blocks are provided in Table 14.9 below.

**Table 14.9: Interpolation Results** 

Solid	# of Blocks	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3		Average # of Drill holes
Lower	7632	38	10	3
Middle	3658	36	10.5	3.5
Upper	3178	38	10.8	3
Andesite	598	35	8.6	3
North	1350	37.7	11	3.3
Northwest	2417	40	9.8	3.2
TOTAL	18833	37.5	10.1	3.2

Blocks were assigned percentages according to the portion of their volume that overlapped with a mineralized solid. Gold and silver grades were assigned to all blocks flagged with a lithology code and with percent greater than zero (Figure 14.10.). A block was automatically designated "waste" where no part of a mineralized solid was captured, with no grades assigned.

Blocks that overlapped more than 50% with the underground excavation void survey were coded as ADIT and applied a zero density to account for volume loss due to historical mining.

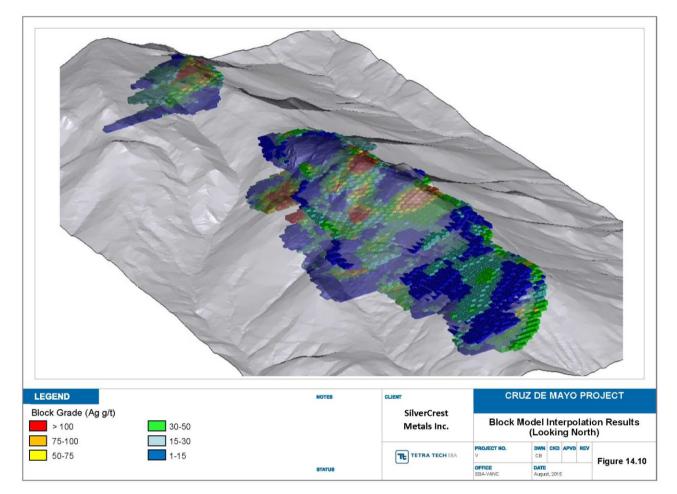


Figure 14.10: Block Model Results, Oblique View Looking Northeast

#### 14.10 Resource Estimate

The resource estimate is contemplated as an on-site crushing and heap leach operation with both open pit and underground resource potential providing mineralized material to the processing plant. The project was previously contemplated (EBA, 2011) as a remote open pit operation feeding material to the newly expanded Santa Elena Mine which is no longer contemplated in this report.

## 14.10.1 Cut-off grades

Several factors were considered in determining the appropriate cut-off grade, including silver and gold prices, reasonably assumed mining costs, metal recoveries, and grades used for comparable deposits in the region. Table 14.10 lists the metal prices and recoveries used for silver equivalent calculation and cut-off grade determination. The Cruz de Mayo deposit occurs at relatively shallow depths, ranging from surface to a few hundred metres.

Open pit resources have been constrained through a conceptual pit shell created in Dessault Systemes Geovia Whittle  $4X^{\text{TM}}$ . The parameters have been based on preliminary studies of geotechnical conditions, similar

mines including the Santa Elena mine. Based on the metal prices and recoveries in Table 14.10 a cut-off grade of 45 g/tonne silver equivalent was applied to blocks amenable to open pit mining.

Underground resources have been constrained through applying conceptual underground mining costs and parameters, based on similar mines, resulting in a cut-off grade of 120 g/tonne silver equivalent. In addition, mineralized zones or areas with contiguous zones of blocks above the cut-off grade have been considered for resources.

The metal recoveries applied for grade cut-off determination are derived from previous discussion with SilverCrest personnel at the time of the 2012 metallurgical testwork campaign, and although the results of the work are not explicitly relied upon, Tetra Tech believes the values applied are within a reasonable range. Review of other similar projects in Mexico also suggest the values are reasonable.

Table 14.10: Input	Parameters used for	Silver Equivalent	Calculation and	<b>Grade Cut-Off Determination</b>

Parameter	Unit	Value
Ag price	USD/troy ounce	16
Au price	USD/troy ounce	1,100
Ag recovery	%	55
Au recovery	%	75

#### 14.10.2 Mineral Resource Classification

Resources were categorized as indicated or inferred in accordance with CIM definitions. Categories were assigned based on the following criteria:

- **Indicated** Blocks were assigned to the indicated category if interpolation results were based on a minimum of 3 drill holes, 6 or more reporting composites, and the average distance to nearest reporting composite was less than 30 metres.
- Inferred Blocks not assigned to the indicated category were classified as inferred if the interpolations
  results were based on input from one or more drill hole and minimum of 2 composites within the
  specified search radius.

