2020 MINERAL RESOURCE ESTIMATE OF THE GOLD VEINS WITHIN MPSA-225-2005-XI OF THE MACO MINE

Davao de Oro, Philippines

Prepared for:
Apex Mining Company, Inc.

CP involved
Carlito A. Ausa
BS Geo
Registered Geologist, Lic. No. 779
CP Exploration Results and Mineral Resource Estimation, PMRC/GSP
CP Reg. No. 19-01-01

March 2020

2.0 CERTIFICATE AND CONSENT OF THE CP

2.1 Certification and Consent

I, ***Carlito A. Ausa***, do hereby certify:

- That I am an Independent Consultant in reporting Exploration and Mineral Resource Results, hired as Consultant by Apex Mining Company for the purpose of vouching for the content of the Technical Report titled "2020 Mineral Resource Estimate of the Gold Veins within MPSA-225-2005-XI of the Maco Mine" dated March 2020.
- I graduated and hold the following degree:
    - B.S. Geology (1980)
- I have worked as a geologist with the Bureau of Mines/Mines and Geoscience Bureau for 14 years. My stint in the Bureau of Mines included mineral investigation of mineral deposits, and resource estimation. After my resignation from the Mines and Geosciences Bureau, Region XI, Davao City, I worked as a geologist for a Junior Exploration Company in the Philippines in 1994 and then overseas for a total of 16 years. I have undertaken resource evaluation and estimation during my stint overseas and in the Philippines.
- I am aware of the definition of 'Competent Person' as defined in the Philippine Mineral Reporting Code (PMRC) and certify that by virtue of my education, training, related work experience as well as affiliations with mining professional organizations, that I fulfill the requirements for a 'Competent Person' set out by the Philippine Mineral Reporting Code.
- I have Professional License and PTR to Legally Practice my Profession in the Philippines
    - Geologist Professional Regulation Commission No. 779
    - PTR No.0113971 issued on 1-13-2020 at Panabo City
- I am a Member of the Accredited Professional Organization Geological Society of the Philippines (GSP) - active member
- I am an accredited "Competent Person" (CP) by the Geological Society of the Philippines, in accordance with the PMRC in regard to Reporting Exploration Results and Mineral Resources. My Registration and Seal No. is 19-01-01.
- I have no fiduciary interest in Apex Mining Company which engaged me to review the exploration results and resource estimation of Maco Mines.
- For the Technical Report, I am an independent reviewer applying all the required guidelines set out in the Philippine Mineral Reporting Code in the conduct of the review and evaluation
- I have read the guidelines spelled out in the Philippine Mineral Reporting Code and certify that this review has been prepared in accordance with the Code. I give consent to the filing of the Technical Report with the Philippine Stock Exchange and other regulatory authorities and any publication by them for regulatory and disclosure purposes, including electronic publication in the public company files on their websites accessible by the public of the Technical Report.

2.2 Scope of work of each CP involved

Carlito A. Ausa is the PMRC-accredited CP on Geology involved in the project. His scope of work was to review, audit, and if found in order, certify the work of the Apex Technical Team who prepared the resource estimates. The CP was provided with information needed for preparation of the report. The criteria used in the resource estimation are compliant with the Philippine Mineral Reporting Code (PMRC) as required by the Philippine Stock Exchange.

2.3 Reliance on other experts indicating therein objective, nature and coverage

The CP relied on the data gathered by the technical staff of Apex. The CP certified report can only be as good as the data provided to the CP. The objecting of this work is to present a PMRC-compliant Mineral Resource Estimation Report.

REPUBLIC OF THE PHILIPPINES
CITY OF TAGUM

SUBSCRIBED AND SWORN to before me this FEB 18 2020 in TAGUM CITY, Philippines, affiant personally appeared to me and exhibited his PRC Registered Geologist License No. 068 as proof of his identity.

Doc. No. 152;
Page No. 39;
Book No. IX;
Series of 2017.

EMMAN REY F. DAPAING
Notary Public
Until December 31, 2021
PTR No. 270 [illegible] Tagum City; 01-03-2020
IBP Lifetime OR No. [illegible]4255; Pasay City
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2.4 Signature(s) of the CP(s)

Carlito A. Ausa

PRC Registered Geologist No. 779.

PMRC Competent Person Registration No. 19-01-01
Geological Society of the Philippines

3.0 EXECUTIVE SUMMARY

APEX Mining Company Inc. contracted Carlito A. Ausa (Registered Geologist No. 779; CP Reg. No. 19-01-01) to review and audit the mineral resource estimation report prepared by the Apex Technical Team, and to certify compliance of the said estimate with the Philippine Mineral Reporting Code.

Apex owns the mineral rights to **MPSA-225-2005-XI** and **MPSA-234-2007-XI**, both situated within barangays Masara and Teresa in the Municipality of Maco, Davao de Oro in Mindanao Island in the Philippines. At the time of writing, operations at the Maco Mine were focused on gold and silver production from the veins in **MPSA-225-2005-XI**.

The mineral property is located in the Southern Pacific Cordillera, a magmatic arc terrane bounded by the left-lateral Philippine Fault to the west and the Philippine Trench to the east. The geology of the tenement consists of a basement dominated by volcanic rocks of intermediate composition, locally identified as the Masara Formation, intruded by diorites of the Masara Intrusive Complex, and overlain by the intermediate volcanic and pyroclastic rocks of the Amacan Volcanic Complex. The Au-Ag-base metal veins in the property are hosted by the Masara Formation and the Masara Intrusive Complex. Mineralization is controlled by structures related to the Philippine Fault. Porphyry Cu-Au deposits and skarn mineralization have also been identified in places within the tenement.

Previous estimates by different workers have varied significantly, partly due to the differences in the methodologies applied, but mainly due to the coverage in terms of which veins were included in the estimate. For this report, mineral resource estimation was limited to the veins within **MPSA-225-2005-XI**. Resource estimates for the veins in **MPSA-234-2007-XI** as well as the known porphyry Cu-Au deposits were not included.

To ensure a suitable check, only data collected prior to October 1, 2019 were included in the final database. A geostatistical approach was adopted in estimation, using the ordinary kriging method for grade interpolation. Variogram models, although available in previous reports, were remodeled for all veins in consideration of the volume of additional data obtained. High grade cuts applied were statistically determined for each vein, utilizing the cumulative frequency distribution of the assay values. Tonnage values were estimated using a global specific gravity and the volumes of the solids modelled for each vein after accounting for the mined out portions. Resource blocks were then classified on the basis of the number and distance of the samples used to estimate each block with respect to the range of the variogram. Measured blocks are those surrounded by samples from at least four sides, all within one-third of the variogram range. Blocks with at least two samples within two-thirds of the range are classified as Indicated, and those with at least two samples within the range are classified as Inferred. In cases where the interpreted solids extend beyond the range from the farthest sample, these portions of the vein were not included in the estimate.

At a cutoff grade of 1.5 g/t Au, the estimated mineral resource within **MPSA-225-2005-XI** as of October 2019 is **945,000 ounces of Au** (5,920,000 tons at 5.0 g/t Au), comprised of:

MINERAL RESOURCE (1.5 g/t Au cutoff)			
CLASSIFICATION	**TONS (000 t)**	**GRADE (gpt)**	**OUNCES Au**
Measured	380	5.8	70,000
Indicated	3,220	5.0	517,000
SUB-TOTAL	**3,600**	**5.1**	**587,000**
Inferred	2,320	4.8	358,000
TOTAL	**5,920**	**5.0**	**945,000**

Using a higher cutoff grade of 3.0 g/t Au the estimated resource is:

MINERAL RESOURCE (3.0 g/t Au cutoff)			
CLASSIFICATION	TONS (000 t)	GRADE (gpt)	OUNCES Au
Measured	290	6.8	63,000
Indicated	2,050	6.6	434,000
SUB-TOTAL	**2,340**	**6.6**	**497,000**
Inferred	1,380	6.5	288,000
TOTAL	**3,720**	**6.6**	**785,000**

Considering the current mining rate of 1,800 tons per day, as well as the long term plan to ramp up production to 3,000 tons per day, the Measured and Indicated resources defined, with an estimated 3.60 million tons at a 1.5 g/t Au cutoff, provide enough blocks to be converted to ore reserves that would sustain mine operations for 3 to 5 years. For vein-type deposits where new ore sources are commonly found through exploration, a mine life of 3 to 5 years provides enough time for identifying and defining new veins, vein extensions, and splits, to serve as replacement for the mineral resource blocks depleted by production. In consideration of the plan to increase the mining and milling rate, however, it is recommended that exploration efforts also be increased to ensure that it is at pace with production. A number of gold veins identified in Parcel IV of MPSA-234-2007-XI, though not included in this estimate due to the lack of access for verification, have been operated and were proven to be good ore sources in the past, making these veins viable exploration targets for future geologic work.

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5.0 INTRODUCTION

5.1 Who commissioned the report preparation and to whom it should be submitted

Apex Mining Company, Inc. (Apex or the Company), a Philippine Company listed in the Philippine Stock Exchange (PSE) has commissioned this report.

5.2 Purpose for which the report was prepared

This report was prepared in compliance with the requirement of the Philippine Stock Exchange (PSE) to submit a PMRC-compliant report on mineral resources.

5.3 Scope of Work or Terms of Reference

Apex has title to several properties covered by **MPSA-225-2005-XI** and **MPSA-234-2007-XI** located in the municipalities of Maco and Mabini in Davao de Oro Province in southeastern Mindanao. The Mineral Resource Estimate presented in this report only covers the gold mineralization of eighteen veins with active underground development delimited within **MPSA-225-2005-XI**. Inactive gold veins with old workings and the identified porphyry copper deposits were not included in the resource estimate. The results of exploration activities, focused on prospects within **MPSA-234-2007-XI**, were also not included in this report. In order to meet deadlines and ensure a suitable check, only data collected prior to October 1st of 2019 were considered.

5.4 Duration of the preparation, including field visits and verification

Database reconstruction and validation was initiated October 2019, followed by wireframe modelling of the veins and mined out areas. The Mineral Resource Estimate Report became available in February 2020. The Apex technical team who carried out the estimation and report preparation includes underground geologists, exploration geologists, project, and senior staff who have all worked for Apex Mining Co., Inc. for at least 3 years.

The Competent Person (CP) – Geology, Mr. Carlito A. Ausa, used to be the Exploration Manager and Chief Geologist for Apex from 2014 until 2019. He also visited the mine site to verify the data provided during the review of the report.

5.5 Members of the technical report preparation team

Table 5.5.1: Members of the Apex Technical Report Preparation Team

Name	Position
Alex C. Diambrang, Jr.	*Senior Geologist*
Isaac Norman D. Rivera	*Resource Geologist*
Darwin Edmund L. Riguer	*Exploration Geologist*
Josel P. Retardo	*Engineering Manager*
Marivic U. Collado	*GIS Manager*
Edgar C. Biego	*GIS Administrator*
Maritess R. Tuscano	*QA/QC Officer*

5.6 Host company representative

Host Company representative is Mr. Alex C. Diambrang, Jr., Senior Geologist.

5.7 Compliance of report with PMRC

The report follows the format outlined in the PSE Implementing Rules and Regulations for the 2007 Philippine Mineral Reporting Code (PMRC). The mineral resource classification outlined in the PMRC was also adopted in the report.

6.0 RELIANCE ON OTHER EXPERTS OR CPs

The undersigned has relied on the data provided by Apex. Geologic modelling and resource estimation was done by the Apex technical team. All work that was conducted has been reviewed by the CP. The CP certified report can only be as good as the data provided that was used to make it.

7.0 TENEMENT AND MINERAL RIGHTS

7.1 Description of mineral rights

7.1.1 Location of the contract areas (Barangay, Municipality, Province)

MPSA-225-2005-XI is in barangays Teresa and Masara, Maco, Davao de Oro Province. **MPSA-234-2007-XI** is composed of six parcels located within the following barangays in the Municipality of Maco, with some portions in the Municipality of Mabini: **Parcel-I** is located at Barangay Tagbaros and some portions at Barangay Mainit; **Parcel-II** is located entirely at Barangay Mainit; **Parcel-III** is located at Barangays Masara, Mainit, and New Leyte; while **Parcel-IV** is located at Barangay Teresa with small portions at barangays Elizalde and New Barili and some portions to the south is located within the Municipality of Mabini; **Parcel-V** is located entirely within the Municipality of Mabini; and **Parcel-VI**'s northern portion is within Barangay New Barili, Municipality of Maco with the southern portion at the Municipality of Mabini.

7.1.2 Coordinate locations as per MGB

MPSA 225-2005-XI is defined by the corner points with the technical descriptions below

Table 7.1.2.1: MPSA-225-2005-XI corner coordinates

Corner	Latitude	Longitude
1	7°23’00.81”	126°01’14.76”
2	7°23’10.58”	126°01’14.76”
3	7°23’10.58”	126°02’13.46”
4	7°23’00.81”	126°02’13.46”
5	7°23’00.81”	126°02’18.35”
6	7°23’11.16”	126°02’28.72”
7	7°22’22.82”	126°03’17.13”
8	7°22’21.48”	126°03’15.80”
9	7°22’21.48”	126°03’21.67”
10	7°21’42.41”	126°03’21.67”
11	7°21’42.41”	126°02’42.55”
12	7°21’48.41”	126°02’42.55”
13	7°22’17.36”	126°02’13.45”
14	7°21’32.92”	126°02’13.45”
15	7°21’32.92”	126°01’53.89”
16	7°21’42.69”	126°01’53.89”
17	7°21’42.69”	126°02’03.67“
18	7°22’02.22”	126°02’03.67”
19	7°22’02.22”	126°01’44.11”
20	7°22’31.52”	126°01’44.11”
21	7°22’31.52”	126°01’24.54”
22	7°23’00.81”	126°01’24.54”

The six (6) individual parcels of MPSA-234-2007-XI are bounded by the geographic coordinates with the technical descriptions given below

PARCEL- I

Table 7.1.2.2: MPSA-234-2007-XI Parcel-I corner coordinates

Corner	Latitude	Longitude
1	7° 24’ 00.00”	126° 00’ 30.00”
2	7° 24’ 30.00”	126° 00’ 30.00”
3	7° 24’ 30.00”	126° 01’ 00.00”
4	7° 24’ 00.00”	126° 01’ 00.00”

PARCEL- II

Table 7.1.2.3: MPSA-234-2007-XI Parcel-II corner coordinates

Corner	Latitude	Longitude
1	7° 24’ 00.00”	126° 01’ 17.28”
2	7° 24’ 19.53”	126° 01’ 17.28”
3	7° 24’ 19.49”	126° 01’ 33.56”
4	7° 24’ 01.80”	126° 01’ 33.56”
5	7° 24’ 00.00”	126° 01’ 30.00”

PARCEL- III

Table 7.1.2.4: MPSA-234-2007-XI Parcel-III corner coordinates

Corner	Lattitude	Longitude
1	7° 23’ 10.58”	126° 01’ 55.33”
2	7° 23’ 32.51”	126° 01’ 33.50”
3	7° 23’ 42.27”	126° 01’ 33.52”
4	7° 23’ 42.25”	126° 01’ 43.30”
5	7° 23’ 32.48”	126° 01’ 43.28”
6	7° 23’ 15.71”	126° 02’ 00.00”
7	7° 24’ 01.74”	126° 02’ 00.00”
8	7° 24’ 01.71”	126° 02’ 12.69”
9	7° 24’ 21.24”	126° 02’ 12.74”
10	7° 24’ 21.23”	126° 02’ 19.45”
11	7° 23’ 30.00”	126° 02’ 19.33”
12	7° 23’ 30.00”	126° 03’ 00.00”
13	7° 23’ 14.34”	126° 03’ 00.00”
14	7° 22’ 57.28”	126° 02’ 42.84”
15	7° 23’ 11.16”	126° 02’ 28.72”
16	7° 23’ 00.81”	126° 02’ 18.35”
17	7° 23’ 00.81”	126° 02’ 13.46”
18	7° 23’ 10.58”	126° 02’ 13.46”

PARCEL- IV

Table 7.1.2.5: MPSA-234-2007-XI Parcel-IV corner coordinates

Corner	Lattitude	Longitude
1	7° 22’ 30.00”	126° 00’ 00.00”
2	7° 23’ 00.00”	126° 00’ 00.00”
3	7° 23’ 00.00”	126° 00’ 34.73”
4	7° 23’ 10.58”	126° 00’ 34.75”

5	7° 23’ 10.58”	126° 01’ 14.76”
6	7° 23’ 00.81”	126° 01’ 14.76”
7	7° 23’ 00.81”	126° 01’ 24.54”
8	7° 22’ 31.52”	126° 01’ 24.54”
9	7° 22’ 31.52”	126° 01’ 44.11”
10	7° 22’ 02.22”	126° 01’ 44.11”
11	7° 22’ 02.22”	126° 02’ 03.67”
12	7° 21’ 42.69”	126° 02’ 03.67”
13	7° 21’ 42.69”	126° 01’ 53.89”
14	7° 21’ 32.92”	126° 01’ 53.89”
15	7° 21’ 32.99”	126° 01’ 44.20”
16	7° 21’ 13.45”	126° 01’ 44.15”
17	7° 21’ 13.64”	126° 00’ 25.91”
18	7° 22’ 12.23”	126° 00’ 26.04”
19	7° 22’ 12.23”	126° 00’ 30.00”
20	7° 22’ 30.00”	126° 00’ 30.00”

PARCEL- V

Table 7.1.2.6: MPSA-234-2007-XI Parcel-V corner coordinates

Corner	Lattitude	Longitude
1	7° 20’ 30.00”	126° 02’ 42.68”
2	7° 21’ 42.41”	126° 02’ 42.55”
3	7° 21’ 42.41”	126° 03’ 21.67”
4	7° 21’ 23.00”	126° 03’ 21.95”
5	7° 21’ 23.02”	126° 03’ 12.20”
6	7° 21’ 13.25”	126° 03’ 12.18”
7	7° 21’ 13.23”	126° 03’ 21.96”
8	7° 20’ 30.00”	126° 03’ 21.80”

PARCEL- VI

Table 7.1.2.7: MPSA-234-2007-XI Parcel-VI corner coordinates

Corner	Lattitude	Longitude
1	7° 20’ 05.33”	126° 00’ 00.00”
2	7° 22’ 00.00”	126° 00’ 00.00”
3	7° 22’ 00.00”	126° 00’ 06.46”
4	7° 20’ 05.32”	126°00’06.204”

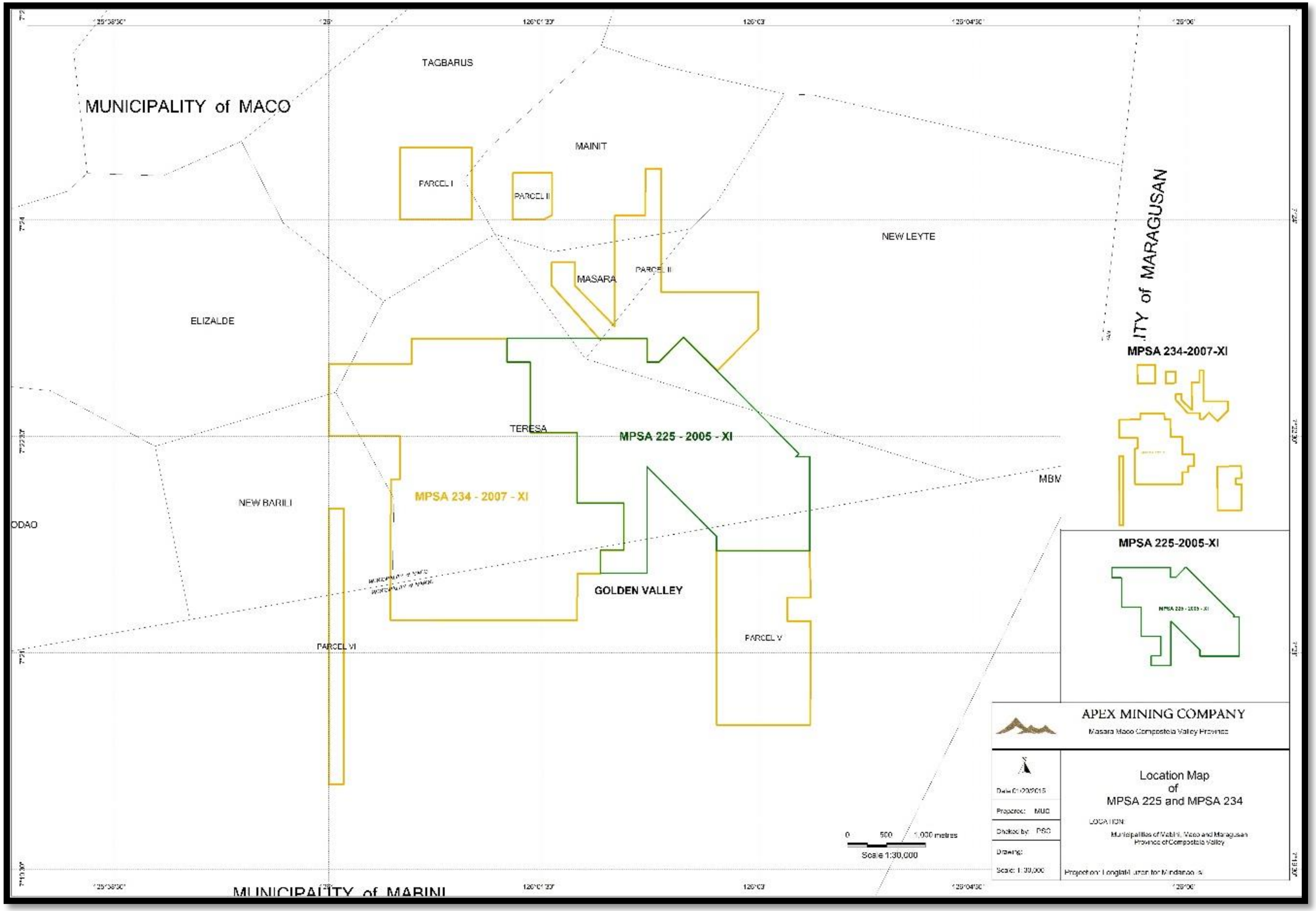


Figure 7.1.1: Tenement Map of Apex Mining Company, Inc.

