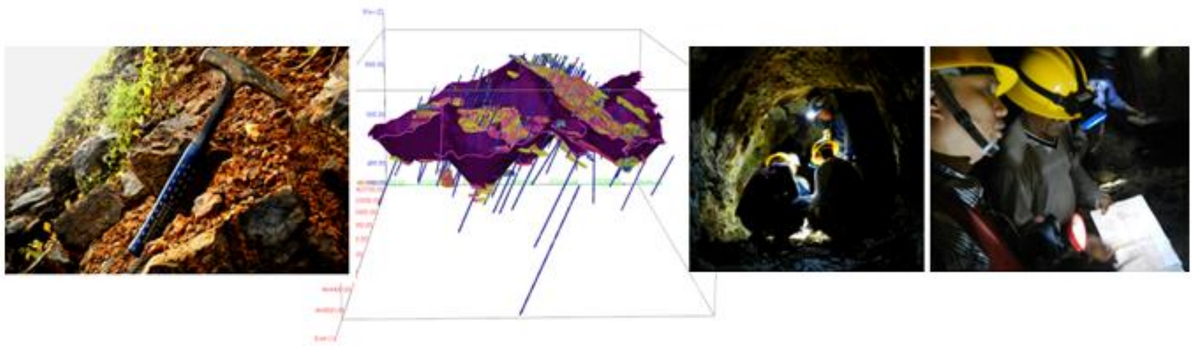
NI 43-101 EXPLORATION RESULTS AND MINERAL RESOURCE UPDATE REPORT

ON THE BALABAG GOLD-SILVER PROJECT



TVI RESOURCE DEVELOPMENT (PHILS.) INC.

MPSA No. 086-1997-IX

Zamboanga Del Sur, Mindanao, Philippines

Owner: TVI RESOURCE DEVELOPMENT (PHILS.) INC.
Operator: TVI RESOURCE DEVELOPMENT (PHILS.) INC.

Prepared for

TVI Pacific Inc.
Suite 600, 505 – 2nd Street SW
Calgary, Alberta, Canada T2P 1N8

Prepared by

JAIME C. ZAFRA PGeo FAusIMM
390 Luis Tongco Street, Purok 3,
Barangca, Baliuag, Bulacan,
Philippines 3006

July 19, 2021

DATE AND SIGNATURE PAGE

This Report entitled "NI 43-101 Exploration Results and Mineral Resource Update Report on the Balabag Gold-Silver Project" was prepared on behalf of TVI Pacific Inc.

The Report was prepared in compliance with National Instrument 43-101. The effective date of this Report is May 15, 2021.

Hereby signed by the following Qualified Person:

PHILIPPINES
JAIME C. ZAFRA
LICENSED GEOLOGIST
NO. 0000671
Fellow-AusIMM| CP-PMRC

________________________ Signed at Bulacan, Philippines on July 19, 2021

JAIME C. ZAFRA, P. Geo
Geologist – Philippines Professional Regulation Commission Registration No. 671
Competent Person for Exploration Results and Mineral Resource Reporting
Geological Society of the Philippines - Philippine Mineral Reporting Code
PMRC CP Registration No. 14-05-01
Fellow - Australasian Institute of Mining and Metallurgy (AusIMM)
FAusIMM No. 992551

Table of Contents

Table of Contents
(continued)

SCHEDULES

List of Figures

List of Figures
(continued)

List of Figures
(continued)

List of Figures
(continued)

List of Figures
(continued)

List of Figures
(continued)

List of Figures
(continued)

List of Figures
(continued)

List of Figures
(continued)

List of Figures
(continued)

List of Figures
(continued)

List of Figures
(continued)

List of Tables

List of Tables

(continued)

NOTICE

This report was prepared as a National Instrument 43-101 Technical Report, in accordance with Form 43-101F1, for TVI Pacific Inc. The quality of information, conclusions and estimates contained herein is based on: (i) information available at the time of preparation; (ii) data supplied by outside sources, and (iii) the assumptions, conditions and qualifications set forth in this report.

TVI Pacific Inc. is authorized to file this report as a Technical Report with the Canadian Securities Regulatory Authorities pursuant to provincial securities legislation. Except for the purposes legislated under provincial securities law, any other use of this report by any third party is at that party's sole risk.

1 EXECUTIVE SUMMARY

Mr. Jaime C. Zafra was retained by Mr. Clifford M. James, President and CEO of TVI Pacific Inc. ("**TVIP**") to prepare an updated independent Mineral Resource Report ("**updated Mineral Resource Report**"), according to the National Instrument 43-101 - Standards of Disclosure for Mineral Projects ("**NI 43-101**") on the Balabag Project ("**Balabag**") in Zamboanga, Philippines. TVIP has a 30.66% interest in TVI Resource Development (Phils.) Inc. ("**TVIRD**"), a private Philippine resource company with operations, development and exploration projects in the Philippines, including Balabag, which is 100% owned by TVIRD. The updated Mineral Resource Report will be used by TVIP, a publicly traded Canadian resource company listed on the TSX Venture Exchange, in fulfillment of their continuing disclosure requirements under Canadian Securities laws, including NI 43-101. This updated Mineral Resource Report is written in support of an updated Mineral Resource Estimate based on results of further exploration works conducted in late 2017 to December 2020 for the Balabag gold and silver deposit (part of the Balabag Hill Project).

Mr. Jaime C. Zafra, BSGeo. PGeo. FAusIMM is the Qualified Person ("**QP**") for this report. He has 42 years of experience in the field of geology, exploration of epithermal gold deposits and Mineral Resource estimation in the Philippines, Laos, Indonesia and Papua New Guinea.

A site visit was undertaken by the QP who examined the style of mineralization in the explored areas, reviewed the drilling and sampling conducted and the assaying of gold and silver procedures during the period January 16 to January 19, 2021. Mr. Zafra observed that drilling and sample protocols, including sample methodology, the preparation of samples and their subsequent analyses, have been conducted in accordance with industry standards using appropriate quality assurance/quality control procedures in all exploration activities of TVIRD. The QP further considers that the geological and assay data during his verification of the database, having found no inconsistencies, is robust and suitable for use as inputs into a Mineral Resource Estimate.

To the best of the QP's knowledge, there are no environmental, permitting, legal, title, taxation, socio-political, market, political or other relevant factors that would materially impact the Mineral Resource Estimate presented in this updated Mineral Resource Report.

Balabag is situated within the municipalities of Bayog, Province of Zamboanga del Sur, and Diplahan and Kabasalan, Province of Zamboanga Sibugay, Mindanao Island, the Philippines. Mineral exploration activities conducted by TVIRD such as detailed geological mapping, outcrop sampling and diamond drilling since 2005 have confirmed the presence of mineralized bodies within the east-west trending epithermal vein system in Balabag Hill. Gold and silver are the two elements of economic interest which have been identified thus far in the Balabag Project.

Three major quartz vein systems in the area were identified: Tinago-Unao-Unao-Yoyon veins to the north; Miswi veins in the east; and Lalab veins to the south. The veins exhibit various epithermal quartz vein textures such as colloform, crustiform, massive, drusy, vuggy, comb and cockade textures. Multiphase brecciation texture are also dominant. Quartz stringers and quartz stockworks also occur adjacent to most quartz veins ranging from hairline to centimeter sizes. The geometry of the veins and the associated stockworks are generally sub-horizontal at the Tinago and Miswi areas while a sub-vertical attitude of veins is notable in the Lalab area.

In 2007, an NI 43-101 technical report was prepared by P.J. Lafleur Geo-Conseil Inc., elaborating the first resource estimate of the Balabag Project based on 66 drillholes initially completed by TVIRD from 2005 to early 2007.

As more drilling progressed after the initial resource estimate, TVIRD categorized the types of quartz veins into two major geological domains. The previously known Domain 1 represents the true veins having more predictable continuity and grade uniformity. Domain 2, on the other hand, was characterized by quartz stockwork and silicified andesite. The stockworks were considered as another domain due to the erratic nature of grades and thickness.

A second NI 43-101 technical report was produced by Georeference Online Ltd in June 2012. Clinton P. Smyth, P. Geo authored the report and updated the Balabag resource table based on drilling data gathered to the end of June 2011. Mr. Smyth estimated a total Indicated Resource of 1.78 million tonnes at 2.34 g/t Au and 72.3 g/t Ag using a cut-off grade of 0.0 g/t and applying the definition of the indicated resource only to the Domain 1 resource mineralization as determined at that time. The Domain 2 resource mineralization was not considered a mineral resource by Georeference.

With the resumption of TVIRD's exploration works in late 2017 up to the present time, a detailed mapping of surface outcrops and several underground tunnels has been conducted to further understand the geology of the Balabag deposit. More infill drilling was carried out to test the vein continuity and its cross-cutting relationships and to determine the stages of mineralization. The total number of drillholes in the project reached 382 holes with a cumulative meterage of 41,161.60 meters as of December 2020.

The resource drilling from October 2018 to December 2020 within Balabag Hill targeted the vein system extensions at the Lalab, Miswi and Unao-Unao areas. The drilling program was carried out in Phases:

- Phase 1 drilling aimed to increase the resource at the Lalab area. A total of twelve (12) drillholes with an aggregate meterage of 1,068.10 meters were drilled. Drillholes were oriented on a NW direction to intersect the true width of the vein. Four (4) sub-vertical veins were encountered during drilling.
- Phase 2 drilling with fifteen (15) drillholes and an aggregate meterage of 1,211.95 meters focused on Miswi veins particularly on the up dip and down dip portions of the holes that were drilled along the Duala tunnel.
- Phase 3 drilling focused on the up dip and down dip portions of the Monding mineralized veins at the Unao-unao area. Twenty-four (24) drillholes with a total meterage of 1,859.45 meters were drilled.
- Phase 4 drilling with 35 drillholes having an aggregate meterage of 2,866.50 meters targeted the shallow and possible deeper mineralized veins in the Lalab, Miswi, Tinago and Mossad areas.

A total of 109 drillholes, including the above noted eighty-six (86) drillholes and a further 23 drillholes completed in 2012 and 2013, have been added to the Balabag database since the NI 43-101 technical report produced by Georeference Online Ltd in June 2012 and filed on SEDAR on August 15, 2012.

Recent drilling has provided the opportunity to further subdivide the previously generated geological domains into five new mineral domains: BX1, BX2, BX3, QSW and QSX1. The prefix “BX” stands for hydrothermal breccia while the succeeding number denotes the sequence of deposition. Quartz stockworks that are hosted by wall rock are under the quartz stockwork (“**QSW**”) domain whereas quartz stockworks that are hosted by BX1 are designated as the QSX1 domain.

- BX1 is mostly silicified breccia with volcanic breccia clasts cemented by grey quartz with crisscross hairline-millimeter white-translucent quartz stockwork. Clasts are normally altered to silicification and argillized, and also appear in irregular shapes.
- BX2 displays overprinting of typical epithermal textures in one body. Clasts comprise of wallrock and silicified matrix or cement material of the ore. Ginguro texture is also common in BX2 and often reflects high gold grades.
- BX3 recorded the highest and consistent gold grades in the model. Breccia clasts here are not only the altered and mineralized wallrock but also the gold-bearing quartz vein itself. Sulphide minerals are notable in this rock type.
- QSX1 covers quartz stockworks which occur in between mineralized veins, particularly associated with BX1.
- QSW are the typical stockworks found in the deposit.

The estimated Measured and Indicated Mineral Resource for Balabag using a cut-off grade of 0.4 g/t AuEq is 4.35 million tonnes at 1.79 g/t Au and 43.08 g/t Ag for 2.36 g/t AuEq. This is equivalent to approximately 331,000 AuEq oz at metal prices of US$1,500/oz Au and US$20/oz Ag. The estimated Inferred Resource is 140,919 tonnes at 2.78 g/t Au and 64.11 g/t Ag for 3.63 g/t AuEq. The overall Mineral Resource as of May 15, 2021 is summarized in Table 1-1.

A nominal cut-off grade of 0.4 g/t AuEq was used in reporting the Mineral Resource. Gold equivalent was used as the cut-off grade parameter to give credit to both gold and silver values, at prices of US$1,500/oz and US$20/oz, respectively.

The mineral resource was estimated using a conventional geostatistical block modeling approach constrained by mineralization wireframes. Geostatistical analysis, capping, variography and estimation were conducted on the in-situ gold and silver data. As noted by previous authors, particularly C.P. Smyth, grades at Balabag are extremely erratic due to variograms unsuitable for use in kriging. This is expected, given the non-normal distribution of gold and silver values in both true veins and stockworks. Hence, the Inverse Distance Squared (“**ID^2**”) method was deemed more practical to use instead of Ordinary Kriging. Grade interpolation was done per major vein locations: Tinago and Unao-Unao; Miswi; and Lalab. Separate search ellipses were used per general vein structure, following the strike of the deposit. The orientation of each search ellipse was based on the geological interpretation made on three major locations in the project area.

Roughly 70,000 tonnes with a grade of 2.18 g/t Au and 71.56 g/t Ag have been estimated as potential small-scale mining volume depletion below the October 2020 topography model, prior to the eviction of small-scale miners from Balabag in 2012. This estimated volume has been deducted from the overall resource estimate.

Table 1-1: Mineral Resource Estimate of the Balabag Gold-Silver Project, May 15, 2021

Category	Tonnage	Au (g/t)	Ag (g/t)	AuEq (g/t)	AuEq (oz)
Measured	3,016,143	1.80	50.80	2.48	241.000
Indicated	1,338,029	1.74	25.69	2.08	90,000
TOTAL	**4,354,172**	**1.79**	**43.08**	**2.36**	**331,000**
Inferred	140,919	2.78	64.11	3.63	16,000

Sample protocols, including sample methodology, preparation, analyses and data verification have been conducted in accordance with industry standards using appropriate quality assurance/quality control procedures in all exploration activities of TVIRD. Quality Assurance and Quality Control ("**QA/QC**") measures were implemented to monitor the accuracy and precision of assay data from analytical laboratories and have included:

- Monitoring the performance of laboratories in terms of analytical accuracy, precision and bias via Certified Reference Materials ("**CRMs**").
- Use of coarse blank material to detect sample preparation contamination.
- Sampling and sample preparation procedures were monitored via analysis of field duplicates and laboratory duplicates.
- Exploration samples were submitted for analysis at an umpire laboratory as a check on overall performance.

TVIRD led a comprehensive metallurgical test campaign at various times after earlier drilling phases to evaluate the feasibility of processing the Balabag gold and silver ore. As a vital part of the initial internal scoping studies, a bulk mineralogy and gold deportment study was initiated in order to characterize the ore and acquire some guidance into developing the basic process flowsheet. Several metallurgical test campaigns were undertaken to determine the amenability of the ore to various unit operations and concentration processes.

There are numerous mining tenements surrounding the Balabag Mineral Production Sharing Agreement ("**MPSA**") tenements, however, there are no known exploration or development activities in these areas despite the general area's favorable geology. None of the tenement holders or operators of adjacent properties have published a mineral resource. No representation is made here implying continuity of mineralization from any adjacent property. There is opportunity for the discovery of epithermal Au-Ag, porphyry Cu-Au and massive sulfide-style mineralization within the region of Balabag. Historic mining shows that Au-Ag, Cu, and Zn are present in the region and may contain significantly larger resources than the current and historical workings have exploited and are currently exploiting.

2 INTRODUCTION

Exploration works conducted by TVIRD such as detailed geological mapping, outcrop sampling and diamond drilling confirm the presence of mineralized bodies within the east-west trending epithermal vein system in Balabag Hill. The area is characterized by quartz-veining and silica replacement within andesitic to dacitic volcanic and fine-grained laminated tuffaceous host rocks.

Gold and silver are the two elements of economic interest which have been identified so far in the Balabag Project.

2.1 Scope of Work

TVIP has retained the services of Mr. Jaime C. Zafra, BSGeo. PGeo., for this updated mineral resource estimate based on results of further exploration works that have included mapping and drilling conducted in the late 2017 to December 2020 period for the Balabag gold and silver deposit (part of the Balabag Hill Project). An earlier NI 43-101 report on resource estimates was authored by Mr. P.J Lafleur of Geo-Conseil Inc. in 2007 and was subsequently updated by Georeference Online Ltd in June 2012. The June 2012 report was authored by Mr. Clinton Smyth, P.Geo, of Georeference Online Ltd and provided an update of the Balabag resource table based on drilling data gathered through to the end of June 2011. Mr. Smyth estimated a total Indicated Resource of 1.78 million tonnes with grades of 2.34 g/t Au and 72.3 g/t Ag, using a cut-off grade of 0.0 g/t.

This updated Mineral Resource Report has been prepared to update the mineral resource estimate for the Balabag Project as previously prepared in June 2012 by Georeference Online Ltd for TVIRD.

2.2 Qualification and Experience

This updated mineral resource estimate has been produced for NI 43-101 reporting. Mr. Jaime C. Zafra, BSGeo. PGeo. FAusIMM is the Qualified Person ("**QP**") for this report. Mr. Zafra has significant experience in the style of gold and silver deposition in the Philippines and other epithermal gold-silver deposits in Laos, Indonesia and Papua New Guinea. Mr. Zafra has 42 years of experience in the field of geology, mineral exploration and mineral resource estimation, project development, mineral resource / reserve modelling and studies and mineral property evaluation.

Mr. Zafra has managed drilling programs, mine development, grade control, operations and the performance of resource and financial modeling for the preparation of Mineral Resource and Mineral Reserve reports for iron, magnetite sands, nickel and gold projects for companies in the Philippines and Lao PDR.

Mr. Zafra is the Technical Consultant for the Phu Kham Gold Project of Nikki Lao Sole Co. Ltd. (Laos), Consultant for the Sultan Kudarat Gold Project with GRCO Isulan Mining Corporation (Philippines), Chairman of the Board of Directors and President of Geotechniques and Mines, Inc. in joint venture with F. A. Nepomuceno Construction & Development, Inc. for its Mariveles, Bataan, Philippines Armour Rock and Rock Aggregates Project, and Director and Senior Vice-President/COO of Batangas Exploration and Development, Inc. which worked on the evaluation of projects in the Philippines, including gold, nickel and iron sand projects.

Mr. Zafra has also acted as a Project Consultant or Geologist (Philippine Competent Person ("**CP**")) with various other exploration projects, including Eramen Mining Corp. (Philippines), Baraka Resources Ltd. (Philippines), Howerstock Ltd. (South Sudan), and Voco Point Trading Pty. Ltd. (Papua New Guinea) with respect to gold-silver, iron sand and nickel laterite projects.

Mr. Zafra fulfills the requirements to be a QP for the purposes of NI 43-101 by being a Fellow of the Australasian Institute of Mining and Metallurgy. Mr. Zafra is also an Accredited Competent Person with the Geological Society of the Philippines and has considerable involvement and significant experience with gold-silver, nickel and iron projects.

2.3 Site Visit

A site visit was undertaken between January 16 and January 19, 2021 by Mr. Jaime C. Zafra. Mr. Zafra examined mineralization in the explored areas, reviewed the drilling and sampling conducted and the assaying of gold and silver procedures.

3 RELIANCE ON OTHER EXPERTS

In preparation of this report the author has relied upon others for information pertaining to land status, environmental liabilities and historic exploration.

3.1 Land Status, Environmental Studies and Permitting

The QP, Mr. Zafra, has fully relied upon and disclaims responsibility for information provided by TVIRD regarding property ownership and mineral tenure for the Balabag Project. Mr. Zafra has not reviewed the property title or mineral rights for Balabag, nor has he reviewed the permitting requirements or independently verified the permitting status or environmental liabilities associated with Balabag, and also disclaims responsibility for that information, which is presented in Sections 4 and 5 of the current report and presented as provided by TVIRD.

4 PROPERTY DESCRIPTION AND LOCATION

4.1 Property Area and Location

The Balabag Project is situated within an approved MPSA registered under the name of TVIRD. The approved and issued MPSA denominated as MPSA No. 086-1997-IX consists of 59 contiguous meridional blocks of half minute longitude and half minute latitude with a total area of 4,779 hectares. The MPSA is bounded by the geographic coordinates as shown in Table 4-1.

Table 4-1: Geographical coordinates of MPSA No. 086-1997-IX

Corner	Latitude	Longitude
1	7°55'30" N	122°54'00" E
2	7°55'30" N	122°58'00" E
3	7°51'30" N	122°58'00" E
4	7°51'30" N	122°57'30" E
5	7°52'00" N	122°57'30" E
6	7°52'30" N	122°54'00" E
7	7°52'30" N	122°54'00" E
8	7°52'30" N	122°53'30" E
9	7°53'30" N	122°53'30" E
10	7°53'30" N	122°54'00" E

The MPSA is located within the Municipalities of Bayog, Diplahan and Kabasalan, Provinces of Zamboanga Del Sur and Zamboanga Sibugay, Island of Mindanao, Philippines (Figure 4-1).

The northern portion of the Balabag MPSA is within Certificate of Ancestral Domain Title ("**CADT**") No. RIX-SIN-0908-075 issued by the National Commission of Indigenous People ("**NCIP**") to the Subanen Indigenous tribe. The CADT encompasses a total of 47,720 hectares wherein approximately 15% of the northernmost portion of the MPSA is located. The central to southern portion of the MPSA tenement is covered by a CADT application of the same Subanen tribe.

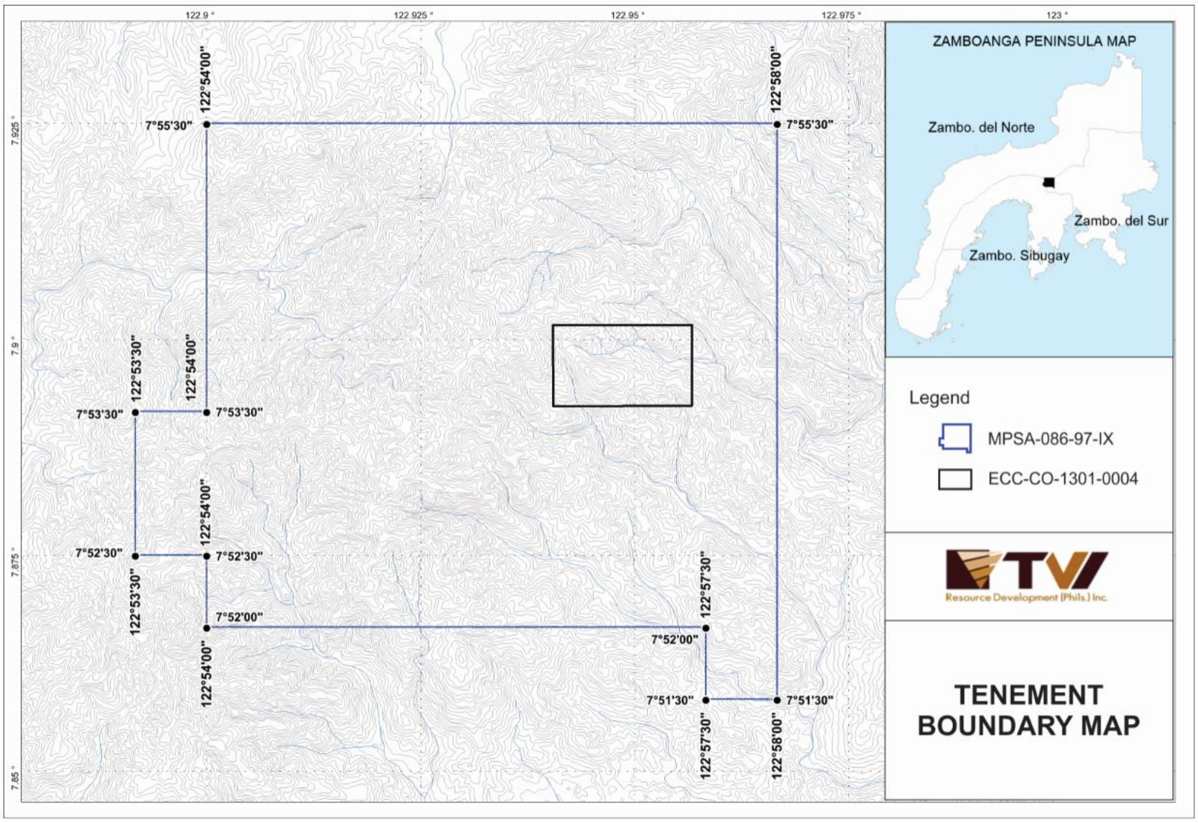


Figure 4-1: Geographical coordinates of MPSA No. 086-1997-IX.

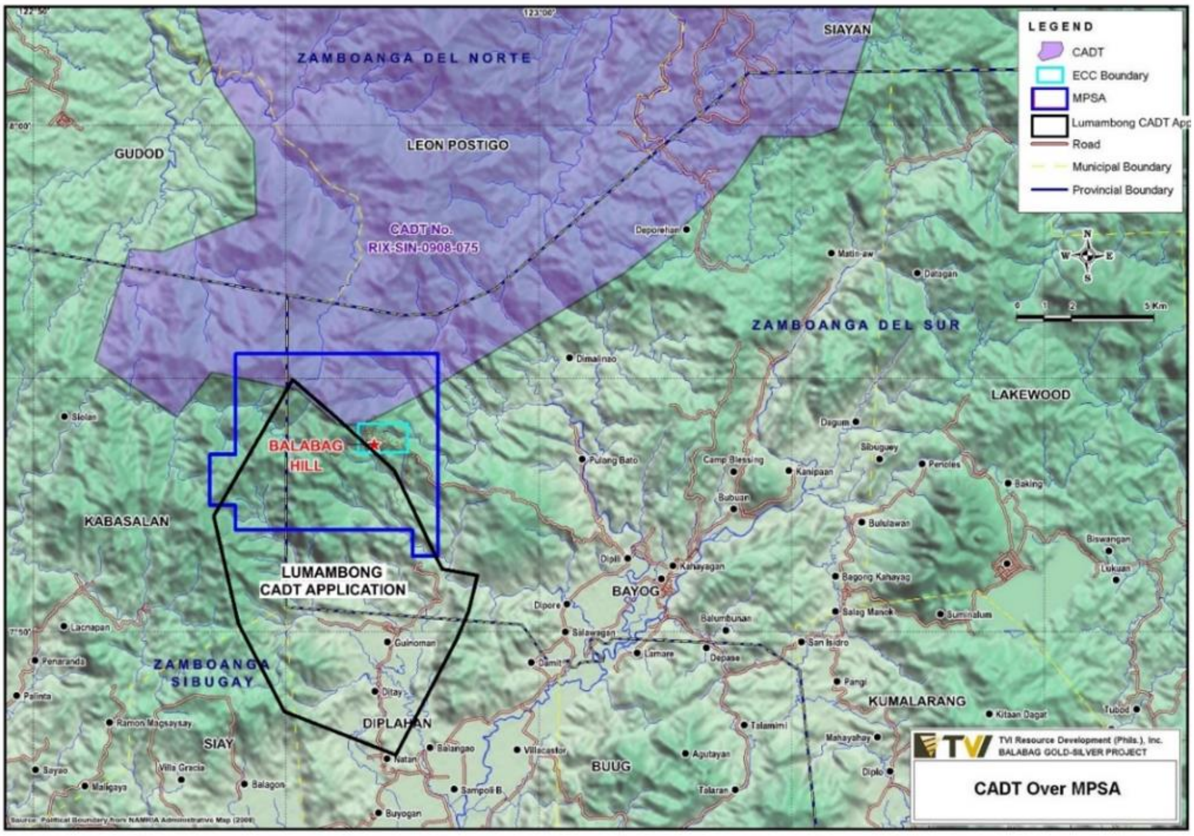


Figure 4-2: CADT areas within the Balabag MPSA.

4.2 Licenses and Mineral Tenure

The MPSA was approved on November 20, 1997 by the Department of the Environment and Natural Resources ("**DENR**") and was registered on May 6, 1998 with the Mines and Geosciences Bureau ("**MGB**") Regional Office No. IX in Zamboanga City. The MPSA was originally granted under the name of Zamboanga Minerals Corporation ("**ZMC**"). ZMC assigned the MPSA to TVIRD pursuant to a Deed of Assignment ("**DOA**") executed by the two companies on July 6, 2009 with an addendum to the DOA executed on August 27, 2009. The DENR approved the DOA on September 28, 2009.

The approved MPSA has a term not exceeding 25 years from the date of the execution thereof and renewable for another term not exceeding 25 years. The approved MPSA gives the right to the Contractor to explore the MPSA area for a period of 2 years renewable for like periods but not to exceed a total term of 8 years, subject to annual review by the MGB Director to evaluate compliance with the terms and conditions of the MPSA and subject to extension for another 2 years at the discretion of the MGB Director.

TVIRD is required to strictly comply with the approved Exploration and Environmental Work Programs together with their corresponding budgets. These work programs are required to be submitted by TVIRD as requirements in securing the renewal of the Exploration Period within the MPSA term. TVIRD is likewise required to submit quarterly, bi-annual, and annual accomplishment reports under oath on all activities conducted in the Contract Area. All the reports submitted to the MGB are subject to the confidentiality clause of the MPSA.

If the results of exploration reveal the presence of mineral resource, TVIRD, during the exploration period, shall submit a Declaration of Mining Project Feasibility ("**DMPF**") together with a Mining Project Feasibility Study; a 3-year Development and Utilization Work Program; a Final Exploration Report; a Five-Year Social Development and Management Plan ("**SDMP**"); an Environmental Protection and Enhancement Plan ("**EPEP**"); a Final Mine Rehabilitation and Decommissioning Plan ("**FMRDP**"); an approved Survey Plan; an Environmental Compliance Certificate ("**ECC**"); and endorsements from 2 out of 3 Local Government Units ("**LGUs**"). Failure by TVIRD to submit a DMPF during the Exploration Period shall be considered a substantial breach of the MPSA. In addition to these, a Contingent Liability Fund-Steering Committee ("**CLRF-SC**"), a Mine Rehabilitation Fund Committee ("**MRFC**") and a Multi-partite Monitoring Team ("**MMT**") need to be formed exclusive for the proposed mining project.

The ECC was issued to TVIRD on October 1, 2013 and the DMPF approved on April 29, 2016.

The Balabag MPSA is in good standing as it is compliant with the terms and conditions of the MPSA and the Implementing Rules and Regulations of the Philippine Mining Act of 1995.

On September 19, 2019, the Company commenced the renewal process of the Balabag MPSA, which will expire on November 19, 2022. One of the major requirements for any renewal is a passing grade on the Tenements, Social, Health, Environmental, Social

(“**TSHES**”) audit, which TVIRD accomplished. On March 19, 2021, Secretary Roy A. Cimatu of the DENR issued an Order approving the renewal of MPSA No. 086-1997-IX, the Balabag MPSA, for an additional twenty-five (25) year period through to November 20, 2047.

4.3 Agreements, Royalties and Encumbrances

An MPSA is a form of Mineral Agreement, for which the Philippine government grants the MPSA holder (the “**Contractor**”) the exclusive right to conduct mining operations within, but not title over, the contract area during a defined period. Under this agreement, the Government shares in the production of the Contractor, whether in kind or in value, as owner of the minerals. The total government share in a MPSA shall be the excise tax on mineral products. The excise tax is currently 4% of the actual market value of the gross output at the time of extraction. In return, the Contractor shall provide the necessary financing, technology, management, and personnel for the mining project. Allowable mining operations include exploration, development, utilization of mineral resources, and rehabilitation of the areas disturbed during each phase of mining.