None of the blocks were classified as measured for the purposes of the current resource estimate. This is due, in part, to insufficient drill hole spacing over most areas and the inconsistencies identified during the data verification process (Section 12.0).

Development of mineral resource projects are exposed to a variety of risks including environmental, permitting, legal, financial, socio-economic, political and marketing which may impede or even halt the project. The resource estimate reported herein assumes appropriate risk mitigation is implemented by the controlling company as the project proceeds.

#### 14.10.3 Statement of Mineral Resources

The results of the mineral resource estimation using the parameters described above are presented in Table 14.11. The mineral resource estimate is reported at a base case cut-off grade of 45 g/t silver equivalent for

open pit and 120 g/t silver equivalent for underground resources. Grade and tonnages are included using a variety of cut-off grades in order to show sensitivity to cut-off grade used in the estimation.

Table 14.11: 2015 Cruz de Mayo Mineral Resource Estimate, Effective Date: August 15, 2015

	INDICATED										
	AgEq Cut-off gpt	SG	Tonnage	Ag gpt	Au gpt	AgEq gpt	Contained Ag oz	Contained Au oz	Contained AgEq oz		
0	60	2.544	2.544 338,000 126 0.19 144 1,368,000 2,000	1,563,000							
Open Pit	45	2.544	396,000	114	0.17	131	1,457,000	2,000	1,663,000		
	30	2.544	467,000	102	0.15	116	1,531,000	2,000	1,747,000		
	135	2.544	318,000	185	0.27	210	1,889,000	3,000	2,145,000		
Underground	120	2.544	396,000	170	0.25	193	2,173,000	3,000	2,466,000		
	105	2.544	492,000	156	0.23	178	2,473,000	4,000	2,812,000		
Total Indicated		2.544	793,000	142	0.21	162	3,630,000	5,000	4,129,000		

INFERRED										
	AgEq Cut-off gpt	SG	Tonnage	Ag gpt	Au gpt	AgEq gpt	Contained Ag oz	Contained Au oz	Contained AgEq oz	
Open Pit	60	2.544	74,000	78	0.30	106	185,000	1,000	252,000	
	45	2.544	76,000	77	0.29	105	189,000	1,000	257,000	
	30	2.544	77,000	77	0.29	104	190,000	1,000	257,000	
Underground	135	2.544	188,000	154	0.27	180	931,000	2,000	1,085,000	
	120	2.544	249,000	145	0.24	167	1,157,000	2,000	1,336,000	
	105	2.544	339,000	132	0.22	152	1,436,000	2,000	1,662,000	
	•									
Total Inferred		2.544	325,000	129	0.25	152	1,346,000	3,000	1,592,000	

#### Notes:

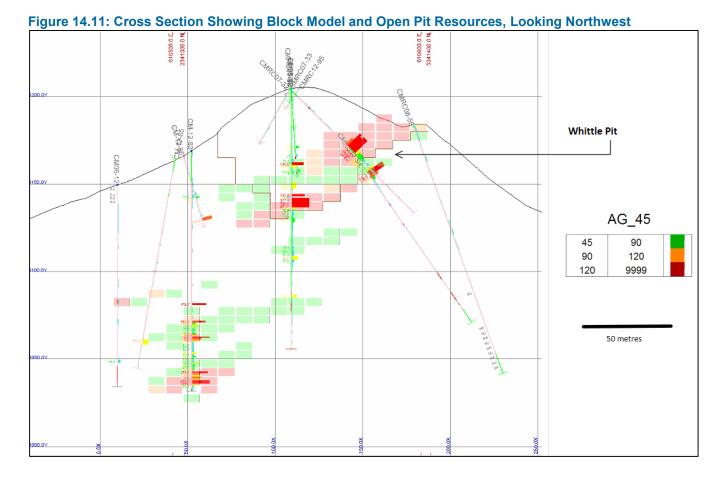
Mineral resources are classified by Tetra Tech EBA and conform to NI 43-101 and CIM definitions for resources. Mineral Resources have been estimated from geological evidence and limited sampling;