7.1.3 Number of claims and hectares covered

MPSA 225-2005-XI covers an area of **six hundred seventy nine and two hundredths (679.02) hectares.** Most of **MPSA 234-2007-XI** is within the Municipality of Maco covering a total of 1,194.97 hectares, with some portions within the adjacent Municipality of Mabini with area coverage of 363.56 hectares. The total area of **MPSA 234-2007-XI** is **one thousand five hundred fifty eight and fifty three hundredths (1,558.53) hectares** and is comprised of six (6) individual parcels with the following areas:

Parcel 1 = 84.799 hectares
Parcel 2 = 29.625 hectares
Parcel 3 = 233.123 hectares
Parcel 4 = 883.681 hectares
Parcel 5 = 258.876 hectares
Parcel 6 = 68.423 hectares

TOTAL = 1,558.527 hectares

7.1.4 EP/MPSA/FTAA mode of agreement

Both tenements are under Mineral Production Sharing contract agreements.

7.2 History of mineral rights

The property was originally comprised of contiguous load claims with 75 Declaration of Locations (DOLs) of nine hectares each and a number of claim fractions of various shapes and sizes totaling 679.02 hectares. The claims were then named **ASA-24, et al**, and were originally staked for gold, silver, copper, and other metallic minerals under the Philippine Bill of 1902. **Mining/Lode Lease Contracts (MLCs) Nos. V-83; V-95; V-96, V-97, V-124 and V-125** covering the area were issued to Apex Mining Company, Inc. in 1994. Apex then applied the MLCs for a Mineral Production Sharing Agreement Contract in 1998, denominated as **APSA-242-XI**. An amendment was filed for the same APSA in 2005. The Philippine Government approved the application on December 15, 2005, denominated as **MPSA-225-2005-XI**.

MPSA-234-XI-2007 was applied for in 2005, denominated as **APSA-248-XI**, composed of six individual parcels adjacent to and around **MPSA-225-2005-XI**. The application was approved in June 2007.

7.3 Current owners of mineral rights

Apex Mining Company, Inc. owns 100% of the mineral rights on the basis of MPSA agreements with the Philippine Government.

7.4 Validity of current mineral rights

The Mineral Production Sharing Agreement is valid for a 25 year term, and is renewable for another 25 years. The leases are issued under the Mining Act of 1995 (Republic Act No. 7942). Surface rights are held with the government and the mining leases are issued as cooperative agreements between the Company and the Philippine Government.

MPSA No. 225-2005-XI expires in 2030 while **MPSA No. 234-2007-XI** expires in June 2032.

7.5 Agreements with respect to mineral rights

Apex Mining Company, Inc. is a holder of two Mineral Production Sharing Agreements with the government, approved in 2005 and in 2007.

7.6 For clarification of the net revenue that may be derived from the project, the following are included:

7.6.1 Royalties, taxes, advances and similar payments paid or to be paid by the company to the mineral rights holder, joint venture partner(s), government, Indigenous People, local government, and others.

- Excise Tax – 4%
- MOA with local people – 1% plus provision of scholarships, health programs, infrastructure, and other social programs

7.6.2 Receivables and payable sums to the company and mineral rights holder.

There are no other receivables or payables as the company has 100% mineral rights on the property.

8.0 GEOGRAPHIC FEATURES

8.1 Location and Accessibility

The mine site may be accessed from Davao City through the concrete-sealed Pan Philippine (Maharlika) Highway, driving 74 km north-northeast to the town of Mawab, Davao de Oro Province, and then 26 km heading east-southeast through a combination of concrete and gravel-paved road following the Hijo-Masara river valley upstream. The Maco mine site is located within the adjoining barangays of Masara and Teresa in the Municipality of Maco, Davao de Oro Province at the upper reaches of Masara River.

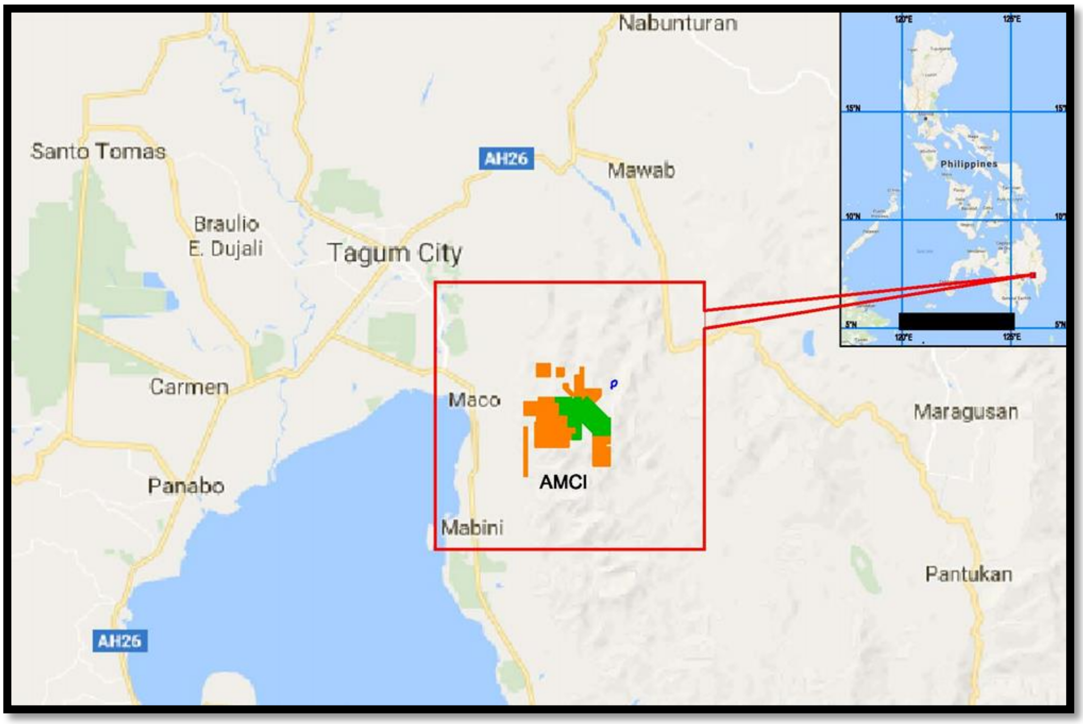


Figure 8.1.1: Location of the MPSA contract areas

8.2 Topography

The contract areas occupy a generally rugged terrain characterized by deeply incised, V-shaped river channels, with elevations ranging from about 500 to 1300 meters above sea level. The active mining area is located at the headwater portions of Masara River, the most dominant drainage system in the Municipality of Maco.

Commercial timber operations were widespread in the past, with most of the hard wood species now gone. Vegetation cover on the mountain slopes is now characterized predominantly by secondary-growth trees, locally named as “buyo-buyo”, along with tropical shrubbery. The indigenous Mansaka tribe, along with migrants from the lowlands, practice traditional slash and burn farming. These resulted to scattered clearings along the slopes that are planted with rice, corn, coffee, coconut, bananas, and other seasoned crops.

8.3 Climate

The climate in Davao de Oro is categorized by no clearly- defined dry season with rains experienced almost throughout the year with highest rainfall usually experienced from November to February.

8.4 Population

Barangays Masara and Teresa have 1,233 and 2,207 residents, equivalent to gross population densities per hectare of 3.31% and 1.35%, respectively.

8.5 Land Use

The present land use of the Municipality of Maco is generally agricultural, with traditional subsistence farming and forest product-gathering being the main source of livelihood of the local inhabitants. Agricultural areas and forestland make up for 84% and 13%, while mining and quarrying only account for 1%.

9.0 PREVIOUS WORK

9.1 Resource Estimates of Previous Workers

The table below presents a summary of resource estimates by various workers for the Maco Mine together with the methodology applied.

Table 9.1.1: Summary of Previous Resource Estimates

Year	Author(s)	Methodology	Tonnage (Mt)	Grade (gpt Au)	Ounces (koz Au)
2017	Peña	Geostatistical	2.5	5.4	430
2015	Peña	Geostatistical	2.5	5.6	450
2012	Malihan & Flores	Geostatistical	6.6	5.9	1,250
2011	McManus	Inverse Distance	7.0	5.0	1,130
2010	Malihan	Long Section, Polygonal	3.1	5.9	590
2009	Apex	Long Section, Polygonal	2.8	5.7	510
2007	Crew	Long Section, Polygonal	10.4	6.1	2,040
2006	Snowden	Long Section, Polygonal	5.7	7.8	1,430
2004	MGB	Long Section, Polygonal	6.1	7.1	1,390
2002	Apex	Long Section, Polygonal	5.9	6.2	1,180
1995	Howe	Long Section, Polygonal	2.6	6.3	530

9.2 Brief description of previous estimates

Previous workers have declared a wide range of resource estimates for the Maco Mine. This is in part due to the varying conditions through time, leading to the use of different cut off grades, as well as the differences in the methodologies applied, such as the limitations for extrapolation. The greater root of the observed variance, however, is the coverage of the estimates, with some including all known veins within one particular or both contract areas, and some only covering those with active mining operations.

Starting in 2012, mineral resource estimates were done in-house by the Apex technical team using a geostatistical approach, applying a uniform cut-off grade of 1.5 g/t Au. These estimates were then reviewed and certified by Competent Persons. **Malihan & Flores (2012)** estimated 1,250,000 oz Au in 41 veins within both **MPSA-225-2005-XI** and **MPSA-**

234-2007-XI. The resource declaration by **Peña (2015)** that followed is significantly lower at 450,000 oz Au as this estimate only included the 12 veins that were actively producing at the time of reporting. An update by **Peña (2017)** presented an estimate of 430,000 oz Au with the same coverage, showing that the mine was able to replace the depleted ore blocks.

10.0 HISTORY OF PRODUCTION

10.1 Production History of Apex Mines

- **1976-1989** – Apex extracted **573,022 oz Au** from over 3.5 Mt of mined ore.
- **1991** – The company was forced to stop operations due to labor disputes and prolonged depressed gold prices. Limited small scale mining operations were carried out by Apex until mining activities were finally suspended in 2000.
- **2003** – Apex entered into separate operating agreements with Goldridge Mining Corporation, Viclode Mining Corporation, and Mintricor Inc., with Apex obtaining a percentage of gold production as per the contracts.
- **2005** – Mining operations were revived under Crew Gold which managed the mine until October 2009, producing a total of **45,929 oz Au** and **150,707 oz Ag** during this period.
- **2009** – ASVI (Mindanao Gold) took over until Monte Oro acquired the mine in January 2013. Under ASVI, the mine produced a total of **79,570 oz Au** and **386,141 oz Ag**.
- **2013 – Present** – Apex, under the management of Monte Oro, produced a total of **281,887 oz Au** and **1,484,395 oz Ag** as of December 2018.

10.2 Areas mined within the Tenement Area

From the mid-1970s to 1980s, mining operations were concentrated on copper ore from the Kurayao and Wagas areas. Gold was also produced mostly from Hope, Dons, and Wagas-Masarita vein systems. In 2005, after Crew Gold took over, mining activities were focused on the areas near the Masara and Malumon creeks at the eastern portion of **MPSA-225-2005-XI**, wherein Bonanza, Masara, and Sandy veins became the major gold ore sources. At present, development and mining are still focused on these areas, with the addition of vein extensions and newly discovered veins and splits such as Masarita 2, SDN2, Jessie veins as ore sources.

10.3 General description of mining, ore beneficiation, concentrate, mineral product market

Mining in the area employed the conventional shrinkage method, before shifting to cut-and-fill during the late 2000s. In areas where the vein widths encountered are too narrow, conventional mining like the modified shrinkage was still carried out. By the middle of 2010, longhole mining was introduced to operations.

Broken underground ore is hauled by low profile trucks to the surface at the mine yards. Ore is then delivered to the mill where it goes through primary, secondary, and tertiary crushing, followed by grinding using ball mills. The ore then goes through thickeners before being fed to the CIL tanks where gold and silver are recovered through cyanide leaching followed by adsorption onto activated carbon. The loaded carbon then undergoes stripping, depositing the precious metals onto steel wools in the process. The sludge recovered is then refined by smelting, producing doré, usually containing 14-20% Au, 75-80% Ag, and 1-5% other elements.

10.4 Tonnage mined and metals sold

Table 10.4.1: Production History of Apex Mines

Year	Mined		Milled			Bullion	
	Tons	Au, g/t	Tons	Au, g/t	Ag, g/t	Au, oz	Ag, oz
2006 (Dec)	13,129	4.07	79,508	4.29	18.72	134	439
2007	78,077	3.83	306,686	3.17	13.59	7,228	21,790
2008	166,971	4.59	252,613	4.59	20.99	21,618	60,179
2009	148,417	5.88	200,465	5.09	32.69	20,727	79,968
2010	214,650	5.24	332,328	4.92	30.78	25,659	113,007
2011	208,849	4.99	374,348	4.73	32.01	26,256	146,294
2012	234,033	3.90	373,873	3.80	22.40	23,877	116,071
2013	289,015	4.78	542,365	3.66	22.70	26,797	151,830
2014	258,596	6.01	544,878	3.89	21.85	26,521	151,203
2015	438,424	5.61	704,481	5.42	34.39	43,139	227,417
2016	514,327	6.06	717,438	4.68	29.98	54,681	309,623
2017	509,066	5.24	578,893	3.90	23.99	60,185	315,525
2018	655,797	4.94	609,604	4.25	25.56	70,564	328,797
Total	**3,729,351**	**5.23**	**5,617,480**	**4.35**	**26.26**	**407,386**	**2,022,143**

11.0 REGIONAL AND DISTRICT GEOLOGY OF MASARA GOLD DISTRICT

The Mindanao Pacific Cordillera (MPF) is a magmatic terrane with an ophiolitic segment in the north, subdivided into (1) Northern Pacific Cordillera, (2) Central Pacific Cordillera, and (3) Southern Pacific Cordillera (Peña, 2008). The MPF is bounded by two prominent structures, with the Philippine Fault to the west and the Philippine trench to the east. Intrusive and extrusive igneous rocks are associated with subduction of the Philippine Sea Plate to the east that dates back to Eocene time. Development of a Late Neogene Magmatic arc associated with the reactivation of subduction of the Philippine Sea Plate is indicated by the Pliocene-Holocene volcanic rocks in the north and south of the cordillera.

11.1 Stratigraphy

The project area is in the Southern Pacific Cordillera section of the MPF. The stratigraphy (Figure 11.1.1), is defined by Peña (2008) to be as follows

- Cretaceous – Paleogene **Barcelona Formation** – consists mainly of andesitic volcanic flows and flow breccias intercalated in places with greywacke, metaclastic rocks and tuff
- Eocene **Tagabakid Formation** – sedimentary sequence of clastic rocks with local lenses of limestone and intercalations of andesitic flows and tuff
- Early – Middle Miocene **Agtuuganon Limestone** – limestone that occurs with thin beds of shale, sandstone, and conglomerate
- Miocene **Cateel Quartz Diorite** – quartz diorite dikes which intrude Cretaceous – Paleogene rocks in the region
- **Amacan Volcanic Complex** – consists of andesitic to dacitic domes, plugs, flows, and pyroclastic rocks named after the Amacan Mine near Lake Leonard

11.2 Structural Geology

The Philippine Trench, to the east of the MPF, is the trace of the west verging subduction of the Philippine Sea Plate (PSP) during the Neogene. Subduction was induced by the collision of the Philippine Mobile Belt with the Palawan – Mindoro Microcontinental Block during the Late Miocene. To the west lies the Philippine Fault which extends all the way to northern Luzon. NW-SE splays of the Philippine Fault invade sections of the mountain ranges of MPF. Gold mineralization is controlled by strike-slip faults parallel to these structures related to the Philippine Fault. The Masara District appears to be situated in what appears to be a dilational jog within caldera structures.Thus, the present subduction of the PSP is a reactivation of an ancient process as a result of another collision-accretion.

11.2.1 Faults

Faults observed in the Masara Mine are all steeply dipping and are categorized into: (1) NNW, (2) NE, (3) E-W, and (4) N-S systems. The first two systems are classified as wrench faults, producing drag folds, slaty cleavage, and cataclasis, while the last two are gravity faults. NE faults are evidently right-lateral and tend to abut against the NNW faults.

11.2.2 Folds

Folding in the area involved pre-Tertiary to Miocene rocks with fold axes generally trending NE and N-S. The NE trending folds include the truncated SW plunging anticline and a small SW plunging syncline.

11.2.3 Dikes

The quartz diorite dikes in the area mostly trend NE, with a few trending NW. On the other hand, most of the andesite porphyry dikes strike NW and only a few trend NE. The two systems, being almost normal to each other, suggest that a set of fractures controlling emplacement.