Balabag is covered by the CADT of the Indigenous Cultural Community (“**ICC**”) of the Subanen Tribe of Bayog. Under the Indigenous Peoples Reformed Act (“**IPRA**”) of 1997, no Tax Declarations, Land Titles and other surficial or tenurial rights instruments are allowed within a CADT area unless these have been issued prior to the effectivity of the IPRA Law in 1997. TVIRD, after satisfying all the requirements of the Free and Prior Informed Consent (“**FPIC**”) process set forth by the NCIP, signed a Memorandum of Agreement (“**MOA**”) with the ICC of the Subanen Tribe of Bayog on August 19, 2014. The MOA between the Subanen Tribe of Bayog and TVIRD allows TVIRD to conduct exploration, development and utilization activities within Balabag. The MOA is co-terminus with the life of the MPSA. Once operational, the Subanen Tribe of Bayog will receive a 1% royalty of the gross amount of the mineral products that will be extracted from Balabag.

The harmonious relationship between TVIRD and the Subanen Tribe of Bayog and TVIRD’s fulfillment of its obligations under the terms and conditions of the MOA have ensured that no violations have been incurred by TVIRD.

TVIRD is required to pay an excise tax of 4% of the value of its production should it proceed to the production stage. Other taxes, fees, and funds that will be imposed during the production stage are Municipal and National Business Taxes, Environmental Fees, the Social Development Fund and Final Mine Rehabilitation Fund, Corporate Tax and a net smelter royalty (“**NSR**”) due to ZMC arising from the MOA signed with ZMC on April 26, 2005 (“the **ZMC MOA**”). The NSR is to be calculated at 2.5% on the gross proceeds of gold and other minerals produced from commercial mining operations, less all costs incurred in the smelting and refining of such gold minerals and is to be paid quarterly.

TVIRD is further required to pay, at the same date every year determined from the date of the first payment, an occupation fee over the Contract Area equal to 75.00 Philippine pesos per hectare to the concerned LGU. If the fee is not paid on the date specified, TVIRD shall pay a surcharge of 25% of the amount due in addition to the occupation fees. A non-payment of the occupation fees for two (2) consecutive years may result in cancellation of the MPSA.

TVIRD has been paying the Occupation Fees since the granting of the MPSA in addition to the municipal business tax.

4.4 Environmental Obligations

All mining projects are typically evaluated and assessed for their economic, social, cultural, and environmental impacts and contributions. This includes consideration of potential risks associated with the respective project and how to mitigate such in response to the requirements of the Philippine Mining Act and related compliance obligations. Compliance obligations may be categorized as follows:

- Licensing and/or permitting requirements, that include but are not limited to:
  - ECC;
  - Wastewater Discharge Permit;
  - Notice to Proceed; and,
  - Others.
- Reportorial obligations;
- Laws and regulations;
- Best practice standards, that include but are not limited to:
  - ISO 14001:2015;
  - Tenements, Safety & Health, Environment and Social ("**TSHES**") management performance audits;
  - Monitoring by stakeholders; and,
  - Others.
- Requirements of interested parties, as considered relevant by the MPSA holder.

The Environmental Impact Assessment ("**EIA**") relative to the project is integrated in the planning process at the Project Feasibility Stage through which adverse environmental impacts of proposed actions are considerably reduced through a reiterative review process of project siting, design and other alternatives, and the subsequent formulation of environmental management and monitoring programs. From these, a positive determination by the DENR Environmental Management Bureau ("**EMB**") results in the issuance of an ECC that assists the MPSA holder in its development and operational plans. The ECC and the Environmental Impact Statement from the EIA then serves as the basis in the preparation of the EPEP and FMRDP.

The MPSA holder's compliance with the conditions stipulated in the ECC, Environmental Management Plan and Environmental Monitoring Plan from the EIA, and commitments made in the EIA Report, EPEP, and FMRDP, is monitored quarterly, or more frequently, as may be deemed necessary by the MMT. The MMT is responsible to monitor compliance and consists of the following members:

Table 4-2: Membership of MMT

Chairman	Regional Office representative.
Member	Department Regional Office representative.
Member	EMB Regional Office representative.
Member	Contractor / Permit Holder representative.
Member	Affected Community representative.
Member	Affected Indigenous Cultural Community ("ICC") representative.
Member	Environmental NGO representative.

The Chairman of the MMT is responsible to regularly submit to the MRFC a report on the status and/or result of its monitoring activities with a copy to the CLRF-SC. The CLRF-SC shall then evaluate and either approve or disapprove of the submitted EPEP and FMRDP while reviewing the adequacy of control and rehabilitation measures and monitoring the MRFC. The CLRF-SC is composed of the following members:

Table 4-3: Membership of CLRF-SC

Member	A director of the MGB.
Member	A director of the EMB.
Member	A director of the Lands Management Bureau.
Member	A director of the Bureau of Soils and Water Management.
Member	A director of the Bureau of Fisheries and Aquatic Resources.
Member	The Administrator of the National Irrigation Administration.
Member	The Assistant Director of the MGB.

In addition to the above, a standardized monitoring system is also being implemented whereby activities of the permit holder will be monitored annually and their performance scored and rated through a Compliance Scorecard. Permit holders who fail to comply with the above standards shall be deemed non-compliant and subject to penalties and/or their respective permit(s) subject to suspension/cancelation.

In compliance with the Philippine Mining Act of 1995, TVIRD, holder of the Balabag MPSA 086-1997-IX, has a final mine rehabilitation and decommissioning plan ("**FMRDP**") approved by the CLRF-SC on March 11, 2016. Also, in coordination with the CLRF-SC, TVIRD has started setting up the approved Final Mine Rehabilitation and Decommissioning Fund that will fund the approved FMRDP of TVIRD with respect to the Balabag Project. The trust fund is expected to be fully funded by November 2022.

There are currently no known environmental liabilities associated with the Balabag Project.

4.5 Permits

As required by the Philippine Mining Act of 1995 and its related Implementing Rules and Regulations, TVIRD, prior to undertaking the development and production stages of the Balabag Project, is required to submit:

- ✓ Proof of compliance with the provisions of the MPSA based on the results of the most recent TSHES audit;

- ✓ an ECC;
- ✓ Endorsements from two out of three of the respective provincial, municipal and Barangay LGUs;
- ✓ A DMPF that includes:
    - feasibility studies;
    - a 3-year development and utilization work program;
    - a final technical report on the exploration results in accordance with the Philippine Mineral Reporting Code ("PMRC");
    - a 5-year Social Development Management Plan; and,
    - an EPEP and FMRDP.

TVIRD has confirmed that it has satisfied all the above noted submission requirements, all of which have been approved by the DENR – MGB on April 29, 2016

Business related permits, mining permits, environmental permits, Security, Safety and Health permits and other associated permits are registered and maintained in the TVIRD-BGSP-REG-SM-010 Permits and Licenses Monitoring Register.

The status of key permits received includes:

Table 4-4: Status of Key Balabag Project Permits Received

Permit Type	Permit	Issuing Agency	Date – Expiry / Renewal
Mineral Production Sharing Agreement	MPSA No.086-1997-IX	Department of Environment and Natural Resources	20 November 2047
Deed of Assignment of MPSA	Certificate of Registration OR No. 3637756	DENR-Mines and Geosciences Bureau Regional Office IX	Mine Closure
Environmental Compliance Certificate	ECC-CO-1301-0004 ECC-OL-R09-2020-0131 ECC-OL-R09-2021-0131	DENR-Environmental Management Bureau	Mine Closure
Declaration of Mining Project Feasibility	Notice of Issuance 050216-0026	DENR-Mines and Geosciences Bureau	Mine Closure
Environmental Protection and Enhancement Program/ Final Mine Rehabilitation or Decommissioning Plan Certificate of Approval	COA No. 111-2016-04	Mines and Geosciences Bureau – Contingent Liability and Rehabilitation Fund Steering Committee	Mine Closure/End of Mine Life
Social Development and Management Program Certificate of Approval	COA No. 042-2019-09IX	DENR-Mines and Geosciences Bureau Regional Office IX	01 December 2023
Wastewater Discharge Permit	DP-R09-20-02967	DENR-Environmental Management Bureau Regional Office IX	22 July 2021
Water Permit	CWP No. 12-12-19-013 CWP No. 12-12-19-014 CWP. No. 12-12-19-015	National Water Resources Board (NWRB)	12 December 2021

Table 4-4: Status of Key Balabag Project Permits Received *(continued)*

Permit Type	Permit	Issuing Agency	Date – Expiry / Renewal
Special Tree Cutting Permit	STCEP No. RIX-02-2018	Department of Environment and Natural Resources	01 March 2019 / Date and Area Extension Application in Process
Permit to Operate (Air Pollution Source and Control Installations)	2019-POA-C-0973-0052 PTO-OL-R09-2021-01285	DENR-Environmental Management Bureau Regional Office IX	20 March 2023 03 March 2026
Hazardous Waste Generator Registration Certificate	OL-GR-R9-73-015201	DENR-Environmental Management Bureau Regional Office IX	Mine Closure
Chemical Control Order Registration Certificate	CCOr-R09-CN-2020-00155-Amended	DENR-Environmental Management Bureau Regional Office IX	Mine Closure
Chemical Control Order Importation Certificate	CCOI-R09-CN-2021-00325	DENR-Environmental Management Bureau Regional Office IX	21 December 2021
Certificate of Authority to Operate (for Chemical Laboratories)	Certification of Filing with OR No. 18257571	Professional Regulation Commission-Professional Regulatory Board of Chemistry	Not applicable at the moment. PRC is developing new guidelines on issuance of COA
Safety and Health Program Certificate of Approval	SHP-2021-IX-07	DENR-Mines and Geosciences Bureau Regional Office IX	31 December 2021
Private Security Agency License to Operate	PSA-R-09-165280-1671	PNP-Civil Security Group-Supervisory Office for Security and Investigation Agency (SOSIA)	31 March 2023
Notice to Proceed (for Mining Project to Operate)	073118-0010	DENR-Mines and Geosciences Bureau	Mine Closure
Approved Survey Plan	Approved under Order of Survey issued on 10 September 2012	DENR-Mines and Geosciences Bureau Regional Office IX	Mine Closure
Free Prior and Informed Consent/NCIP Certification	CPRIX-16-0585	National Commission on Indigenous Peoples	Mine Closure
Sanitary Permit	595	Municipality of Bayog, Province of Zamboanga del Sur, Philippines	31 December 2021
ISO 14001:2015 Certification	Certificate No. 0114193	Intertek	25 May 2024
Fire Safety Inspection Certificate	R2020-09-056749	Bureau of Fire Protection (BFP)	09 July 2022
Mineral Processing Permit	Approved 3YDUWP for CY 2020-2022 012020-0003	DENR-Mines and Geosciences Bureau	31 December 2022
License to Possess Explosives/Explosive Ingredients/ Controlled Chemicals	PIB28-150410-03488	Philippine National Police (PNP)	15 April 2022

TVIRD is a corporation duly incorporated and validly existing under the laws of the Philippines. It is in good standing with respect to all applicable filing and regulatory requirements and has all the legal capacity to conduct its business in the Philippines.

The Balabag MPSA is duly registered and in good standing and there are no liens or encumbrances registered against the property. There is neither any indication of any potential issue that could result in the termination, revocation or suspension of the MPSA, nor any evidence of grounds for the nullification of the ownership of the MPSA held by TVIRD.

4.6 Significant Factors and Risks Related to the Property

The author is not aware of any significant risk factors that may affect access, title, rights, environmental issues or ability to perform and develop work on the property.

5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 Accessibility

The Balabag MPSA is situated in the Municipalities of Bayog, Province of Zamboanga del Sur, and Diplahan and Kabasalan, Province of Zamboanga Sibugay, Mindanao Island.

The nearest Municipality to the mining property is Bayog. The town is accessible from either Pagadian or Zamboanga City through the Zamboanga-Pagadian National Highway, then through an 18-km gravel dirt road from the highway junction at Imelda or Buug, Zamboanga del Sur. From the town center of Bayog, the project site can then be accessed through a 14-km road using four-wheel-drive vehicles in just 45 minutes travel time.

Zamboanga City, the center of trade and commerce in Western Mindanao, is linked to Cebu and Manila by weekly boat and daily airline services. Pagadian City is also connected to Cebu and Manila through daily commercial flights.

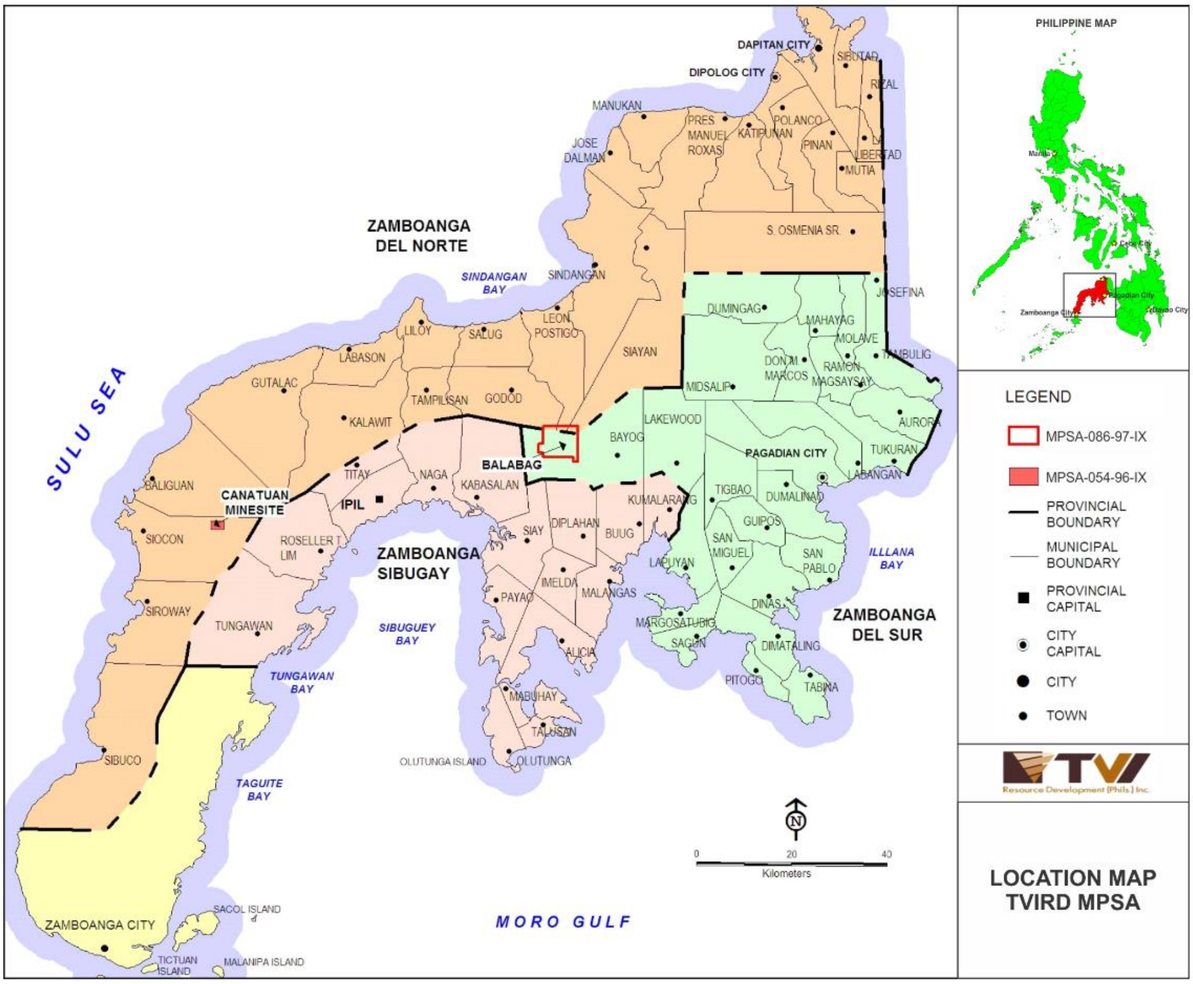


Figure 5-1: Location of BALABAG MPSA relative to Bayog, Pagadian and Zamboanga City.

5.2 Climate

According to the Modified Coronas Climate Classification Scheme used by the Philippine Atmospheric Geophysical and Astronomical Services Administration ("**PAGASA**"), the climate in Balabag and its adjoining area is classified under Type IV. This is characterized by mild temperatures and moderate rainfall. Rainfall is evenly distributed throughout the year although the heaviest downpours occur during the months of May to December. Annual rainfall ranges from 1,599 mm to 3,500 mm. Average monthly precipitation is approximately 220 mm. Temperature is constant throughout the year, varying only from a minimum of 22˚C to a maximum of 31˚C. Recorded climate data from the nearest municipality of Bayog is shown in Table 5-1.

Exploration work is generally conducted throughout the year considering that the area experiences mild temperatures and moderate rainfall.

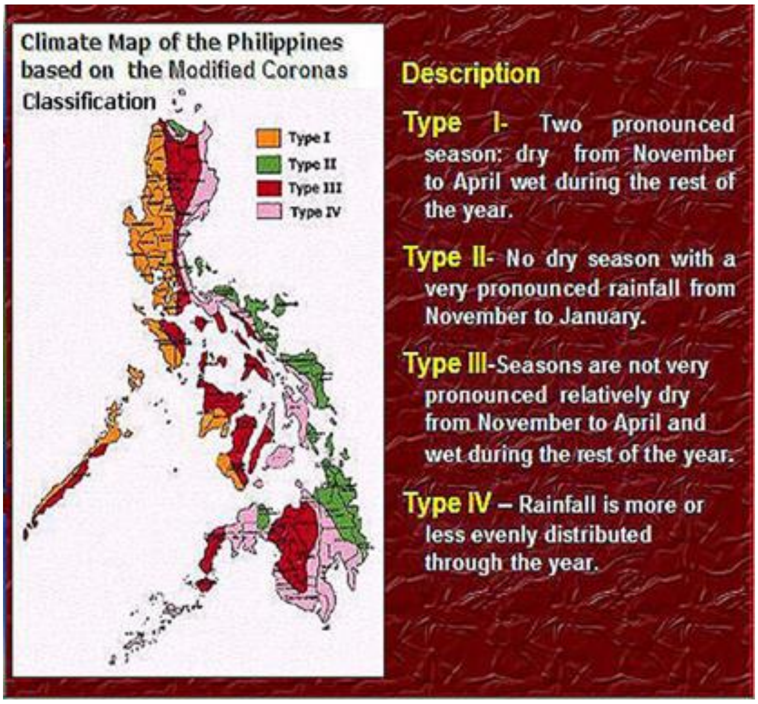


Figure 5-2: Climate map of the Philippines.

Table 5-1: Climate data of Bayog, Zamboanga del Sur

Climate data for Bayog, Zamboanga del Sur [hide]													
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Average high °C (°F)	30 (86)	30 (86)	31 (88)	31 (88)	30 (86)	29 (84)	29 (84)	29 (84)	29 (84)	29 (84)	30 (86)	30 (86)	30 (86)
Average low °C (°F)	22 (72)	22 (72)	23 (73)	24 (75)	24 (75)	24 (75)	23 (73)	23 (73)	23 (73)	24 (75)	23 (73)	23 (73)	23 (74)
Average precipitation mm (inches)	48 (1.9)	44 (1.7)	56 (2.2)	56 (2.2)	112 (4.4)	135 (5.3)	124 (4.9)	124 (4.9)	115 (4.5)	134 (5.3)	90 (3.5)	56 (2.2)	1,094 (43)
Average rainy days	13.0	11.7	15.6	18.1	25.6	25.7	25.2	24.1	23.8	26.1	22.3	16.5	247.7

(Source: https://en.wikipedia.org/wiki/Bayog)

5.3 Local Resources

Economic activity in the host community is primarily related to agriculture. The Sibugay River Valley which runs through Bayog town is considered as the rice granary of the province of Zamboanga Sibugay.

The northwest portion of the MPSA is dominated by secondary growth forest with few remaining primary forests in the hinterlands. However, some ridges have been denuded of forest cover and have been converted into upland farms or "*kaingin*". These upland farms are planted with rice, corn, ginger, cassava, sweet potato, various fruit trees and rubber. Abandoned kaingins have been overtaken by lush growths of a fast-growing tree locally known as "*buyo-buyo*".

The Balabag project site was formerly occupied by thousands of illegal artisanal small-scale miners since the mid-90s. The miners were extracting mineralized gold-bearing material from the surface and from hundreds of shallow underground tunnels. The material extracted was processed in rod mills to grind and recover the gold with mercury through the amalgamation process. Carbon-in-Pulp ("**CIP**") agitation tanks were later introduced to further recover gold from rod mill tailings using activated carbon, cyanide and lime. The timber requirements of artisanal miners for their underground tunnels and housing requirements also resulted in Illegal logging activities and the deforestation of Balabag Hill and its immediate environs.

The illegal small-scale miners were evicted from their Balabag tunnels following the issuance in 2012 of a Cease-and-Desist Order ("**CDO**") by the MGB against all forms of illegal mining activities in the region, including small-scale operations in the Balabag Hill area.

It is expected department managers and senior technical staff for the Balabag Project will be drawn from outside of the Zamboanga Peninsula as well as from the local community as they are available. Skilled and non-skilled workers will likely be recruited from qualified residents living in the host and nearby communities.

5.4 Infrastructure

The nearest township to the project site is Bayog, a 3rd class Municipality under the jurisdiction of the Province of Zamboanga del Sur. Bayog is one of the top revenue-producing municipalities in the province, with an annual income mainly from mining, quarrying and some business establishments.

Power is provided to Bayog by the Zamboanga del Sur Electric Cooperative II ("**ZAMSURECO II**") through its substation in the municipality of Buug, Zamboanga Sibugay. Bayog has a level III water system that supplies the town and barangay Kahayagan. The types of water systems used in the different barangays are classified into Level 1 (shallow well, deep well & spring); Level II (spring development with communal faucets); and Level III (with individual household connections).

Bayog has a collegiate school that caters to the educational needs of the entire populace and of the neighboring municipalities. There are 32 public schools and 1 private school in the municipality.

Government facilities include the town's public market, the newly constructed Municipal Building, the Bayog Municipal Health Center and the 3,500-seat Municipal Gymnasium.

There are passenger buses and jeepneys that service the Bayog to Buug and Bayog to Pagadian routes. To date, there are two buses servicing the Bayog to Zamboanga City route.

Two dams can be found in the Municipality, namely: the Sibugay Irrigation Dam and the Dipili River Irrigation Dam, both responsible for irrigating some 100 square kilometers of rice fields.

A 12 kilometer all-weather road has recently been constructed by TVIRD connecting the project site to the Bayog municipality. Within the project site, old logging roads exist which were repaired and rehabilitated and are presently being used as access to the exploration areas around the MPSA. Supply of water is tapped from several surface sources.

As for the specific requirements of the Balabag Project, it is expected that power will be sourced from multiple diesel-powered generator sets located onsite and water supply will be provided from a combination of sources including the Malagak Creek, the Digoman Creek and the Depore Creek as well as commercial water filtration suppliers in Bayog town.

5.5 Physiography

The topography of the MPSA area is generally moderate to rugged. Relief is moderate to high, characterized by steep slopes and V-shaped valleys. Elevation ranges from 200 to 928 meters above sea level ("**mASL**"). The Balabag gold-silver deposit is located on an east-west elongated hill with a peak elevation of 685 mASL.

The western section of the MPSA is drained by the tributaries of the Kabasalan River. The eastern and southern sections are drained by the Dipili and Depore rivers, both major tributaries of the Sibugay River. The dominant drainage pattern is dendritic although some trellis and rectangular patterns are recognizable along the northern half of the MPSA.

5.6 Surface Rights

The Balabag Project is located within a valid and subsisting MPSA. It is also inside the CADT of the Indigenous Cultural Community of the Subanen Tribe at the Municipality of Bayog, Province of Zamboanga del Sur approved by the NCIP. As a CADT holder, this Subanen Indigenous Tribe holds the surface rights over the Balabag Project but has provided their consent to TVIRD for its mining project as confirmed through a Deed of Undertaking and MOA dated August 19, 2014 and approved by the NCIP through an En Banc Resolution No. 07-05-2016 Series of 2016, dated May 25, 2016. The MOA is co-terminus with the life of the MPSA.

Through the existing Balabag MPSA, TVIRD has the right to use surface lands sufficient for many years of operation. Sufficient area exists at the property for all needed surface infrastructure related to the life-of-mine plan, including processing, maintenance, fuel storage, explosives storage and administrative offices as well as the tailings storage facility that is to be constructed in stages to accommodate progressively increasing resources as they are defined.

6 HISTORY

Alluvial placer gold was discovered in Depore, Bayog in 1989 by artisanal small-scale miners along the Depore River, several kilometers southeast of Balabag. Depore is the barangay that has jurisdiction over Balabag. In 1995, the presence of gold veins in Miswi was discovered by accident by a group of militiamen who were on routine patrol. Illegal artisanal small-scale mining operations in Balabag Hill eventually started as early as June 1995 when the gold rush slowed down in the Depore River due to dewatering problems. After that, several exploration companies showed interest in the area, foremost of them being Rio Tinto Exploration Philippines Corporation (“**RTEPC**”) and Templar Gold N.L. (“**TGNL**”).

6.1 History of Mining Claim

The Balabag MPSA was originally awarded to ZMC on November 20, 1997 and subsequently registered with the MGB on May 6, 1998.

From October 15, 1996 to January 14, 1998, the ZMC MPSA tenement was optioned to RTEPC.

When RTEPC relinquished its interest in the tenement, TGNL, an Australian company, undertook a six-year option agreement with ZMC from February 18, 1999 to November 25, 2004 but the agreement was terminated prior to completion.

On April 26, 2005, ZMC entered into the ZMC MOA with TVIRD that provided TVIRD the exclusive right to explore the property with the option to acquire ownership for the sum of US $ 350,000 and a 2.5% NSR. The US $350,000 option to acquire ownership was paid in part as cash (US $50,000) and shares of TVIP (2,993,697 TVIP shares). The NSR is to be calculated at 2.5% on the gross proceeds of gold and other minerals produced from commercial mining operations, less all costs incurred in the smelting and refining of such gold minerals and is to be paid quarterly.

TVIRD initially conducted due diligence work which involved channel sampling of sites previously sampled by RTEPC. During the latter part of that year TVIRD geologists methodically mapped and sampled some artisanal miners’ accessible tunnel workings in the Tinago-Miswi vein occurrences. Data gathered confirmed the presence of significant gold and silver values associated with the Tinago vein at Balabag.

The MPSA originally held by ZMC was assigned to TVIRD pursuant to a DOA executed by and between ZMC and TVIRD on July 6, 2009 and further amended on August 27, 2009. The assignment in favor of TVIRD was approved by the DENR on September 28, 2009.

6.2 Exploration History

RTEPC conducted detailed geological mapping and rock sampling, stream sediment (-80 mesh) and grid-soil geochemical sampling and an IP-Resistivity survey within the Balabag area and vicinity from October 15, 1996 to January 14, 1998.

The geological and geochemical surveys collected 213 stream sediment samples, 164 outcrop and rock float samples, 984 grid soil samples and 344 rock chip samples from various artisanal small-scale mine tunnels. The IP-Resistivity survey was conducted over a total of 9.6-line kilometers. In November 1997, RTEPC reported the following conclusions:

- High grade epithermal gold mineralization in Balabag is indicated by a north-south trending high assay zone in the Tinago artisanal small-scale mining area measuring 20 meters by 130 meters. The zone averaged 20.32 g/t Au and 464.04 g/t Ag based on 145 rock samples collected.
- Balabag has two broad geochemical gold soil anomalies of greater than 0.1 ppm Au. Portions of these anomalous zones were being worked on at that time by artisanal small-scale miners, where gold-bearing quartz stockworks and veins were mined underground.
- The presence of drainage geochemical anomalies of 100 to 360 ppm copper coupled with 10 ppm molybdenum at Legumbong, located in the southwest part of the area, is suggestive of possible porphyry copper mineralization. K-silicate alteration (secondary biotite and magnetite) was also observed in the diorite intrusive in the same area.
- Rock geochemical anomalies in San Pedro, at the north-central section of the claims, reflect copper skarn type of mineralization believed to be related to andesite porphyry. High zinc and lead values were also obtained from outcrop samples in the headwaters of Dipili River. Rock chips and grab samples from the Upper Dipili copper skarn gave assay results ranging from 1.72% to 9.49 % Cu, 148 to 242 g/t Ag, 0.1 to 1.59% Pb and 1.1% to 8.84% Zn. Stream sediment samples from the San Pedro copper skarn area returned results that range from 0.14 ppm to 0.68 ppm Au, 40 ppm to 85 ppm Pb and 100 ppm to 180 ppm Zn, while grab samples taken from the Upper Dipili skarn base metal occurrence gave 0.86 g/t Au, 1.24% Zn and 0.27% Pb.

RTEPC recommended follow-up detailed geological mapping, additional IP-Resistivity, and subsequent ground magnetic surveys. The company planned an initial program of three (3) drill-holes of 300 meters each to test identified targets, however the company withdrew from its agreement with ZMC and eventually left the Philippines.

In 1999, TGNL signed an Option Agreement with ZMC for a six-year option term beginning February 18, 1999. During this Option Agreement period, Goldminco Corporation, listed in Canada, provided all the funding for a TGNL incorporated company in the Philippines by the name of Templar Resources Phil. Inc. ("**TRPI**"). TGNL and TRPI gained access to RTEPC's results and progressed directly to drilling when they moved into the property. TRPI drilled five (5) shallow drill holes employing relatively small diameter drill core sizes. Total meterage drilled was 593.6 meters. The first two (2) holes missed the veins. Hole 3 was sited at Miswi and between 79 meters to 93 meters (14 meters intersection), returned values of 5.2 g/t Au and 85 g/t Ag (including 3 meters at 16.6 g/t Au, 311 g/t Ag). Holes 4 and 5 were drilled at Tinago. Hole 4 penetrated an artisanal small-scale miner's stope. Hole 5 intersected 9 meters at 5.4 g/t Au and 122 g/t Ag (including 2 meters at 19.7 g/t Au and 450 g/t Ag). On November 25, 2004, the Option Agreement with ZMC was terminated by TRPI.

On April 26, 2005 ZMC entered into an agreement with TVIRD. TVIRD initially performed work which involved channel sampling of sites previously sampled by RTEPC. During the latter part of that year TVIRD geologists methodically mapped and sampled some artisanal miners' tunnels within the Tinago-Miswi vein systems. Data gathered confirmed the presence of significant gold and silver values associated with the Tinago vein at Balabag. Later in the same year, TVIRD commenced its drilling program with the first hole collared on November 17, 2005.

Considering the encouraging initial results, TVIRD decided to expand the program. As of the end of the Phase 4 drilling program, TVIRD completed 382 holes with cumulative meterage of 41,161.60 as of December 2020.