<sup>-</sup> Mineral resources are not mineral reserves and do not have demonstrated economic viability. In addition, inferred mineral resources are highly speculative and have a high degree of uncertainty. It cannot be assumed that any part of the inferred resources will be upgraded to a higher category with additional work;

<sup>-</sup> AgEq calculations incorporate metal prices of US\$ 16/oz Ag and US\$ 1,100/oz Au, metal recoveries of 55% Ag and 75% Au for a Ag:Au metal value ratio of 93.75;

<sup>-</sup> Tonnage and contained ounces have been rounded to the nearest thousand; and

Images capturing the block model with the open pit and underground resources are shown below in figures 14.11 and 14.12. Blocks are shown subject to a 45 g/t AgEq cut-off, only contiguous zones of blocks with grade >120 g/t AgEq that are below the open pit are reported as underground resources.



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Mineral Resources for Cruz de Mayo are reported using a base case of 45 gpt AgEq cut-off for open pit resources and 120 gpt AgEq for underground resources. Cut-off grades were estimated from metal prices and recoveries used for AgEq calculation and mining costs from similar mining projects.

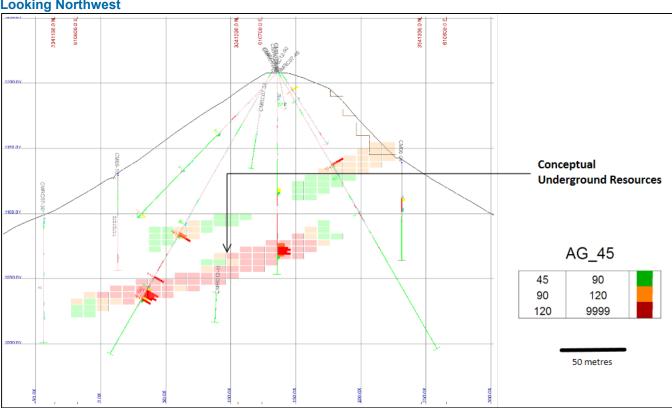


Figure 14.12: Cross Section Showing Block Model and Underground Resources (Blocks >120gpt), Looking Northwest

The grade and tonnage curve indicates that the deposit is highly sensitive to the cut-off grade being applied. The open pit curve is shown for blocks that lie within the Whittle pit. The graphs show a steep decline in tonnage with a generally consistent increase in average grade with increasing AgEq cut-off grades (Figure 14.13).

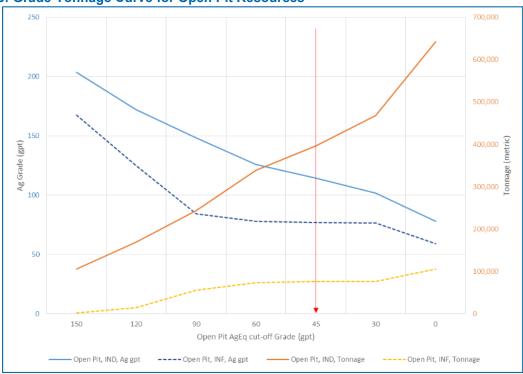


Figure 14.13: Grade-Tonnage Curve for Open Pit Resources

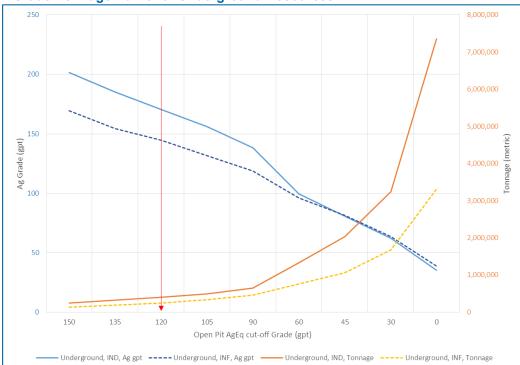


Figure 14.14: Grade-Tonnage Curve for Underground Resources

#### 14.11 Resource Validation

Validation of the resource model was done by visual comparison of block grades with drill intercepts on section, and through examining the results of grade modelling along individual vertical and plan sections to check for a global bias in the ID2 model. Vertical sections were generated at 25 metre intervals and horizontal plan maps at 5 metre intervals. Grade models were run using the using ID³, ID⁵, and Nearest Neighbor methods and then compared to the overall average grade of composites in the mineralized solids for the same section using swath plots (Figures 14.15 and 14.16). The total number of blocks was also included on the plots for reference.