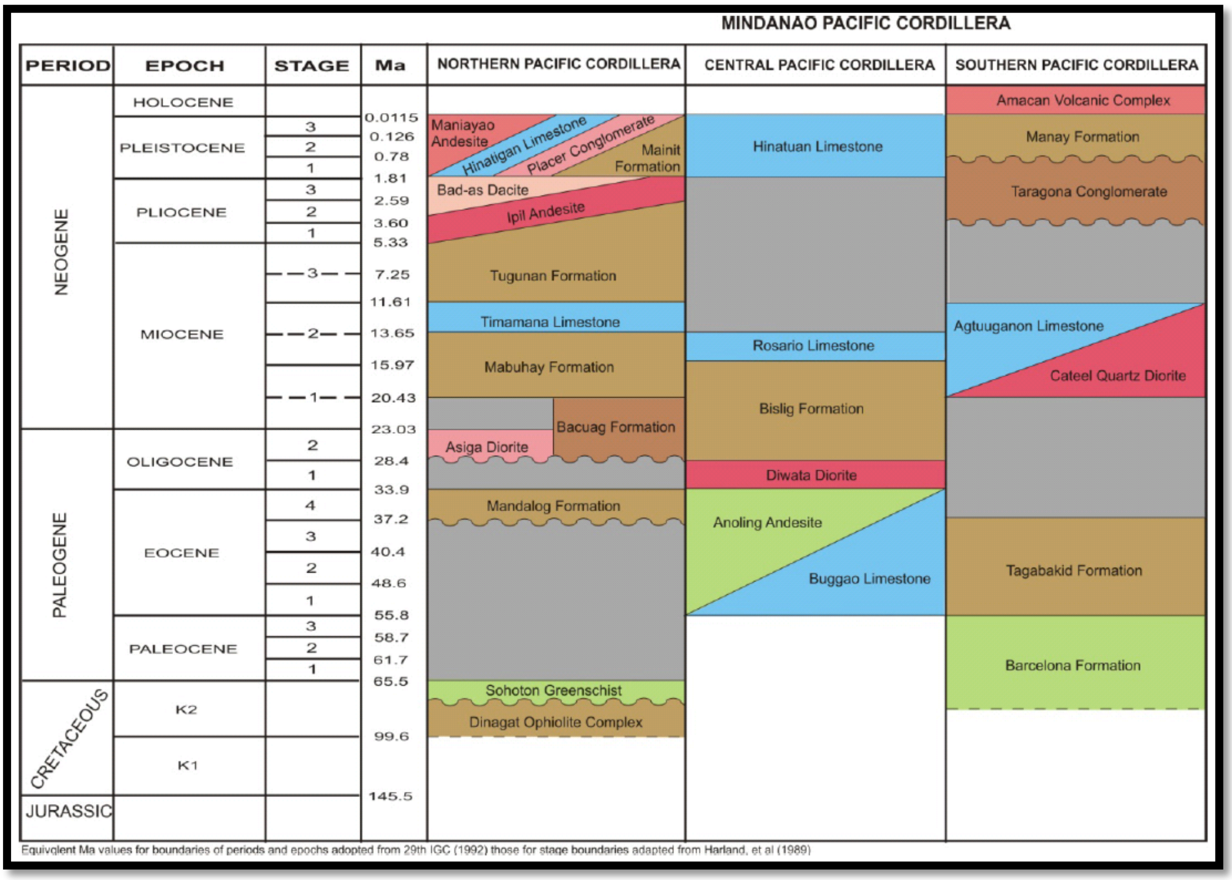


Figure 11.1.1: Stratigraphic Column of the Mindanao Pacific Cordillera adopted from Peña (2008)

12.0 LOCAL GEOLOGY

12.1 Geological work undertaken by the company in the property

Geological work undertaken by Apex includes detailed 1:1000 scale surface mapping, grid soil geochemical surveys, geophysical surveys, diamond drilling, and where there is active development, underground mapping.

12.2 Rock types and their geological relationships

The Maco geological setting is characterized by a suite of shallowly eroded volcanic, subvolcanic intrusive complex and sedimentary package. This regionally disposed dominantly massive andesitic and volcaniclastic country rock package (**Masara Formation** or MF) is cut by high-level intrusive (**Masara Intrusive Complex** or MIC) and a later sub-volcanic intrusive complex (**Amacan Volcanics** or AV) (Figure 12.2.1). The multi-phase intrusive suite is comprised predominantly of diorite, with subordinate stock-like bodies of andesite porphyry. The sub-volcanic complex is equally multi-phase with stock-like bodies of dacitic and basaltic-andesitic composition extensively widespread towards north, and apparently emplaced at a later phase than the intrusions

These volcanic, intrusive and sub-volcanic complex that host various vein-style gold mineralization has once been subaerially emergent and shallowly eroded.

An apparent erosional unconformity or paleosurface can be found in the western part of tenement along the contact of MF and the overlying presumably younger basal conglomerate. This paleosurface is now represented by a thin layer of poorly consolidated dominantly carbonaceous mudstone which underlies thick limestone capping. Together, the limestone and its basal clastic sediment package forms part of the district-wide **Tagbaros Formation** (ML).

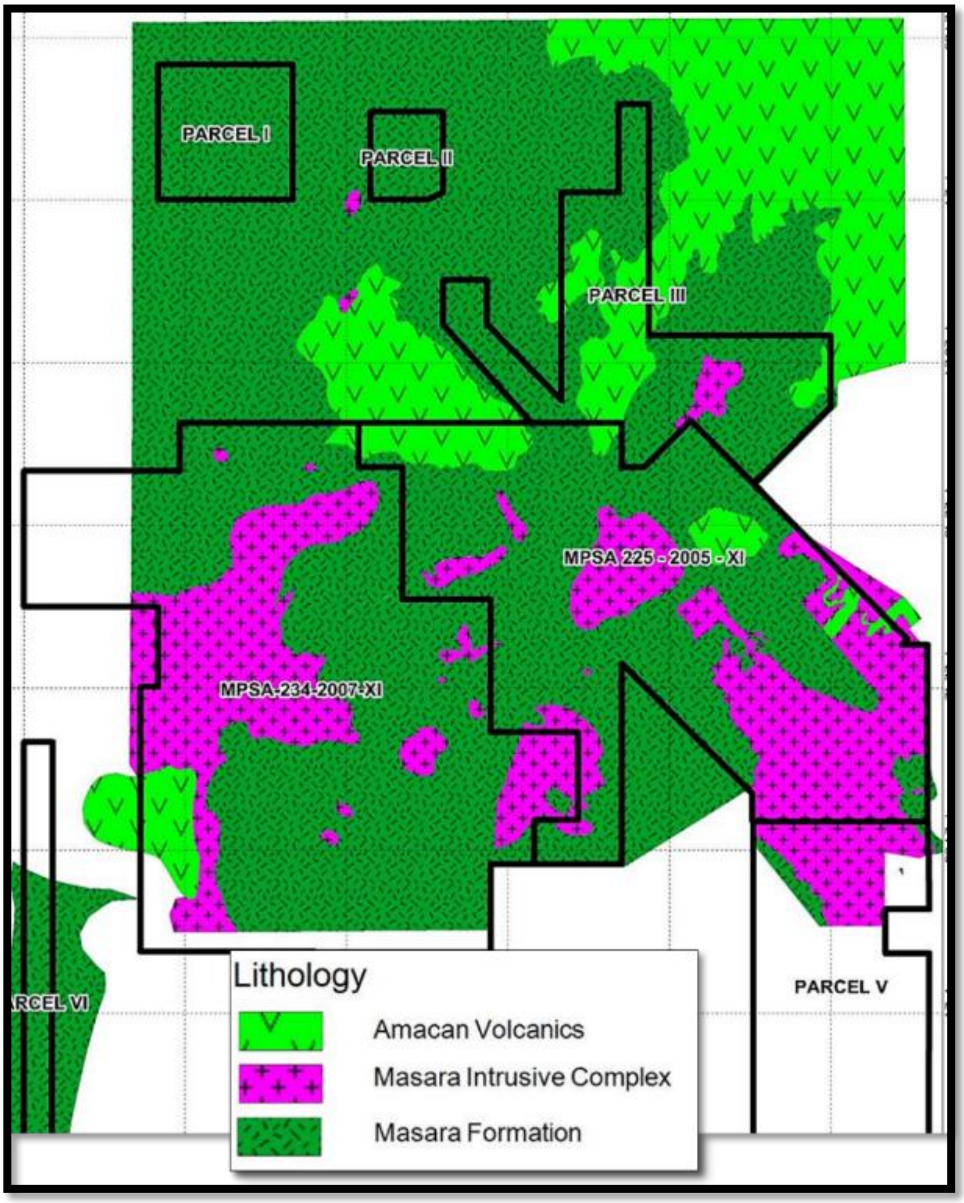


Figure 12.2.1: Geologic Map of the Tenement Area

The following are descriptions of lithologic units encountered as gleaned from surface mapping:

Masara Formation

Andesite (AND)
Andesite is the oldest rock unit known to occur in the area. It is massive in outcrop, basically a fine-grained hornblende andesite, generally aphanitic with embedded small (mm size) hornblende and plagioclase feldspar phenocrysts. It is hard and greyish in color when fresh. Darker coloured units have been observed and may be basaltic andesite in composition. This unit outcrops mostly within the tenement.

Masara Intrusive Complex

Diorite (DIO)
Diorite is a dominantly fine- to medium-grained equigranular phaneritic, occurring as small (a couple of hundred meters) bodies in outcrop. When unaltered, it is generally greyish in color,

becoming darker when propylitized and lighter when argillized. It distinctively contains hornblende crystals unlike feldspar porphyry. Weathered and argillized diorite is generally soft and friable within all prospects. In some areas, mapped dioritic bodies texturally grade into coarser grained hornblende biotite diorite rock type.

Andesite Porphyry (ANY)
Andesite Porphyry is a textural variant of DIO, and thus both are possibly co-magmatic and co-eval. ANY has more than 30% of these (1 to 5mm in size) light-colored euhedral to subhedral phenocrysts lighter when argillized and greenish when chloritized. The notion that ANY and DIO are co-genetically one intrusion is substantiated by the difficulty in the field to identify which outcrop could be named ANY or DIO because they are visually similar and in some places phenocrystic contents vary slightly in just a few meters. A ballpark estimate is then used when complexities occur on which outcrop is to be named for which rock name. In previous drill cores, however, it is much easier to distinguish between the two but, as with outcrops, phenocrystic contents vary in minor terms. As with AND and DIO, ANY lithologies also exhibit variable intensities of argillization, and are also hosts to veins and mineralized structures in the area.

Amacan Volcanics

Feldspar Porphyry (PHY)
Feldspar Porphyry is still aphanitic but very distinctively porphyritic, with at least 30% phenocrysts, most of which are large euhedral feldspar crystals (greater than 5mm to as much as 15 mm in size). It may be regarded as another coarser textural variant of ANY, but its distinction in the field lies in the amount of larger feldspar phenocrysts, similar to the Mabuhay Andesite Porphyry or the Birds-Eye Porphyry in the Surigao district. There are a number of evidences that suggests PHY (Feldspar Porphyry) is a disparate and younger intrusive than the co-genetic DIO-ANY (diorite- andesite porphyry) bodies. Among these are those outcrops having PHY cut veins, lithologies exhibit very weak alteration to fresh rock. PHY is equivalent to “Alipao Andesite” as invoked by RWG-UP-NIGS.

Dacite Porphyry (DAP)
Dacite Porphyry appears to have a fine- to medium-grained phaneritic groundmass of hornblende, quartz and feldspar. Phenocryst is mainly euhedral to subhedral feldspar of up to 15 mm in size. Similar to PHY, DAP is quite altered to fresh.

12.3 Description of various geological structures and their trends

The major structural features defined within Apex’s MPSA area and its general vicinity consist of: 1) NW-trending, steep NE-dipping left lateral strike slip faults correlated with and representing the local segments of the Philippine Fault System; 2) a large Valles-type caldera or volcanic center, the periphery of which is defined by a ring fracture zone; 3) a north-south system of gravity faults, and; 4) a less dominant set of second order northwest-northeast conjugate faults. Post-ore thrust faults are fairly well-distributed central to the area; toward the area’s perimeter, the thrust fault generally dips away from the volcanic center.

A few minor sub-parallel sets of folds with northerly to north-northwesterly axes are also found at Masara proper as well as west to southwest of the Apex tenement. The NW-trending fault system is most dominant near the caldera center and its structures are generally disposed in a parallel fashion, if not overprinted by an inner set of major auriferous quartz veins. Some of the gold-bearing veins and the known porphyry copper-gold deposits follow the conjugate northeasterly faults and the peripheral ring fracture system.

13.0 MINERALIZATION IN THE PROPERTY

13.1 Overview of the mineralization

At least four types of mineralization have been identified within the Apex property. These are the (1) sub-epithermal Au-base metal veins (2) porphyry-related Cu-Au mineralization; and (3) skarn mineralization.

13.1.1 Au-Ag-Base Metal Veins

At least ten of the known vein systems are classified as Au-base metal veins, namely; Bonanza-Bonanza Hanging Wall Split-Masara, Sandy-Sandy North, Manganese, Jessie, Maria Inez, St. Francis, Don Calixto, Fern, Masarita-Masarita 2 and Wagas. These were classified as sub-epithermal veins due to the high base metal sulfide content (30-80%) and are associated with propylitic- and skarn-altered host rock as observed in the underground headings instead of the characteristic argillic alteration for low sulfidation mineralization.

Mineralization within the Masara Gold District is structurally controlled by series of faults directly associated with the Philippine Fault Zone. Vein mineralization is characterized as fault-controlled massive sulfide breccia which were later overprinted or bounded by quartz, carbonates and Mn-rich carbonate veins exhibiting crustiform-colloform, vuggy or cockade textures.

These veins strike NW to WSW and dip steeply to the northeast. Dip deflection however is also observed for the steeply dipping veins. Vein mineralization generally persists for several kilometers with vein widths ranging in some high grade portions from 1.0-5.0m.

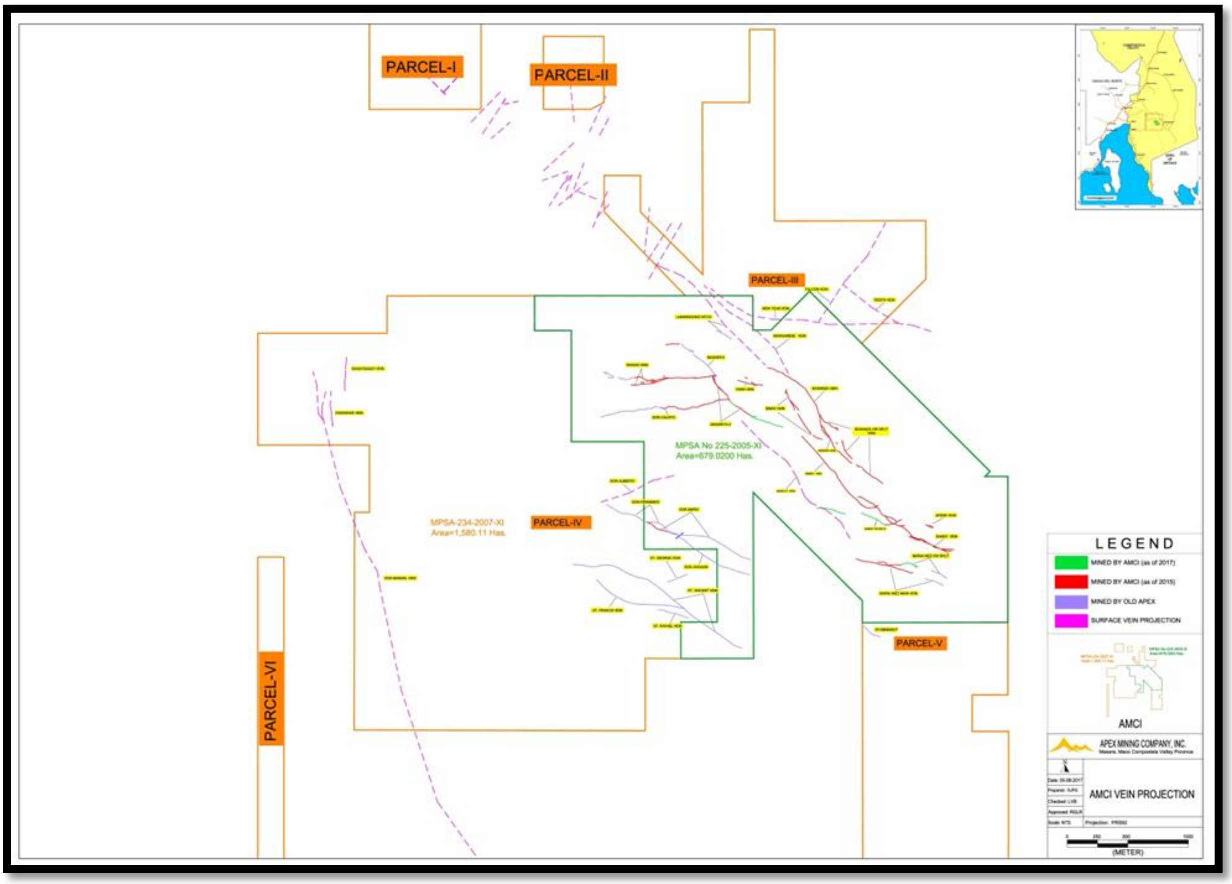


Figure 13.1.1.1: Tenement Map showing the surface projections the vein prospects

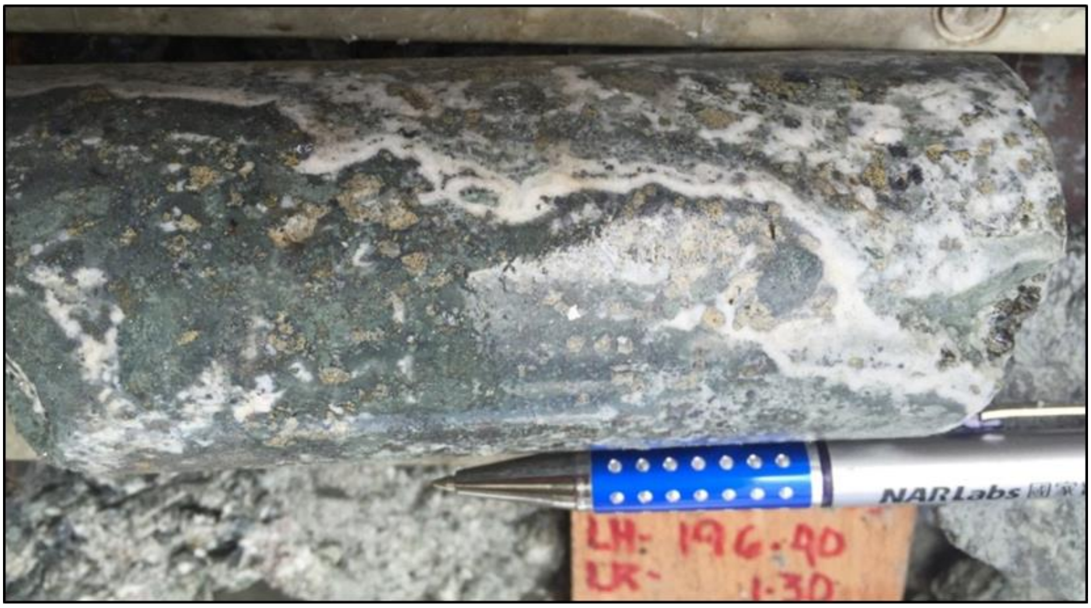


Figure 13.1.1.2: MST-590-005 intercept at 194.1-195.1m interpreted as part of the Don Calixto vein characterized by multiphase base metal-carbonate mineralization