6.3 History of Mine Production

The Balabag Hill gold-silver deposit has been subject to illegal artisanal mining at least since 1998. There is no official record of mining production from the artisanal mining but it is estimated that illegal artisanal small-scale miners extracted 170,000 tonnes of Au -rich quartz vein and silicified rocks from 1996 to 2012. This TVIRD estimate is based on projected volumes extrapolated from the general orientation and width of the tunnels, with reference to the portals and exit points mapped from the 2012 topography of Balabag Hill.

By October 2020, the present topography of Balabag Hill was surveyed and established by TVIRD. Using the updated topography model, TVIRD has estimated a potential small-scale mining volume depletion of approximately 70,000 tonnes with grades of 2.18 g/t Au and 71.56 g/t Ag. The volume estimate is based on the results of a more detailed mapping inside accessible tunnels and underground workings. Average gold and silver grades were derived from actual rock chip and channel samples collected from the tunnels. This estimate accounts for the projected workings done by the small-scale miners below the October 2020 topography model, prior to their eviction from Balabag in 2012.

Clearing and stripping of terrain prior to the October 2020 topography update has resulted in the reduction of the small-scale mining volume depletion estimate.

7 GEOLOGICAL SETTING AND MINERALIZATION

7.1 Regional Tectonic and Geological Setting

The Philippines is located in the West Pacific region, where movements of three lithospheric plates, the Eurasian, Indo-Australian and Pacific Plates (including the Philippine Sea Plate), are responsible for the tectonic development of the Philippines. The Pacific Plate, mainly composed of oceanic crust, is moving west to west-northwest direction.

The Eurasian Plate is moving at north-northeast with some marginal basins on its eastern periphery and the Indo-Australian Plate, part oceanic and part continental, is moving northward, (Figure 7-1). Movements between these plates have produced the “Philippine Mobile Belt” (Gervasio,1966), a complex zone consisting of transcurrent faults, collision zones and subduction zones.

The Philippine archipelago is bounded on the eastern side by the East Philippine Arc, a west-dipping subduction zone located along the Philippine Trench. On the western side, it is bounded by the West Philippine Arc, an east dipping subduction zone where the Eurasian Plate subducts.

The West Philippine Arc can be traced from the Manila Trench down to the Mindoro-Panay Area marked by collision zones related to the Palawan Micro Continental Block and continuous down to offshore Negros Trench and then to Zamboanga area where another collision zone occurred between the Sulu-Zamboanga Arc and the West Philippine Arc. This zone is represented by the Sindangan Fault system, a suture zone between two arcs: the northeast trending Sulu-Zamboanga Arc located west of the Sindangan Fault and the NNW trending West Philippine Arc located east of the Sindangan Fault (Pubellier, et. al.,1991). Transecting the archipelago is the Philippine Fault Zone which is a left lateral strike slip fault that can be traced from northern Luzon to southern Mindanao, (Figure 7-2).

The Zamboanga Peninsula area is divided into three distinct rock-stratigraphic assemblages namely, SW-Zamboanga Zone, Cotabato-Sindangan Collision Zone, and NE-Zamboanga Zone.

SW-Zamboanga Zone, where the Balabag MPSA is located, consists of a generally NE-trending and relatively older suite of rock stratigraphic units. This includes a pre-Tertiary basement complex consisting of Triassic schists and other metamorphics (Tungawan Schist), Cretaceous ultramafics and ophiolitic rocks (Bungiao Melange), Paleocene to Miocene sediments (Sirawai and Anungan Formation) and volcanics (Soleplep Volcanic Complex) unconformably overlie the basement complex. Miocene intrusives and hypabyssal rocks (Vitali Diorite) intrude preexisting rocks. Another episode of active volcanism occurred during Plio-Pleistocene which deposited NE trending andesitic to basaltic plugs and pyroclastic flow deposits (Sta. Maria Volcanic Complex).

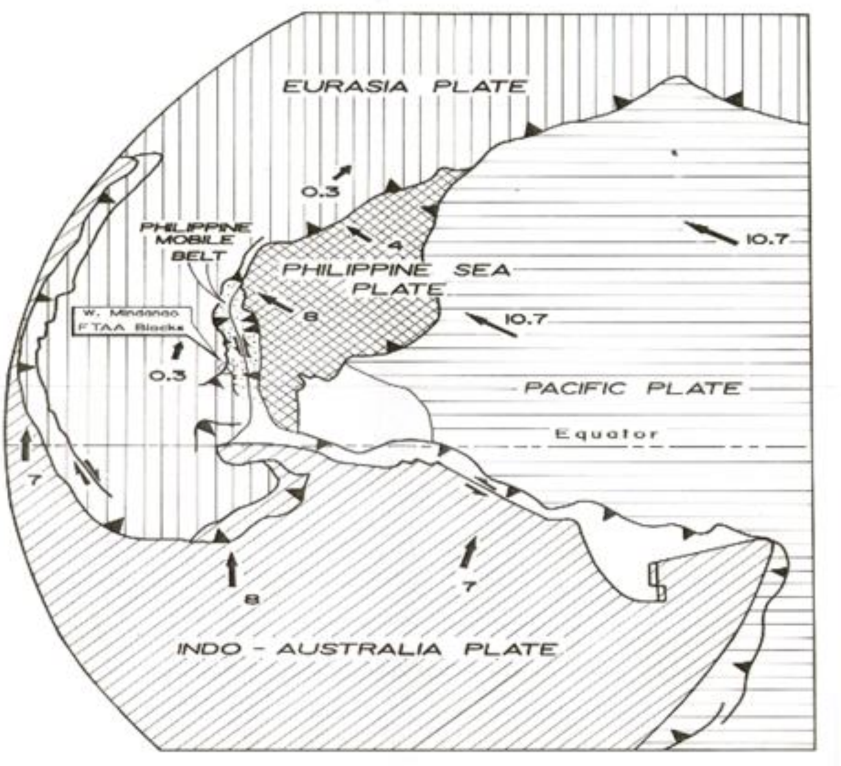


Figure 7-1: Location of the Philippine Mobile Belt with respect to adjacent tectonic plates.

Source: Geology of the Philippines 2nd Edition, 2010, Mines & Geosciences Bureau

The Cotabato-Sindangan Collision Zone is characterized mostly by NW-trending braided or anastomosing sinistral faults and similarly trending lithostratigraphic units. Rock suites comprise Cretaceous ultramafics and ophiolitic rocks, Paleocene-Eocene sediments, and Oligocene to Miocene volcanics and sediments, Miocene intrusive and hypabyssal rocks, Quaternary igneous sequences (both intrusive and extrusive), and alluvium comprise the youngest sequences. The northeast Zamboanga Zone is mostly covered with the Pleistocene Malindang Volcanic Complex and related lahar and alluvial deposits which have the same age as the Sta. Maria Volcanic Complex of the southwest Zamboanga Zone.

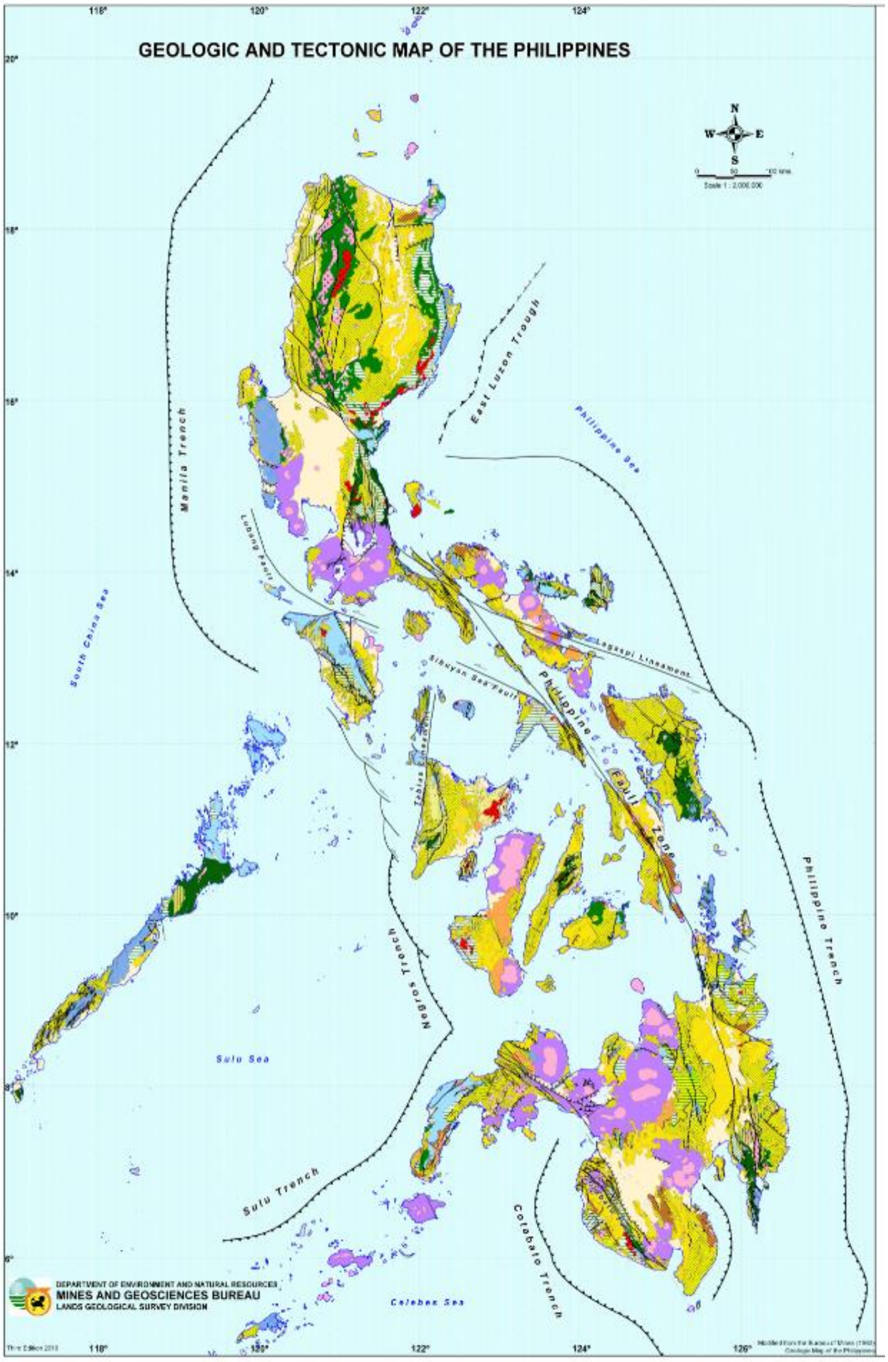


Figure 7-2: Tectonic map of the Philippines.

Source: Geology of the Philippines 2nd Edition, 2010, Mines & Geosciences Bureau

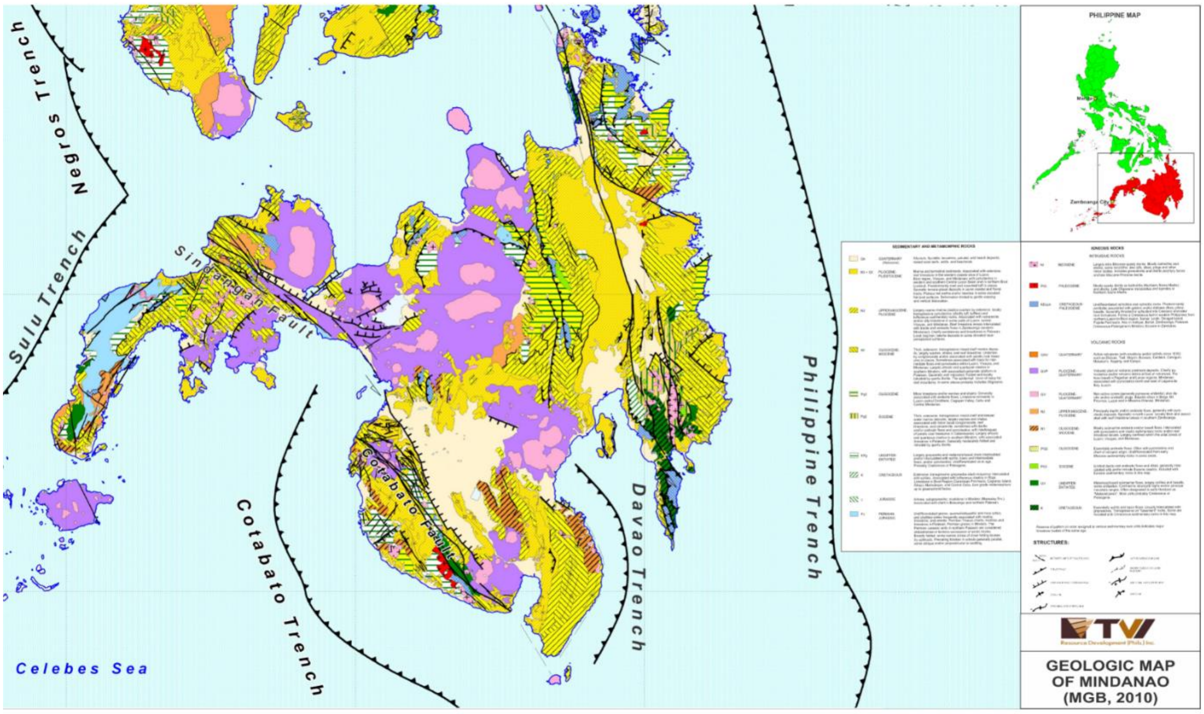


Figure 7-3: Regional geologic map of Mindanao.

Source: Geology of the Philippines 2nd Edition, 2010, Mines & Geosciences Bureau

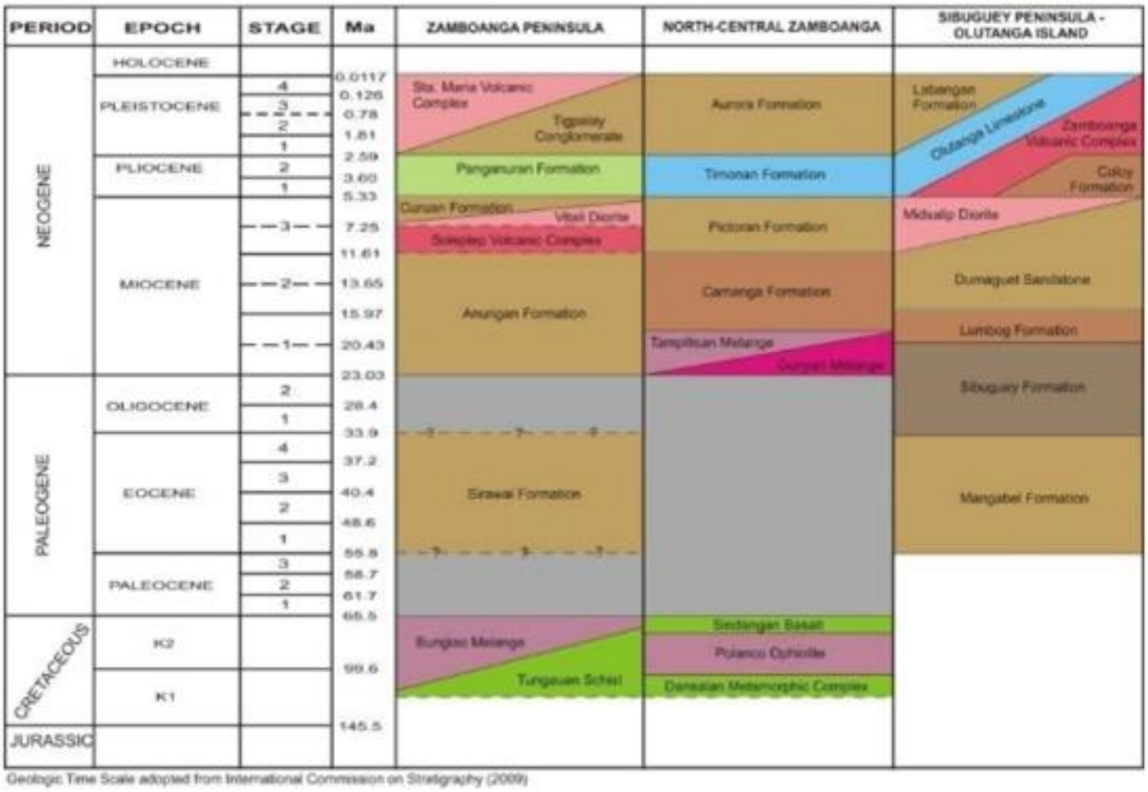


Figure 7-4: Stratigraphic column for Zamboanga Peninsula, North-Central Zamboanga and Sibugay Peninsula-Olutanga Island.

Source: Geology of the Philippines 2nd Edition, 2010, Mines & Geosciences Bureau

7.2 Local Geology

Four main rock units were identified within the Balabag MPSA tenement. These rock units include the sedimentary rocks, volcanic rocks, diorite, and andesite-dacite porphyry. The sedimentary rocks correlate with the Paleocene and Early Miocene Sirawai and Anungan Formation, respectively. The volcanic rocks, on the other hand, correlate to the Late Miocene Soleplep Volcanic Complex and the diorite to Late Miocene Vitali Diorite. The youngest rock unit of RTEPC's interpretive geology of the area is the andesite-dacite porphyry which can be correlated to the Pliocene-Pleistocene Sta. Maria Volcanic Complex.

7.2.1 Sedimentary Rocks (Early to Middle Miocene)

The sedimentary rock units consist of a well-indurated sequence of bedded calcareous mudstone-siltstone-sandstone-conglomerate intercalated with limestone. Outcrops were noted north of the Upper Dipili River. Mudstone is thinly laminated and brown to dark gray in color. Sandstone consists of lithic fragments cemented by a calcareous matrix. The conglomerate is poorly sorted and usually contains clasts of limestone and other sedimentary rocks. The limestone is white to gray and crystalline. Beds generally strike to northwest and dip 60-70 southwest.

Figure 7-5: Paleontological analysis of samples BL-65765 and BL-65766 have identified several fossils of foraminifera *(Lepidocyclina, Miogypsina, and Cycloclypeus)* with some algae and corrals, with age range of Early to Middle Miocene.

7.2.2 Volcanic Rocks (Late Miocene)

The observed volcanic rocks in the area consist of altered volcanic flows and pyroclastic rocks. The volcanic flows are massive and fine grained to porphyritic. They range in composition from andesite to basalt. Pyroclastic rocks occur as interlayered with the volcanic flows. They include tuffs and volcanic breccia. The volcanic breccia consists of fragments of altered andesite and basalt embedded in a tuffaceous matrix.

Basalt is fine grained and magnetic with magnetite being altered to hematite and other ferromagnesian minerals altered to chlorite. It is vesicular and amygdaloidal.

Figure 7-6: Sample of amygdaloidal basalt.

7.2.3 Intrusive Rocks (Late Miocene)

Like most of the Philippines' precious metal mineralization which occurred during the Middle to Late Miocene period, active subduction-related arc volcanism brought about by the Sulu Trench enabled the intrusion of diorite rocks at Sulu-Zamboanga Arc. These intrusive rocks along with active volcanism served as a heat source for precious and semi-precious mineralization in the area.

Although no diorite outcrop has been mapped yet at the MPSA area, an altered plagioclase phyric diorite clast within a hydrothermal vein breccia was identified from drillhole BLDH-10-145 at 147.8 meters and an altered diorite porphyry from drillhole BLDH-10-150 at 153.7 meters located north and west of the Tinago area, respectively.

K-feldspars of the plagioclase phyric diorite are pervasively altered to sericite-illite. Very fine-grained tourmaline is noted locally, enclosed by mosaic quartz intergrown with illite of wall rock replacement.

An altered microdiorite was also noted from a wall rock sample at the Unao-Unao area that was subjected to petrographic identification by the MGB. It has hypidiomorphic texture as exhibited by fine to medium-grained twinned sodic plagioclase + augite + enstatite. Poikilitic texture has at times been observed in smaller augite crystals enclosed by larger plagioclases. Accessory opaques occur as blocky to elongate/ acicular and web-like disseminations. Plagioclase are altered with clay and some chlorite while pyroxenes are mostly or partly altered by chlorite.

The MGB interpreted the ghosted hypidiomorphic plagioclase and less abundant ghosted amphibole and relict or recrystallized primary quartz among wall rock material enclosed by silica/silicate cement/fill as an indication of a high-level intrusion.

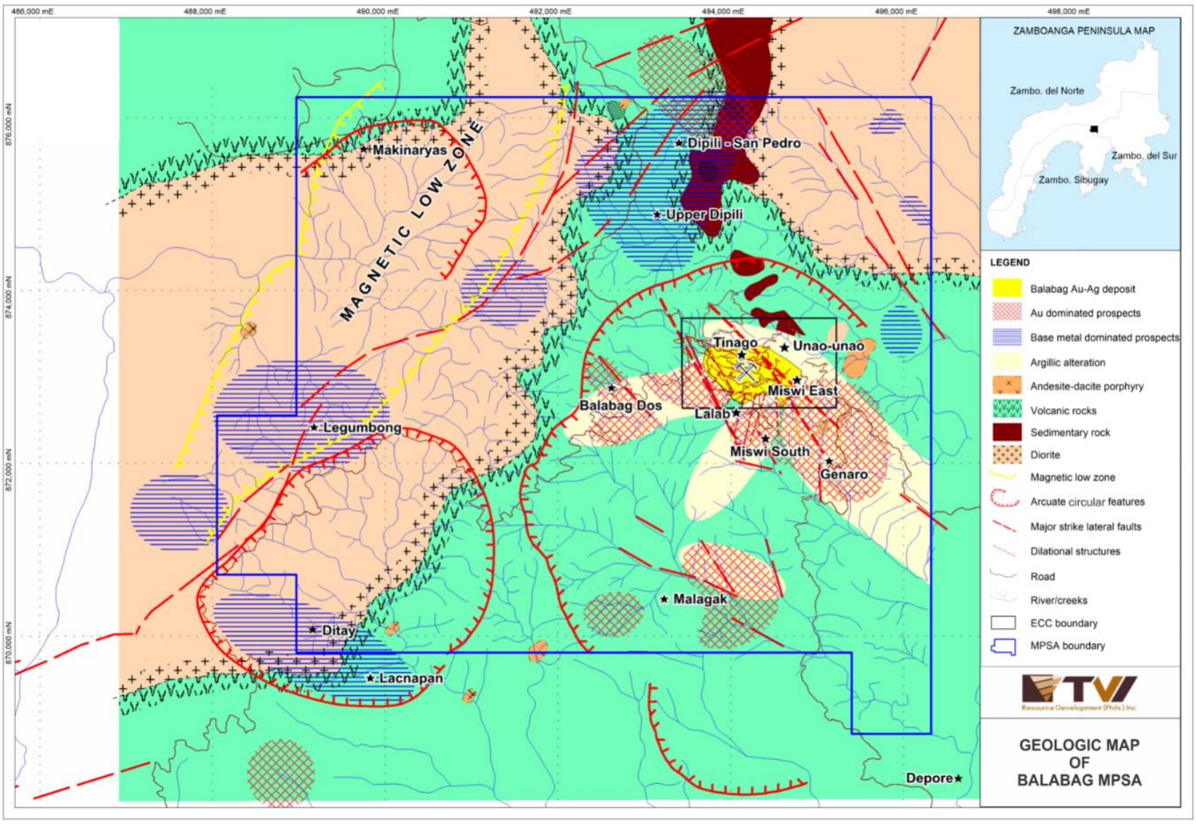


Figure 7-7: Local geologic map of Balabag MPSA and vicinity.

Source: RTEPC, 1997

The TVIRD exploration team conducted further follow-up to detailed geologic mapping of the property in the latter part of 2017 covering the central part of the MPSA, particularly focusing on the Balabag Hill mineralized zone extending both northward and southward, chasing the possible extent of the mineralization.

Figures 7-8 and 7-9 show the updated geologic map of the property based on consolidated data from field mapping, drill core logs, and petrographic analysis of selected drill core and outcrop samples.

The mapped areas around Balabag Hill and vicinity are dominated by andesitic flows, volcanic breccias, pyroclastic and the youngest rock unit mapped as diatreme breccia. The above stratigraphic units were intruded by high-level andesite to dacite dikes.

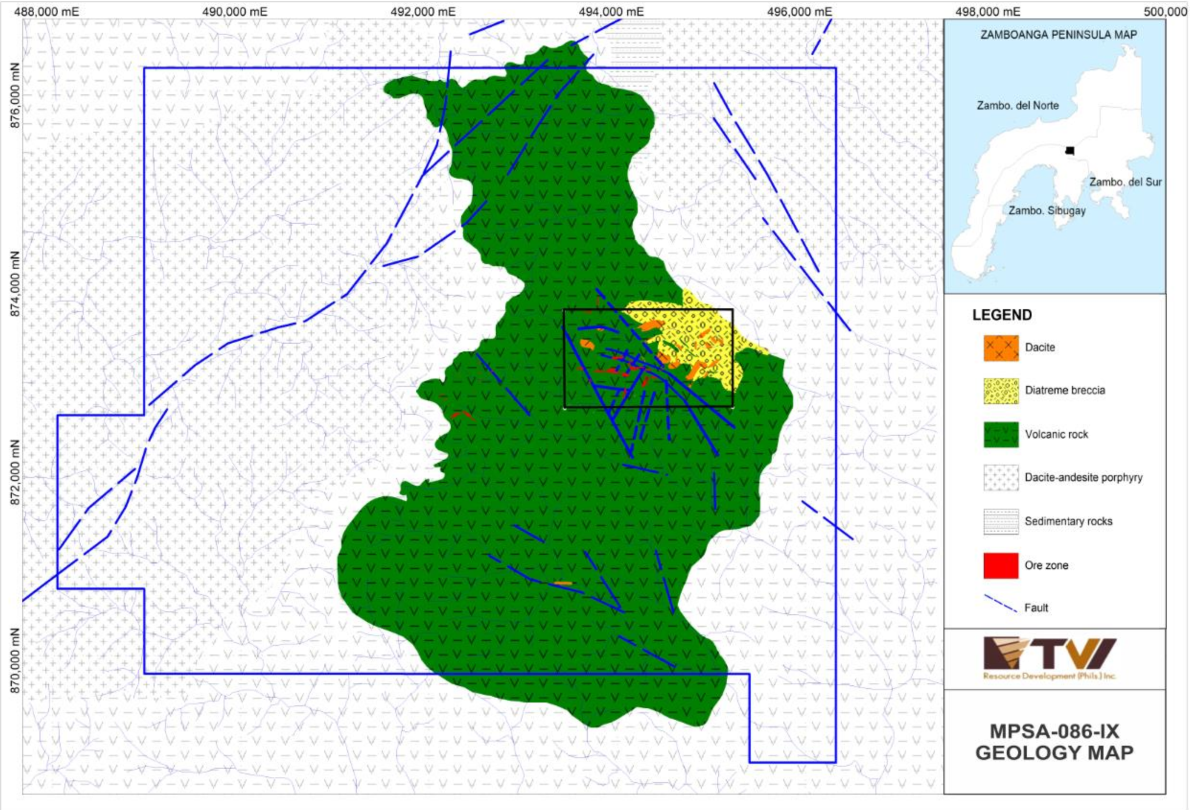


Figure 7-8: TVIRD Updated Geologic Map of Balabag Hill and Vicinity, 2019 (colored lithologies) superimposed on RTEPC, 1997 (uncolored lithologies).

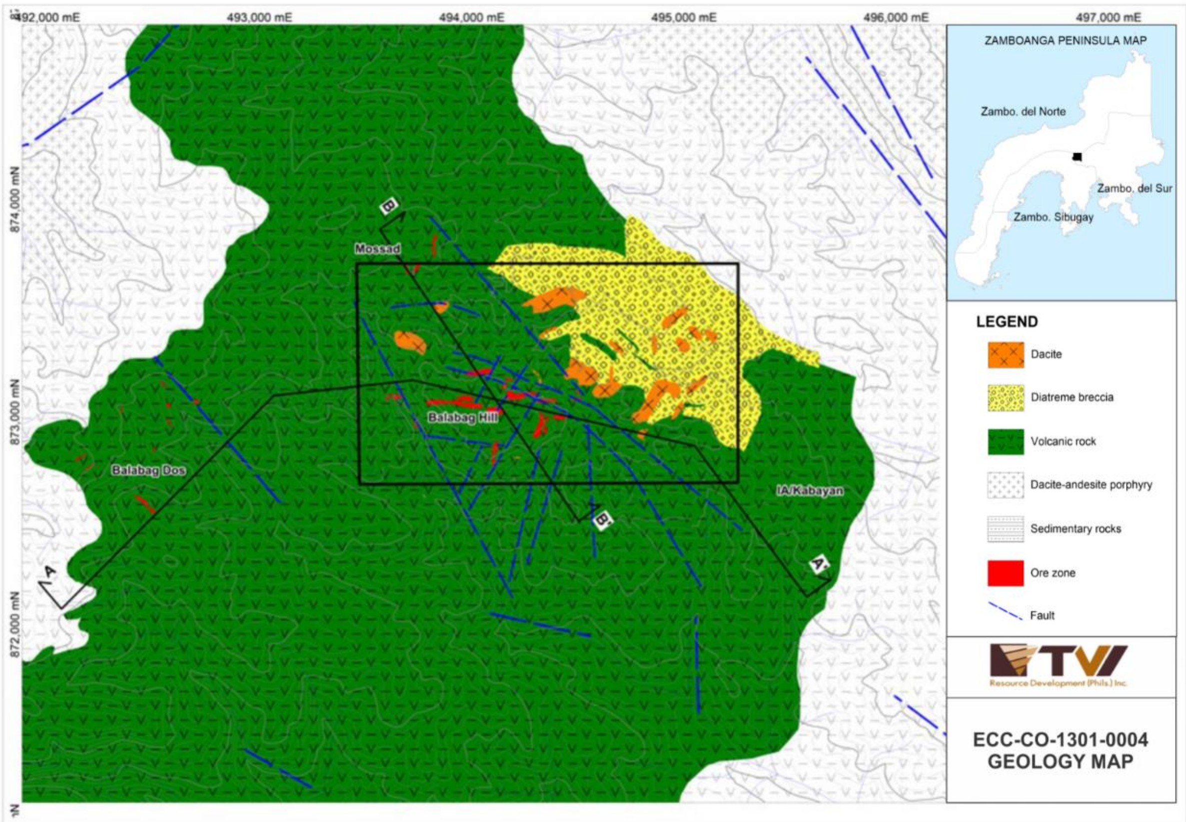


Figure 7-9: TVIRD Detailed Geologic Map of Balabag Hill Au -Ag Deposit, 2019.