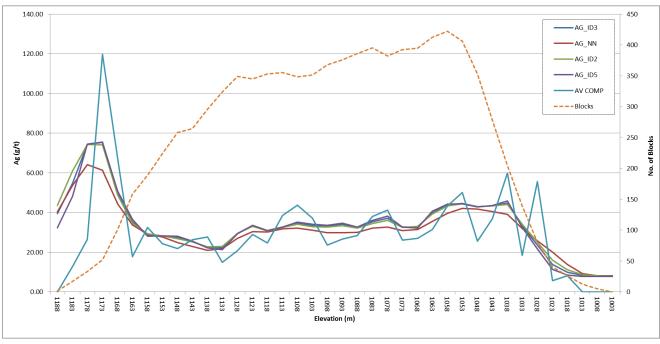
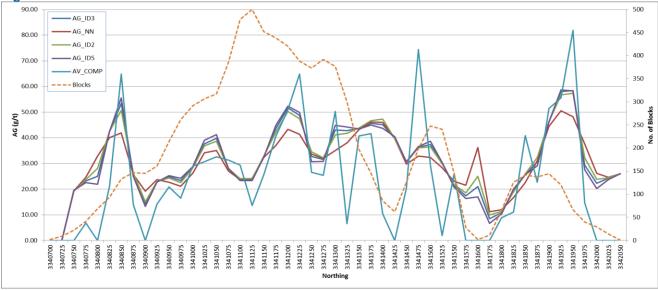


Figure 14.15: Swath Plot of Plan Sections





The plots generally show a good correlation between the various methods employed, especially at lower silver grades. The plot of average composite grades for the section show sporadic distribution, likely, due in large part to drillhole spacing. However, the general trends follow the interpolation results, especially in the horizontal sections. Overall, the consistency between models appears to indicate the original model is valid, and the ID<sup>2</sup> method unbiased.

## 15.0 ADJACENT PROPERTIES

There are no producing or advanced stage projects adjacent to Cruz de Mayo, however, the concessions are completely surrounded by numerous concessions with registered owners including a subsidiary of Teck Resources Limited and Peñoles. The information that Tetra Tech EBA has is that Teck Resources have been undertaking exploration in the area for several years and that they have no interest in precious metals such as silver of gold except when found within ore extracted for copper smelting. No information pertaining to the Peñoles interest was available.

## 16.0 OTHER RELEVANT DATA AND INFORMATION

No relevant data to discuss.

## 17.0 INTERPRETATION AND CONCLUSION

The Cruz de Mayo property is host to a near-surface, low-sulphidation epithermal silver deposit, located in Sonora, Mexico. Additional drilling on the property warranted a re-examination of the previous Mineral Resource Estimate reported in 2007 and 2011, which is part of this 43-101 report. The estimate completed by Tetra Tech EBA contemplates an autonomous heap leach operation with both open pit and underground resource potential which varies from the previous approaches. The estimate shows a significant upgrade in resources from the inferred to the indicated categories, while reducing the overall tonnage from the previous estimate.

## 17.1 Key Risks and Opportunities

- 1. Continuity of grade and thickness is a potential problem (i.e. twin drilling results). Lack of reproducibility of results, even between recent twinned holes.
- 2. As indicated by historical metallurgical work, silver metal recoveries are variable due to silver mineral speciation and effective grain sizing; grade cut-offs applied in this report are based on conservative estimates using low range recovery factors and also by incorporation of ICP analytical data rather than the more aggressive 4-acid digestion methods to suit potential conditions of a heap leach operation rather than a milling operation.
- 3. Samples reported in certain areas were obtained exclusively by 4 acid digestion. This method has been shown to have a positive bias on silver values and may not be an accurate representation of actual silver grades.
- 4. Although considered volumetrically insignificant, historical excavation volumes from adits Uno and Dos are approximate, and no volumes have been estimated for adits Tres and Cuatro; some high grade material currently included as part of the open pit mineral resource estimate may have been removed from previous mining in these areas, this would have to be confirmed by additional investigation.