Figure 13.1.1.3: ASA-785-012 intercept at 330.7m showing crustiform-colloform banded quartz+rhodonite+rhodochrosite+sulfide vein and late stage vuggy carbonate veins with bladed texture

Figure 13.1.1.4: ASA-590-004 intercept displaying multi-phased breccia with angular to sub-angular sulfide-rich clasts and quartz-calcite-rhodochrosite veins:

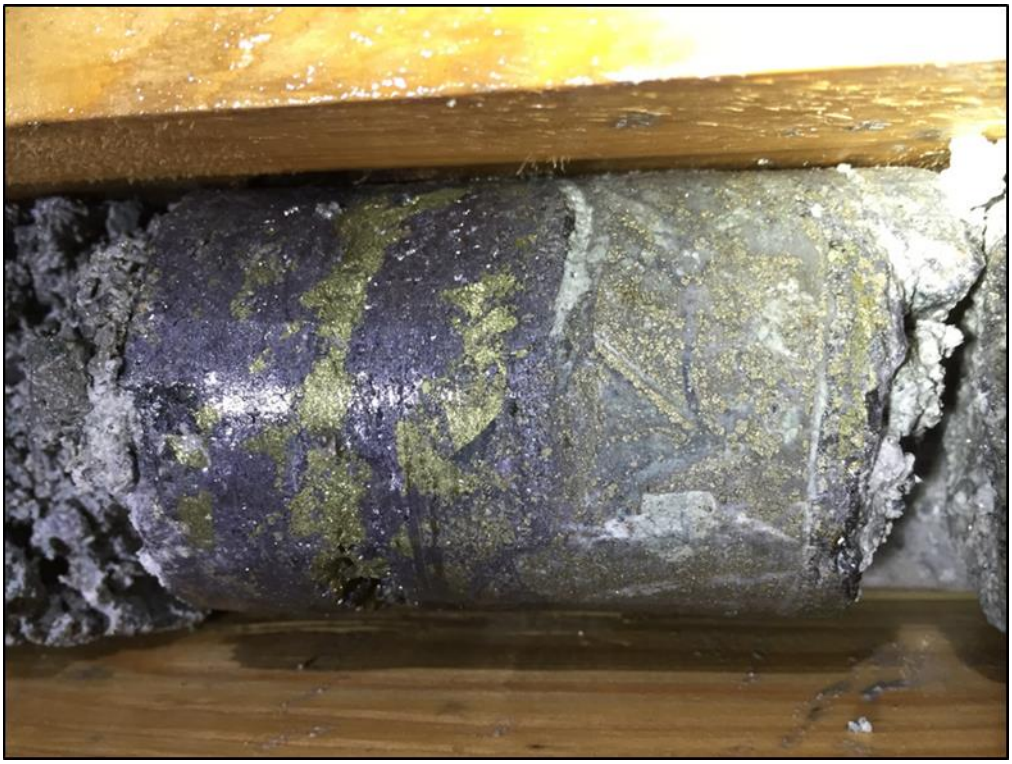


Figure 13.1.1.5: Massive sulfide (gn+py+cpy) vein breccia intercept in MST-590-008

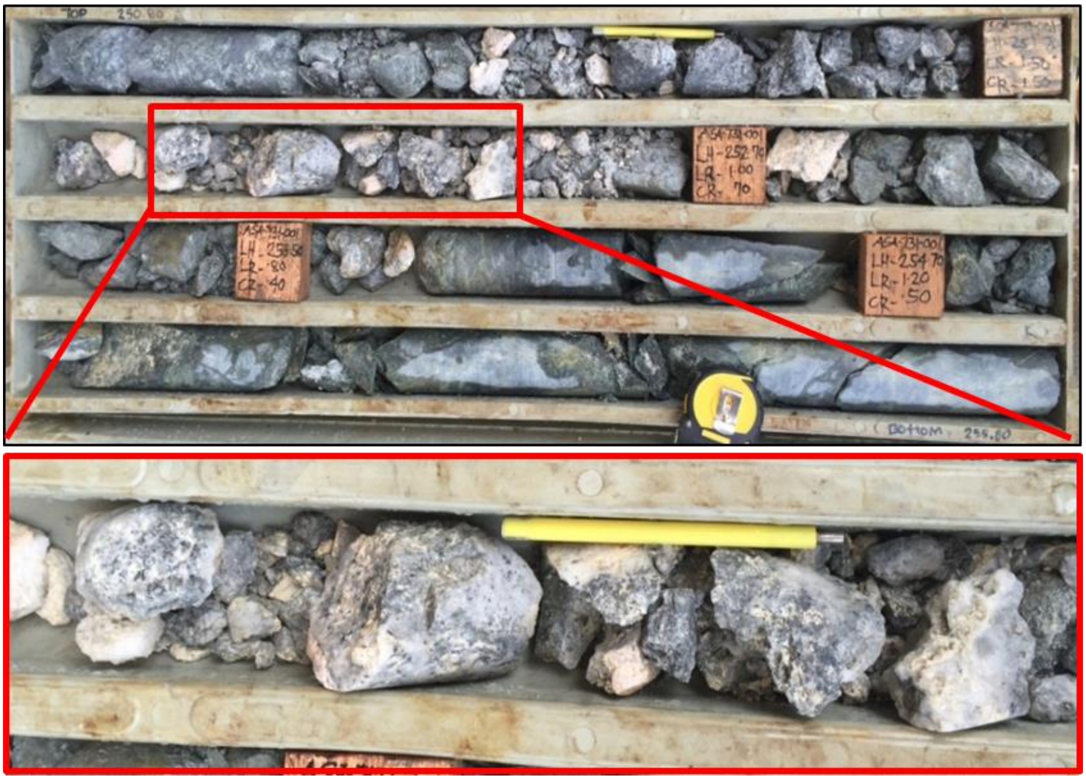


Figure 13.1.1.6: Vuggy, quartz-carbonate-rhodochrosite vein breccia intercept in ASA-731-001 with sp-gn-py-cpy.

Figure 13.1.1.7: Quartz-carbonate vein breccia intercept in MST-560-004 at 117.4-117.7m. Carbonate veins show colloform-crustiform banding

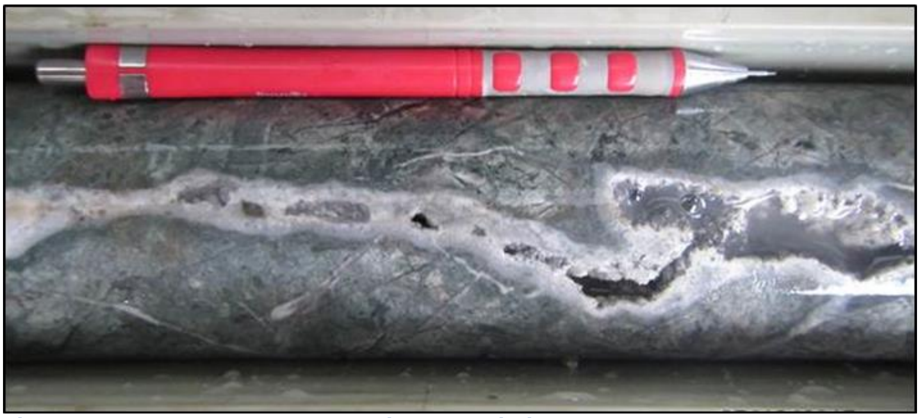


Figure 13.1.1.8: Vuggy quartz+carbonate vein in ASA-545-003 at 116.9-117.1m

Figure 13.1.1.9: Vuggy quartz+pyrite+chalcopyrite vein with angular diorite clasts in ASA-590-020 at 56.8-57.8m. Sulfides occur along vein selvages.

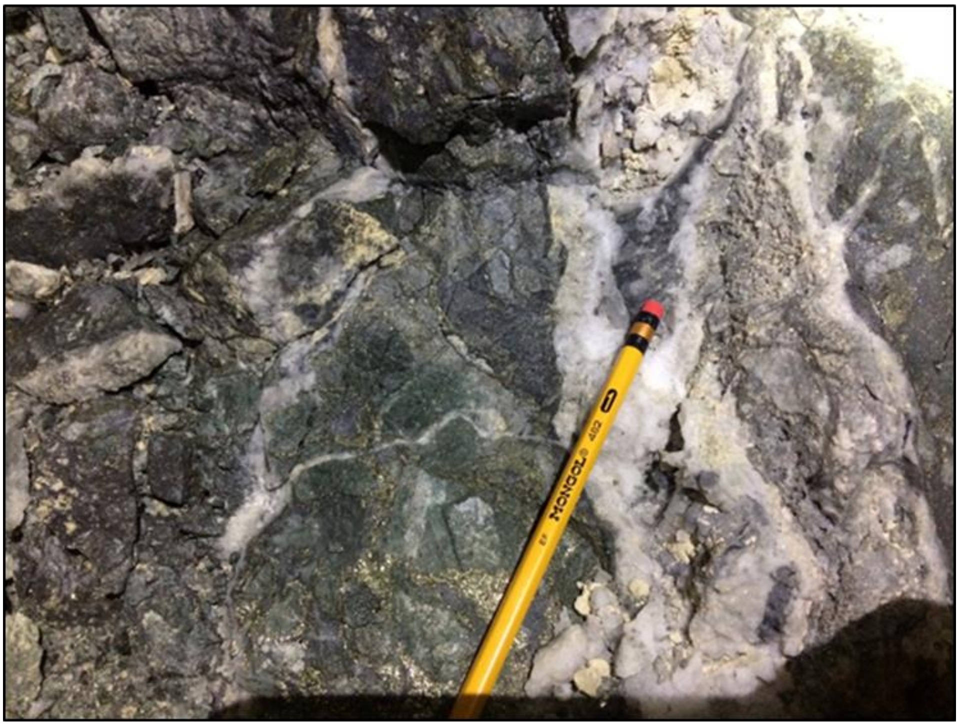


Figure 13.1.1.10: Carbonate+quartz vein breccia with py+cpy disseminations and patches exposed underground at heading Level 560 SDNS ODE 102S position

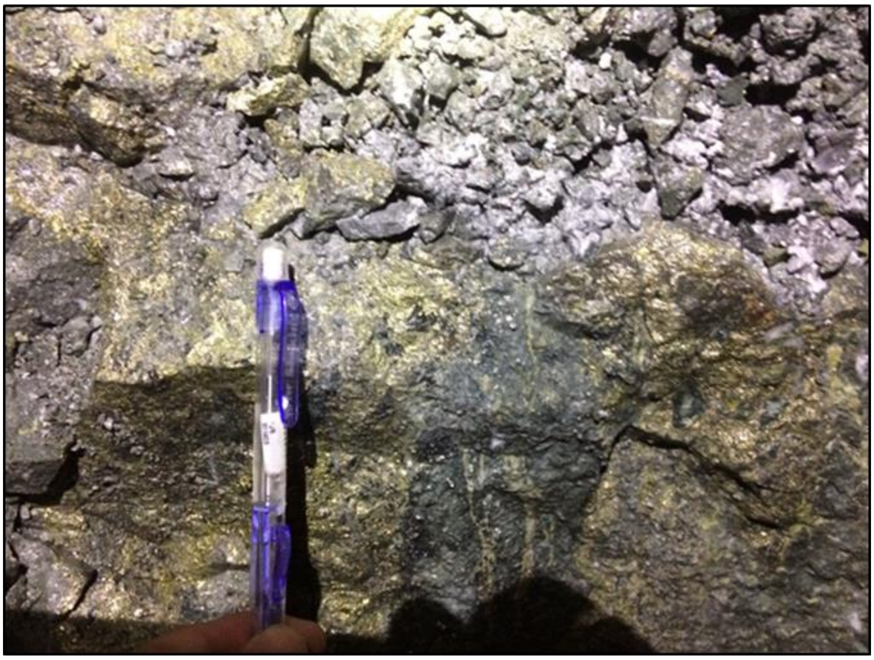


Figure 13.1.1.1.11: High Au grade massive sulfide (py-cpy) vein hosted by propylitic-altered andesite at Level 490 BNZ ODE

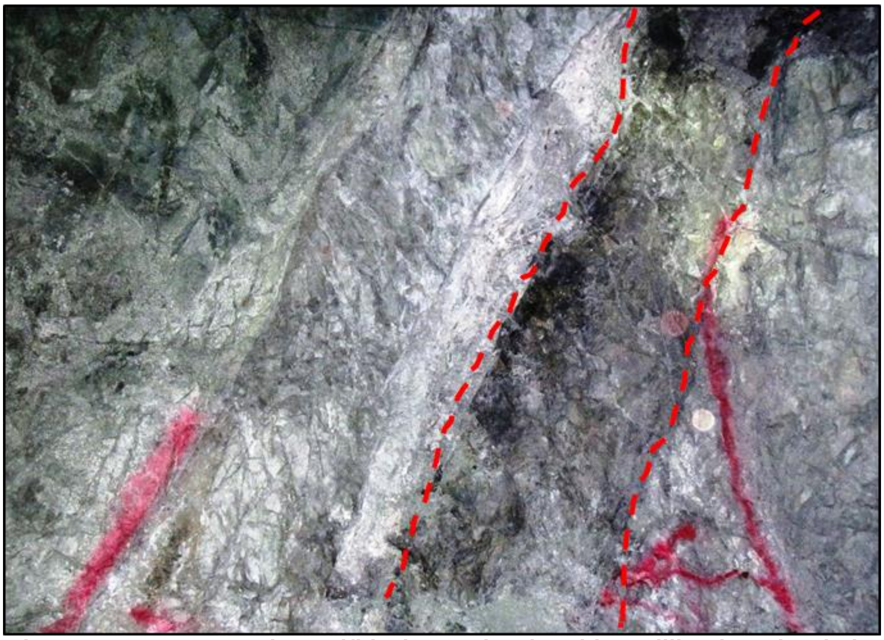


Figure 13.1.1.1.12: Massive sulfide (py-cpy) vein with argillic alteration halo at Level 680 SDN ODE

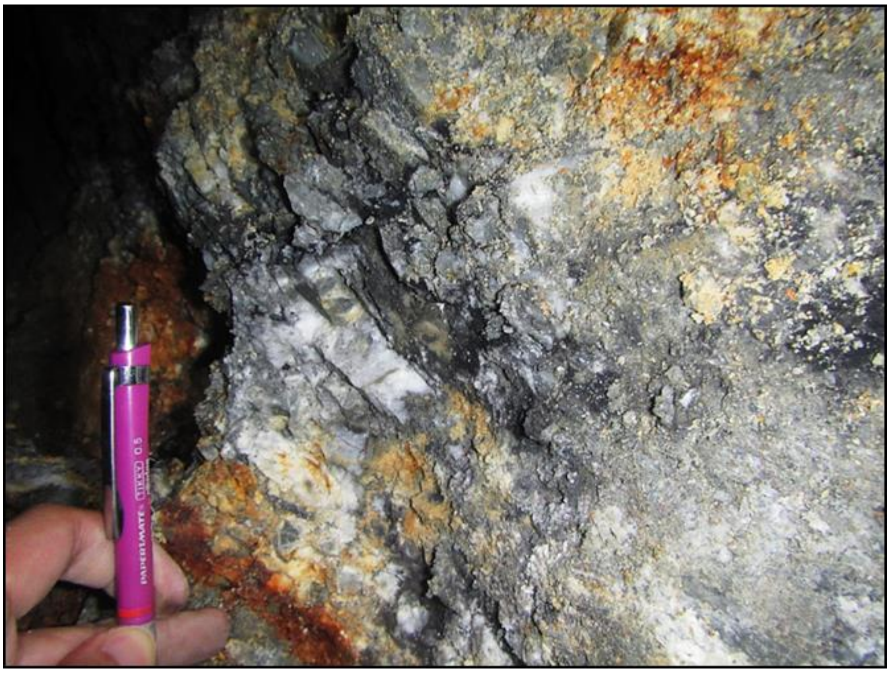


Figure 13.1.1.13: Grey and white chalcedonic quartz veins associated with black sulfide veinlets exposed at Level 545 MST2 ODW 52N position

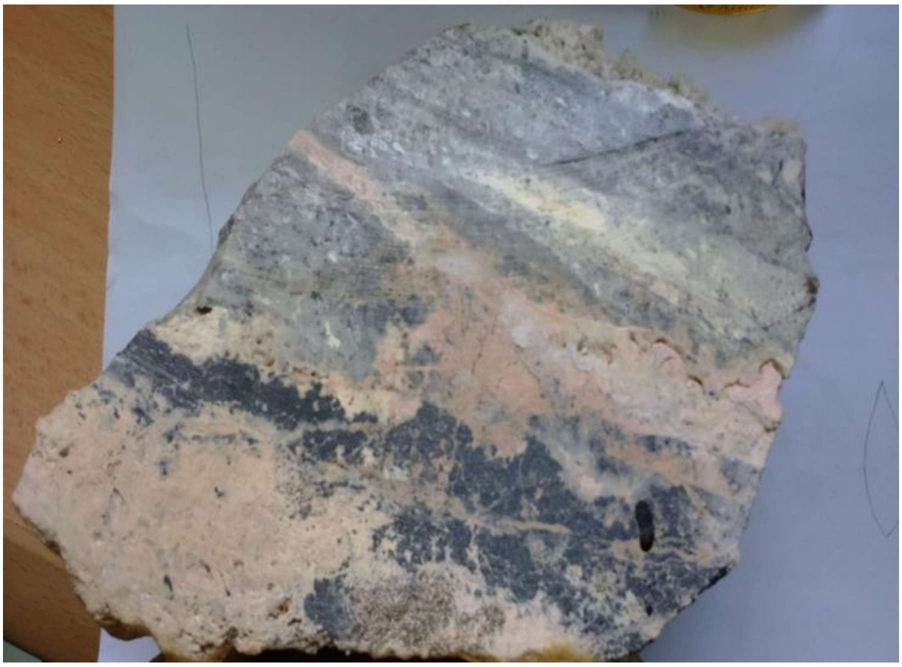


Figure 13.1.1.14: Level 590 SDNS ODW hand specimen showing quartz-carbonate-galena crustiform-colloform bands. Incorporated silicified diorite clasts with relict feldspar laths and disseminated cpy-py.