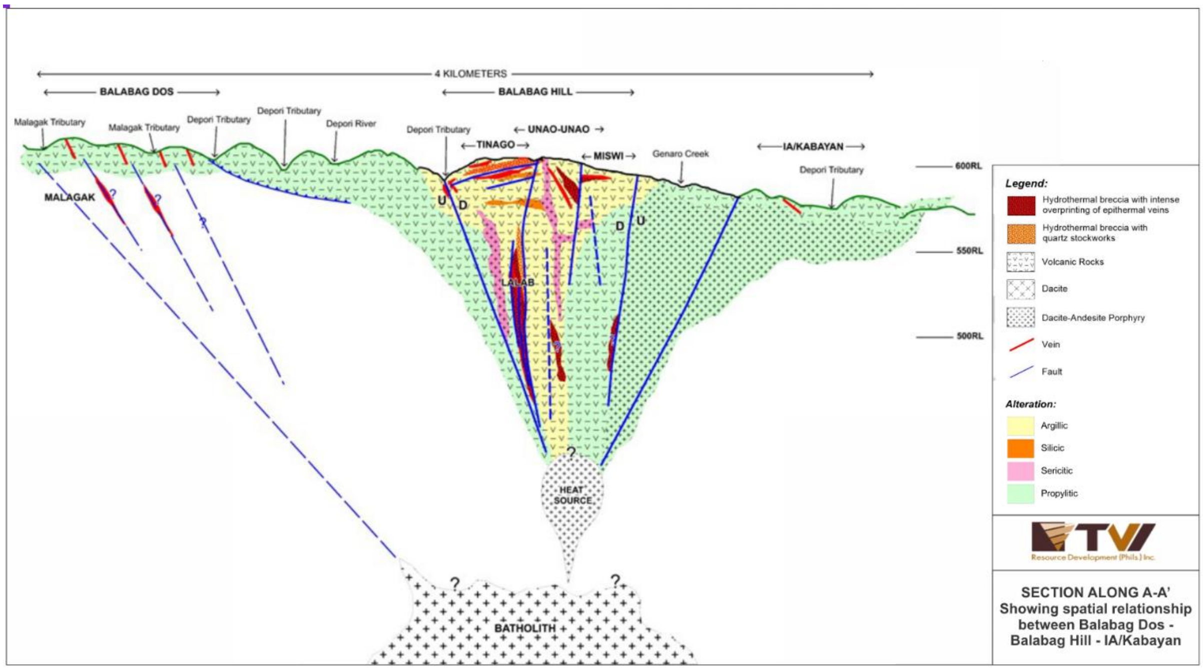


Figure 7-10: Conceptual stratigraphic section of Balabag Hill and adjacent prospects.

7.2.4 Andesite to Trachyandesite

Andesites vary from fine grained to porphyritic with well-defined flow bands, and some exhibits vesiculated and amygdaloidal texture. Some amygdules are filled with calcite. Andesite mineralogy is mostly plagioclase with chlorite patches. Thin sections of altered porphyritic andesite samples show complete replacement of plagioclase phenocrysts by fine-grained, dense sericite. Hornblende is replaced by quartz and/or chlorite.

Figure 7-11:

Sample of porphyritic andesite.

Several andesite samples from outcrops and drill cores that were sent to Applied Petrological Services & Research ("**APSAR**") in New Zealand (September 2018), Mason Geoscience Pty Ltd ("**Mason Geoscience**") in Australia (December 2010) and to the Petrological Section of the MGB (initially in April 2010 with another batch of samples submitted in January and May 2019), further aid in the interpretation and correlation of the observed rock units in the area.

Both APSAR and the Mason Geoscience analyses interpreted that the andesite samples were formed in two different occurrences:

i. Some contain minor to moderate weakly flow-foliated phenocryst abundances, accompanied by flow-felted groundmass plagioclase laths with local angular vesicles, and are inferred to have formed as extrusive lavas; and,

ii. Some are massive, with moderately abundant phenocrysts in fine-grained groundmass, and are inferred to have formed as shallow intrusive bodies (e.g. dykes).

The andesite volcanic flow (trachyandesite) is characterized by pseudomorphed plagioclase and amphibole phenocrysts contained within ghosted, plagioclase-rich trachytic to pilotaxitic textured groundmass. The relict apatite together with pseudomorphed magnetite present in the ghosted pilotaxitic to trachytic textured groundmass indicate probable intermediate igneous classification.

In addition, ghosted plagioclase and amphibole crystal clasts together with plagioclase and amphibole porphyritic lithic fragments defining clastic rock types may represent tectonic brecciated andesite and trachyandesite or volcanic rock types.

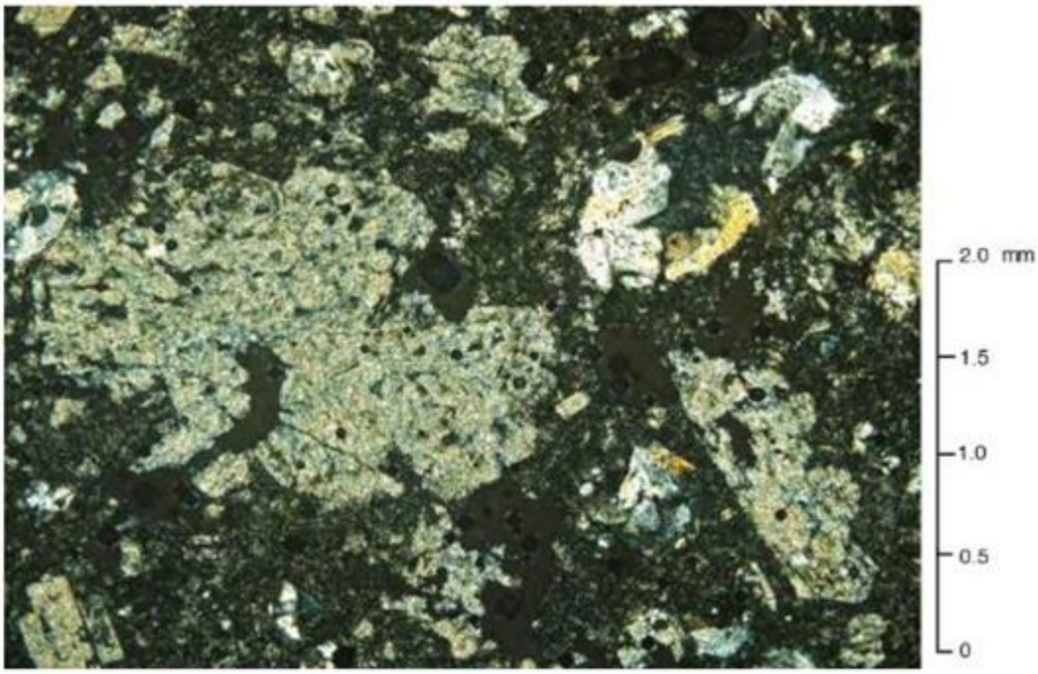


Figure 7-12: Microphotograph of Sample BAL-LAB-2010-16 under crossed polars; altered porphyritic andesite illustrating complete replacement of plagioclase phenocrysts (center left, bottom right) by fine-grained dense sericite (tiny yellowish flecks), and replacement of hornblende phenocryst (upper right) by quartz (pale yellow) and fine-grained dense chlorite (anomalous dull green).

Source: Mason Geoscience, 2010

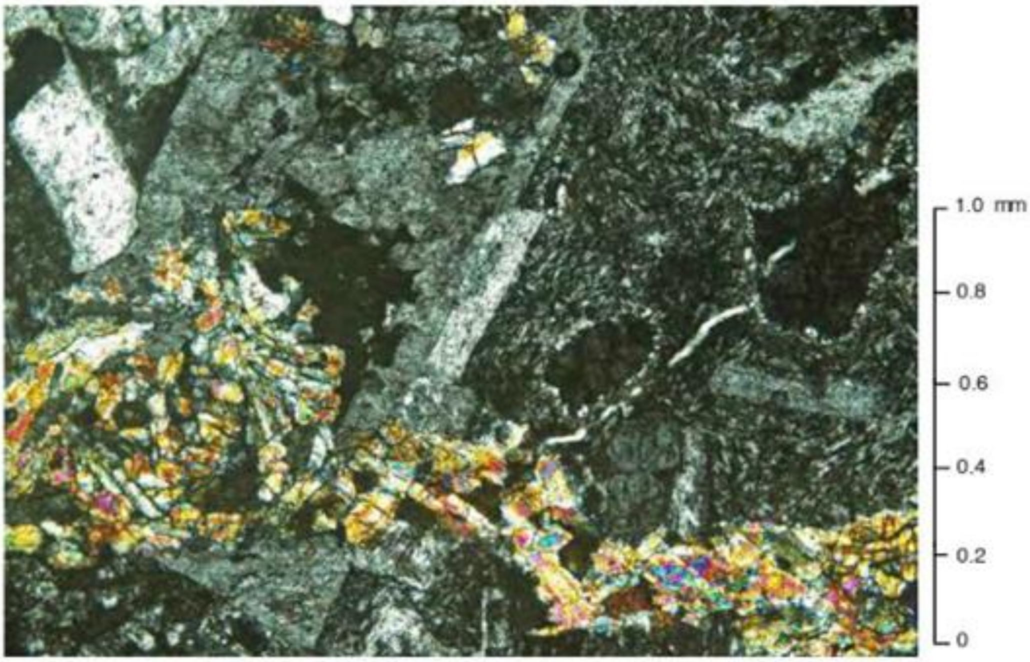


Figure 7-13: Microphotograph of Sample BAL-TIN-2010-13 under crossed polars; altered porphyritic andesite cut by a veinlet (bottom) filled by small epidote crystals (anomalous yellow and brighter colors), albite and epidote after a plagioclase phenocryst (left half of view), albite after fine-grained felted groundmass, and fine-grained chlorite filling ovoid to angular vesicles (center right).

Source: Mason Geoscience, 2010

7.2.5 Pyroclastic Rocks and Volcanic Breccias

The pyroclastic rocks are medium to coarse grained tuffaceous sandstone, flow breccias, agglomerates and tuffs. The tuffs are further subdivided into ash tuff, lithic tuff, and crystal tuff. The ash tuff is buff to cream and thinly bedded. The lithic tuff is well indurated, greenish to grayish black and propylitic. Flow breccias are either monomictic or polymictic. Monomictic breccias are poorly sorted, matrix to clast supported and contain andesitic clasts cemented by an andesitic sandy matrix. The polymictic breccias are poorly sorted, matrix supported and contain clasts of limestone, porphyritic andesite, aphanitic andesite, and some mudstone and clastic rocks.

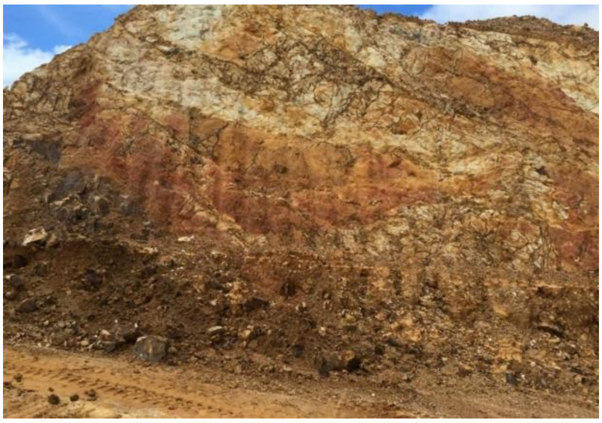


Figure 7-14:

Weathered and oxidized outcrop of volcaniclastic breccia sequence at Miswi.

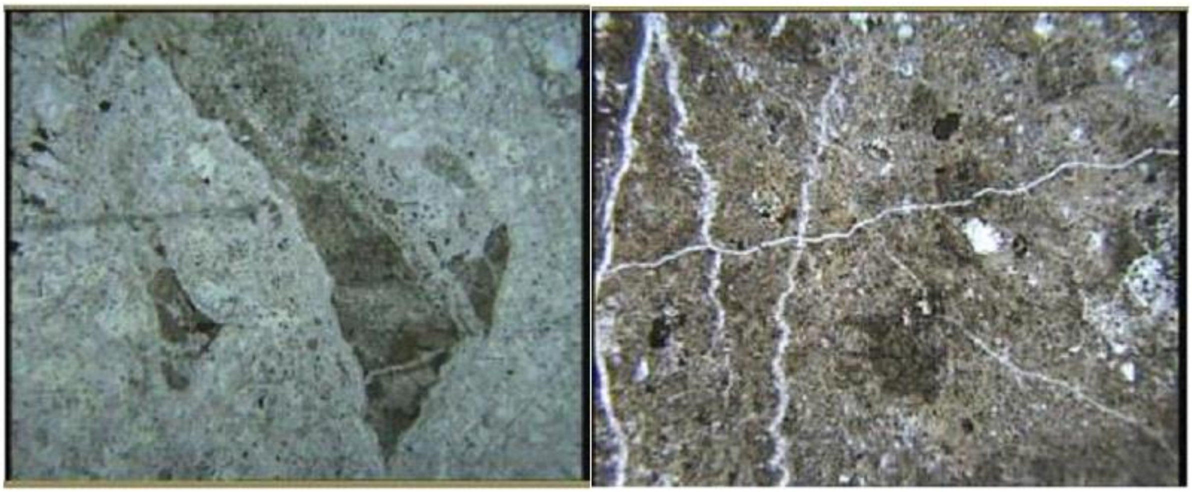


Figure 7-15: Microphotograph of altered tuffaceous samples under plain polarized light, (left) clastic textured wall rock fragments enclosed by mosaic-chalcedonic quartz & interstitial chlorite-illite; (right) pervasive adularia (impregnated with ultra-fine-grained hematite) formed after clastic wall rock.

Petrographic analysis by the MGB of three wall rock samples from Unao-Unao underground tunnels (BL-65757, BL-65758 and BL-65759) identified relict clastic texture. Although significantly altered, the samples still show relict clastic texture. Still recognizable are a few angular to subrounded altered clasts afloat a microcrystalline quartz + fibrous illite matrix. Clasts are fully replaced by illite-sericite fibers + opaques. Fragment sizes range from 0.04 to 2.94 millimeters in length.

The identified volcanic breccia is composed of abundant small to large (millimeter to centimeter sized) angular to subrounded lithic fragments, mostly porphyritic andesite but also including micro-dacite porphyry. This coarse volcanic breccia is inferred to have been sourced from mixed intermediate to acid volcanic and subvolcanic terrain.

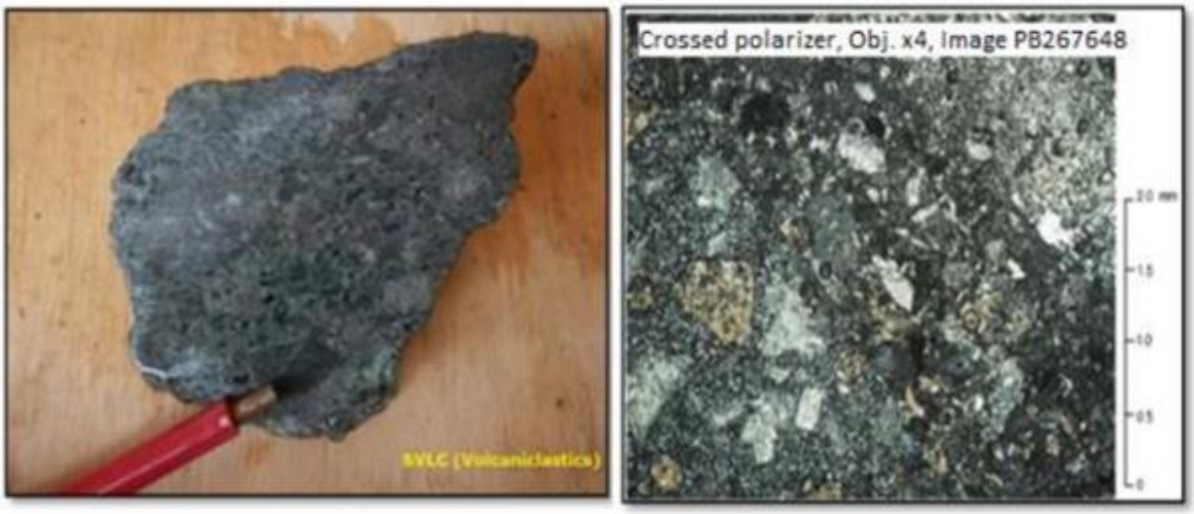


Figure 7-16: Volcanic breccia specimen sample and microphotograph (BAL-TIN-2010-15); porphyritic andesite clasts in a matrix (oriented NW-SE in this view) composed of small angular crystal and lithic fragments in fine-grained matrix.

7.2.6 Dacite – Andesite Porphyry

During the Pliocene-Pleistocene period, another episode of active volcanism occurred, thus the emplacement of the northeast trending andesitic to basaltic plugs and pyroclastic flow deposits. Precious metal mineralization may have also occurred during this period. Some of these hypabyssal intrusives observed in the vicinity of Balabag Hill and some drill cores have dacitic composition. Like most wall rocks associated with Balabag Au – Ag mineralization, the phenocryst and groundmass minerals are mostly altered or totally replaced by illite-sericite.

Shown in Figure 7-18 is a micropictograph BAL-TIN-2010-11. This sample analyzed by Mason Geoscience is composed of moderately abundant phenocrysts of plagioclase and hornblende which comprises 40% of the rock's total composition suggesting that this sample may have been emplaced as a small intrusive body.

Figure 7-17: Altered dacite from drill hole BDDH-07-63 at 134.18m depth.

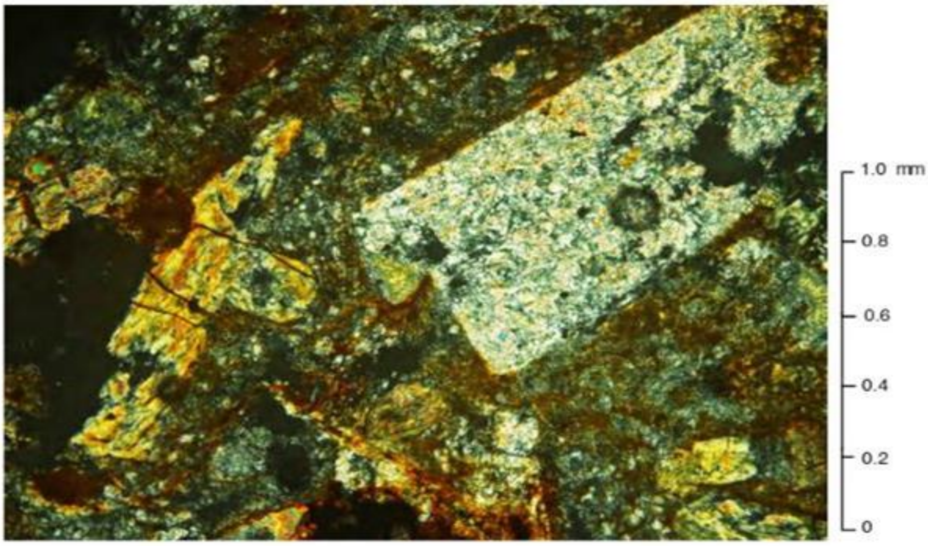


Figure 7-18: Microphotograph of BAL-TIN-2010-11 under crossed polars; argillic altered porphyritic andesite illustrates replacement of a plagioclase phenocryst (upper right) by a dense mat of fine-grained illitic clay (pale yellowish color), and replacement of a hornblende phenocryst (left) by smectite clay (orange yellow) in fine-grained clay-altered groundmass.

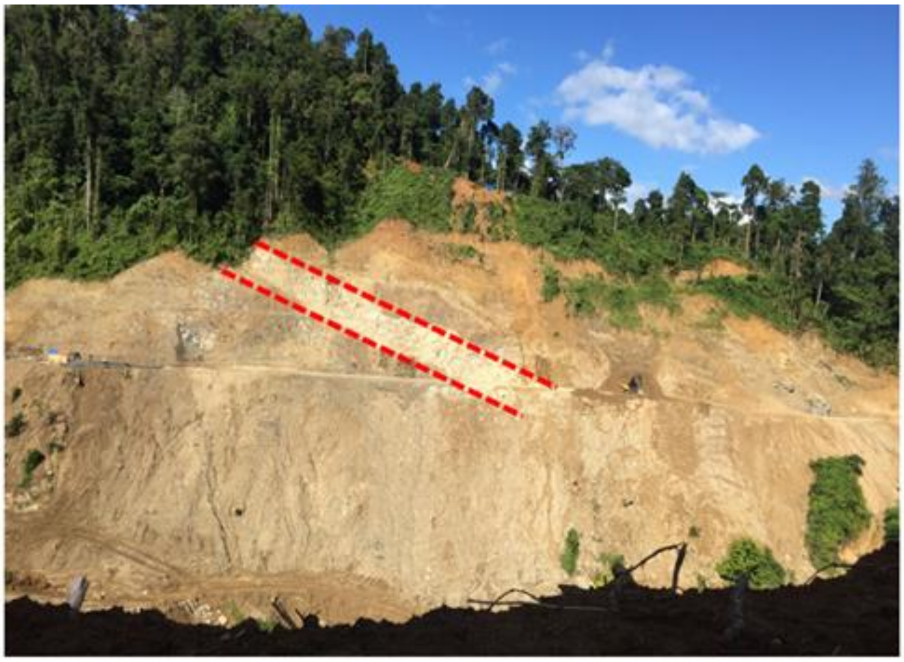


Figure 7-19: Outcrop of dacite dike intruding volcaniclastic and diatreme breccia sequence outcropping in Unao-Unao area.

7.2.7 Diatreme Breccia

A recently identified rock unit within the Balabag MPSA is composed of poorly sorted, rounded to subrounded heterolithic clasts of older rock units with varying sizes (millimeter to meters sizes) consisting of stratified but disorientated tuffaceous sedimentary rocks, pyroclastic fallout and breccias, diorite and limestone within a fine ash-rich, tuffaceous sedimentary matrix.

Initially the rock suite was identified as conglomerate but was later interpreted as a diatreme breccia due to the presence of clasts of carbonized wood fragments, surrounding pyroclastic volcanic ejecta and accretionary lapilli tuff, large slumped large blocks of limestone and sub-rounded clasts of subvolcanic porphyries and/or diorite which were interpreted as a result of explosive events related to the intrusion of subvolcanic dacitic dikes and possible event of phreatomagmatic explosion.

Outcrops of the diatreme breccia were observed directly at the northeast side of the Balabag Hill gold deposit. The breccia unit appears to be more than 50 meters thick. Based on cross-cutting relationships and composition of its clasts, this unit is assigned to the Pliocene-Pleistocene age.

Being located at the northeastern portion of Balabag Hill and with no identified associated mineralization, the diatreme breccia could be considered as the eastern boundary of Balabag Au -Ag mineralization. Brecciation may have occurred during the period of active volcanism in the Pliocene-Pleistocene times. Existing diatreme breccia models show that it is common for these structures to be intimately related to high-level magmatic intrusions, their apophysis or feeder dikes. In the case of Balabag Diatreme Breccia, several dacite dike outcrops were mapped at the vicinity of the proposed tailings storage facility area where this rock unit crops out.

Figure 7-20: Drill core sample of diatreme breccia (left); diatreme breccia outcrop along Unao-Unao creek with carbonized wood fragments (mid-right).

7.3 Structural Geology

The Sindangan-Cotabato-Daguma Lineament is a northwest-southeast trending left lateral strike-slip fault that separates the island-arc-related eastern-central Mindanao and Zamboanga Peninsula with continental affinity (Yumul et. al., 2004). The lineament is believed to be the product of the 'soft' collision between Sundaland and the Philippine Mobile Belt, during Late Miocene to Pliocene (Pubellier et al. 1997). The sinistral movements along the Siayan-Sindangan-Suture-Zone forms and controls the structural grain of the north Zamboanga area (Bobis, 2011).

Stresses along this northwest trending collision zone produced northeast trending dilatant zones (tension gashes) and northwest trending fault jogs, dilational splays, dilational bends and northwest striking dilatant zones in reverse and normal faults. These resultant structures acted as passageways for mineralized hydrothermal fluids where precious and semi-precious metals were deposited as in the case of Balabag.

Inside the Balabag MPSA are northwest and east-north-east trending faults which act as boundaries and guideways to gold-silver mineralization (Figure 7-22). A major northeast-southwest dextral strike-slip fault known as the Kabayugan Fault, was interpreted to have passed by the northwest portion of the MPSA. Several northwest-southeast trending strike slip faults with related normal fault and low-dipping fault component traverses the central and southeast corner of the MPSA.

Figure 7-23 shows an interpreted structural scenario within Balabag Hill gold mineralization and vicinity. Two northwest trending sinistral strike fault couples running along the Depore, Unao-Unao and Miswi areas characterized by fault gouges and manifested geomorphologically by northwest trending ridges and straight stream courses bounding the northeast and southwest portion of Balabag Hill have resulted in numerous dilatant zones and/or fault structures that have been hosting the gold mineralization zones as veins and breccias in Balabag Hill.

The known mineralization zones at Balabag Hill area either have an east-north-east (Tinago and Unao-Unao), northeast (Miswi) or north-northeast (Lalab) trend. The east-northeast striking mineralization zones have gentler dips (37-50°) to the north or northwest while north-northeast and northeast trending vein zones are moderately to steeply dipping (50-80°) to the northwest. The east-northeast to east-west trending and gently to moderately dipping vein zones occur as tension fractures or gashes while the northeast and north-northeast trending ones are the extension fractures which were filled with silica-quartz-sulfide veins.

A structural study of the Balabag Epithermal Gold Vein Deposit was performed by Dr. Mario A. Aurelio in April 2013 to understand the nature of the vein system. Dr. Aurelio's study determined that:

1. The Balabag epithermal quartz gold veins are hosted by Late Oligocene to Early Miocene volcano-sedimentary sequences built over the continental-ophiolite basement mix. These arc sequences consist mainly of andesite flows (and their intrusive equivalents) intercalated with clastic sequences of conglomerates, sandstones, siltstones and minor shales. Limestones are seen occasionally intertonguing or interlayered with the clastic sequences. Induration in the clastic deposits is generally light to moderate.
2. The gently dipping geometry of the Balabag veins is the result of tilting of the entire vein system as the Late Oligocene to Early Miocene volcano-clastic host rocks were subjected to regional folding. This folding event appears to be associated with a major tectonic event involving the collision of Zamboanga Peninsula with the central Mindanao volcanic arc sometime in the Middle Miocene.
3. In Balabag, this folding event resulted in the formation of the Unao-unao anticline, forming beds moderately dipping (~60°) to the south-west and north-east on either bank of the easterly trending Unao-unao Creek. The folding of the host volcano-clastics caused the tilting of the Balabag epithermal veins, giving rise to their present-day gentle (~30°) northerly dips. This configuration suggests that the system remains open to the west, east and at depth and should be tested by detailed surface geological mapping, tunnel inventory and exploratory drilling.

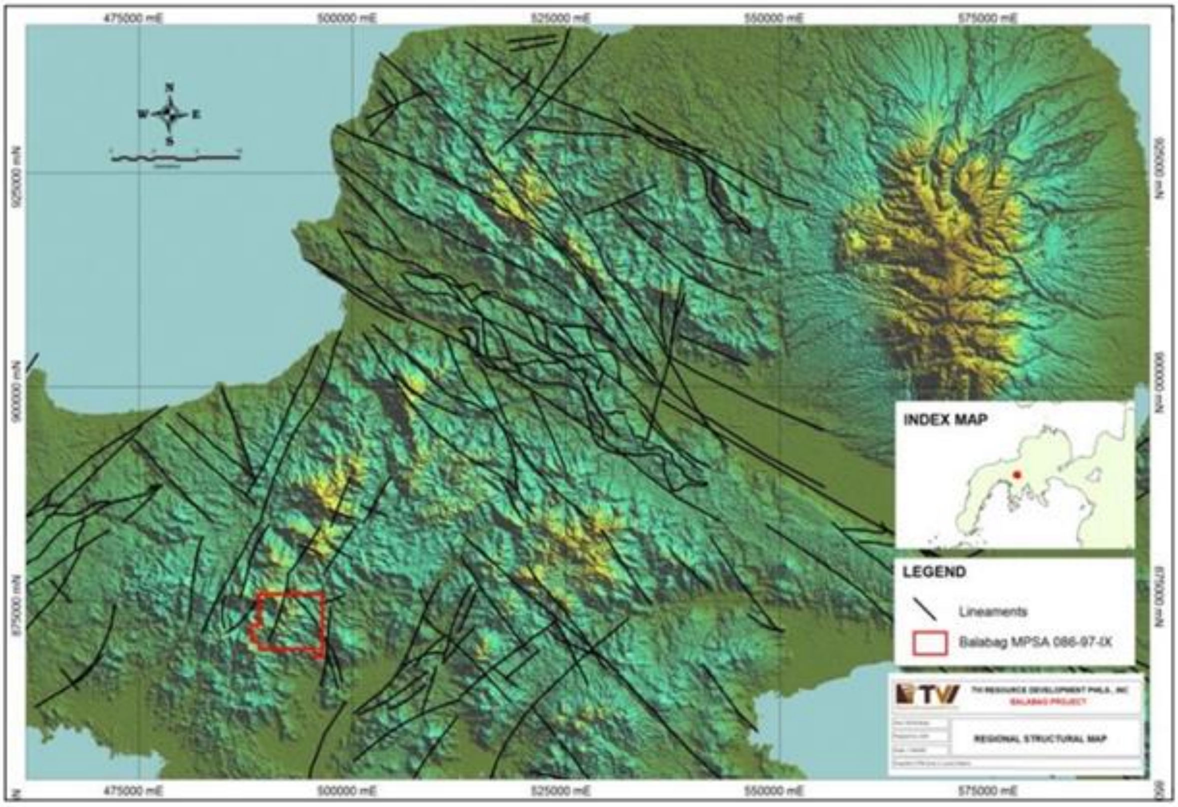


Figure 7-21: Lineaments map of North-Central and NE Zamboanga Peninsula.

Source: Bobis, Renato, 2011

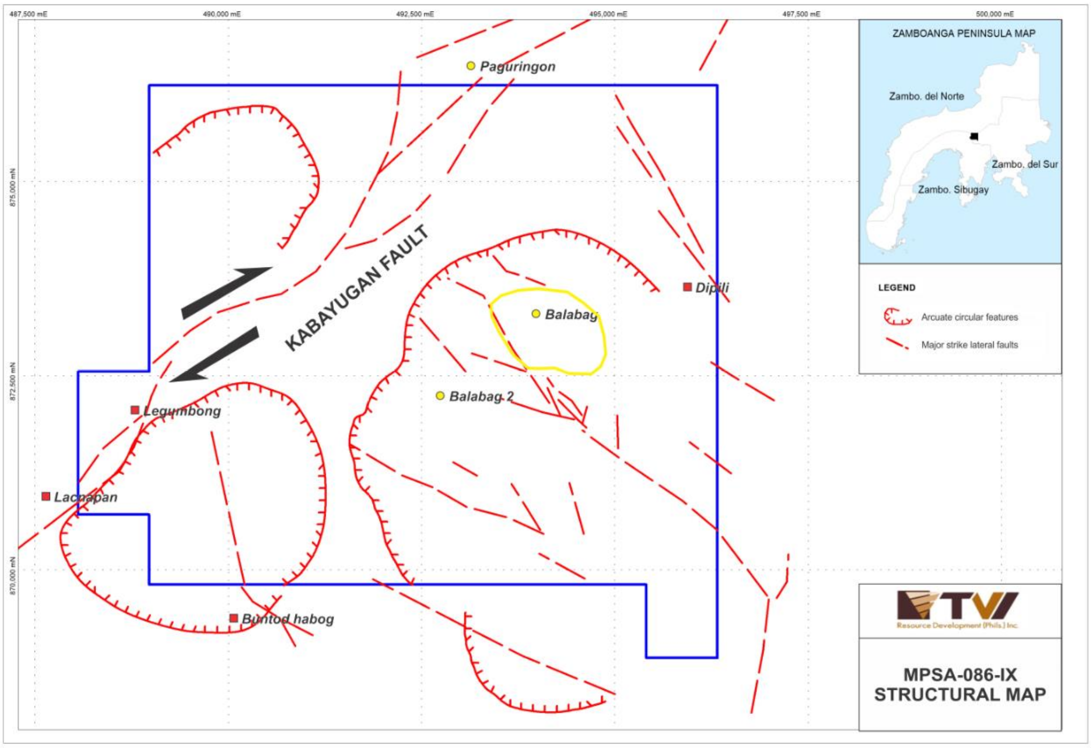


Figure 7-22: Interpreted structural map of Balabag MPSA based on satellite imagery.