#### 18.0 RECOMMENDATIONS

The following recommendations are suggested for further work at Cruz de Mayo;

- Evaluation of nearby potential acquisitions for expansion of resource.
- Carry out more metallurgical work to characterize silver speciation, help determine appropriate
  analytical digestion methods for sample analysis, and to fine optimal recoveries for a chosen processing
  method.
- Resampling or twinned hole programs in areas with assays obtained exclusively with 4 acid digest.
- Increase drillhole spacing density in areas with potential to host high-grade shoots.
- Conduct regional exploration drilling for expansion of existing resources and to test for additional mineral potential in the area.

The following budget is suggested;

Table 26.1: Cruz de Mayo, Sonora, Mexico - Proposed Budget

Recommendation	Future Work	Estimated Cost				
Phase I (12 months)						
Land Acquisition	Acquire additional concessions adjacent property	\$20,000.00				
Drilling	Drill new target area for estimated 1,200m of drilling	\$180,000.00				
Analysis	Geochemical analysis of drill samples	\$20,000.00				
	Total cost Phase I					

Phase II (Future)*						
Additional Drilling	Infill drilling program of estimated 5,000m	\$750,000				
Analysis	Geochemical analysis of drill samples	\$75,000				
Metallurgical Test Work	Amenability to leaching	\$50,000				
Resource Estimation	Modeling and analysis	\$50,000				
	\$925,000					

<sup>\*</sup> Based on results and success of Phase I

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## **CERTIFICATE OF QUALIFIED PERSON**



# Certificate of Qualified Person P. James F. Barr

#### I, P. James F. Barr, P.Geo, do hereby declare that:

- 1) I currently reside in Kelowna, British Columbia, Canada, and am currently employed as Senior Geologist by Tetra Tech EBA Inc., with office address at 9<sup>th</sup> floor, 1066 W Hastings Street, Vancouver, British Columbia.
- 2) I hold a Bachelors of Science with Honours from the University of Waterloo (2003), Ontario, Canada, with a major in Environmental Science, Earth Science and Chemistry and I have practiced as an exploration and resource geologist in Canada, Africa, and Mexico since 2003.
- 3) I am a member in good standing in the Association of Professional Engineers and Geoscientists of British Columbia (APEGBC), member #35150.
- 4) I am author and Qualified Person responsible for the preparation of the Technical Report entitled:

"Mineral Resource Estimate for the Cruz de Mayo Property, Sonora, Mexico NI 43-101 Technical Report Prepared For SilverCrest Mines Inc. and SilverCrest Metals Inc." Amendment Date: September 15<sup>th</sup>, 2015 Effective Date: August 15, 2015

- 5) I am responsible for all sections of the Technical Report.
- 6) As a Qualified Person for this report, I have read the National Instrument 43-101 and Companion Policy and confirm that this report has been prepared in compliance to National Instrument 43-101.
- 7) I visited the Cruz de Mayo property on two separate occasions between May 2011 and May 2012, and also visited the Cruz de Mayo core storage facility on October 15-16, 2012.
- 8) I have worked on and visited numerous epithermal, skarn and geologically related properties in this and other regions of Mexico, and have been conducting Mineral Resource Estimates for more than 5 years.
- 9) I am independent of both SilverCrest Mines Inc. and SilverCrest Metals Inc, as independence is described in Section 1.5 of the National Instrument 43-101. In addition, I am currently not a shareholder of the Company nor am I directly entitled to financially benefit from its success.
- 10) Prior to this report, I was co-author to the Technical Report entitled "Mineral Reserve Update for the Santa Elena Property and Preliminary Economic Assessment for Cruz de Mayo, Sonora, Mexico (May 2011) by EBA Engineering Consultants Ltd (now Tetra Tech EBA Inc).
- 11) To the best of my knowledge, information and belief, as of the Effective Date of the report, the parts of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the Technical Report not mis-leading.

Dated this 15th of September, 2015

Original signed and sealed by "P. James F. Barr"

P. James F. Barr, P.Geo Senior Geologist, Tetra Tech EBA Inc.