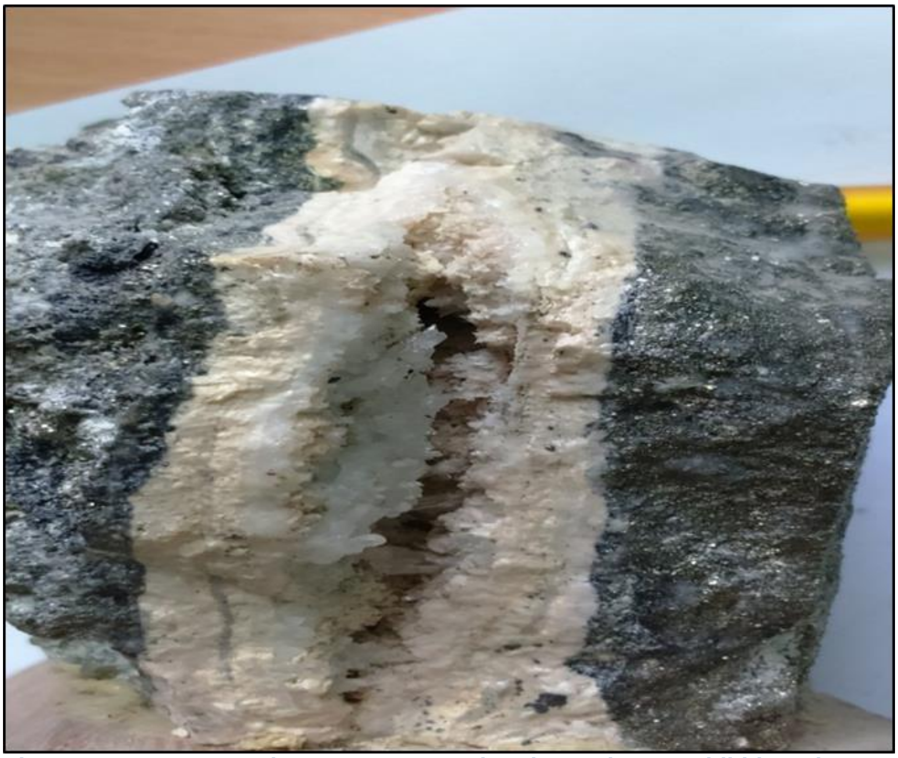


Figure 13.1.1.15: Level 635 SDN ODE hand specimen exhibiting drussy, vuggy quartz+carbonates in massive sulfide (py-cpy-gn) vein

13.1.2 Porphyry Cu-Au Deposits

A cluster of Cu-Au porphyry prospects are situated within the central to western portion in Parcel IV of MPSA-234-2007-XI. The high grade Maco vein-type mineralization towards the east in MPSA-225-2005-XI were previously postulated to be spatially, temporally and genetically related to these porphyry deposits.

Currently identified prospects consist of (1) Pagasa, (2) Mapula, (3) Theresa, (4) Kurayao, (5) Kanarubi, and (6) Quiamonan. Vertical and lateral extents of these Cu-porphyry bodies were not well constrained due to the limited drilling campaigns targeting these areas. Out of the six prospects, only Mapula, Kurayao, Theresa and Pag-asa were previously drilled.

The porphyry-Cu mineralization in the tenement defines two arcuate belts which may be related to a collapsed caldera structure. These lineaments limit the western extent of the fault-controlled Au-bearing vein structures (Coller, 2011). The E-W fault-controlled veins (Don Alberto, Don Fernando, Don Mario, St. Francis and St. Vincent) however overlap with the porphyry-Cu mineralization.

Recent reprocessing and subsequent interpretation by CSRWG of magnetic data from the airborne survey by Thomson Aviation Pty. Ltd. over the AMCI tenement in 2012 revealed a broad magnetic low which encompasses majority of the abovementioned prospects. In addition, the delineated elliptical magnetic anomaly served to define the extent of the AMCI porphyry deposit down to a depth of 500 meters.

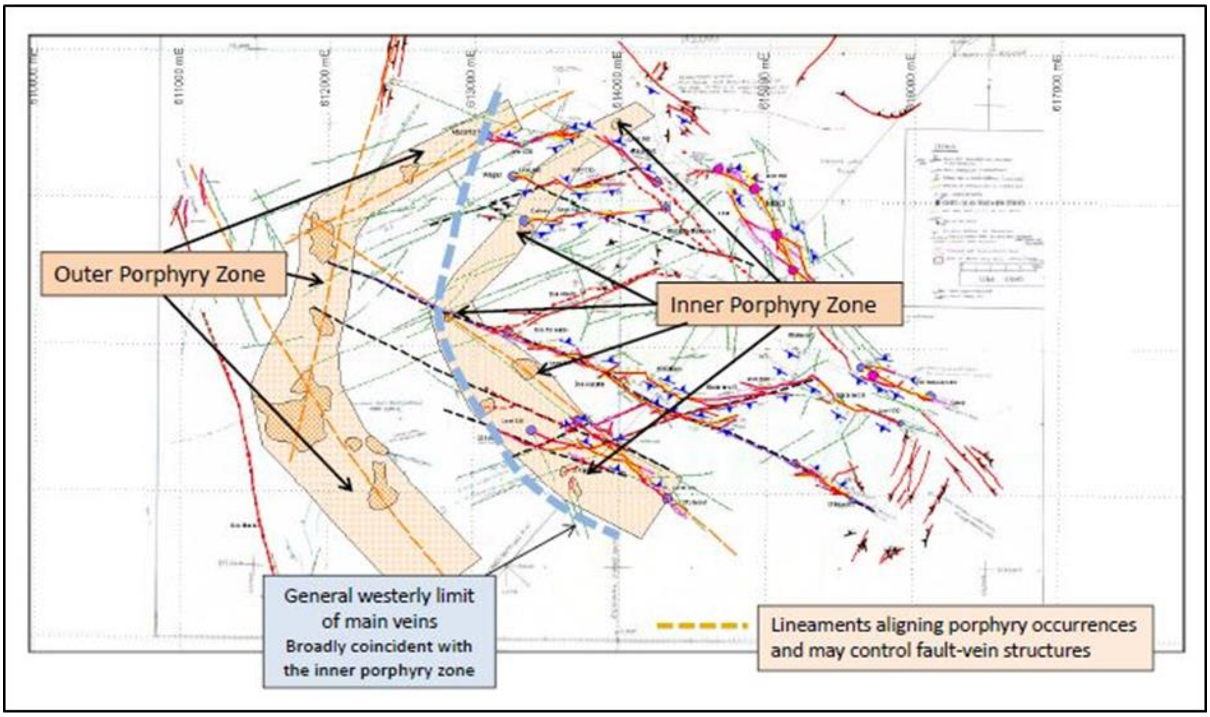


Figure 13.1.2.1: Porphyry Copper Gold Mineralization in relation to the Maco Gold Veins modified from Coller (2011)

13.1.3 Skarn Mineralization

Localized skarn mineralization was noted within the tenement from surface exposures, underground headings and diamond drill hole intercepts.

Recent study identified total of five skarn zones (Figure 13-17) and observed in close proximity to the Au-bearing veins. Skarn assemblages identified were (1) garnet skarn: garnet - diopside ± epidote ± tremolite ± calcite ± pyrite (2) magnetite skarn: magnetite ± pyrite ± garnet ± chalcopyrite, (3) epidote skarn: epidote - tremolite ± garnet ± sulfides and (4) pyrite skarn: pyrite - epidote ± magnetite ± chalcopyrite ± calcite.

Based on the recent work skarn mineralization although widespread, are non-contiguous and currently not considered potentially economical Au mineralization targets. Potential and economic viability of skarn mineralization within the AMCI tenement requires further evaluation.

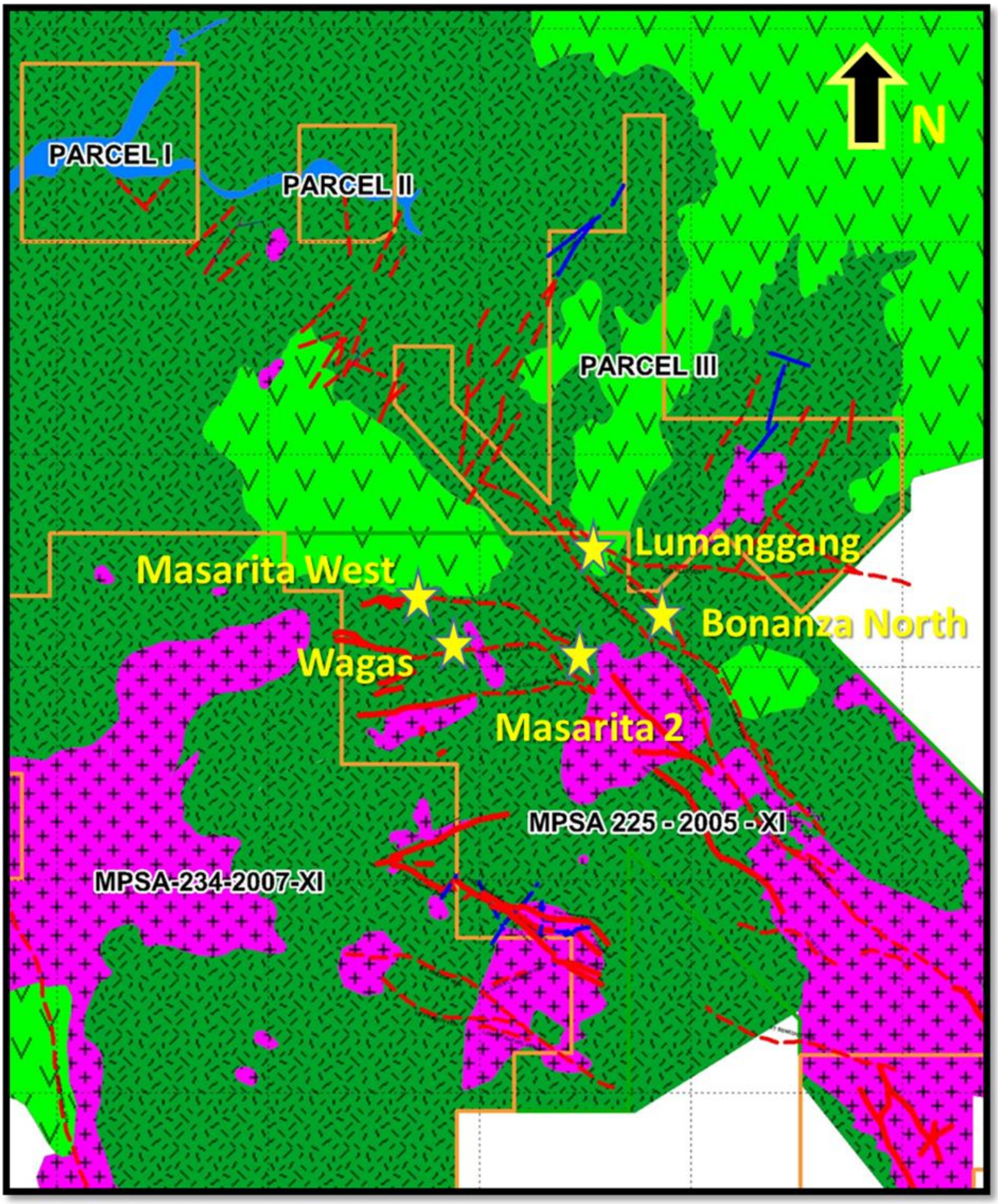


Figure 13.1.3.1: Geologic map showing spatial distribution of recently identified skarn zones

Figure 13.1.3.2: Monomictic crackle breccia characterized by angular garnet skarn clasts set in vuggy, drussy quartz+calcite vein intercepted in DNC-530-104 at 85.4m

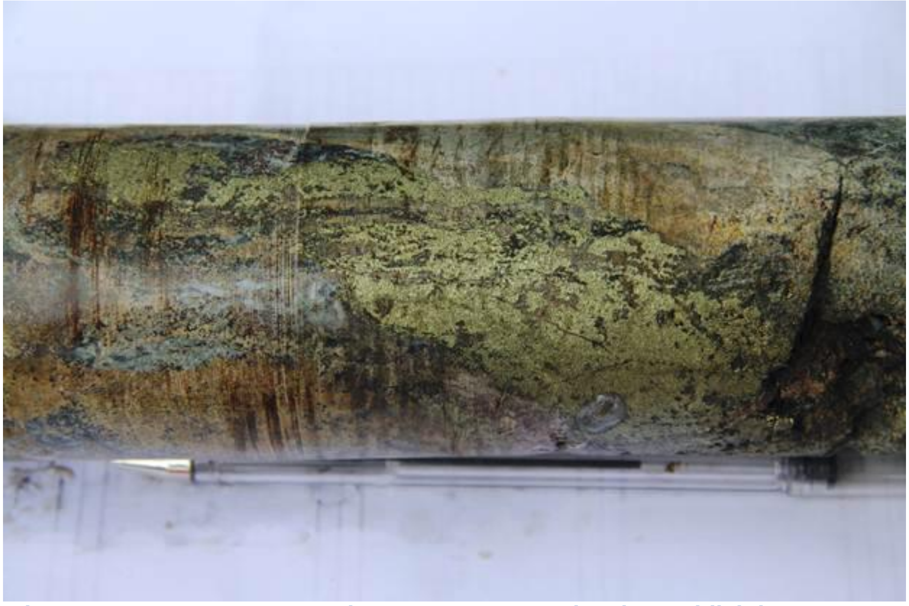


Figure 13.1.3.3: DNC-530-104 intercept at 86.4m showing reddish brown garnet skarn with semi-massive chalcopyrite

13.2 General style of mineralization along the Basemetal vein systems within the property

Gold mineralization within the district is multiphasal and generally comprised of massive sulfides, suflide- and silica-rich breccias, plus quartz, carbonate and Mn-rich carbonates and silicates occurring as either stockworks or exhibiting drussy, vuggy crustiform-colloform, cockade or colloidal textures.

High Au mineralization generally coincides with vein zones primarily composed of massive sulfides and sulfide-quartz breccias ranging <1.0-3.0m in width. Sulfide content percentage for these high grade zones are approximately between 30-80%. Sulfide minerals are comprised of pyrite, chalcopyrite, galena and sphalerite. Visual identification of bornite(?) and covellite(?) in vein hand specimens will have to be verified through ore microscopy. Gangue minerals are composed of quartz, carbonate and Mn-rich carbonates and silicates.

13.3 Length, width, and depth of mineralization

The existing NW-WNW trending AMCI vein systems have already been developed approximately 1,000m along strike with vein splits at least 100m in length. Vein widths range from 1.0-1.5m with swells reaching greater than 4.0m. Current mine development has established a vertical depth of approximately 400m (from Level 900 down to Level 545) for the Sandy Vein with potential for extending this below the existing mine levels. Mineralization of the existing AMCI vein systems remains open at depth.

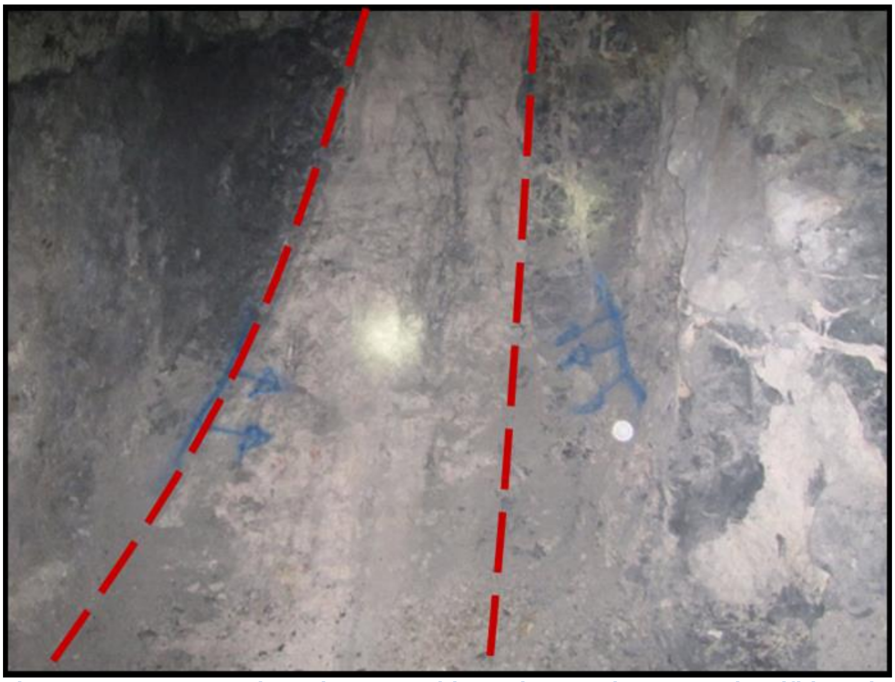


Figure 13.3.1: Approximately 1.2m wide carbonate+base metal sulfide vein exposed at Level 590 SDN ODE MV 134S position. The vein is composed of carbonates, galena-sphalerite stringers/lenses with minor rhodochrosite and disseminated py+cpy

Figure 13.3.2: (Cover) Massive sulfide (py-cpy) - quartz breccia trending N57W 60NE exposed at Level 605 BHWS ODW 62S position

Figure 13.3.3: Multiphase vein zone exposed at Level 756 SDY ODE 142S position. The 3.5m wide vein zone is composed of sulfide-quartz breccia with late carbonates. Sulfides are comprised primarily of pyrite and chalcopyrite with minor galena and sphalerite.

13.4 Element grade levels and patterns

No recent comprehensive study was done on the grades of other elements and their possible relationship with each other. With regards to other base metals, galena appears to have a direct relationship with gold. Higher grade ore shoots are usually noted to contain appreciable galena within them. For the other base metals, the relationship with gold has not been clearly established.

Mercado et al (1987) noted some zoning patterns although not too well defined. Apparently, base metal concentration on topmost to intermediate levels—previously L+4 (L690) to L+7 (L780)—is higher, as manifested in massive replacement lenses of sphalerite, galena and chalcopyrite, than those in L+4 (L690) down to Level 0 (Elev. 555). These were observed in Masara, Don Joaquin and St. Francis veins.

13.5 Wall rock alteration and paragenesis

Results from X-ray diffraction analysis by CSRWG of samples collected in 2015 from the underground identified 3 alteration mineral assemblages, namely; sericitic, chlorite-sericite and propylitic. Samples taken from Level 780 SDN MV, Level 780 SDNS, Level 605 and Level 560 BHWS, Level 785 MAI HWS, Level 785 MAI ODW DXC 155E and Level 560 WGS 68W SL exhibited chlorite-sericite alteration. Sample taken from the hanging wall at Level 780 SDN MV showed sericitic alteration while the hanging wall sample taken at Level 780 SDNS exhibited propylitic alteration. As observed in the underground, the chlorite-sericite and sericitic alteration commonly occurs as alteration halos immediately adjacent to the mineralized veins and structures and may persist for 2.0-5.0m into the host rock. These alteration assemblages however only overprint and are secondary to the propylitic alteration observed in the eastern part of the AMCI tenement area covering the existing mine development.

14.0 SAMPLE SECURITY, PREPARATION, AND ANALYSES

14.1 Security and Chain of Custody of Samples

Sampling is conducted under the supervision of a geologist. The samples are then delivered and turned over to the Maligaya Sample Preparation Laboratory, and eventually to the In-house Assay Laboratory. The transfer and storage of samples are monitored by the QA/QC Department through the use of transmittals submitted every time sample custody changes hands. The sample dispatching flowcharts for mine, exploration, and drilling samples are shown in the Figures 14-1 and 14-2. Rejects and unused duplicates of mine samples are stored for 3 months before being sent to the mill for feeding while those of exploration and drilling samples are permanently stored in the core house for future reference.

14.2 Sample Preparation and Assay Facility

Samples from the drilling campaign conducted by Crew Gold (2005-2009) were sent to the McPhar Laboratory in Manila for sample preparation and analyses. An in-house assay laboratory was later on established by Crew Gold in the mine site. Under Monte Oro Resources & Energy Inc., a separate sample preparation laboratory was constructed and additional analytical equipment for the assay laboratory, such as a new Atomic Absorption Spectrophotometer, were acquired.

14.2.1 Sample Preparation Equipment

The Maligaya Sample Preparation Laboratory (MSPL) is equipped with the following:

1. **Drying Oven** – As metal contents are reported in dry weights, samples are dried before preparation.
   Drying process:
   a. The sample is loaded in a drying pan along with its sample tag.
   b. The pan is charged inside the oven at 160oC for mine samples and at 120oC for drill core samples.
   c. Mine samples are dried for 3-4 hours while exploration and drill core samples are dried for 6-8 hours.
   d. The drying pan is taken out using tongs or a trolley.
   e. After the sample is withdrawn, it is immediately sent for crushing to minimize moisture drawn from the atmosphere.