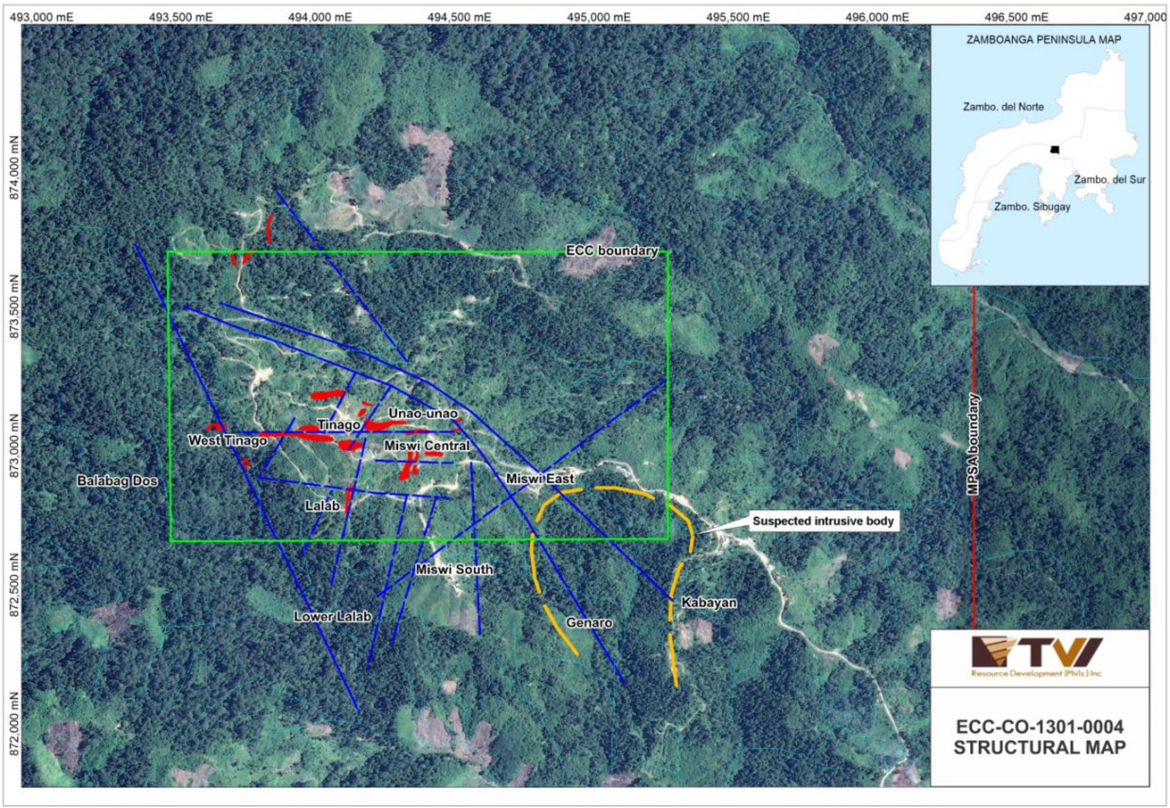


Figure 7-23: Interpreted local structural map within Balabag Hill and vicinity

Source: Sosa, Leo. A, November 2018

8 DEPOSIT TYPES

8.1 Alteration Type and Style

Geological mapping done within the MPSA tenement resulted in the identification of several alteration zones consisting of propylitic, argillic, sericite (+adularia), silicic and quartz-adularia zones. The latter is represented in the vein zone.

The primary rock types hosting the Balabag gold-silver deposit are composed of volcanic units of andesite grading to trachytic and volcanic fragmental rocks or breccia that have been invaded by mineralizing hydrothermal fluid producing varied alteration assemblages.

Various representative rock and drill core samples were analyzed and studied by Mason Geoscience in 2010 using optical petrographic methods, supplemented by optical mineragraphic observations, staining for K-feldspar, and fluid inclusion micro-thermometric studies on some samples. The Geological Laboratory Services Section of the Philippines' MGB Petrology Laboratory ("**Petrolab**") was also commissioned for petrographic analysis using thin sections in 2019. The services of APSAR were also utilized for studies of considerable vein samples containing altered wall rock during the period November 2018 to May 2019.

Propylitic alteration represents the outer alteration halo of the deposit. This broader alteration zone is a manifestation of thermal and related metasomatic effects resulting from the emplacement of intrusions, of possible quartz diorite to quartz monzodiorite classification, into volcanic units, andesite to trachy-andesite eruptive rocks. Petrographic studies revealed the presence of albite + chlorite + opaques (possibly hematite) + epidote + quartz + leucoxene mineral assemblages giving the rock a greenish discoloration. The plagioclase phenocrysts were replaced by albite + K-feldspar+ calcite ± epidote, the ferromagnesian phenocrysts (probably pyroxene and hornblende) by chlorite + epidote + quartz, the groundmass plagioclase laths by K-feldspar, and the vesicles were filled by chlorite + minor quartz + leucoxene. Carbonates and epidote usually occur as fracture filling accompanied by quartz and radial aggregates of needle-like epidote crystals. This type of alteration is present within the footwall and hanging wall distal to the vein systems of the Balabag deposit. Likewise, it is observed mostly in the host rock in lower parts of the drill core. In surface exposures, it is represented by the gray to greenish color of volcanic unit host rock.

Argillic alteration consisting of illite/smectite + K-feldspar + quartz + pyrite + leucoxene/rutile zone mainly occurs at the surface or near surface based on drill hole data appearing as bleached, pale white to yellowish discoloration of the rock. This alteration replaces the andesite, volcanic breccia, and tuff host rocks. Most of the primary minerals are replaced by illite/smectite mixed layer minerals. Further, this alteration is commonly accompanied by quartz veinlets and as vein's immediate wall rock alteration at shallow depths.

Relics of rock textures may be visible depending on the intensities of argilization showing replacement of illite and smectite pseudomorphed after prismatic crystals of plagioclase and ferromagnesian phenocrysts. Traces of granules of leucoxene/rutile are scattered in a fine-grained altered matrix of indeterminate clays. Pyrite is also found locally disseminated throughout the rock matrix but predominantly oxidized.

Figure 8-1:

Argillized porphyritic andesite of BLDH-10-139 (12.15-12.30m) with 0.05 g/t Au and 0.25 g/t Ag.

Sericite alteration is more prominent on the southern side of Balabag Hill, characterized by its pale green to gray color in appearance. This type of alteration is common in hydrothermally altered sequences and is formed at low to intermediate temperature ranging >200-350°C and usually characterizing the margins of the main vein zones. Common alteration minerals present are sericite being dominant and chlorite group minerals and rarely high temperature kaolinite (Corbett and Leach, 1998). In the area, host rock is invaded by a significant volume of relatively low-temperature hydrothermal fluid. This caused selective pervasive replacement by the sericite alteration assemblage of sericite + chlorite + albite + minor quartz + leucoxene. In more detail, plagioclase phenocrysts were replaced by sericite, ferromagnesian phenocrysts were replaced by chlorite + quartz, magnetite micro-phenocrysts were replaced by chlorite + leucoxene, groundmass was replaced by chlorite + albite + leucoxene, and minor vesicles were filled by chlorite. At a deeper level, it envelops dominantly the main mineralized vein zones, grading to argillic at shallow level and outwardly to propylitic peripheral to the veins. Sericite alteration can grade into high temperature potassic type by increasing amounts of K-feldspar and into the low temperature argillic type by increasing amounts of clay minerals (Pirajno, 2009).

Silicic alteration is defined by fine-grained alteration assemblages of quartz ± albite ± opaques (possibly pyrite). This alteration is closely related to the mineralized zone and occurs as narrow haloes peripheral to vein walls. It is also apparently dominantly confined within dacite host rock occurring as dike-like bodies dispersed in Balabag. Common features observed are gray to pale green discoloration of the host rock partially to wholly destroying the phenocrysts embedded in a silicified groundmass showing massive, chalcedonic textures with pyrite clusters and disseminations.

Quartz-Adularia alteration represented the main vein zone alteration minerals consisting of quartz – adularia – illite/smectite + chlorite group minerals. The vein zone is a multiple-stage massive to crustiform banded fracture-fill and breccia cement assemblages mostly comprising chalcedonic to mosaic quartz, in paragenetic association with less abundant adularia, chlorite, illitic clay and carbonate enclosing and dispersed with only minor amounts of sulphides.

Alteration of breccia clasts composing wall rock, present as fluidized, milled, and sorted silt to granule sized clasts within discrete deposition bands, or as coarser grained blocks more broadly enclosed by multiple massive to banded silica/silicate fracture-fill/breccia cement, comprises pervasive adularia, mosaic quartz, chlorite and interlayered illitic/smectitic/chloritic clay dispersed with grains and aggregates of pyrite and rutile. Under this breccia, increasing sulphide appearing fine black lines or "ginguro" smeared along with the quartz fluids and breccia cement carrying more gold in solution and/or interstitial to mosaic-chalcedonic quartz and/or lock-in sulphides.

The argillic, sericite and silicic are most directly related to the gold-silver mineralization in Balabag wherein the altered wall rocks are commonly bounding the mineralized quartz veins and breccias. These alterations grade into a propylitic zone farther away from the vein as shown in Table 8-1.

Table 8-1: Alteration zonation in relation to ore zones

VERTICAL AND HORIZONTAL ALTERATION ZONATION

Metasomatic	Hydrothemal Alteration	Ore
Propylitic (early alteration)	Argillic	±Stockwork
	Sericite	**BXHT** or Stockwork
	Silica-Adularia-Sericite	**VNB/VNX/BXHT**
	Silicic (limited)	**BXHT** or Stockwork
	Sericite	**BXHT** or Stockwork
	Argillic	±Stockwork
	Propylitic	

Petrographic observations by Mason also identified potassic alteration consists of K-feldspar +quartz + sulfide (possibly pyrite) ± zoisite + leucoxene/rutile. This is found as relict kernels in some lithic fragments of veins in Balabag. However, no surface outcropping was observed nor obtained during field studies.

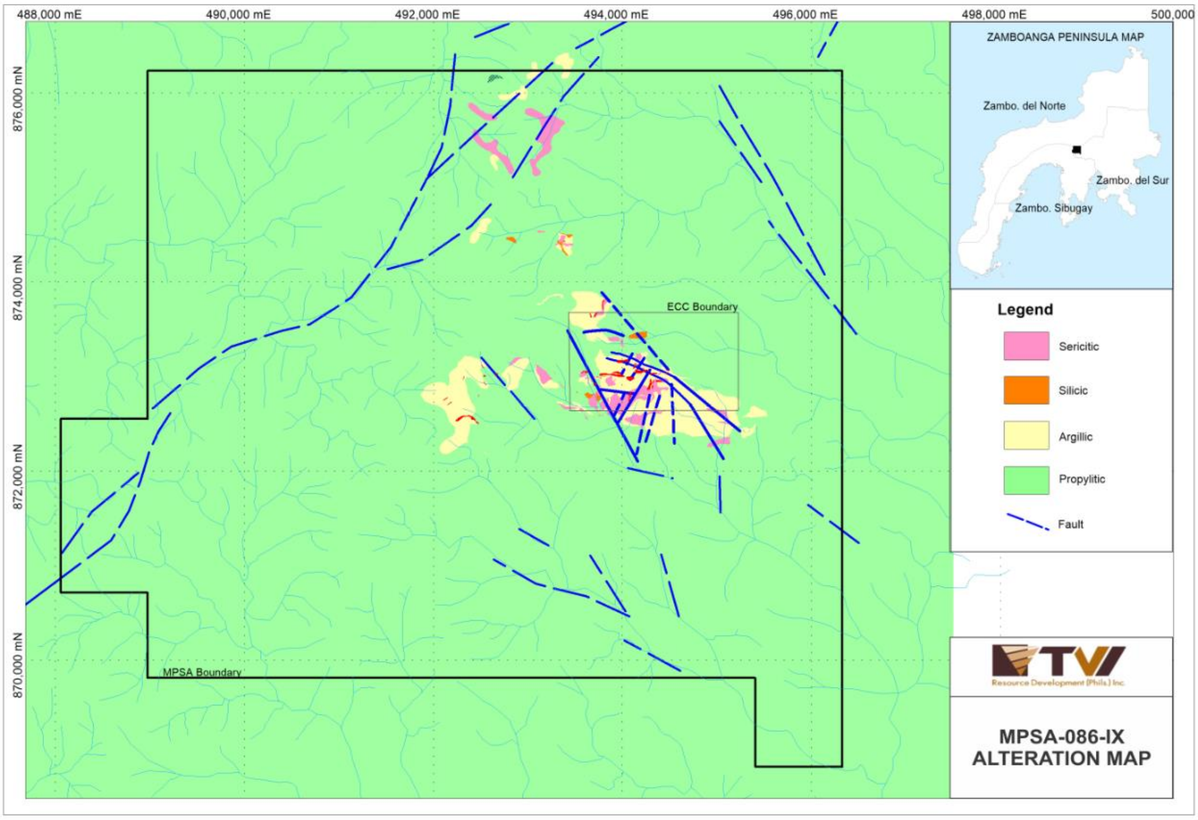


Figure 8-2: Balabag MPSA alteration map.

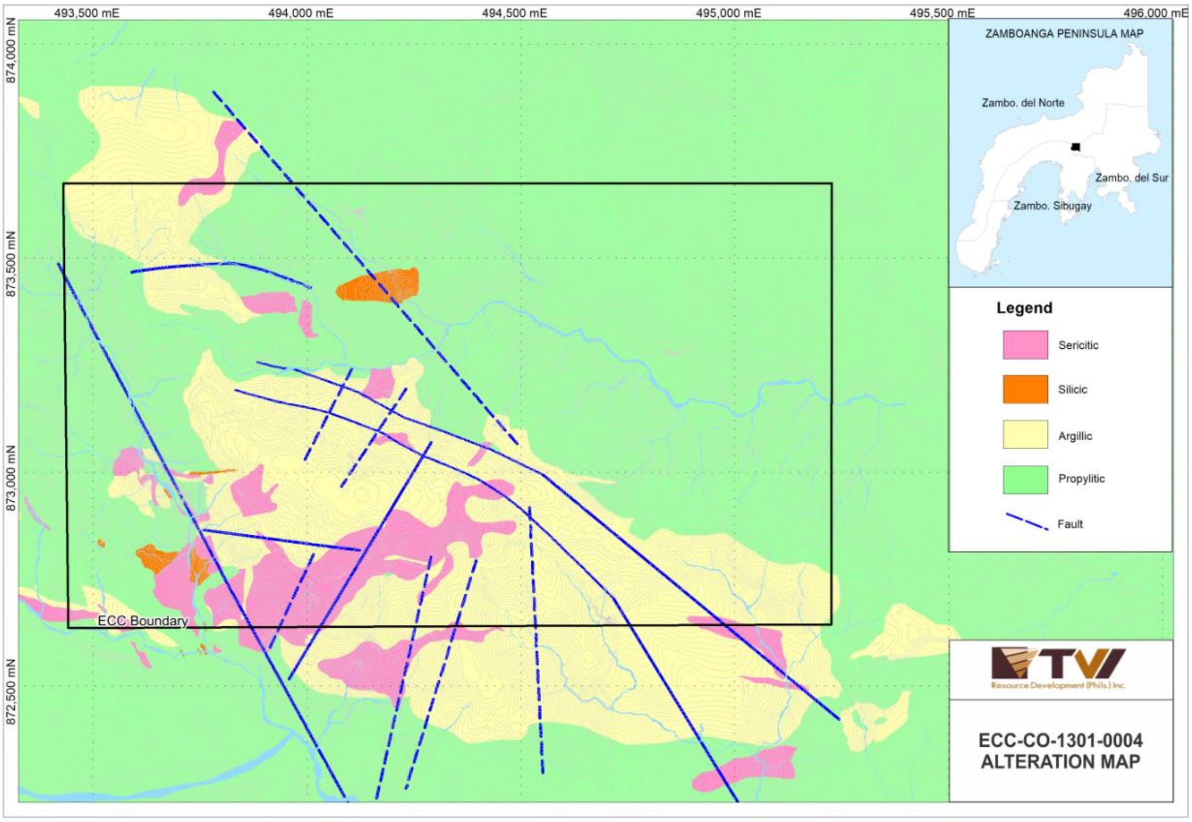


Figure 8-3: Close-up view of alteration present within the Balabag ECC.

Drillhole intercepts at the central portions of the Tinago, Unao-Unao and Warik-Warik areas are comprised mainly of argillic alteration enveloping at the shallow depths ranging from 5 meters down to 60 meters. This was followed by extensive sericite alteration at deeper levels that can be traced down to 100 meters depth. Both alterations are evidently bordering the mineralized zones in Tinago defining sericite as the main immediate wall rock alteration at depth then progresses to argillic near surface due to overprinting. Silicic alteration is also present in drill holes mainly overprinted at sericite zones and occasionally at propylitic zones and fault zones. Propylitic alteration predominated at the north Tinago. Drill core samples are greenish color with distinguishable host rock textures. Chlorite, carbonate and epidote are the main minerals identified but may also contain traces of sericite and pyrite.

Miswi drillholes are largely composed of argillic, silicic, sericite and to a lesser propylitic alteration at deeper levels. These alterations are irregular down holes due to numerous structural disruptions. Argillic alteration occurs dominated at shallow depths down to 80 meters on some drill holes affecting both the volcanic rocks and dacites whilst sericite alteration is affecting mainly volcanic rocks. Silicic alteration is dominant in the Miswi area compared to Tinago and mainly occurs as the main alteration of the dacite dikes intruded within sericite, argillic and propylitic altered volcanic rocks. Sericitic, silicic and argillic alteration can be present either at the foot wall and hanging wall of the mineralized zone in Miswi and rarely propylitic alteration at the footwall due to fault displacement.

Figure 8-4: Drillhole section looking NE at Tinago (Unao-Unao / Warik-Warik) prospect showing the mineralized zones and alteration.

Pervasive argillic and sericite alterations apparent at the Lalab surface extended at deeper levels based on drillhole intercepts where argillic alteration covers the shallow depths with some reaching 60 meters down hole as shown in Figure 8-5. Sericite alteration is extensive down the holes following the argillic alteration and can be observed at the cliff side of the hill and as isolated bodies protruding on the surface with minor overprinting of argillic alteration.

This alteration assemblage bounds the steeply dipping vein system of Lalab accompanied by moderate to intense silicification both at the hanging wall and foot wall. Several silicic altered bodies can also be found down hole. These are associated with the dacite dikes with drill hole intercepts ranging from 15 meters to 30 meters wide bordered by sericitic and propylitic zones. Propylitic alteration is also present outward from the Lalab vein system following the sericite zones.

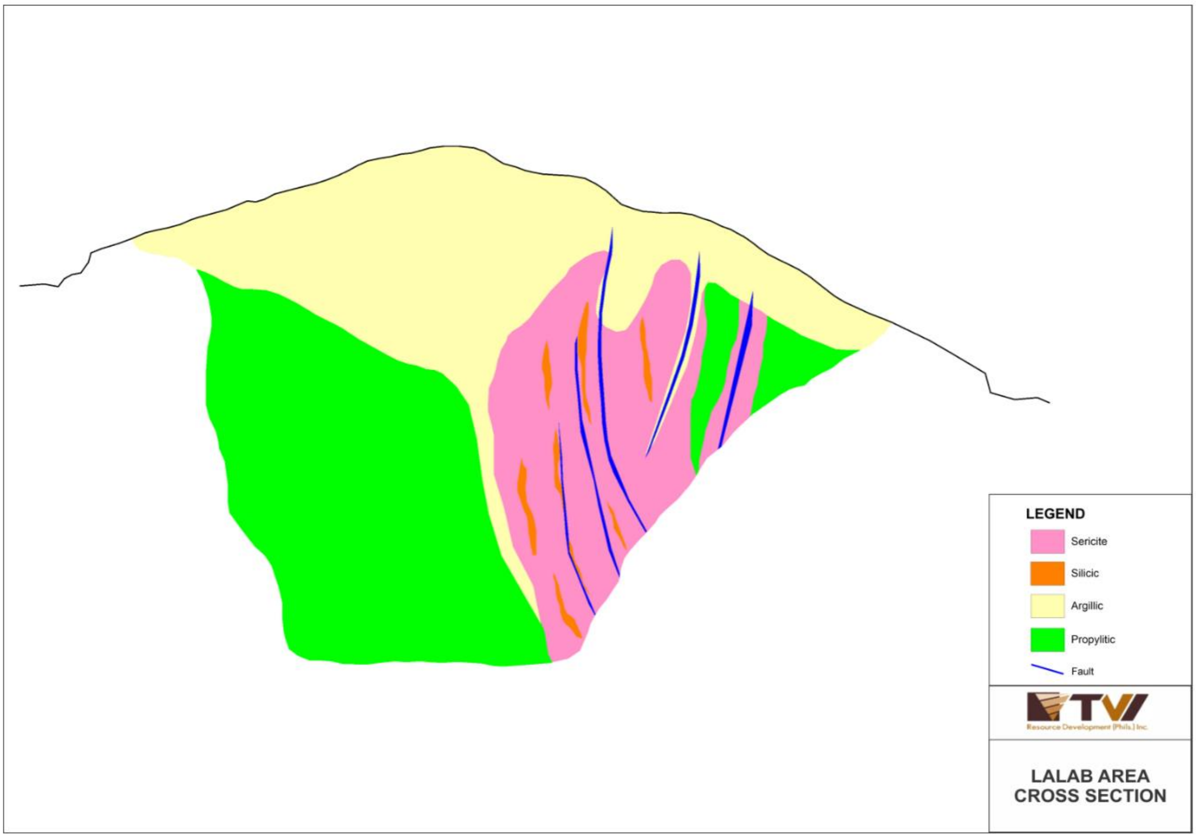


Figure 8-5: Section looking northeast of Lalab vein system showing alteration zonation enveloping the mineralized vein system.

8.2 Mineralization Type and Style

The Balabag gold-silver mineralization is interpreted as a low-sulphidation epithermal vein system hosted in andesitic lava flows and pyroclastics. Multiple-stage massive to crustiform banded fracture-fill and breccia cement assemblages mostly comprising of chalcedonic to mosaic quartz, in paragenetic association with less abundant adularia, chlorite, illite and carbonate enclosing and dispersed with only minor amounts of sulphide, define a low-sulphidation epithermal environment of precious metal mineralization. The mineragraphic study of APSAR in 2018 further indicates that the hydrothermal fluid flow and resulting mineralization have taken place at around 220 to 240°C.

Three major quartz vein systems identified in the Balabag Hill area are the Tinago-Unao-Unao-Yoyon veins to the north, Miswi veins in the east and Lalab veins to the south (Figure 8-6). The veins exhibit various epithermal quartz vein textures such as colloform, crustiform, massive, drusy, vuggy, comb and cockade textures. Multiphase brecciation textures are also dominant probably because of several pulses of rising hydrothermal fluids. Quartz stringers and quartz stockworks also occur adjacent to most quartz veins ranging from hairline to centimeter sizes. The geometry of the veins and the associated stockworks is generally sub-horizontal at the Tinago and Miswi areas while a sub-vertical attitude of veins is exhibited in the Lalab area.

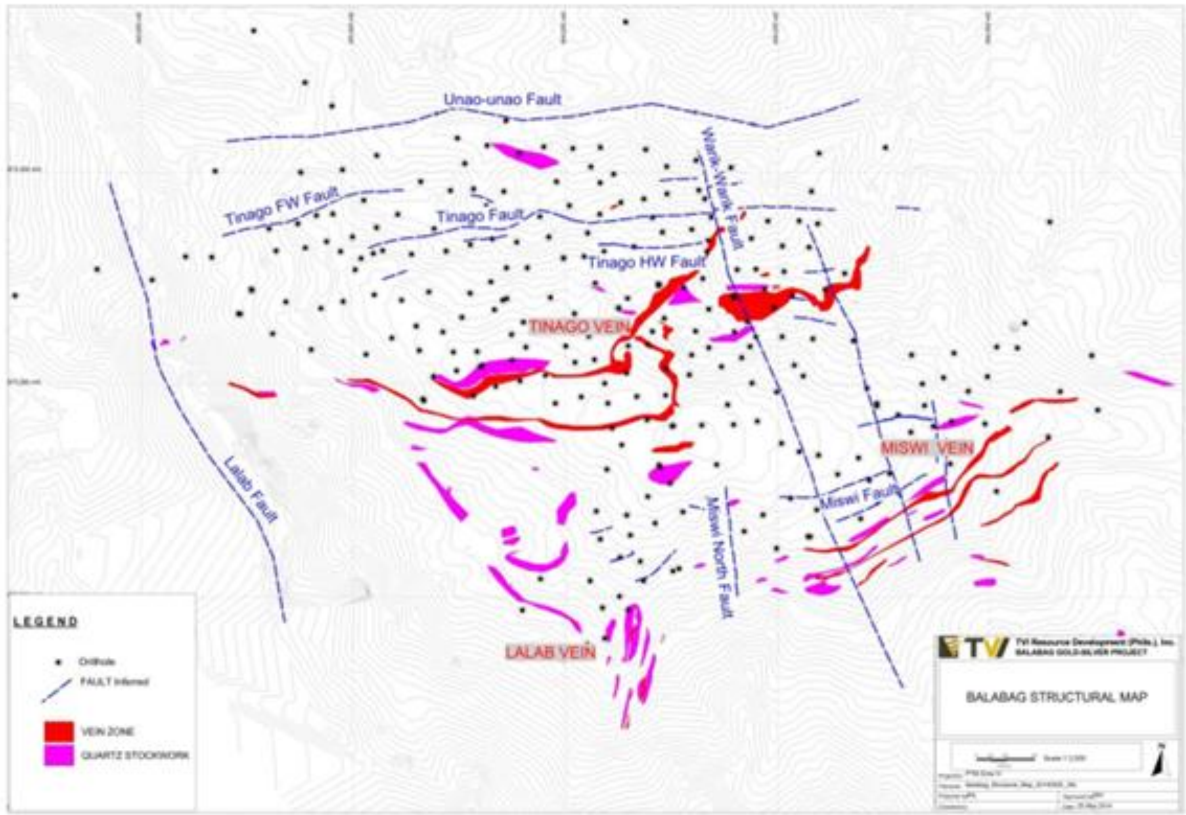


Figure 8-6: Map showing major vein system and faults within Balabag Hill.

8.3 Geological Ore Types

Free gold or electrum dominates the gold-rich precious metal mineralogy of low-sulphidation epithermal systems. The electrum/gold mostly occurs as interstitial to or as inclusions within mosaic-chalcedonic quartz and less abundantly interstitial to or enclosed by adularia, chlorite and illitic clay. Whilst also identified as intergrowths with and overgrowths to base metal sulphides, relatively minor amounts of free gold/electrum are identified as inclusions within pyrite, chalcopyrite, sphalerite, galena, argentite, and other unresolvable telluride and/or sulphosalt minerals. Whereas pyrite and base-precious metal sulphides and possible sulphosalts are leached and replaced by supergene hematite, hydrated Fe-oxides, and cuprite in relation to localized oxidation, native gold appears to remain in situ and essentially unmodified. In terms of the gold and silver alloy, electrum, silver may have been mobilized leaving residual and less mobile gold in place (APSAR, 2018).

Repeated phase separation in association with rapid cooling of hydrothermal fluid including some probable magmatic volatile contributions, is interpreted to have been a main cause for precious and base metal mineral deposition (APSAR, 2018). Occurrence of gold and silver are common in open space fillings such as in vughs, drusy cavities, cockscomb textures, crustifications and colloform banding.

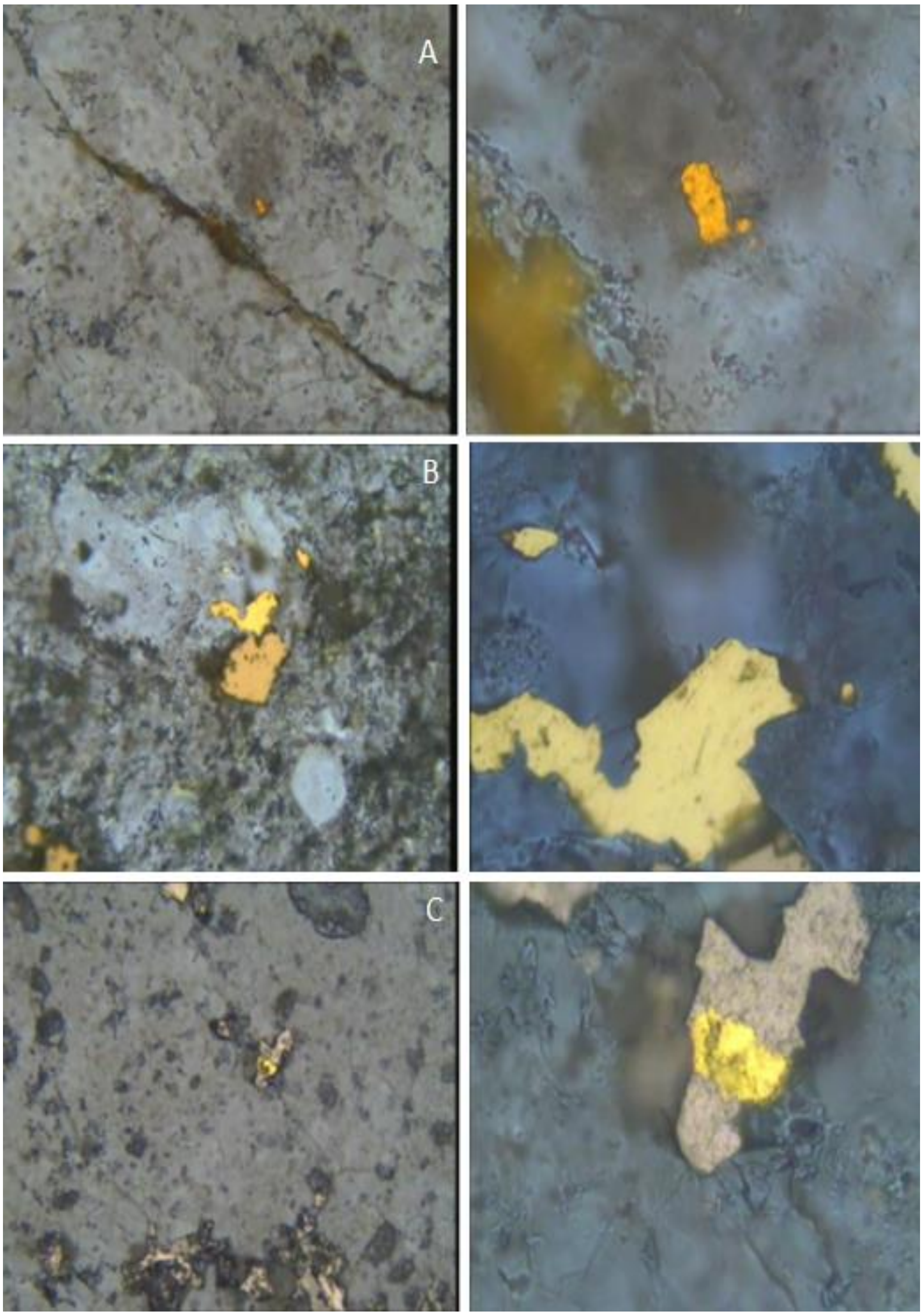


Figure 8-7: (A) Gold interstitial to mosaic quartz (left 600 µm ppl/rl, right 70 µm ppl/rl); (B) Gold/electrum intergrown with mosaic quartz and pyrite of silica vein fragment (left 600 µm ppl/rl, right 70 µm ppl/rl); (C) Gold/electrum intergrown with argentite intergrown with mosaic quartz and adularia (left 600 µm ppl/rl, right 70 µm ppl/rl).