2. **Jaw Crusher** – A Jaw Crusher is used to rapidly reduce the size of samples prior to secondary crushing using the Boyd Crusher.
   Crushing process:
   a. The sample is loaded in a drying pan along with its sample tag.
   b. The pan is charged inside the oven at 160oC for mine samples and at 120oC for drill core samples.
   c. Mine samples are dried for 3-4 hours while exploration and drill core samples are dried for 6-8 hours.
   d. The drying pan is taken out using tongs or a trolley.
   e. After the sample is withdrawn, it is immediately sent for crushing to minimize moisture drawn from the atmosphere.

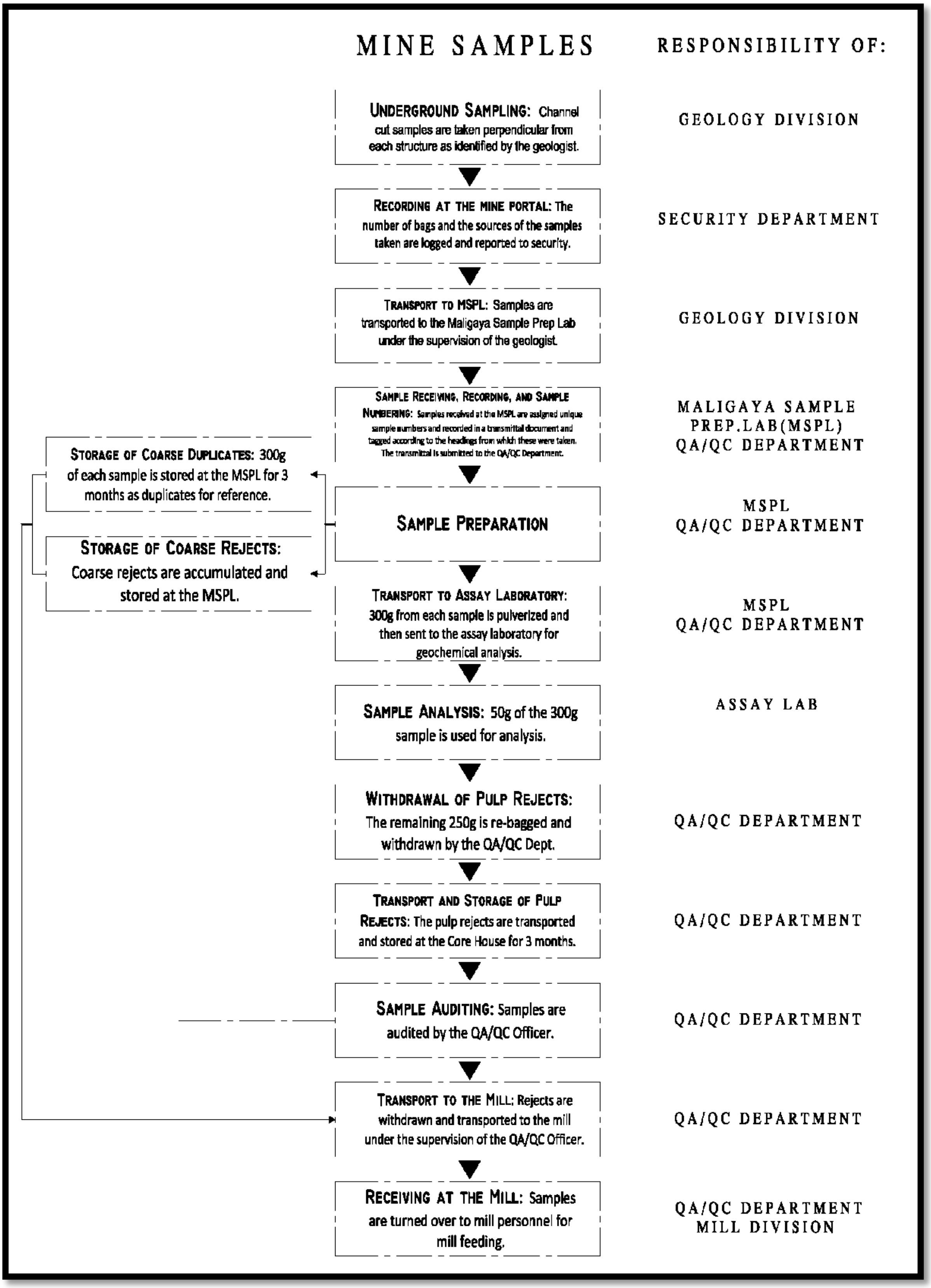


Figure 14.1.1: Sample dispatching flowchart for mine samples

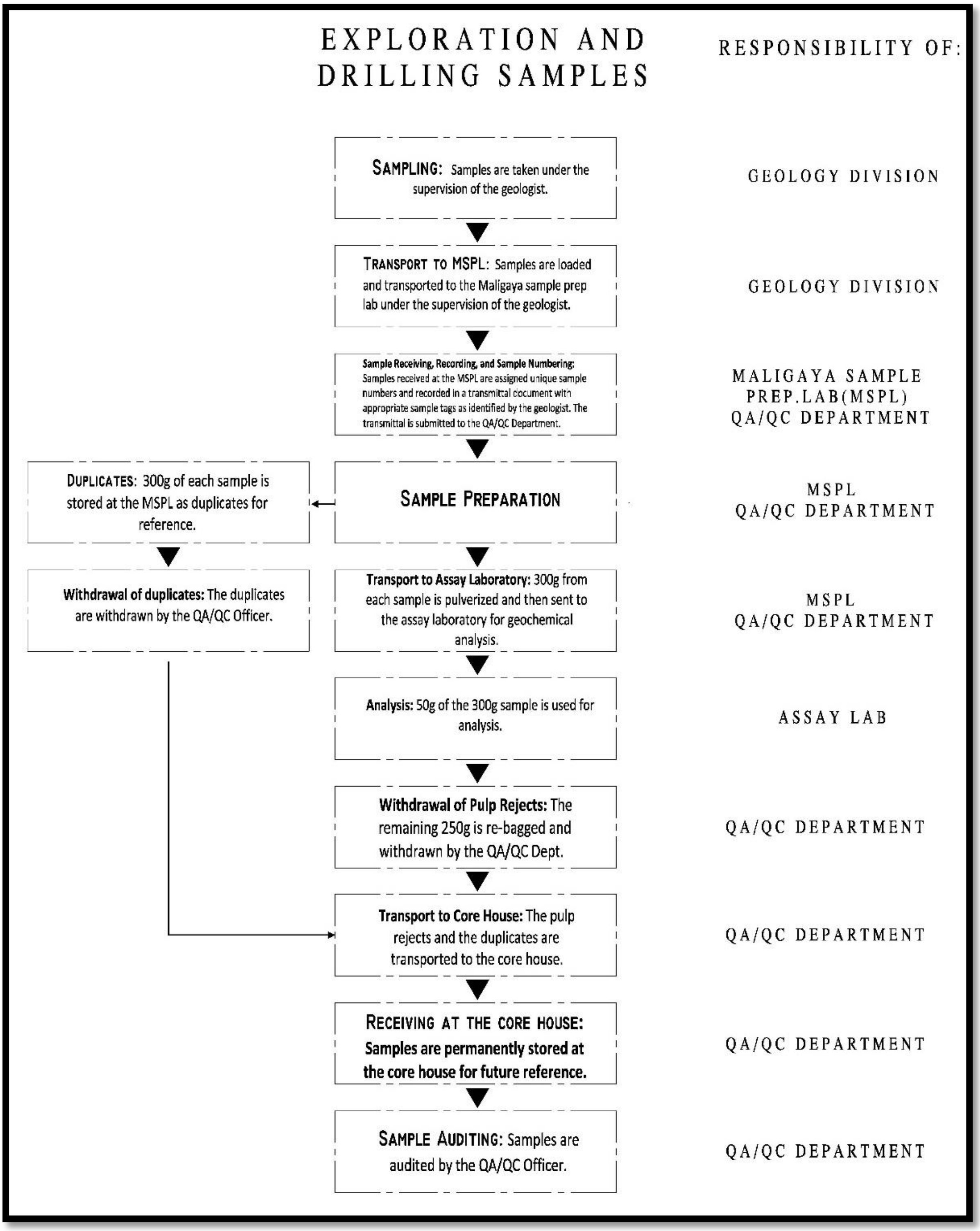


Figure 14.1.2: Sample dispatching flowchart for exploration and drilling samples

3. **Boyd Crusher –** The Boyd Crusher reduces the sample fragments to less than 2mm. It has two movable jaws, one top driven and one bottom driven, which allow for variation in output size and jaw wear.
   Crushing process:
   a. The sample is loaded to the opening at the top of the Boyd crusher.
   b. The Boyd crusher finely crushes the sample and then transfers the materials to the Rotating Sample Divider via a vibrator feeder.
   c. The Rotary Sample Divider then splits the material into portions adjusted by the operator which collect in two trays at the bottom.
   d. The portion for pulverizing is transferred to the original drying pan with the sample tag, while the other is kept as a duplicate.
   e. A flushing sample (barren limestone) is fed to the Jaw Crusher, followed by cleaning using compressed air.

4. **Pulverizer** – A Rocklabs Ring Mill is used to pulverize the materials from the Boyd Crusher to a fine grind of 95% passing 200 mesh.
   Pulverizing process:
   a. The sample is loaded in to the bowl (500g to a 1000g bowl).
   b. A pneumatic airbag then presses the bowl.
   c. The bowl rotates to grind the samples at a pre-set timer depending on the sample type (7 to 10 min.).
   d. The pulverized sample is transferred to the drying pan.
   e. Barren limestone samples are processed followed by cleaning using compressed air.

Figure 14.2.1.1: Sample Preparation Equipment: (A) Drying Oven (B) Jaw Crusher (C) Boyd Crusher (D) Pulverizer

14.3 Sample Preparation

Figure 14-4 shows the sample preparation procedure followed by the Maligaya Sample Preparation Laboratory

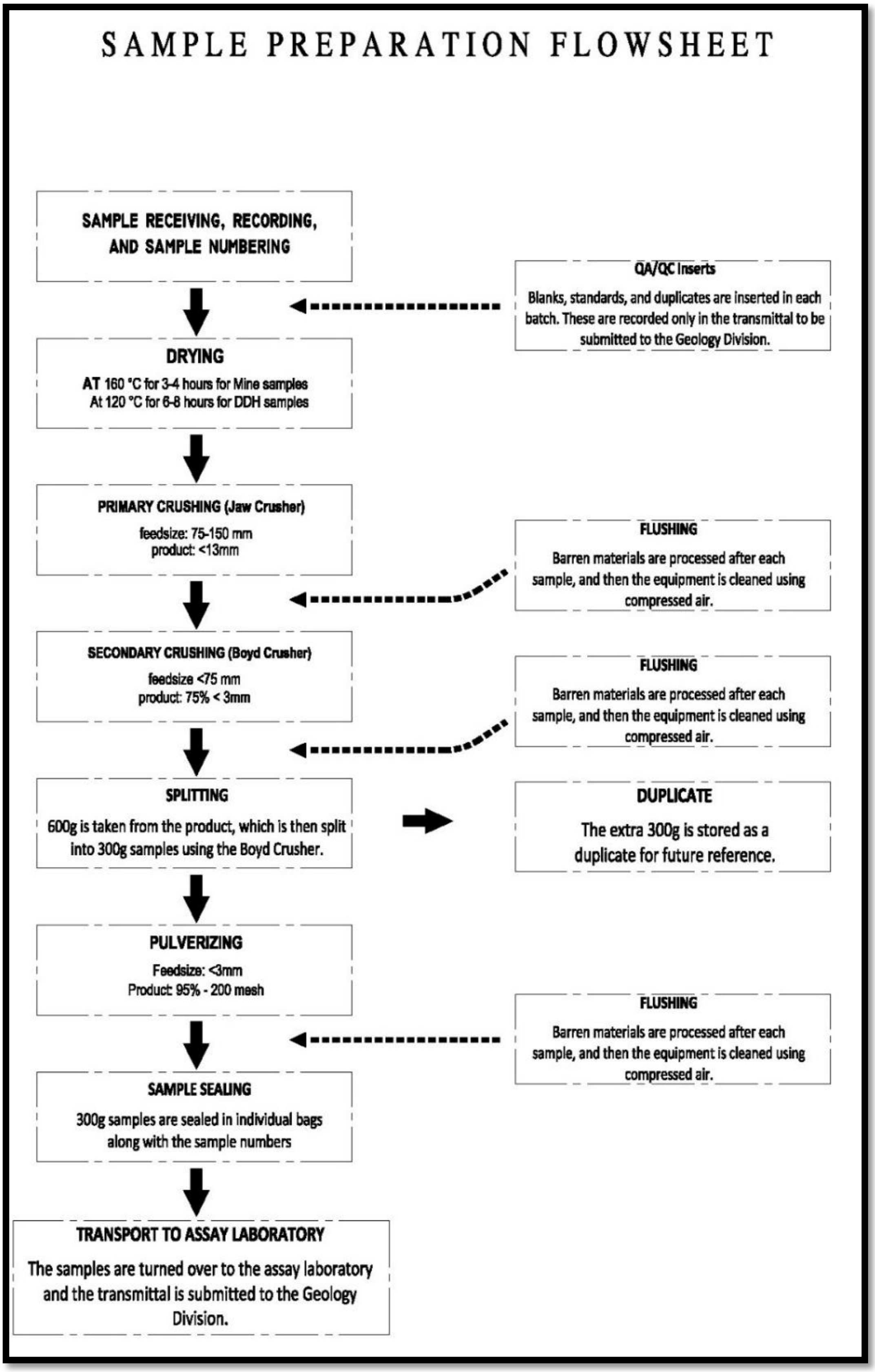


Figure 14.3.1: Sample Preparation Flowchart

14.4 Analytical Methods Used

The main analytical method used for gold is fire assay with a detection limit of 0.02 g/t. The other method utilized for base metals and low grade samples (Au and Ag less than 0.5 ppm) is AAS with a detection limit of 0.002 g/t for Au and 0.001% for base metals. The general procedure for fire assay is shown in Figure 14-5.

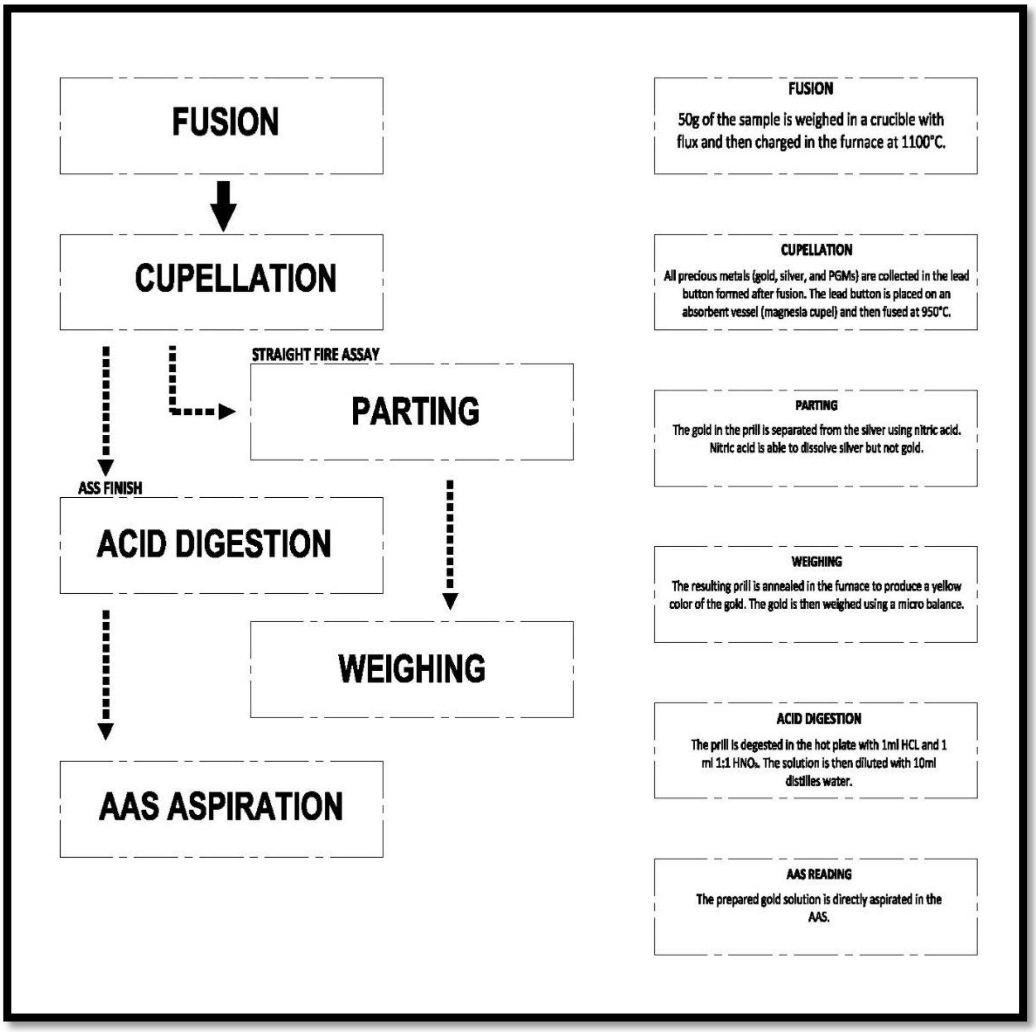


Figure 14.4.1: Fire Assay Procedure

The various stages in assaying are described as follows:

1. **Fusion –** The furnace is pre-heated for about 1 hour until the temperate of 1100ºC is attained. The sample is charged for about 60-90 minutes. The melt is poured into a mould and the lead which contains the precious metals (Au, Ag, PGMs) would sink to the bottom while the slag would form above. The product is then pounded to separate the slag from the lead. Once separated, the lead is shaped into a cube while the slag is sent as waste.

2. **Cupellation –** The lead button is placed on a magnesia cupel and then charged in the furnace at a temperature of 950 ºC for 45-60 minutes. The cupel absorbs the lead, leaving the precious metals called "prill/dore".

3. **Parting/Annealing –** The "prill/dore" obtained after cupellation is placed in a porcelain crucible. The dore is weighed in a microbalance. To separate silver from the gold, a parting solution with 1 part nitric acid and 3 parts water is added to the crucible. Nitric acid dissolves silver but not gold. The silver solution is decanted in the container and the gold is washed with distilled water 3 times. The gold is dried in the hot plate and annealed in the furnace for 15 minutes.

4. **Finishing Technique**
   a. **Gravimetric Method (Part and weigh method)** – This is a conventional method for determining gold. The lower detection limit is 0.02g/t Au. Gold grades above 50g/t Au are re-analyzed with sufficient addition of Ag inquartation in order to obtain an adequate ratio of Au:Ag for dissolution.
   b. **Atomic Absorption Spectrophotometer (AAS) Finish** – This method is used for (low to very low grade) exploration samples. The lower detection limit is 0.002 g/t Au. Gold grades above 2 g/t Au are re-analyzed using a gravimetric finish in order to check the results.
   c. **Two Acid Digestion AAS Finish** – This uses a combination of HNO_3 and HCL, and is currently applied to silver and base metal (Cu, Pb, Zn) grade determinations. The solution is analyzed using AAS after the digestion process. The detection limit is 0.001% for Ag, Cu, Pb, and Zn.