8.4 Types of Quartz Veins

Previous exploration work done by TVIRD prior to the year 2017 categorized the types of quartz veins into two major geological domains. The previously known Domain 1 represents the true veins having more predictable continuity and grade uniformity which include the following mineralized units: massive translucent to milky quartz vein ("**VNQ**"), banded, high Au, quartz vein with banded black sulphides ("**VNB**") and quartz vein breccia with angular andesitic clasts ("**VNX**"). The second domain, on the other hand, was characterized by QSW and silicified andesite ("**VIAN-sil**"). The stockworks were considered as another domain due to erratic nature of grades and thickness.

With the resumption of TVIRD's exploration work in late 2017 up to present, a detailed mapping of surface outcrops and many underground tunnels has been conducted to further understand the geology of the Balabag deposit. A further detailed review of core from old drillholes has been completed and includes the recent drillholes generated from the implementation of Phase 1, 2, 3 and 4 drilling programs in October 2018 to December 2020. Overall, a total of 382 drillholes with a total length of 41,161.60 meters have been reviewed focusing on understanding the quartz vein characteristics, alteration associated with mineralization, host lithology and structural control on mineralized quartz veins and gold-silver assay grades. Based on this detailed review, the cross-cutting relationships of the different quartz veins, vein breccias and stockworks provided a clearer picture in terms of sequence or stages of quartz deposition. Alterations related to mineralization were identified as well as ranges of gold and silver grades on the different quartz veins, and breccias were determined that gave information as to what type of quartz veins are giving higher grades. With this information, the previously generated two mineral domains were further subdivided into five new mineral domains that have provided a clearer understanding of the Balabag gold-silver deposit and have served as target vectors in locating the mineralized quartz veins during implementation of the resource drilling program.

The updated five mineral domains established in the Balabag gold-silver project are BX1, BX2, BX3, QSW and QSX1. The "BX" stands for hydrothermal breccia while the succeeding number denotes the sequence of deposition. Quartz stockworks that are hosted by wall rock are under the QSW domain whereas quartz stockworks that are hosted by BX1 are designated as the QSX1 domain. The characteristics of each domain and their stages of deposition and associated Au and Ag mineralization are presented in the following sections.

8.4.1 Stage 1

BX1 appears to be the early hydrothermal event formed through an explosion breccia related to what is perceived as a diorite intrusion at deeper depth. Due to its mode of formation, it appears as irregular bodies. This domain hosts the main mineralized BX2 and BX3 domains. This hydrothermal breccia is composed of volcanic breccia clasts cemented by grey quartz that is crisscrossed by minimal hairline millimeter size white-translucent quartz stockwork. Clasts for this breccia are usually altered to silica and clay. MGB Petrolab petrographic analysis of the BX1 domain showed it to be mostly medium-grained, subhedral to euhedral relict phenocrysts of altered volcanic rocks enclosed in a silicified and argillized groundmass.

From the 600 BX1 core samples that were analyzed, assay values range from 0.025 g/t Au to 8.55 g/t Au and 0.5 g/t Ag to 191.79 g/t Ag with mean values of 0.25 g/t Au and 6.25 g/t Ag.

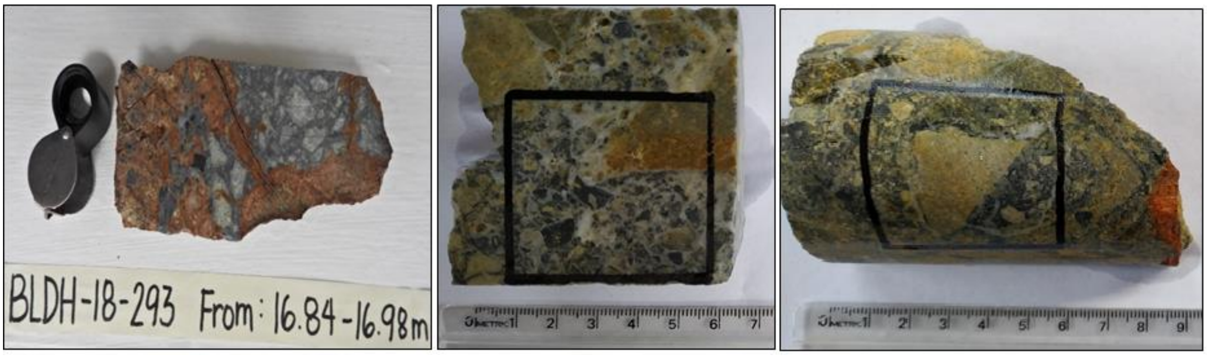


Figure 8-8: BX1 samples that underwent petrographic analysis showing angular volcanic clasts altered by clay and silica.

8.4.2 Stage 2

Following the Stage 1 event, the BX2 domain is related to high level dacite intrusions producing typical epithermal quartz veins cutting host BX1 and volcanic unit. This occurs as continuous linear bodies exhibiting pinch and swell behavior. This domain mainly dominates the Tinago vein system and has predictable continuity and thickness but is erratic in grade. This type is classified into three classes: massive quartz vein ("**VNQ**"), banded quartz vein ("**VNB**") and quartz vein breccia ("**VNX**"). Previous exploration separated these three types; however, recent reviews showed that VNQ, VNB and VNX usually occur alongside each other. Due to being erratic in grade, BX2 generally results in low to high assay grades. A total of 1,421 core samples were analyzed with return value ranging from 0.095 g/t Au to as high as 268.69 g/t Au and 0.01 g/t Ag to 5,234.30 g/t Ag with mean values of 2.99 g/t Au and 87.10 g/t Ag.

BX2 domain is composed of the following:

- The VNQ sub-domain that is milky and translucent in appearance. This was formed directly from hydrothermal fluids crystallized as a massive space filling vein displaying anhedral grains quartz mostly an approximate 30 to 50 micrometer in size (Mason,2010).
- The VNB sub-domain exhibits colloform to crustiform banding with notable ginguro bands. These ginguro bands contain alternating dark and light-colored layers. The dark bands are caused by the presence of fine-grained black sulphides composed mostly of base metals while the light bands are of quartz. According to APSAR (2018), crustiform banding is defined by the distribution and grain-size variation of fluidized wall rock, early silica material and minerals such as adularia, mosaic quartz, chlorite, illite, and sulphides.
- The VNX sub-domain contains sub-angular to angular clasts. These vein clasts are composed of BX1, and volcanic rocks with VNQ-VNB usually acting as the cement material. Thin sections of VNX showed angular silicified rock fragments afloat against a matrix composed of mosaic of inequant microcrystalline to elongated, subhedral

quartz crystals. These quartz aggregates occur in diverse grain sizes from fine to coarse grained with some outlined by iron oxides. Fragmental size captured in thin sections range from 0.50 cm to 1.20 cm (Madrigal, 2019).

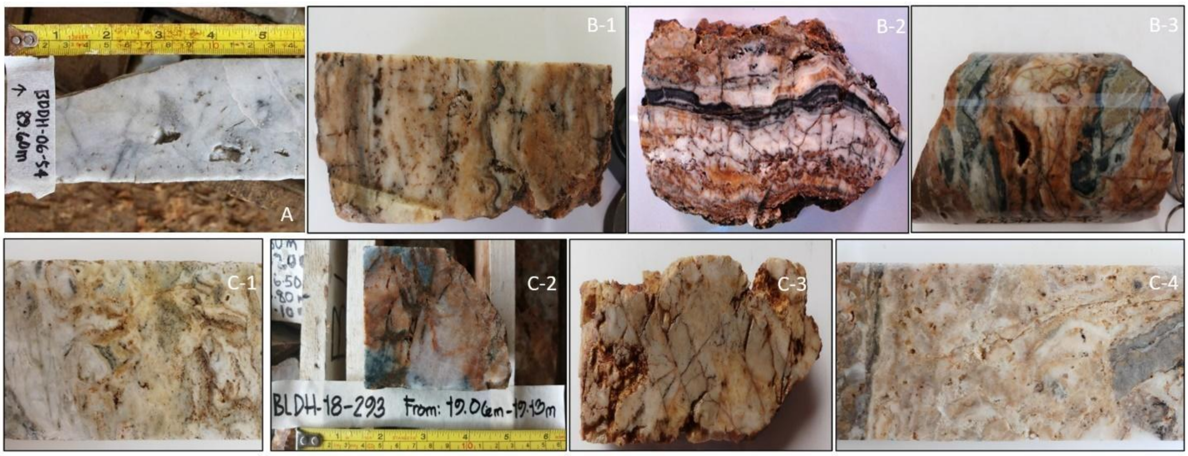


Figure 8-9: (A) BX2 Massive Quartz Vein (VNQ) described as milky; (B) BX2 Banded Quartz Vein (VNB) showing colloform / crustiform texture of alternating dark and light-colored layers of ginguro bands; (C) BX2 Quartz Vein Breccia (VNX) with varying sizes of angular-shaped altered clasts in a quartz altered matrix.

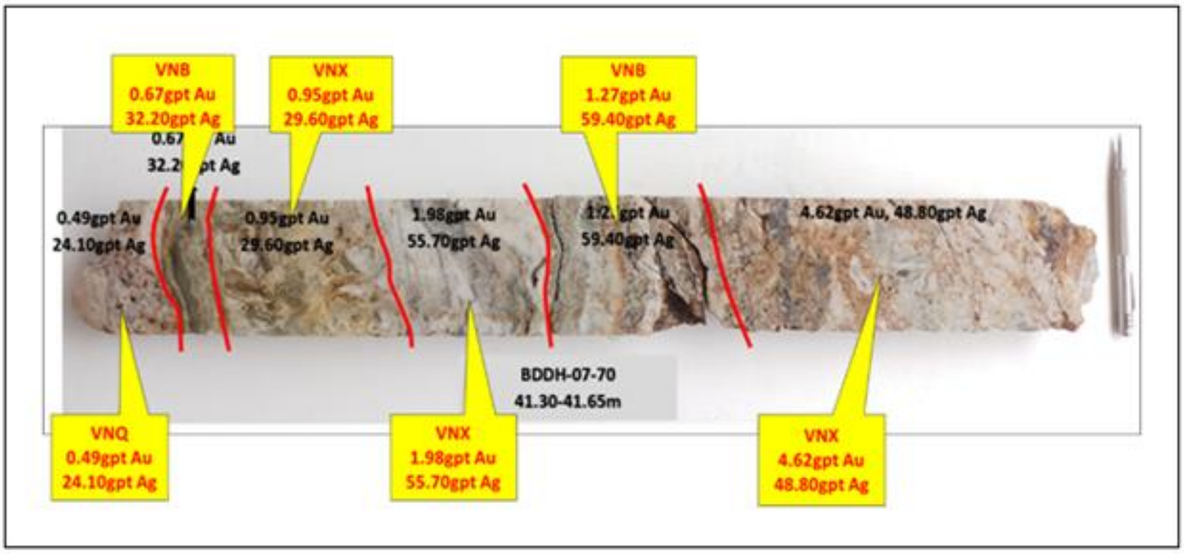


Figure 8-10: Drill core sample of BX2 taken from Tinago Vein System with all three classes of veins (VNB, VNX and VNQ) occurring alongside each other and their corresponding assay grades.

8.4.3 Stage 3

The BX3 domain is formed through late hydrothermal explosion events after BX2 formation within BX1 and within volcanic rock bodies. This resulted in further brecciation composed of varying clasts consisting of altered and mineralized volcanic rocks - BX1 and BX2 breccias that are cemented by white and gray quartz. The BX3 domain has appeared at drillholes in Lalab and Unao-Unao areas. This type of breccia also appears in irregular bodies but exhibits grade uniformity. Significant amounts of ginguro bands greatly contribute to its high Au and

Ag grades. A total of 108 core samples analyzed gave values ranging from 6.38 g/t Au to 47.64 g/t Au and 1.62 g/t Ag to 1647.51 g/t Ag with mean values of 7.48 g/t Au and 202.85 g/t Ag.

Analyzed samples of BX3 showed numerous phases of base and precious metal mineralization as evidenced in relation to the multiple stages of brecciation and silica cement/fracture fill. The fluidized breccia framework clast assemblage comprises silica cement/fill material locally enclosing hydrothermally altered wall rock. Hydrothermal alteration was also found along the breccia matrix dominated by illite, mosaic quartz and chlorite.

On rare occasions, BX3 may exhibit weak brecciation due to low pressure and low temperature conditions. This specific type is exhibited by the BX3 of Tinago area intercepted by drilling. This BX3 was described to be bounded by BX2 and have intensely silicic rock fragments with some crushed white quartz vein materials in a silicic matrix.

Figure 8-11: BX3 samples with multiple clasts of BX2 (VNB-VNX-VNQ) and volcaniclastics cemented by white to grey quartz

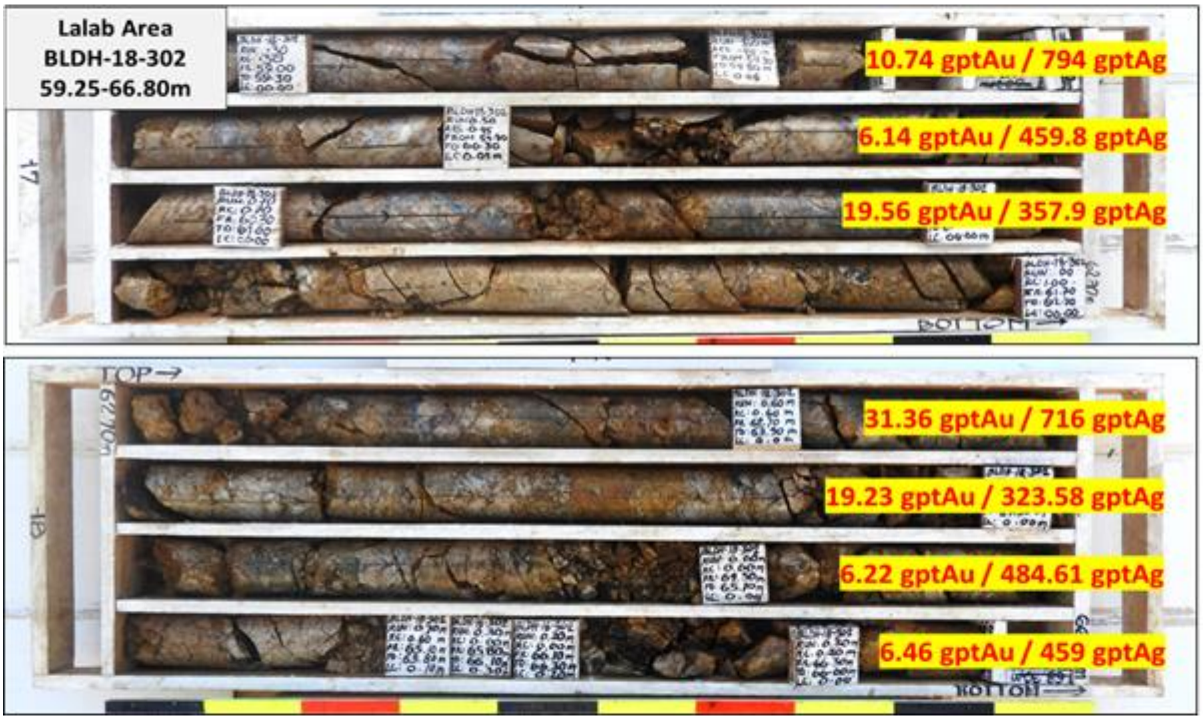


Figure 8-12: BX3 zone intercepted by drilling at Lalab area showing high Au and Ag values.

During the stages of mineralization, hydrothermal fluids may enter thin linear cracks and narrow open space fillings, which may result in quartz stockworks hosted by the early BX1 or by host volcanic units. Two types of quartz stockwork have been established within Balabag and these two types usually occur adjacent to mineralized zones but may also occur independently in small and insignificant zones. The types of quartz stockwork are as follows:

- The QSX1 domain is BX1 that has been overprinted by millimeter-centimeter size epithermal related sheeted veinlets or have been cross-cut by quartz stockworks. A total of 286 core samples were analyzed that returned Au values ranging from 0.04 g/t to 52.89 g/t Au and 0.01 g/t to 713.04 g/t Ag with mean values of 0.91 g/t Au and 12.56 g/t Ag.

- The QSW domain is millimeter-centimeter size quartz stockworks that are hosted by volcanic rocks such as andesite flows and volcaniclastics. Quartz occurs as fracture filling with varying quartz texture ranging from chalcedonic, combed to banded. One sample petrographically analyzed by the MGB Petrolab (2010) showed illite - sericite + secondary quartz + chlorite altered rock cut by comb to polygonal quartz - iron oxide - chlorite. A total of 1,573 core samples were analyzed returning Au values ranging from 0.04 to 56.62 g/t and Ag values ranging from 0.001 to 1,214 g/t giving a mean average of 0.48 g/t Au and 15.78 g/t Ag.

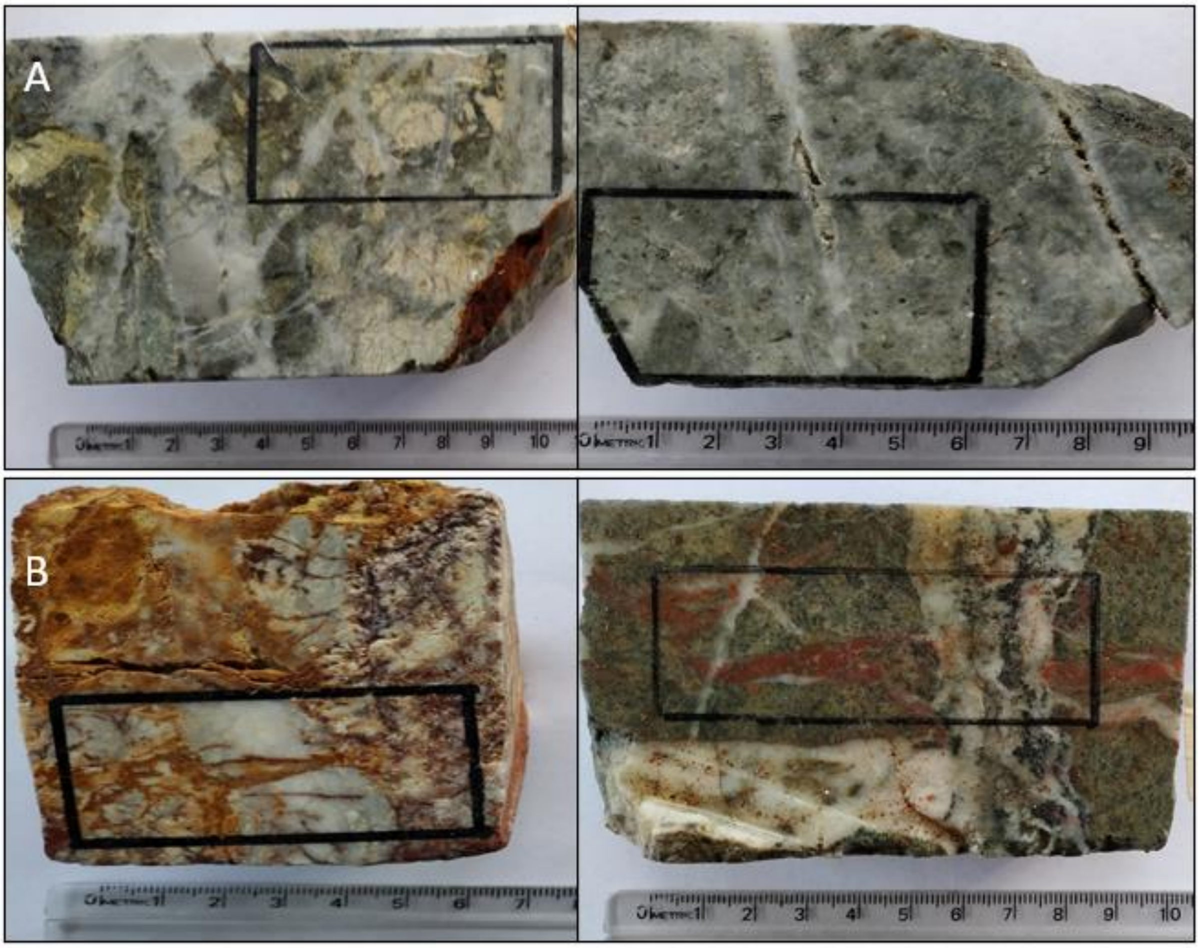


Figure 8-13: (A) QSX1 domain with angular to sub-rounded altered wall rock clasts cut by up to cm-size quartz stockworks; (B) QSW, quartz stockworks hosted by volcanic wall rocks characterized by crosscutting of veinlets.

Table 8-2 and Table 8-3 show the summary of average or mean gold and silver grades of the five mineral domains based on drill core samples analyzed. The BX3 domain gave the highest Au (7.48 g/t) and Ag (202.85 g/t) grades followed by the BX2 domain with average Au (2.99 g/t) and Ag (87.08 g/t) grades. QSX1 has 0.91 g/t Au and 12.56 g/t Ag while QSW has 0.48 g/t Au and 15.78 g/t Ag. The earliest formed domain, BX1, has the lowest grades giving 0.25 g/t Au and 6.50g/t Ag.

Table 8-2: Gold grades of the five mineral domains

Domain by Au_gpt	BX1	BX2	BX3	QSX1	QSW
Number of samples	605	1,421	108	286	1573
Average Drill Intercepts (m)	3.89	3.15	6.38	2.79	5.38
Maximum Value	8.55	268.69	47.64	52.89	56.62
Minimum Value	0.025	0.095	0.103	0.04	0.04
Mean	**0.25**	**2.99**	**7.48**	**0.91**	**0.48**
Median	0.08	1.18	4.49	0.14	0.14
Variance	0.70	80.01	77.72	15.14	3.06
Standard Deviation	0.84	8.94	8.82	3.89	1.75
Coefficient of Variation	0.70	79.22	77.49	17.11	4.55

Table 8-3: Silver grades of the five domains

Domain by Ag_gpt	BX1	BX2	BX3	QSX1	QSW
Number of samples	605	1421	108	286	1573
Average Drill Intercepts (m)	3.89	3.15	6.38	2.79	5.38
Maximum Value	191.79	5,234.30	1,647.51	713.04	1,214.00
Minimum Value	0.001	0.001	1.62	0.01	0.001
Mean	**6.50**	**87.08**	**202.85**	**12.56**	**15.78**
Median	2.90	23.40	40.92	4.06	4.18
Variance	172.18	59,687.04	73,999.99	2,315.55	3,142.69
Standard Deviation	13.12	244.45	272.02	48.12	56.06
Coefficient of Variation	323.09	59,713.07	73,811.26	2,319.39	3,288.70

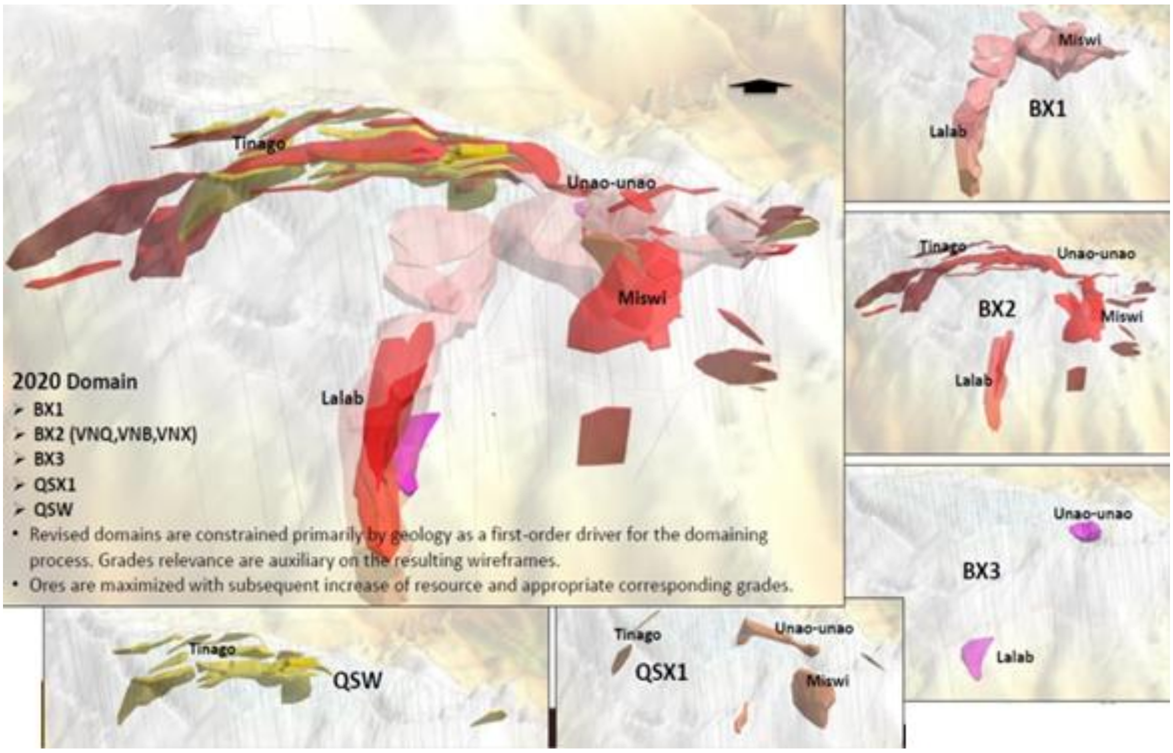


Figure 8-14: Domain distribution within the Balabag major vein systems.

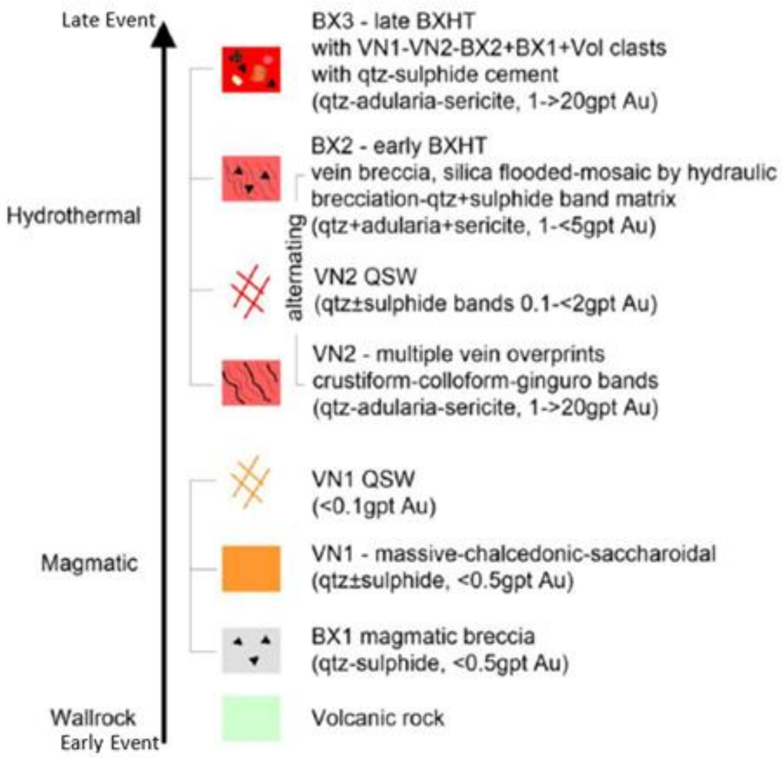


Figure 8-15: Chronological sequence of deposition of the domains.

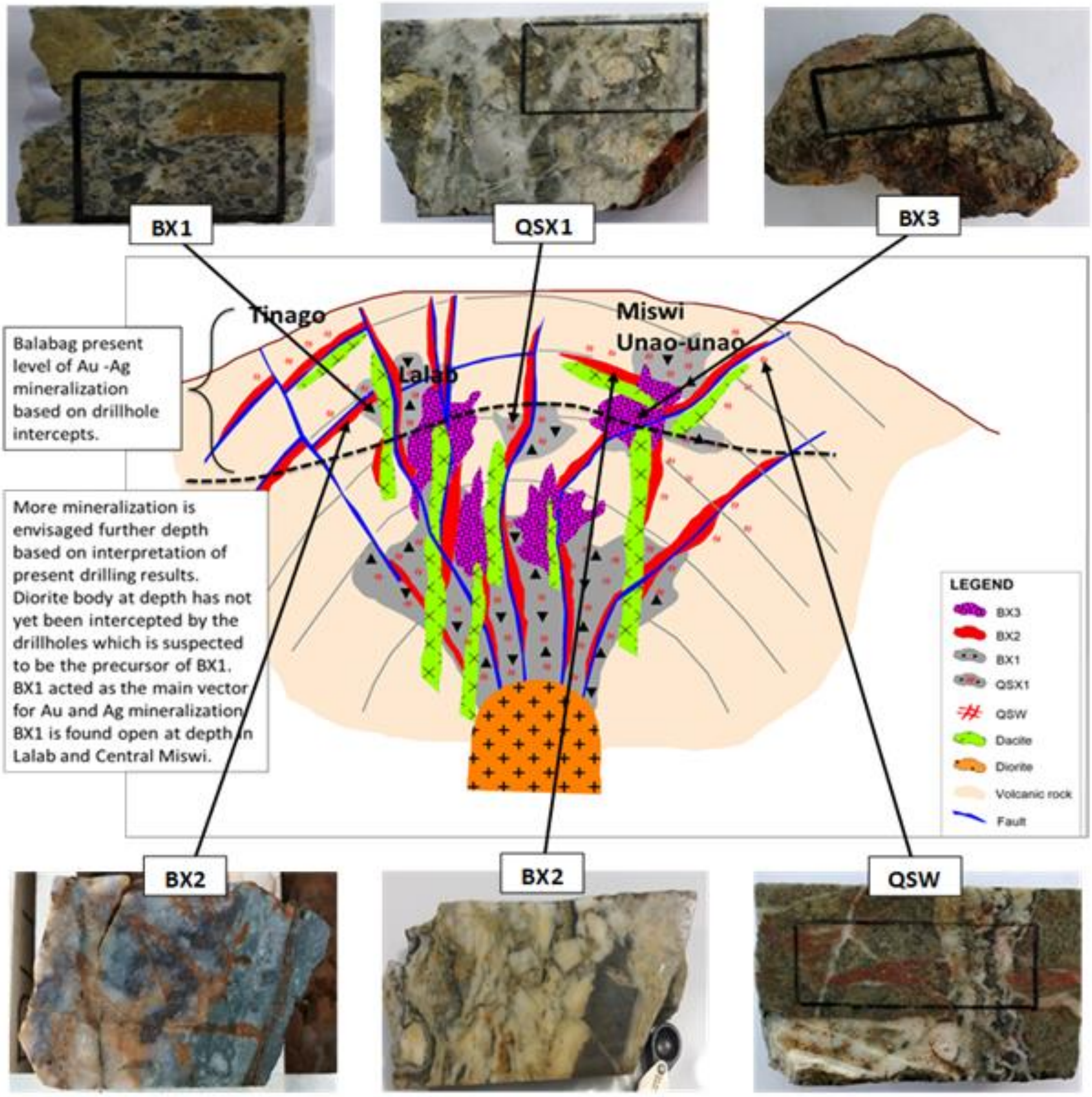


Figure 8-16: Conceptual sequence of deposition of Balabag Au-Ag Deposit defined by the five mineral domains. BX1 - early hydrothermal event related to diorite intrusion and hosts BX2 and BX3 mineralization; BX2 - following BX1 event related to high level dacite intrusions producing typical epithermal veins cutting host BX1 and volcanic unit, Au - Ag rich; BX3 - late hydrothermal explosion event resulting to further brecciation after the vein-type BX2 formation within the BX1 and volcanic rock bodies, Au – Ag rich; Dacite - precursor of BX2 and BX3 (younger than BX1); Volcanic Rock - the country rock; Fault - both pre- and post-mineral structure.

8.5 Localization of the Deposit

8.5.1 Mineralization Controls

Quartz veins in Balabag occur in all types of volcanic rocks, from pyroclastics such as lithic tuff, crystal tuff and tuff breccia to andesitic lava flows such as trachytic andesite. However, it does not occur on intrusive contacts such as in dacites. BX1 as early hydrothermal breccia acts as the main vector of the overprinting of gold-rich epithermal veins.

Geologic structures are one of the strongest mineralization controls in the distribution of mineral deposits in the Balabag low sulphidation epithermal vein system. Prior to mineralization, hydrothermal fluids related with the cooling of shallow intrusive bodies are accountable for the emplacement of the mineral deposits. These mineral deposits are formed by direct crystallization of hydrothermal fluids in cracks, fractures and voids within the wall rocks.

In Balabag, faults and fissure vein systems that are frequently irregular in trend and attitude with the mineralized vein have generally been produced by the filling of open spaces within pre-existing structures. Common open space filling textures are exhibited by the three types of BX2. Veins are later cut and displaced by several post-mineral faults resulting in breakage, tilting and rotation, and subsidence of the mineralized bodies as best presented by Tinago and Miswi. High grade Au rich zone with quartz veins have relatively restricted vertical extent.

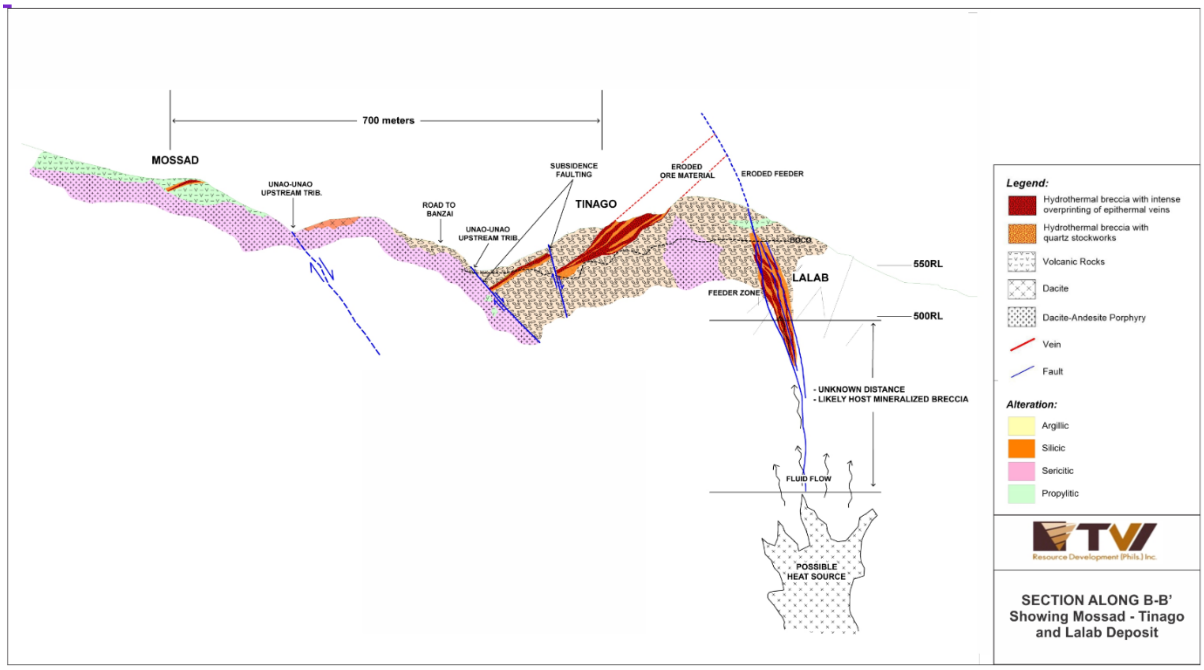


Figure 8-17: Cross section of Balabag deposit showing the structural controls and mineralization.

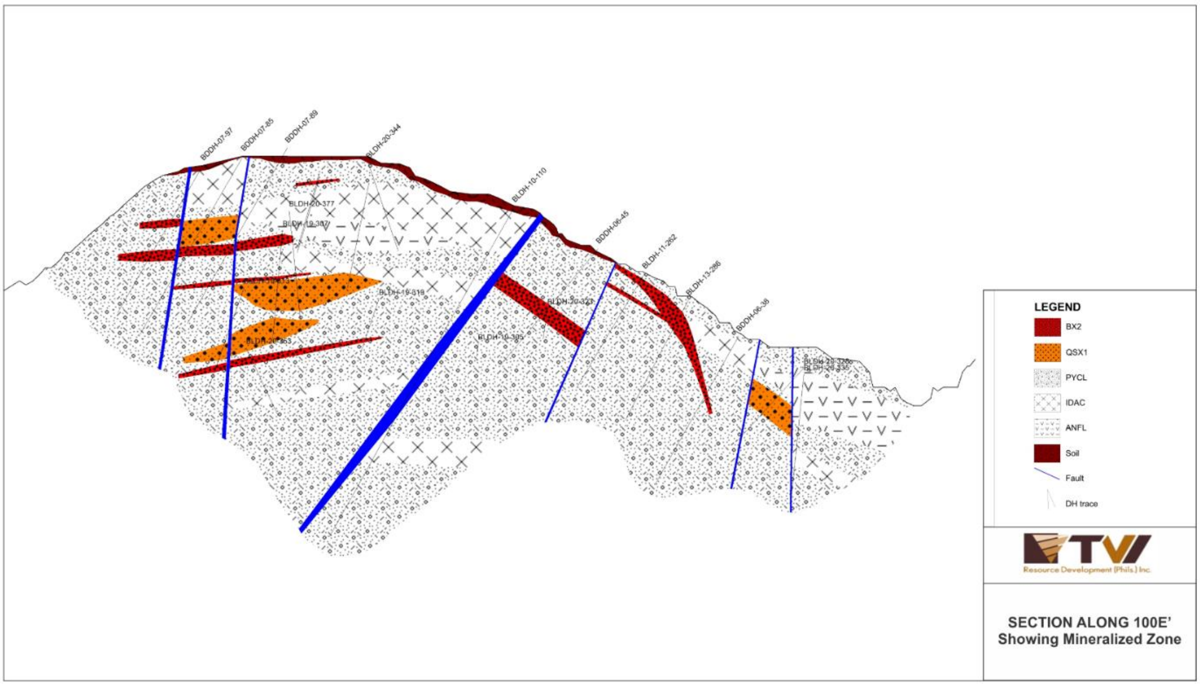


Figure 8-18: Drill section along Line 100E looking southwest showing intercepted faults displacing the mineralized veins of Tinago.

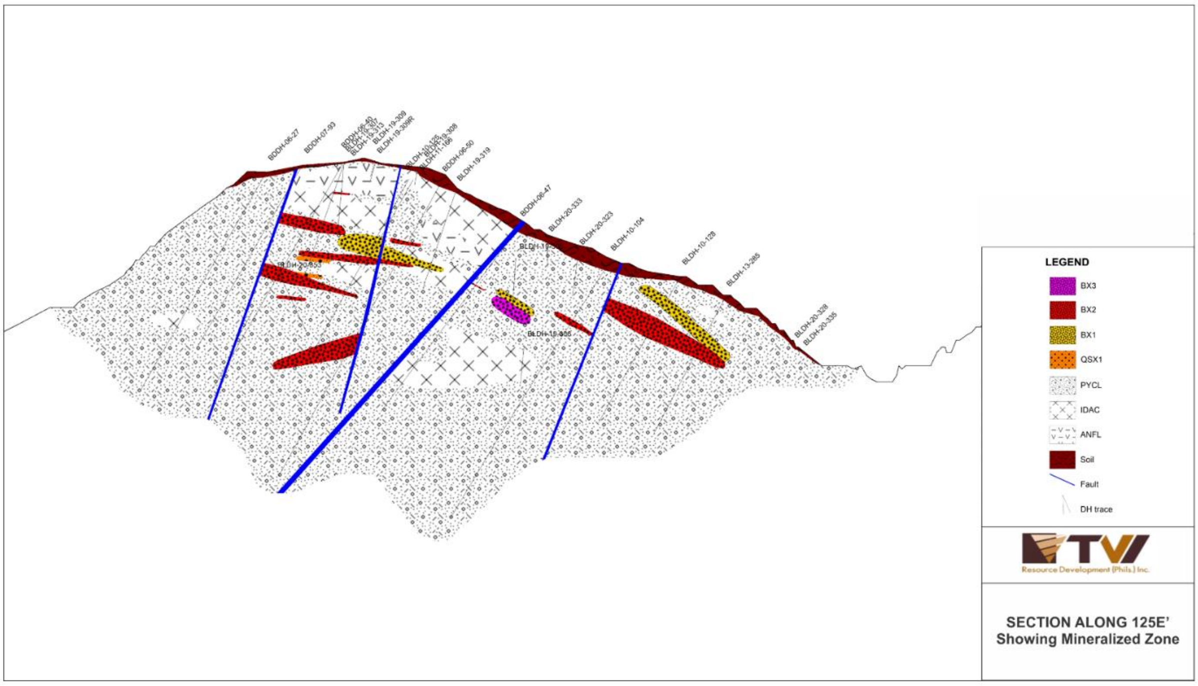


Figure 8-19: Drill section along Line 125 E looking southwest showing intercepted faults displacing the mineralized veins of Tinago and Lalab.

8.6 Geometry of Mineralized Veins

Field mapping, channel and trench sampling, and diamond drilling have established three main vein systems in Balabag. These are at Tinago and Unao-Unao to the north, Miswi to the southeast, and Lalab to the south.

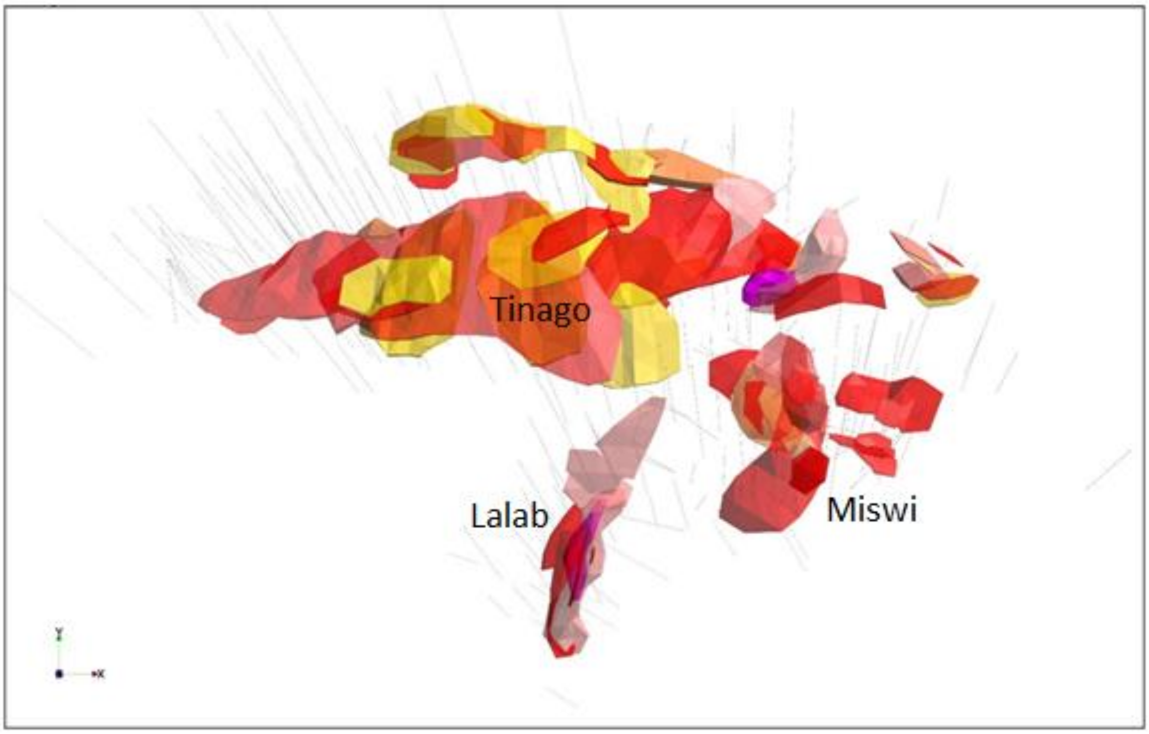


Figure 8-20: Three-dimensional view of the main vein systems.

8.6.1 Tinago, Unao-Unao and Yoyon Vein Systems

The broadest mineralized zones are situated in the Tinago–Unao-Unao vein system. Surface manifestations are mostly covered by oxidized, argillic altered volcanic rocks. The zones primarily consist of continuous sub-parallel sets of veins. These are largely composed of VNQ, VNB and to a more complex VNX categorized under the BX2 domain. General trends of the veins are east-west, gently dipping to the North. The veins have pinch and swell characteristics that typically vary in width from centimeters to several meters with a maximum down dip continuity of about 155 meters. Colloform to crustiform quartz texture are widespread in the Tinago veins and are commonly bounded by quartz stringers and stockwork hosted within volcanic rocks. The veins appear to have been locally slightly displaced by northwest-southeast trending sub vertical faulting that would be post-mineralization suggesting uplifting of the northern portion of the Tinago veins. This faulting persisted from Unao-Unao towards the Yoyon area farther east then extending on to the north Miswi prospect.

The thickest BX2 zone exposed on the surface of Tinago is known locally as "Warik-warik". This was previously mined by small-scale miners and is gently dipping at about 30-40 degrees to the north. The outcropping vein is generally banded with a crustiform quartz texture associated with dark sulphide bands. The banded portions are about 3 meters to 10 meters thick and bordered by massive silica illite/ sericite zones. It can be traced up to 500 meters in strike length towards the east-northeast direction extending to Unao-Unao where a slight plunge was observed. QSX1 zones are also recognized on the northern portion of Tinago sub-parallel to the main veins but are erratic in occurrence and are limited in dimension.

Figure 8-21: Vein outcrop at Warik-Warik.

Unao-Unao veins are characterized by their base metal sulphide prevalent in mineralized zones. These sulphides include chalcopyrite, sphalerite, galena with lesser amounts of covellite and bornite specks and secondary minerals such as azurite and malachite occurring as staining. The dominant occurrence of sulphide is in the form of ginguro banding commonly associated with the colloform to crustiform quartz texture of the BX2 zone and often as the main constituent of the BX3 zone.

Two BX1 zones are identified as irregular mineralized bodies located to the northwest and southeast of Unao-Unao, both trending towards the northeast. Drilling data suggests the northwest BX1 zone was partially overprinted by the east-northeast lateral extension of the BX2 zone of Tinago. In the southeast portion of Unao-Unao lies the second BX1 zone, which is considered to be the larger of the two zones. This was tapped by the BX3 zone and appears to be an irregular body as well which can be observed in most underground small-scale adits. The BX3 zone is the later event of hydrothermal brecciations and has thus yielded much higher grade compared to BX1 and BX2 zones. BX3 zones are also present in Tinago but occur as narrow zones within BX2 zones.

The Yoyon vein is located at the eastern-most part of Tinago-Unao-Unao vein system, about 200 meters east of the Monding tunnel. It is a near surface mineralized zone and was first highlighted from the several surface samples yielding an average of 2.4 g/t Au and 10 g/t Ag. Drilling has intercepted two (2) BX2 domain bodies, present at two different strike directions, northeast-southwest and northwest-southeast but both dip roughly 50 degrees to the north. This vein is mostly VNX and VNB zones, with evident ginguro texture in the latter. Hole BLDH-

20-330R intercepted a 50-centimeter-VNB that assayed a high gold value of 268 g/t Au and 41 g/t Ag whilst to its east extension drilled by hole BLDH-20-378 intercepted 1.25 meters of VNX assaying 16 g/t Au and 180 g/t Ag. QSX1 and QSW are also delineated by drill core assaying 2.47 g/t Au and 5 g/t Ag taken from drillhole BDDH-06-55 at over an interval of 0.50 meters and at a depth of 9.80 meters to 10.30 meters.

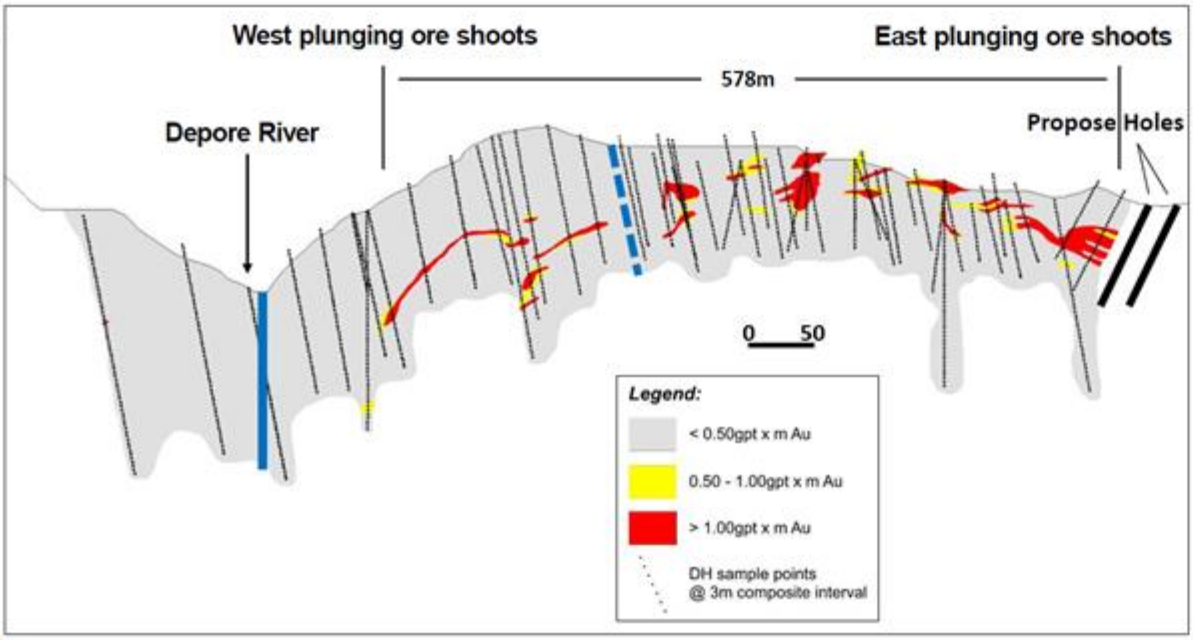


Figure 8-22: Tinago and Unao-Unao mineralization looking north.

Figure 8-23: Drill section along Line 75W showing Tinago mineralization.

8.6.2 Miswi Vein System

Different vein systems were also recognized in Miswi located on the southern section of Balabag Hill. This area is pervasively affected by argillic and sericite alteration at its surface affecting volcanic rocks. Three domains were identified in Miswi, namely BX1, BX2 and QSX1. BX2 zones are predominant in the area followed by QSX1 and to a lesser extent the BX1 zone.

The BX1 zone, interpreted to be the earlier hydrothermal brecciation, is still preserved in this area having a general trend sub-parallel to BX2 zones. However, the majority are significantly overprinted by millimeter to centimeter size epithermal veining that can be categorized under QSX1 zone.

BX2 zones are less continuous in Miswi compared to Tinago-Unao-Unao vein system due to structural complexity. Numerous artisanal tunnels can be observed in the area traversing towards the mineralized bodies. Historic and recent geologic mapping of these tunnels defined the trends of the veins and were referenced during the drilling phase. Drilling data have identified veins orientated in varying directions ranging from sub-horizontal to steeply dipping but generally in northeast direction. The sizes of these veins vary considerably, with some reaching to 180 meters strike length and down dip extension of 65 meters depth having pinch, swell and less often bifurcated structures.

Veins in Miswi are generally broken due to post-mineral faulting. Distinguishing vein textures are predominantly massive to brecciated with associated dark sulphide clusters. Millimeter to centimeter size chalcedonic to banded quartz stringers cross cutting the massive vein can also be observed on drill core samples. Identified clasts in breccia zones are volcanic rocks such as trachytic andesite and volcaniclastics affected by hydrothermal alteration, including argillic, but often flooded by silicification.

8.6.3 Lalab Vein System

Lying on the southern border of Balabag is the Lalab vein system with surface manifestations of broad zones of argillic and sericite alteration hosting millimeter to centimeter size quartz veining. Recent underground mapping and drilling have defined BX1, BX2, BX3 and QSX1 mineralized zones. Several sub-parallel BX2 zones are also observed with the majority trending toward the north-northeast and steeply dipping at 50-70 degrees in a southeast direction.

The thickest BX2 zone is found cutting through and surrounded by the voluminous BX1 zone. This has a strike length of 160 meters in a north-northeast direction and extends down dip to approximately 54 meters. Recent drilling data suggests the north-northeast extension of the vein was truncated by sub-vertical post-mineralized faulting traversing east-west direction.

The BX3 zone is also apparent a few meters from the footwall of the main BX2 zone. This is interpreted to be the later stage of re-brecciation in Balabag following the epithermal veining. This zone is also irregular in geometry tapping the earlier BX1 zone of Lalab. It is characterized by breccia clasts of BX1 and BX2 with associated ginguro bands cemented by gray quartz to quartz-sericite/ chlorite-pyrite + galena/ sphalerite + chalcopyrite.

Among the three vein systems in Balabag, Lalab has the largest BX1 zone. Although irregular in occurrence, trends can be traced towards the north-northeast. It was interpreted to be subjected to earlier hydrothermal brecciation which later became host to quartz veins and breccias.

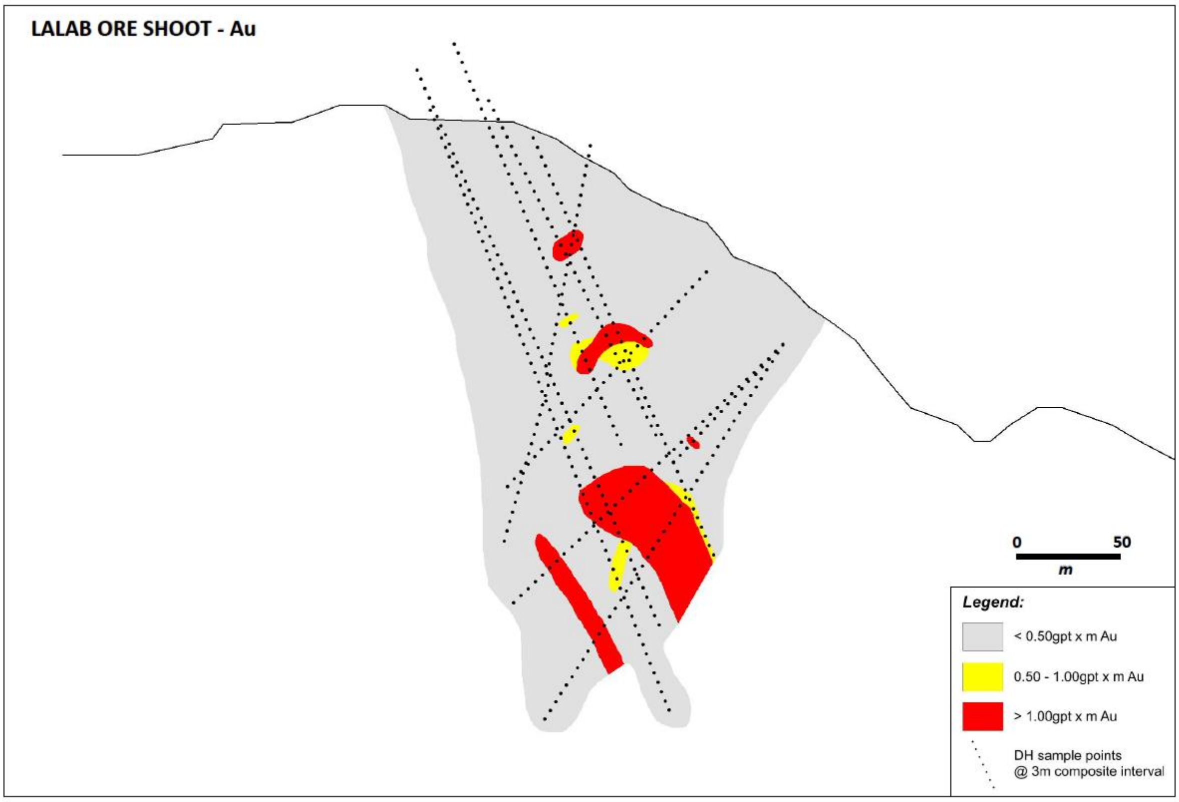


Figure 8-24: Drill section of Lalab mineralization looking northeast.

8.7 Significant Drillhole Intercepts

The recent resource drilling from October 2018 to December 2020 (covering Phase 1, 2, 3 and 4 drilling programs) within Balabag Hill targeted the vein system extensions at Lalab, Miswi and Unao-Unao areas.

- Phase 1 drilling aimed to increase the resource at the Lalab area. A total of 12 drillholes with an aggregate meterage of 1,068.10 meters were drilled. Drillholes were oriented on a northeast direction to intersect the true width of the vein. Four (4) sub-vertical veins were encountered during drilling.
- Phase 2 drilling with 15 drillholes and an aggregate meterage of 1,211.95 meters focused on Miswi veins particularly up dip and down dip of the holes that were drilled along the Duala tunnel.
- Phase 3 drilling focused up dip and down dip of the Monding mineralized veins at Unao-Unao area. Twenty-four (24) drillholes with a total meterage of 1,859.45 meters were drilled.

- Phase 4 drilling with 35 drillholes having an aggregate meterage of 2,866.50 meters targeted the shallow and possibly deeper mineralized veins in the Lalab, Miswi, Tinago and Mossad areas.

Table 8-4 shows the summary of significant Au and Ag grades from Phase 1 to 4 drillhole intercepts.