14.5 Quality Assurance and Quality Control

The AMCI Assay Laboratory has appointed an Analytical Chemist with the main task of implementing the internal QA/QC program of the laboratory. The Geology Division also implements its own QA/QC, acting as an external entity to the assay laboratory, through a department in-charge of monitoring proper sampling procedures, dispatches, and analytical results. The department is run by a QA/QC officer reporting to the Grade Control and Resource Geologists.

14.5.1 Quality Control Procedures

- **Certified Reference Materials (CRM)** – CRMs used both by the assay laboratory and the geology division are purchased from reputable commercial laboratories. Each CRM has a certificate of analysis indicating the mean grade and the tolerance limits to be used for evaluating the performance of each analytical procedure. The matrices and the grades of the CRMs in use were selected in such a way that they are similar to the samples being analyzed in AMCI.
  One CRM is inserted in every batch of samples sent for analysis. To ensure that the analysts are blind to the mean grade, each CRM is assigned a unique control number recorded by the QA/QC officer and the name is erased. The results are then checked against the tolerance limits indicated in the certificates to check the accuracy of the analytical procedures.

- **Blanks** – The AMCI Assay Laboratory uses certified blanks purchased from reputable external laboratories, while the geology division uses both certified and in-house blanks. Limestone samples are pulverized, homogenized, and then split and sealed into 300g samples. One batch of 25 samples is sent to the AMCI Assay laboratory and another batch to Intertek, a laboratory based in Manila, for fire assay. The results from both laboratories certify that the samples are barren, and may be used as blanks for QA/QC.
  One certified blank is inserted in each batch of drilling and exploration samples, while internal blanks are used for mine samples. As the in-house blanks appear similar to

regular samples, these are inserted at random locations within each batch to ensure that the analyst is not aware of which sample is barren. The sample number of the blank insert is reported in the transmittal to be submitted to the geology division. The assay results of the blank inserts are then used to monitor whether there are any cases of contamination.

- **Duplicates** – A duplicate of one randomly selected sample in each batch is also inserted in each batch.
  For the selected sample, 900g is taken instead of 600g. 300g is sealed as a duplicate, and the remaining 600g is pulverized and then split into two using the Rotary Sample Divider of the Boyd Crusher. The sample numbers of the original and the duplicate in each batch are recorded in the transmittal. Similar to blank inserts, the analysts are unaware of which samples are duplicates. The absolute relative deviations of the results of the duplicates are then used to evaluate precision.

- **Grind Checks** – In order to ensure reproducibility of assay results, the pulverized samples are checked if 95% passes 200 mesh.
  Two samples in every batch are screened using the procedure outlined below:
  a. Weigh 100g of dry pulp.
  b. Wet sieve the pulp through the 200 mesh screen.
  c. Dry the oversize.
  d. Weigh the oversize.
  e. Calculate the weight of the undersize by subtracting the weight of the oversize from the total.
  f. Calculate the percentage of the material passing 200 mesh by dividing the weight of the undersize with the total weight, multiplied by 100%.

- **Flux Test** – This test is performed to check if the chemicals to be used for analysis are contaminated with gold.
  One crucible in every batch is loaded with flux and then charged and treated as a normal sample.

14.5.2 Presentation and Analysis of Quality Control Data

The results of the various tests are statistically and graphically analysed on a monthly basis, weekly if there is sufficient data within the week, in order to identify outliers and notable trends. The results are communicated with all parties involved such that if peculiar results are identified, these may be properly investigated, and the causes of which resolved.

1. **Certified Reference Materials**
   The deviations of the assay results from the certified mean value are calculated in terms of the multiples of the certified standard deviation. Results with absolute differences below 2 SD are ideal, while those between 2 SD and 3 SD are still acceptable but may prompt investigation if consistently obtained. A fitted trend line, supported by visual inspection of the scatterplot, is used to detect for bias. Data is further sorted per CRM and similar analyses are made. As CRMs with low, medium, and high grades are used, the accuracy for all grade ranges can be evaluated.

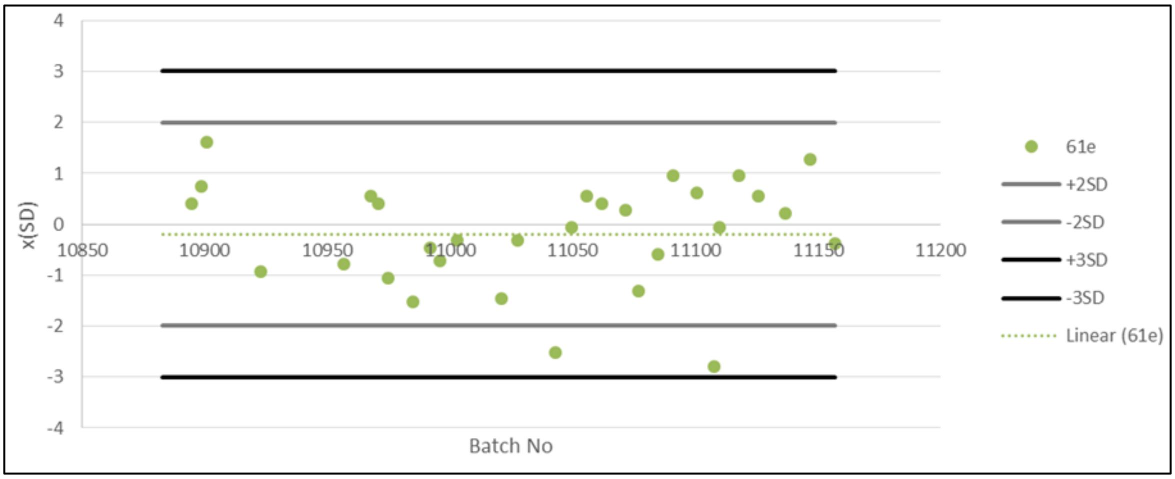


Figure 14.5.2.1: Scatterplot Used for the Analysis of CRM Assay Results

- The recommended value is the certified mean.
- The tolerance limits are calculated as ±2 and ±3 times the standard deviation indicated in the certificate provided by the supplier.

2. **Blanks**
   Assay results of the blank inserts are plotted in sequence to easily identify possible occurrences of contamination. The tolerance limit for blanks is set at 0.02 ppm Au.

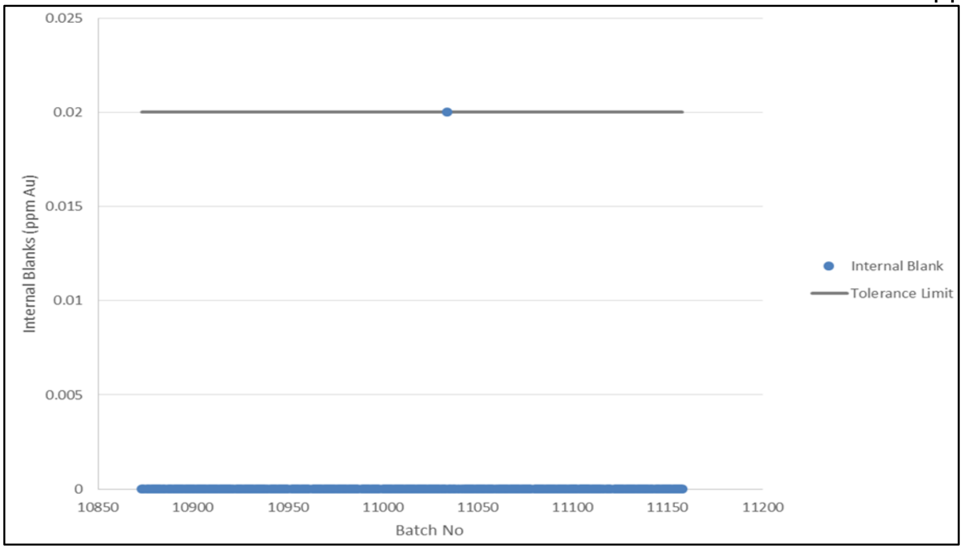


Figure 14.5.2.2: Scatterplot Used for the Analysis of Blank Inserts

3. **Duplicates**
   Considering the highly variable nature of gold, precision is evaluated using the Mean Percentage Relative Deviation (MPRD). MPRD is calculated by dividing the difference of the original and duplicate sample grades by the mean, multiplied by 100%. The tolerance limits is set at 50% MPRD. The MPRD values are plotted per batch as shown below to make it easier to identify patterns.

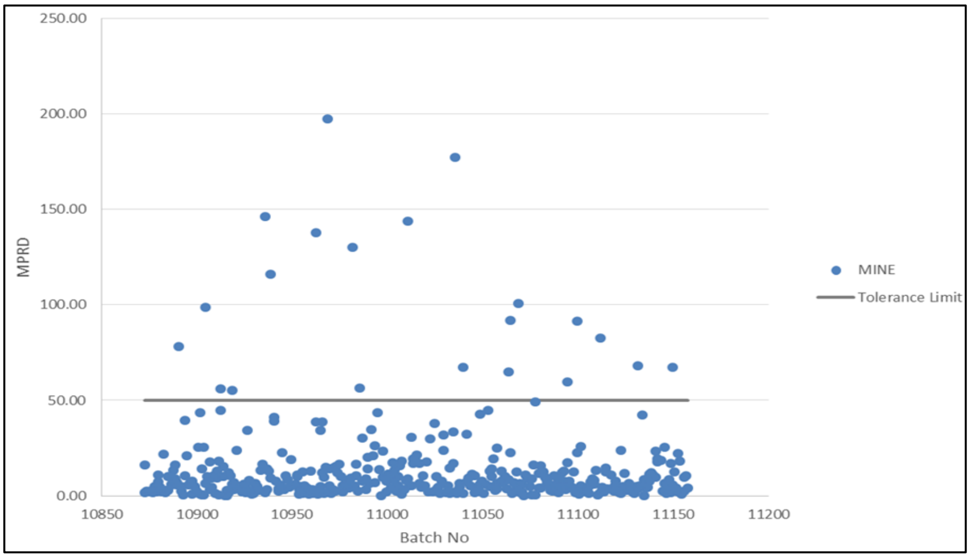


Figure 14.5.2.3: Scatterplot Used for the Analysis of Duplicate Pairs

14.5.3 Statement of the CP on Quality Assurance and Quality Control

The Company has demonstrated industry standard practices in safeguarding the quality of samples, preparation, and analysis, to come up with a valid and verifiable database appropriate for mineral resource estimation.

15.0 MINERAL RESOURCE ESTIMATE

15.1 Database Used

15.1.1 Underground Face Samples

A total of 29,359 channel samples from 9,740 development faces were included in the database. These were taken along channel cuts averaging 0.9m in length, oriented orthogonal to the vein. The samples are tagged with the heading and also whether these were taken from the vein, hanging wall, or foot wall. The locations recorded are based on surveys regularly conducted using a total station by the Engineering Group. Face samples are assayed for gold, silver, copper, lead, and zinc in an in-house laboratory.

15.1.2 Drill Data

Drill hole intervals were tagged according to the veins intercepted, as interpreted by the geologists. The sampling interval for drill cores is 1m. As drilling programs are always oriented perpendicular to the vein projection, drill hole intercepts may also be taken to be oriented orthogonal to the vein similar to face samples. Core samples are similarly assayed for gold, silver, copper, lead, and zinc in an in-house laboratory. A total of 228 drill core samples were extracted for inclusion in the database.

15.1.3 Specific Gravity

Previous estimates used a global density of 2.6 tons per cubic meter. Measurements regularly carried out by the in-house laboratory for all samples support this value. The same approach was used in this study.

15.1.4 Data Verification and Validation

The database used in this report is the same as that used in the 2017 Resource Estimate, updated to include additional data gathered from January 2017 to September 2019. Multiple GIS and QA/QC personnel were tasked with updating the database, followed by validation by the Geologists and GIS Administrator.

15.1.5 Software Used

The primary software used to produce the resource estimate is Geovia GEMS (http://www.geovia.com/ products/GEMS). The table below shows the software used to accomplish various tasks in the study.

Table 15.1.5.1: List of Software Used

Database Management/Editing		Software Used
	Reports, Journals	Microsoft Word
	Drill Data, Face Samples	Microsoft Excel
	2D drawings, Survey Data	Autodesk AutoCAD
	Block Model	Geovia GEMS
Technical Tasks		
	Statistical/ Visual Data Analysis	Geovia GEMS
	Solid/Domain Creation	Geovia GEMS
	Variography	Geovia GEMS
	Kriging	Geovia GEMS
	Validation/ Reporting	Geovia GEMS

15.2 Geologic and Solid Modelling

15.2.1 Geological Interpretation and Domaining

The mineral resource estimated in this study covers the epithermal veins controlled by the steeply dipping NW trending Masara Fault and the associated WNW to EW structures. Underground development mapping has shown that these veins are usually around one meter wide, and that low grade mineralization also persists in the alteration haloes typically up to a meter away from the vein. The low grade materials from the wall rocks are also included in this study. Three domains, namely the Main Vein (MV), Hanging Wall (HW), and Foot Wall (FW), were therefore modelled for each vein.

15.2.2 Vein Modelling

Geologic interpretation of the veins was carried out using face sample and drilling data. The channel cut samples were loaded onto their respective locations based on underground mine survey. A similar procedure was followed for drill holes using downhole survey records. The geologist then digitized the interpretations for the vein boundaries on horizontal two-dimensional sections as lines, using the sample widths for vein thickness. Projections guided by drill hole and structural data from mapping were carried out for the portions of the vein beyond the developed areas. Solids were then rendered from these lines and validated by the geologist to check if the final interpretation agrees with the field observations.

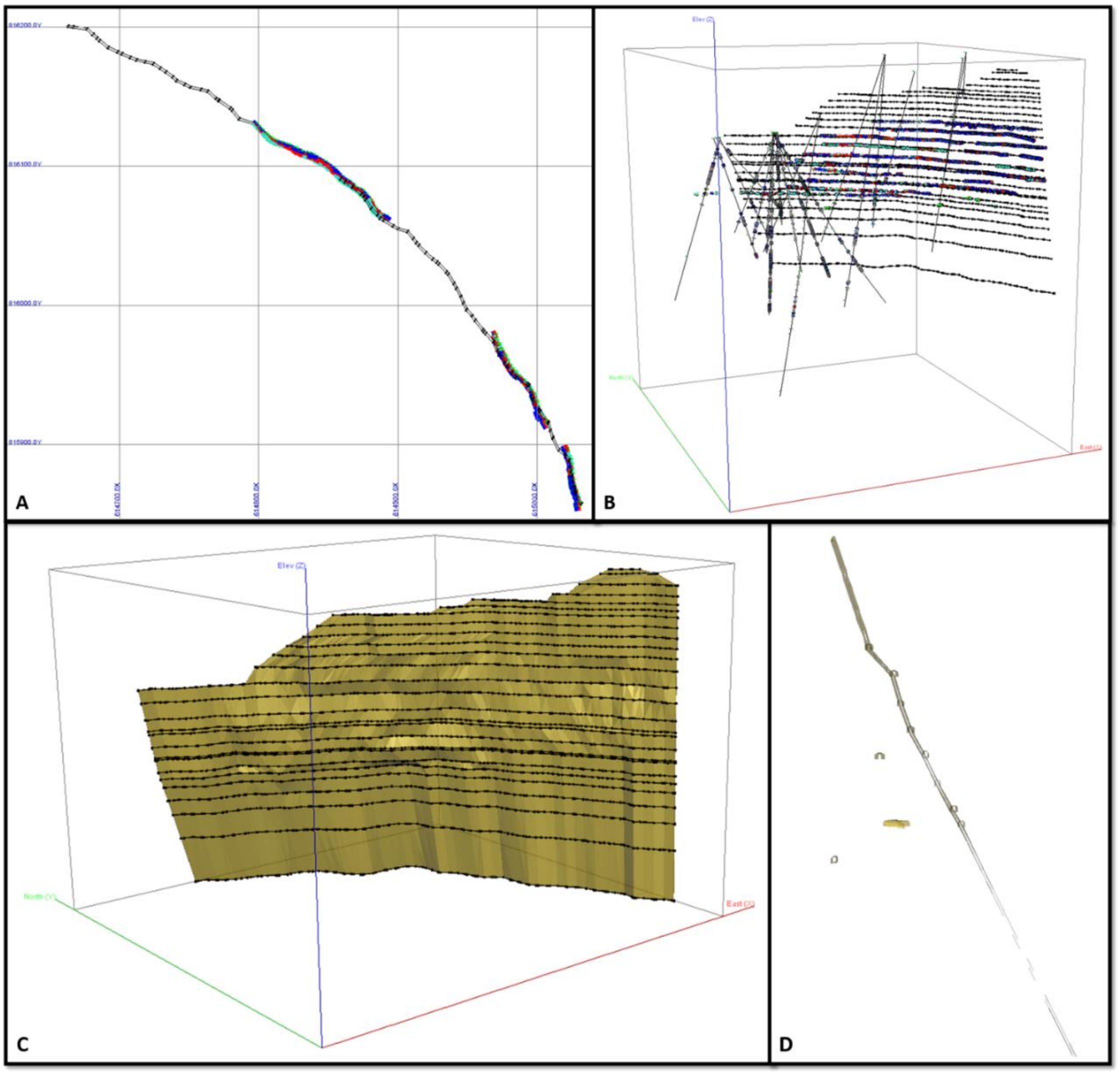


Figure 15.2.2.1: Vein Modelling Procedure: (A) Interpretation of a horizontal section of Bonanza vein guided by channel samples (B) Drillhole intercepts indicating vein extents (C) Vein solid created from interpreted horizontal sections (D) Vertical sections validated by development drives

15.2.3 Wall Rock Modelling

Development drives normally expose the entire width of the vein, but the same case does not apply for the hanging wall and foot wall due to limitations of the drive dimensions. Instead of modelling by means of the sample widths, a uniform thickness of 0.5m was used for the hanging wall and foot wall solids. This number may be regarded as conservative considering the observation that the alteration and low grade mineralization haloes usually persist up to 1m away from the vein. The interpreted vein outlines were used to create surfaces defining the hanging wall and foot wall contacts, which were then projected outward to generate the uniform thickness solids.

15.2.4 Void Solid Modelling

Solids which represent the mined out portions of the vein were modelled using the mined out vertical section plans from the Engineering Group. The sections were digitized as lines, and then extruded to create 3D solids. The intersection with the vein models were then taken as the mined out portions. The same procedure was also done for the hanging wall and foot wall.

15.3 Descriptive Statistics and High Grade Cuts

15.3.1 Descriptive Statistics

Histograms were generated and inspected for all domains. The overall distribution for all veins are all skewed towards the positive end. Upon application of a log-transform on the x-axis, the histogram formed a bell-shaped curve, which indicates a lognormal distribution. In consideration of the high grade sub-population, high grade cuts were selected based on percentiles for each domain instead of assigning a single global value. Statistics for each domain were also calculated.

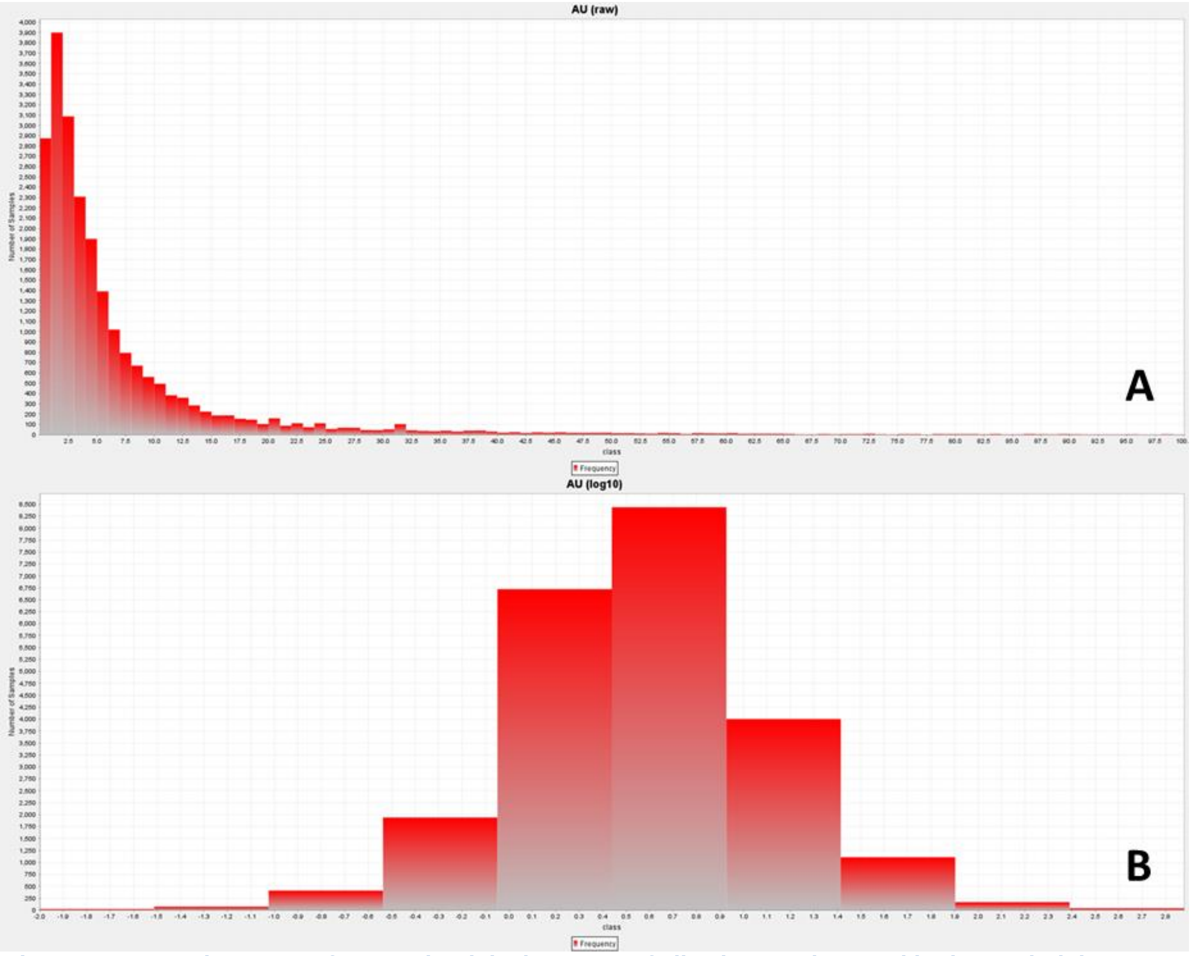


Figure 15.3.1.1: Histogram of Au grades (A) Histogram of all vein samples used in the study (B) Log-transformed histogram of all vein samples indicating a lognormal distribution

Table 15.3.1.1: Summary Statistics of the different Domains

DOMAIN	Summary Statistics				
	Mean	Median	Variance	Std Dev	Coeff Var
ALL MV	5.3	3.4	28.4	5.3	1.0
ALL HW	1.8	1.1	3.5	1.9	1.1
ALL FW	1.6	1.0	2.7	1.7	1.0
BBK MV	7.8	4.7	82.2	9.1	1.2
BHWS MV	6.6	4.3	40.5	6.4	1.0
BNZ MV	4.9	3.1	22.0	4.7	1.0
DNC MV	5.0	3.4	19.9	4.5	0.9
MAI MV	3.9	2.7	13.3	3.6	0.9
MHWS MV	5.7	3.0	54.7	7.4	1.3
MAS MV	7.9	5.3	54.1	7.4	0.9

MST2 MV	7.8	4.7	68.1	8.3	1.1
SDN MV	5.5	3.5	28.6	5.3	1.0
SDN2 MV	6.0	3.9	39.9	6.3	1.0
WGS MV	2.9	2.3	5.9	2.4	0.8

15.3.2 High Grade Cuts

Percentiles were used to determine the high grade cuts applied during estimation. For the veins, the 95th percentiles of each domain were used while the 90th percentile of the global data set was chosen for both the hanging wall and foot wall.

Table 15.3.2.1: Au Grade Percentiles of the different Domains

DOMAIN	Percentiles				
	10	50	90	95	97.5
ALL MV	0.9	3.4	17.1	28.7	43.6
ALL HW	0.3	1.1	5.8	10.0	18.5
ALL FW	0.3	1.0	5.3	8.8	13.9
BBK MV	0.8	4.7	31.8	48.7	93.1
BHWS MV	1.1	4.3	20.7	32.1	44.5
BNZ MV	0.9	3.1	15.1	22.3	29.9
DNC MV	1.2	3.4	14.1	24.9	36.6
MAI MV	0.8	2.7	12.4	18.0	28.0
MHWS MV	0.7	3.0	20.2	46.7	71.6
MAS MV	1.3	5.3	24.2	39.5	62.7
MST2 MV	0.9	4.7	25.0	38.9	65.2
SDN MV	0.8	3.5	17.4	26.3	39.1
SDN2 MV	0.7	3.9	21.5	29.1	48.7
WGS MV	0.5	2.3	8.1	12.8	17.8

15.4 Variography

Variograms were already modelled in previous estimates, the latest of which were done in 2016. Considering the volume of additional data acquired since then, these models were updated in this study. Although the variogram parameters are different for each domain, the range, which indicates the maximum continuity, is generally in the range of 40m to 50m. Omnivariograms were also modelled using data from the three domains. The HW and FW omnivariograms were used for the estimation of the wall rock grades of all domains.

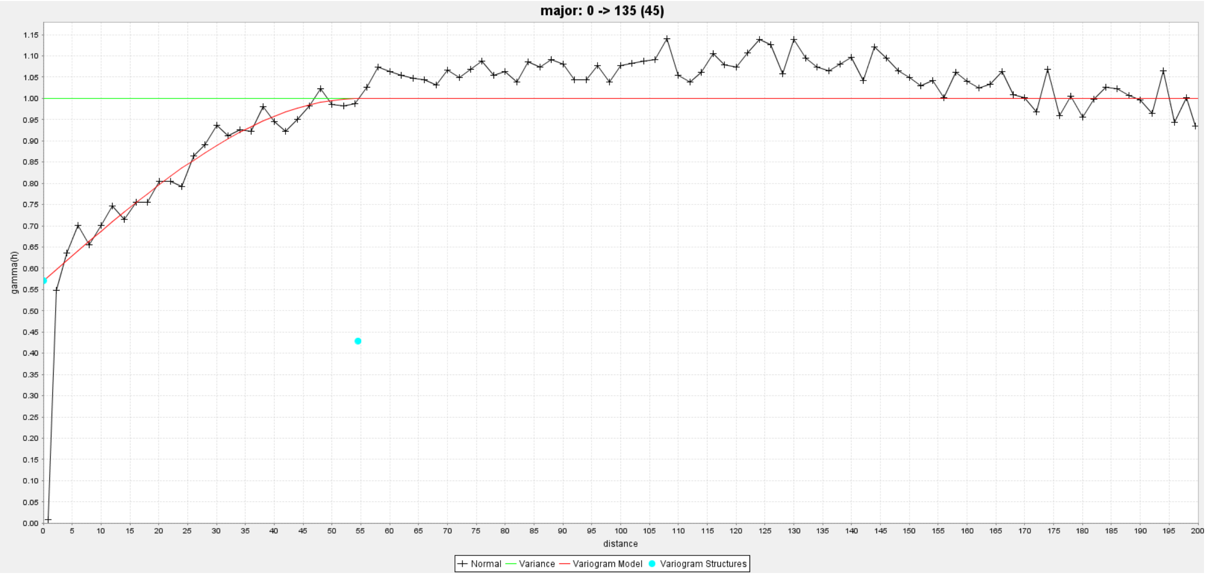


Figure 15.4.1: Experimental variogram and fitted model for Bonanza MV 135 degrees

Table 15.4.1: Variogram Parameters

DOMAIN	Variogram Parameters		
	Sill 0	Range 1	Sill 1
ALL MV	0.5	40	0.5
ALL HW	0.7	41	0.3
ALL FW	0.7	22	0.3
BBK MV	0.5	35	0.5
BHWS MV	0.7	50	0.4
BNZ MV	0.6	55	0.4
DNC MV	0.6	52	0.4
MAI MV	0.7	55	0.3
MHWS MV	0.6	40	0.4
MAS MV	0.7	55	0.3
MST2 MV	0.6	62	0.4
SDN MV	0.7	40	0.3
SDN2 MV	0.6	60	0.4
WGS MV	0.6	60	0.4

15.5 Cutoff Grade Used in Estimation

The same cutoff grades of 3.0 g/t Au and 1.5 g/t Au, used in previous estimates, were adopted for this update. The higher cutoff represents the grade used to guide operations at a mining and milling rate of 1,500 tons per day, at a gold price of $1,200 per ounce. The lower value considers the case where mining and milling rate increases to 3,000 tons per day, which would result to an overall lower cost per ton brought about by a larger divisor for fixed costs. In addition to the possibility of higher metal prices, ore above 1.5 g/t Au were considered to have reasonable prospects for eventual economic extraction.

15.6 Resource Estimation and Block Modelling

15.6.1 Block Model Parameters

Three block models were used to house the resource estimates. The parameters of which are shown in Table 15-5. A block size of 10m (along strike) by 15 m (down dip) was selected for this study, as this corresponds to the sizes of stoping blocks based on the current mining practice.

Table 15.6.1.1: Block Model Parameters

		Origin		
	Rotation	x	y	z
Maligaya	40.0	615,759	813,725	1,265
Maria Inez	70.0	615,892	813,377	1,265
Masarita	70.0	614,046	815,028	965

	Number of Blocks			Block Size		
	column	row	level	column	row	level
Maligaya	224	340	60	5.0	10.0	15.0
Maria Inez	304	310	60	5.0	10.0	15.0
Masarita	304	130	40	5.0	10.0	15.0

Three variables are estimated per block in order to come up with the estimate. These are the tonnage, grade, and resource classification. Another variable, namely the vein width, was also estimated for the MV domains. This fourth variable allowed for better estimation of grade dilution in the ore reserves.

15.6.2 Tonnage Estimation

Using the models, the percentage of each block inside the wireframe was determined by the software for each of the three domains. The value was then adjusted for the percentage of voids to account for the mined out material. The remaining mineralized volumes were then multiplied by the density to come up with the tonnage.

$$\%\,Mineralization = \%\,MV + \%\,HW + \%\,FW$$
$$Tonnage\ per\ Block = Block\ Volume * (\%\,Mineralization - \%\,Voids) * Density$$
$$Tonnage\ per\ Block = (10 * 5 * 15) * (\%\,Mineralization - \%\,Voids) * Density$$
$$Tonnage\ per\ Block = 750 * (\%\,Mineralization - \%\,Voids) * 2.6$$

15.6.3 Search Strategy and Grade Estimation

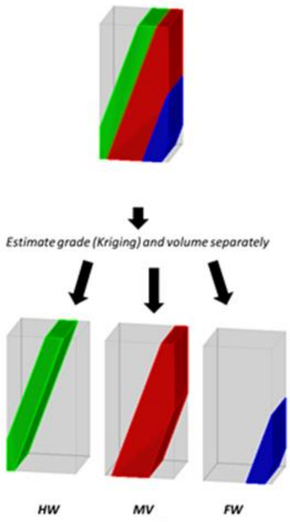
The grades were estimated per block using ordinary kriging. In this method, the weights assigned to each sample are calculated in such a way that the minimum estimation variance is obtained. The weighted average grade is then taken as the estimate. Grade estimation was done in three passes, each with different limitations, according to the distance of the nearest samples relative to the range, and high grade cuts applied. For the first pass, the 95th percentile was used as the high grade cut, and only blocks with samples from at least four different directions within half of the variogram range were estimated. The second pass used the same high grade cut, and estimated the grades of blocks with at least two samples within the range. The last pass estimated the grades of blocks with at least two samples within twice the range, and utilized the 90th percentile as the high grade cut.

Table 15.6.3.1: Search Ellipse Parameters and High Grade Cuts applied

Pass	Search Ellipse	Minimum Octants	High Grade Cut
1st	1/3 of the Range	4	97.5th
2nd	2/3 of the Range	1	97.5th
3rd	3/3 of the Range	1	95th

15.6.4 Block Grade Compositing

The volume percentages recorded for the MV, HW, and FW domains in each block were used as weighting factors to calculate for the composite block grade. The process is illustrated by the diagram below.



$$Block\ Grade = \frac{(Vol_{MV} * Grade_{MV}) + (Vol_{HW} * Grade_{HW}) + (Vol_{FW} * Grade_{FW})}{Vol_{MV} + Vol_{HW} + Vol_{FW}}$$

Figure 15.6.4.1: Block grade computation diagram

15.7 Resource Classification

The resource blocks were classified into three classes, measured, indicated, and inferred, according to which kriging pass the block was estimated based on the search ellipse parameters in Table 15-6. Blocks in the first pass were classified as measured, indicated for the second pass, and inferred for the last pass. The remaining blocks in the model were not included in the resource estimate.

15.8 Mineral Resource Estimate

The total mineral resources for the gold veins included in this study for cutoff grades of 1.5 g/t Au and 3.0 g/t Au are as follows:

Table 15.8.1: Mineral Resource Estimate at 1.5 g/t Au cutoff

MINERAL RESOURCE (1.5 g/t Au cutoff)			
CLASSIFICATION	TONS (000 t)	GRADE (gpt)	OUNCES Au
Measured	380	5.8	70,000
Indicated	3,220	5.0	517,000
SUB-TOTAL	**3,600**	**5.1**	**587,000**
Inferred	2,320	4.8	358,000
TOTAL	**5,920**	**5.0**	**945,000**

Table 15.8.2: Mineral Resource Estimate at 3.0 g/t Au cutoff

MINERAL RESOURCE (3.0 g/t Au cutoff)			
CLASSIFICATION	TONS (000 t)	GRADE (gpt)	OUNCES Au
Measured	290	6.8	63,000
Indicated	2,050	6.6	434,000
SUB-TOTAL	**2,340**	**6.6**	**497,000**
Inferred	1,380	6.5	288,000
TOTAL	**3,720**	**6.6**	**785,000**

Table 15.8.3: Mineral Resource Estimate per Vein at 1.5 g/t Au cutoff

MINERAL RESOURCE (1.5 g/t cutoff)												
1.5 CUTOFF	MEASURED			INDICATED			INFERRED			TOTAL		
VEIN	TONS (000)	GRADE	OUNCES	TONS (000)	GRADE	OUNCES	TONS (000)	GRADE	OUNCES	TONS (000)	GRADE	OUNCES
BBK	12	7.3	2,820	57	4.8	8,710	17	3.6	1,940	86	4.9	13,470
BHWS	7	6.7	1,510	144	5.8	27,040	97	5.5	17,130	248	5.7	45,680
BNZ	34	4.3	4,610	161	3.4	17,670	106	3.4	11,720	300	3.5	34,000
MAI	7	3.8	810	262	7.7	64,920	262	7.7	64,920	531	7.7	130,650
MAIHWS	17	5.9	3,270	238	2.8	21,450	238	2.8	21,450	493	2.9	46,170
MAS	23	7.0	5,140	160	5.4	27,770	116	4.7	17,500	298	5.3	50,410
MST2	32	9.0	9,320	133	7.5	31,840	106	6.0	20,290	271	7.1	61,450
SDN2	21	7.3	4,880	220	5.2	36,650	154	4.6	23,010	395	5.1	64,540
SDY	215	5.3	36,530	1,119	4.6	164,560	505	4.1	66,360	1,839	4.5	267,450
WGS	7	4.1	920	108	3.3	11,300	108	3.3	11,300	223	3.3	23,520
DNC	5	3.8	600	578	4.9	90,530	578	4.9	90,530	1,162	4.9	181,660
JES	0	0.0	0	45	10.3	14,900	29	9.2	8,500	74	9.9	23,400

Table 15.8.4: Mineral Resource Estimate per Vein at 3.0 g/t Au cutoff

MINERAL RESOURCE (3.0 g/t cutoff)												
3.0 CUTOFF	MEASURED			INDICATED			INFERRED			TOTAL		
VEIN	TONS (000)	GRADE	OUNCES	TONS (000)	GRADE	OUNCES	TONS (000)	GRADE	OUNCES	TONS (000)	GRADE	OUNCES
BBK	11	7.9	2,720	34	6.5	7,040	6	5.9	1,140	51	6.7	10,900
BHWS	6	7.1	1,470	115	6.7	24,820	65	7.1	14,630	186	6.8	40,920
BNZ	20	5.6	3,540	69	5.1	11,210	47	5.0	7,580	136	5.1	22,330
MAI	3	5.7	530	190	9.8	59,970	190	9.8	59,970	382	9.8	120,470
MAIHWS	15	6.3	3,090	55	4.7	8,310	55	4.7	8,310	125	4.9	19,710
MAS	21	7.4	4,970	110	6.8	24,090	68	6.3	13,820	200	6.7	42,880
MST2	30	9.4	9,180	109	8.6	30,170	85	6.9	18,850	225	8.0	58,200
SDN2	19	7.8	4,720	153	6.5	32,170	113	5.6	20,220	284	6.2	57,110
SDY	159	6.3	32,380	713	5.9	135,280	269	5.8	49,760	1,141	5.9	217,420
WGS	4	5.5	740	47	4.7	7,080	47	4.7	7,080	98	4.7	14,900
DNC	4	4.4	510	407	5.9	77,760	407	5.9	77,760	818	5.9	156,030
JES	0	0.0	0	45	10.3	14,900	28	9.5	8,420	73	10.0	23,320

16.0 CONCLUSIONS & RECOMMENDATIONS

Mineral resources from the gold veins within **MPSA-225-2005-XI** were estimated at 945,000 ounces of Au (5.92 Mt at 5.0 g/t Au), with 3.60 Mt at 5.1 g/t Au belonging to the Measured and Indicated resource categories. The mining rate at the time of reporting is 1,800 tons per day and the long term plan for the mine is to increase this to 3,000 tons per day. The resource defined in this study therefore provides sufficient targets to be converted to reserves which will support operations for 3 to 5 years.

For vein-type deposits, such as that in the Maco Mine, it is common to find new ore sources either from newly discovered veins, splits, or extensions. This has been well demonstrated in the mine where new veins, such as Masarita 2, SDN 2, and Jessie, were discovered in recent years. Significant splits, with some reaching well over one hundred meters in strike length were also delineated by underground development in Sandy as well as in other vein systems. A mine life of 3 to 5 years then provides ample time to identify and define new sources that would serve as replacement for the blocks depleted by production. With the plan to almost double the production rates, however, it is recommended that efforts geared toward exploration also be increased to ensure that ore replacement is at pace with production.

There are gold veins identified within **MPSA-234-2007-XI** that were mined in the past. The most prominent of these are the Dons and Saints vein systems, with Don Joaquin, Don Mario, Don Fernando, Saint Francis, and Saint Vincent. Based on reports, significant gold production was realized from these areas, marking these as viable targets for future geological work.

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