Table 8-4: Significant intercepts from Phase 1 to 4 drilling program

Hole ID	From (m)	To (m)	Length (m)	Au (g/t)	Ag (g/t)	Litho
Phase 1 Drilling						
BLDH-18-293	27.15	30.50	3.35	2.761	43.842	BX2
BLDH-18-294	63.90	67.85	3.95	0.789	29.762	BX1-BX2
BLDH-18-300	102.45	103.45	1.00	3.60	16.034	PYCL
BLDH-18-301	40.00	42.30	2.30	2.125	31.809	BX3
BLDH-18-302	56.50	78.40	21.90	9.985	462.46	BX3
BLDH-18-302	96.30	101.90	5.60	8.047	189.73	BX2
BLDH-18-304	56.75	68.70	11.95	8.491	477.8	BX3
BLDH-18-304	75.80	77.80	2.00	12.06	414.01	BX3
BLDH-18-304	102.50	107.30	4.80	3.037	72.498	BX2
Phase 2 Drilling						
BLDH-19-305	45.80	48.80	3.00	14.73	32.33	BX3
BLDH-19-305	53.85	56.15	2.30	25.07	180.53	BX3
BLDH-19-306	34.10	46.25	12.15	2.486	6.443	BX3
BLDH-19-306	52.90	54.95	2.05	4.513	23.854	BX2
BLDH-19-307	42.50	44.70	2.20	6.748	140.41	BX2
BLDH-19-307	48.10	52.1	4.00	3.74	150.17	BX2
BLDH-19-307	67.20	68.80	1.60	2.50	35.86	BX2
BLDH-19-307	72.80	77.30	4.50	1.584	16.094	BX2
BLDH-19-307	84.80	86.80	2.00	4.64	34.64	BX2
BLDH-19-307	99.80	100.85	1.05	2.66	16.57	BX2
BLDH-19-308	62.45	64.50	2.05	1.43	16.34	BX2
BLDH-19-308	71.50	73.00	1.50	2.94	50.08	BX2
BLDH-19-309R	72.30	78.10	5.80	2.545	50.475	BX2
BLDH-19-309R	93.70	97.50	3.80	3.938	46.132	BX2
BLDH-19-310	94.10	101.90	7.80	2.034	51.176	BX2
BLDH-19-313	36.40	54.20	17.80	10.73	444.87	BX3
BLDH-19-314	27.80	31.90	4.10	3.105	15.282	BX3
BLDH-19-316	4.80	5.50	0.70	1.29	9.72	BX2
BLDH-19-317	10.20	11.00	0.80	3.90	36.03	BX2

Table 8-4: Significant intercepts from Phase 1 to 4 drilling program *(continued)*

Hole ID	From (m)	To (m)	Length (m)	Au (g/t)	Ag (g/t)	Litho
Phase 3 Drilling						
BLDH-20-321	13.30	14.60	1.30	4.20	44.84	BX2
BLDH-20-322	14.00	15.80	1.80	4.228	120.87	BX2
BLDH-20-322	98.45	99.60	1.15	13.15	362.03	BX2
BLDH-20-323	36.75	37.45	0.70	2.24	10.50	BX2
BLDH-20-323	38.70	39.25	0.55	1.83	11.35	QSX1
BLDH-20-324	35.60	36.40	0.80	1.21	22.51	PYCL
BLDH-20-324	43.40	44.40	1.00	1.92	10.76	BX2
BLDH-20-325	56.40	57.40	1.00	3.03	0.07	QSX1
BLDH-20-328	25.40	26.40	1.00	1.21	4.50	QSX1
BLDH-20-329	22.70	23.70	1.00	1.09	3.60	PYCL
BLDH-20-330	17.90	18.60	0.70	1.08	0.40	QSW
BLDH-20-330	27.00	28.95	1.95	3.40	13.408	QSW
BLDH-20-330R	4.40	6.80	2.40	5.49	45.113	PYCL
BLDH-20-330R	16.50	17.00	0.50	268.69	41.20	BX2
BLDH-20-330R	18.65	19.10	0.45	10.18	12.09	QSW
BLDH-20-331	18.45	19.55	1.10	1.96	1.30	FLTZ
BLDH-20-331	20.50	21.45	0.95	2.033	5.8947	BX2
BLDH-20-333	42.30	48.45	6.15	10.09	16.589	QSX1
BLDH-20-333	53.80	55.33	1.53	3.752	4.649	BX2
BLDH-20-333	62.35	63.05	0.70	27.83	127.80	BX3
BLDH-20-333	67.05	69.90	2.85	15.83	14.719	BX3
BLDH-20-336	0.50	3.30	2.80	2.2	40.324	PYCL
BLDH-20-338	75.20	75.80	0.60	2.08	39.02	BX2
BLDH-20-340	34.90	36.40	1.50	9.44	7.07	QSX1
Phase 4 Drilling						
BLDH-20-344	38.90	39.67	0.77	1.270	1.634	PYCL
BLDH-20-344	73.50	75.95	2.45	0.807	4.810	BX2
BLDH-20-345	97.70	100.10	2.30	0.816	2.396	QSX1
BLDH-20-345	109.20	109.75	0.55	3.880	9.871	BX2
BLDH-20-348	89.10	94.50	5.40	1.084	15.869	BX2
BLDH-20-351R1	67.60	68.60	1.00	1.145	4.041	PYCL
BLDH-20-351R1	73.00	84.15	11.15	4.249	102.362	QSX1/ BX2
BLDH-20-351R2	77.15	79.10	1.95	3.520	91.959	BX2
BLDH-20-351R2	80.10	88.65	8.55	15.595	493.923	BX2
BLDH-20-353	4.35	5.55	1.20	1.135	48.505	BX2
BLDH-20-353	61.15	63.75	2.60	15.58	515.57	BX3/BX2
BLDH-20-353	74.65	77.50	2.85	8.55	134.13	BX3 / BX2
BLDH-20-353	107.40	110.10	2.70	9.39	222.74	BX3 / BX2
BLDH-20-353	111.60	113.55	1.95	2.81	6.26	BX2

Table 8-4: Significant intercepts from Phase 1 to 4 drilling program *(continued)*

Hole ID	From (m)	To (m)	Length (m)	Au (g/t)	Ag (g/t)	Litho
BLDH-20-354	136.85	137.25	0.40	8.625	127.330	BX2
BLDH-20-355	5.40	6.00	0.60	3.610	34.743	PYCL
BLDH-20-355R	16.90	19.00	2.10	1.16	5.69	BX1/ BX2
BLDH-20-358	5.20	6.00	0.80	2.650	7.733	BX2
BLDH-20-358	19.50	20.50	1.00	1.735	2.083	PYCL
BLDH-20-360	14.00	19.10	5.10	2.14	34.62	QSW/BX2
BLDH-20-361	41.25	46.35	5.10	1.384	20.295	BX2
BLDH-20-361	86.90	87.30	0.40	1.025	43.216	QSX1
BLDH-20-361	87.70	88.05	0.35	1.550	56.206	QSX1
BLDH-20-368	36.35	36.95	0.60	0.760	20.715	BX2
BLDH-20-369	93.25	94.75	1.50	2.620	49.486	BX2
BLDH-20-370	52.80	54.60	1.80	2.442	88.353	BX2
BLDH-20-370	56.65	57.05	1.80	1.420	8.352	BX2
BLDH-20-370	120.30	123.10	2.80	0.297	38.746	BX2
BLDH-20-372	101.15	102.15	1.00	1.625	3.135	QSX1
BLDH-20-372	105.00	109.65	4.65	2.402	62.031	BX2
BLDH-20-375	96.15	96.70	0.55	2.460	13.530	QSX1
BLDH-20-375	96.70	103.80	7.10	1.287	5.716	QSW
BLDH-20-375	105.85	107.05	1.20	1.290	12.406	BX2
BLDH-20-376	47.00	47.95	0.95	3.390	26.635	QSW
BLDH-20-377	9.75	11.35	1.60	1.605	17.016	QSW
BLDH-20-377	63.70	64.90	1.20	4.465	258.777	BX2
BLDH-20-378	8.70	9.95	1.25	15.980	180.979	BX2

8.8 Mineralization Types

Reconnaissance geological and geochemical surveys were conducted covering the whole Balabag MPSA tenement. Principal mineralization and/or deposit types that have been recognized and delineated because of the reconnaissance survey include the following:

- Epithermal Au – Ag mineralization in Balabag
- Epithermal Au prospect in Malagak and Depore – Genaro Rivers
- Porphyry Cu – Mo style of mineralization at Legumbong
- Cu skarn style of mineralization at San Pedro – Dipili
- Base metal mineralization in Upper Dipili

The most prominent mineralization is the high-grade epithermal Au-Ag mineralization at Balabag Hill. Follow-up mapping and sampling, detailed geological surveys and resource drilling have been implemented at the Balabag Hill area.

8.8.1 Low Sulphidation Epithermal Gold-Silver Mineralization of Balabag and Malagak and Depore – Genaro Rivers

The Balabag Project hosts quartz-gold-silver mineralization associated with a low-sulphidation epithermal vein system characterized by quartz veining, brecciation, stockworks and silica replacement. High gold and silver grades are associated with quartz veins and breccias having multiple and overprinting epithermal quartz textures and hydrothermal brecciation.

The Depore prospect is located adjacent to, but outside, the Balabag MPSA tenement. Based on geological mapping and sampling within the area, the mineralization may imply a deeper level, medium to high-sulphidation epithermal Au system as evidenced by the increased content of base-metal sulfides with very Ag and the medium crystalline-translucent nature of the vein quartz. Underground tunnels exhibited epithermal overprints described as intense in the form of sub-parallel to cross-cutting veins. Significant base metal minerals associated with copper are galena, light brown sphalerite, chalcopyrite, bornite and covellite. A sample from a tunnel yielded 2.0 g/t Au, 26 g/t Ag, 0.06% Cu, 1.1% Pb and 1.7% Zn.

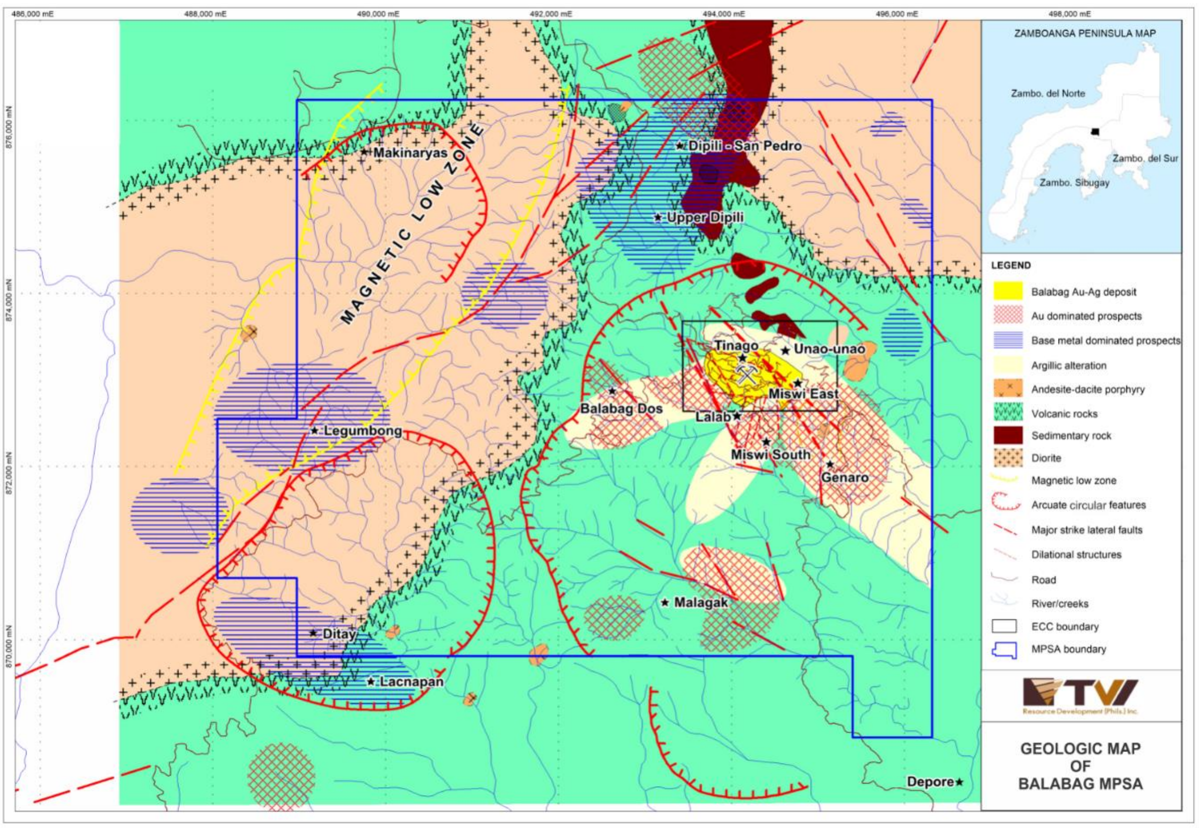


Figure 8-25: Map showing the inferred mineralization and/or deposit types within the Balabag MPSA and neighboring areas.

8.8.2 Porphyry Cu – Mo Mineralization of Legumbong

Based on Rio Tinto's Final Exploration Report (Manuel, Agupitan and Ladia, 1997), the suspected copper mineralization in Legumbong is expressed by the geochemical anomalies of stream sediment samples showing anomalous values of copper and molybdenum and the presence of potassium silicate alteration of secondary biotite and magnetite. Cu anomalies in four adjacent streams range from 100 ppm to 360 ppm Cu and 5 ppm to 10 ppm Mo.

8.8.3 Copper Skarn Mineralization of San Pedro-Dipili

A reconnaissance survey conducted by Rio Tinto revealed copper skarn mineralization in the San Pedro-Dipili area. The skarn along the tributary of the Dipili River is hosted by epidotized sediments with limestone interbeds. The skarn mineralization is defined by discontinuous or irregular lensoid calcareous body with associated copper sulphide minerals. Adjacent to the copper skarn mineralization is a low dipping quartz vein with drusy quartz crystals (Manuel, Agupitan and Ladia, 1997).

8.8.4 Base Metal Mineralization of Upper Dipili

Base metal mineralization in association with high zinc and lead hosted by indurated calcareous/carbonaceous sediments is suspected in Upper Dipili River. The mineralization is believed to occur as sulphide veinlets and clusters. Mineragraphic analysis of the sample collected shows the presence of pyrite-arsenopyrite-(tetrahedrite-tenantite)-galena-sphalerite-chalcopyrite. A grab sample of this material assayed 0.86 g/t Au, 1.24% Zn, 0.27% Pb and 0.06% Cu.

9 EXPLORATION

TVIRD has collated all historical work and integrated the databases from previous owners with the more current and on-going activities. A systematic exploration program was implemented by TVIRD including surface detailed geologic mapping and sampling, test-pitting, and trenching, underground tunnel mapping and sampling, Stream sediment geochemical exploration and drilling activities. The geophysical survey work conducted by RTEPC in 1997 was also consulted to aid in the interpretation aspect of the program.

The key elements completed to date include:

- Geologic mapping and sampling, both surface and underground, including subsurface test-pitting and trenching including the collation of available regional geochemical and geological data from previous workers;
- Review of previous exploration and drilling programs, including the re-logging of old drill cores;
- Exploration target prioritization through implementation of drilling programs.

9.1 Survey Procedures and Parameters

9.1.1 Geologic Mapping and Sampling

Surface geologic mapping was usually done on major creeks and their tributaries, on all road cuts as well as on ridges and spurs using GPS, topographic maps of 1:50,000 to 1:25,000 meter-scale and compass and tape. Outcropping rocks and float as well as rock alteration and geologic structures were mapped, measured, and delineated and reflected on the topographic map to generate a geologic map.

Surface grab and channel sampling were carried out during geological mapping. Grab samples from vein and altered outcrops were collected. Significant veins and vein breccias were ultimately channel sampled using a diamond rock saw in combination with hammer and moil. The geologists together with experienced field assistants routinely marked sample sites with flagging tapes for rock chips and grab samples and spray paint markings for channel samples so they could be easily located and identified.

Standard sampling procedures for grab, rock chip, channel and trenches sampling have been systematically executed by TVIRD field samplers with the supervision of geologists and field assistants.

Figure 9-1: Photo of channel sampling using rock saw.

9.1.2 Test Pitting and Trenching

Test pitting was conducted to determine if gold values defined a vertical zonation along projected vein zones. The test pits were also used to correlate the intensity of weathering and oxide minerals with gold values at identified projected vein zones.

Test pitting was initiated after several surface samples returned anomalous gold values. The test pits have a one (1) meter by one (1) meter dimension and a maximum depth of three (3) meters. Samples were collected by creating a channel (10 centimeters wide and 10 centimeters deep) on two opposite walls of the test pit. Samples were collected for every meter downwards.

Trenching was undertaken when deemed appropriate to get preliminary information as to the width and structural integrity of possible exploration targets. The trenches were surveyed by the field surveyor after or during the course of geological mapping and sampling of the trench. The trenches were dug by using an excavator. All dug trenches were barricaded with caution or flagging tapes. The saprolite exposure and regolith profile in the trench were mapped and the thicknesses measured with reference to the profile line. The starting point or collar coordinates of each trench, rock type, lithological boundaries, structural measurements, visible mineralization and sample intervals were recorded in a field data collection sample sheet.

9.1.3 Underground Mapping and Sampling

Underground mapping and sampling of small-scale mining tunnels were conducted to measure the correct attitudes of the veins and to verify their width and strike continuity as well as to collect vein samples. Sample points selected underground were recorded with reference to distance from the tunnel's portal.

The locations of underground samples collected were determined by the geometry of the tunnels. Samples were taken perpendicular to dip, and therefore reflect true widths.

Predetermined sampling sites were marked with spray paint. A channel cut was about six inches wide and two inches deep. Chip sampling was from bottom to top, or from “sill” of the workings to the “back”. This system eliminated contamination from top material adhering to the lower portions of the channel if sampling was taken from top to bottom. After the samples were taken, the sample locations were sprayed for easy identification. The samples were chipped manually using a heavy hammer and a steel moil/chisel. The chipped rock was caught on a canvass sheet placed immediately below the sampling area. Channel spacing on veins was one (1) meter.

9.1.4 Exploration Geochemistry

Stream sediment samples were collected along major creeks and tributaries at a sampling density of one (1) sample per (1) square kilometer. Minus 80 mesh size stream sediment fractions were collected with an approximate weight of 500 grams. Closely spaced sampling at 200 meters to 300 meters was also conducted within areas where possible mineralization was suspected.

9.1.5 Geophysical Survey

A ground geophysical survey conducted by RTEPC in 1997 was referenced during TVIRD’s exploration program. It consisted of a frequency domain induced polarization chargeability and resistivity survey. A total of 9.6 line-kilometers consisting of six (6) lines spaced at every 200 meters was surveyed within the Balabag Hill area.

An induced polarization (“**IP**”) survey tests the capacity of rocks to hold charge and hence can be used to locate clay and other chargeable minerals such as sulphide minerals including those hosting gold, silver and copper.

A resistivity survey tests for the resistance of rocks and minerals and, inversely, the conductivity, as well. Because of the conductive properties of various metal-bearing minerals, resistivity can be used in mineral exploration to locate metallic-rich rocks. As well, it can detect the presence of resistant silicified bodies such as quartz veins.

9.2 Sampling Methods and Quality

The sampling methodology and procedures used by TVIRD are deemed best practice and are described below. Channel samples derived are assayed in the TVIRD’s internal laboratory.

9.2.1 Rock and Stream Sediment Geochemical Sampling

Identified outcropping veins and mineralized zones were continuously channel sampled using diamond rock saws in combination with hammer and moil. Separate samples were collected on veins as well as on surrounding or enveloping zones of alterations. Channel cut samples were collected across the mineralized zones, veins and alteration from outcrops, trenches and underground workings. The procedure for test pit sampling was essentially the same as for sampling any continuous geologic exposure, e.g. outcrop or trench. The sampling dimension was dictated by the mapped geology, structure and mineralogy and based on the individual geologic boundary that each feature would indicate to be a mineralization control.

Veins and breccia zones were sampled at 30 centimeters to a maximum-one (1) meter width while alteration zones were sampled at two (2) meters to a maximum of three (3) meters width. The sample sites were then marked with flagging tape and spray paint.

Stream sediments were collected along predetermined sample locations using a minus 80 mesh size fraction. A 300 to 500 gram of sediment sample was collected, placed in a plastic sample bag and labelled.

A sufficient number and type of duplicate/replicate samples were taken for QA/QC purposes. Standard samples and blank samples were submitted to check laboratory precision and accuracy.

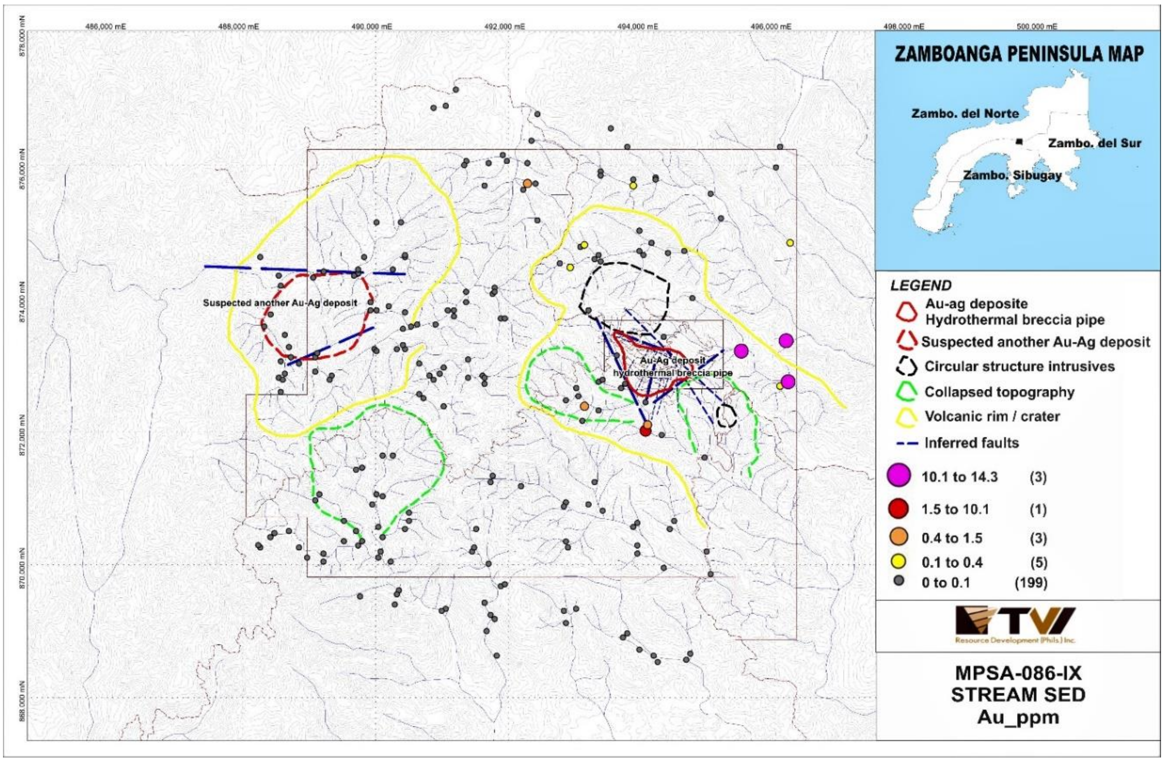


Figure 9-2: Stream sediment sample location map.

9.2.2 Sample Quality

The sampling procedures adopted are consistent with current industry best practices. The methodologies are considered appropriate, and the samples collected from all exploration activities are considered representative of the respective orebodies.

9.2.3 Results of Exploration Works

9.2.3.1 Geologic Mapping

In 2006-2007, detailed drainage geological mapping and sampling were conducted around Balabag Hill in Genaro Creek and Minda Creek, located in the southeast, Depore River, Lalab Creek and Baby Creek in the southwest-west and at Unao-Unao Creek in the north. Total traverse length was 13.5 kilometers. Balabag Hill's surface geological map was reconstructed based on drill hole data during the period.

A more detailed geological mapping was conducted at Balabag Hill and vicinity during the latter period of 2017 to the end of 2020. All roadcuts, creeks and major streams were mapped using compass and tape. Mapping continued further north, west and south of the Balabag Hill, covering a major portion of the Balabag MPSA tenement.

9.2.3.2 Exploration Geochemistry

Stream sediment sampling covering the entire MPSA over Balabag Hill was implemented during the time of RTEPC, the results of which have been assessed by TVIRD. Follow-up stream sediment sampling was also conducted in the later part of 2020 covering Upper Dipili and Valiant areas. In addition, rock samples were also collected covering the Balabag Hill area as well as the surrounding areas.

Compiled rocks and stream sediment samples collected are presented in the following maps.

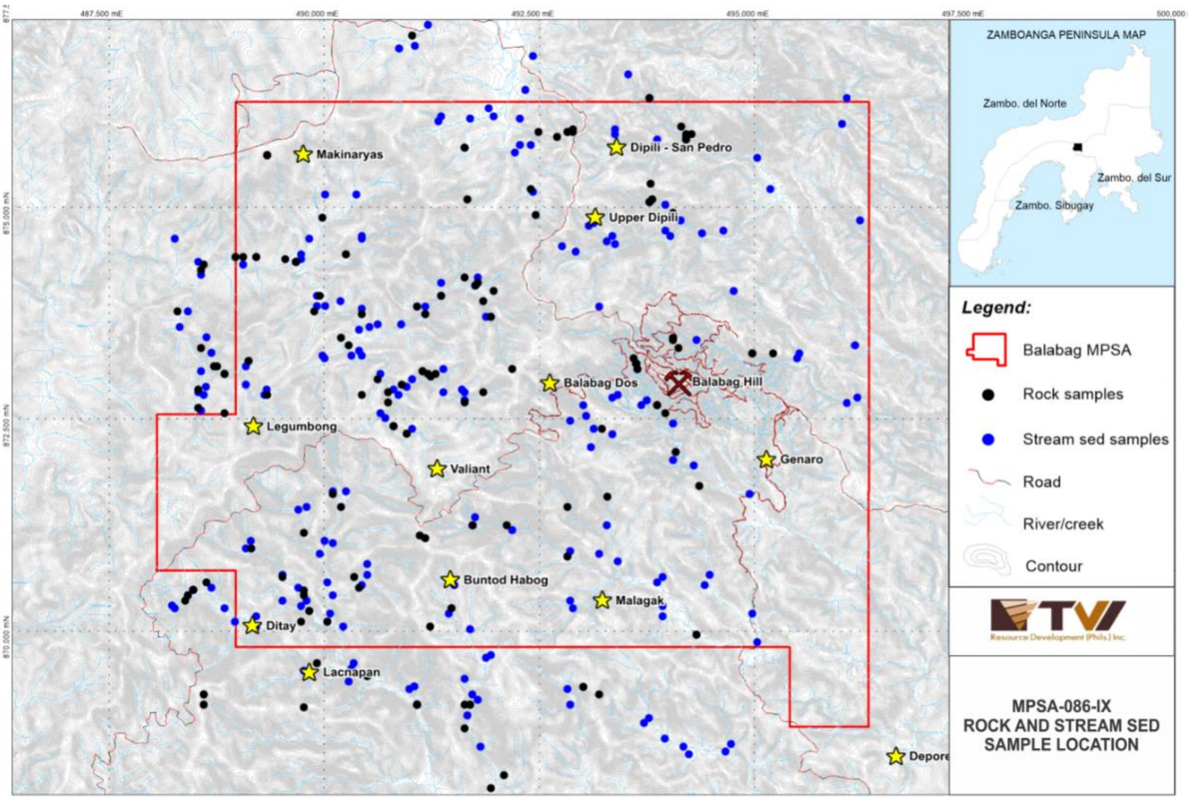


Figure 9-3: Rocks and stream sediment sample locations.

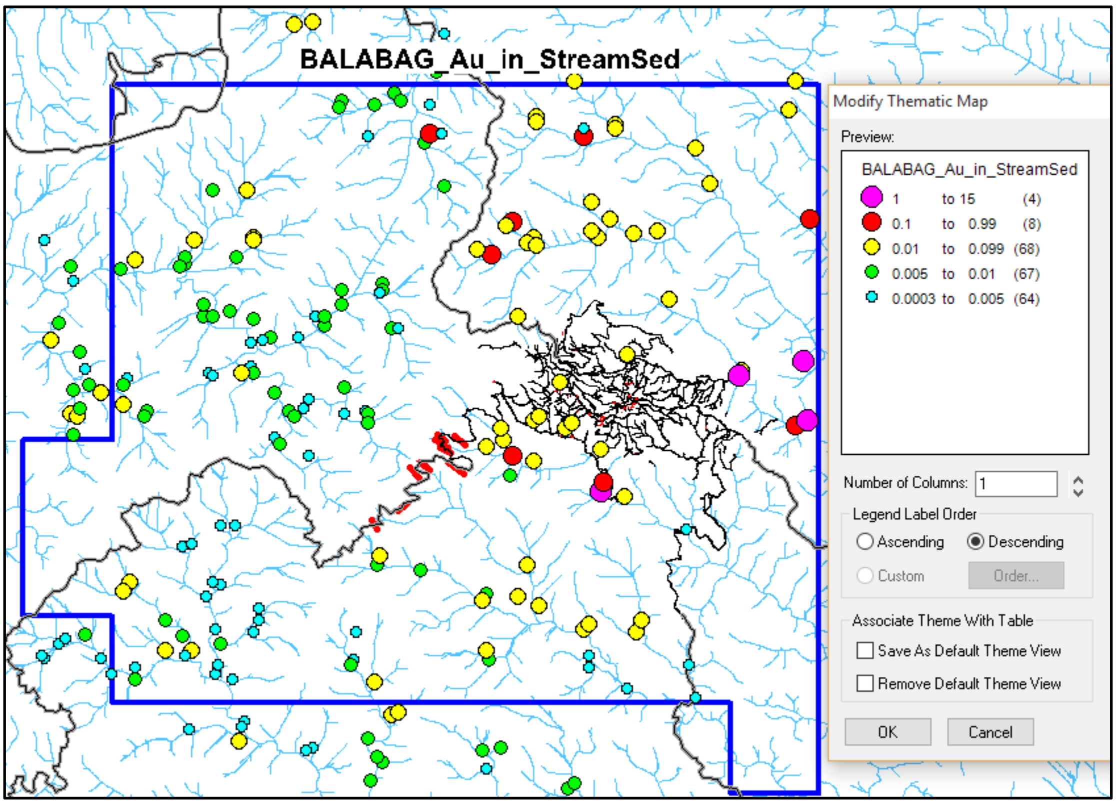


Figure 9-4: Gold results in stream sediments.

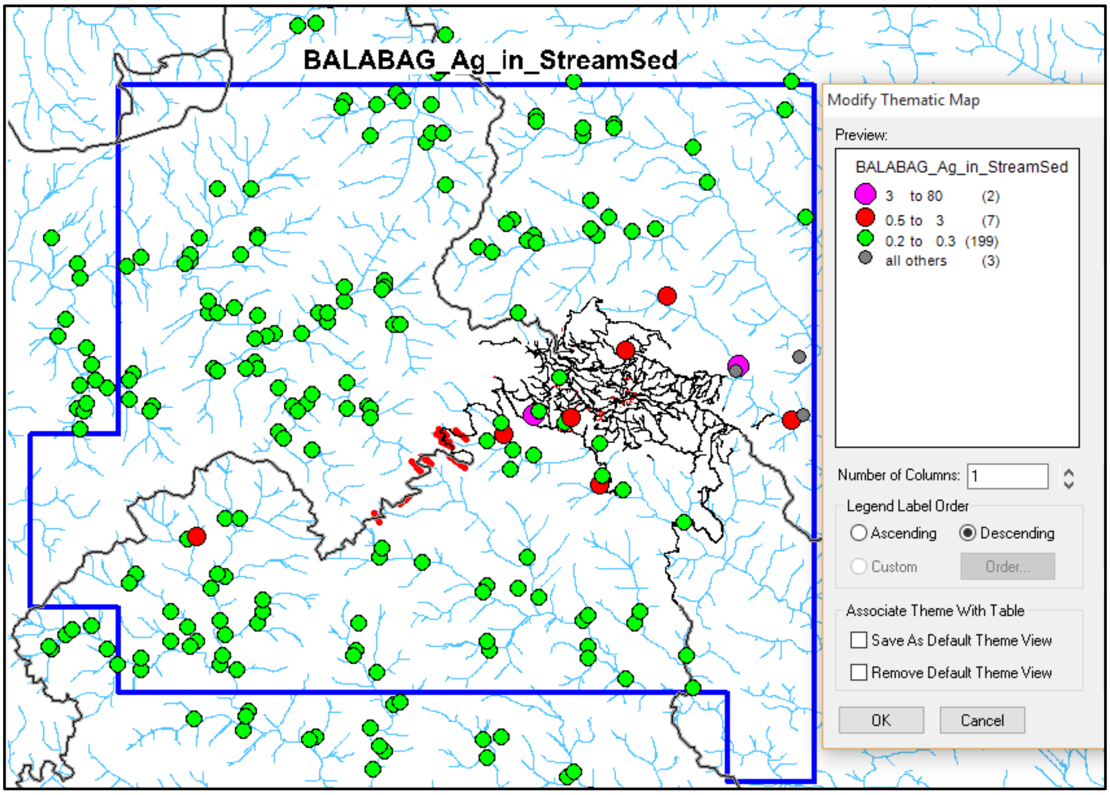


Figure 9-5: Silver results in stream sediments.

In Figures 9-4 and 9-5, stream sediment gold and silver values are located around the Balabag Hill area. High gold anomalies are in the range 1 to 15 ppm while the high silver anomalies are in the range 3 to 80 ppm.

For rock samples, most of the high gold and silver values are located within and around the Balabag Hill area as shown in Figures 9-6 and 9-7.

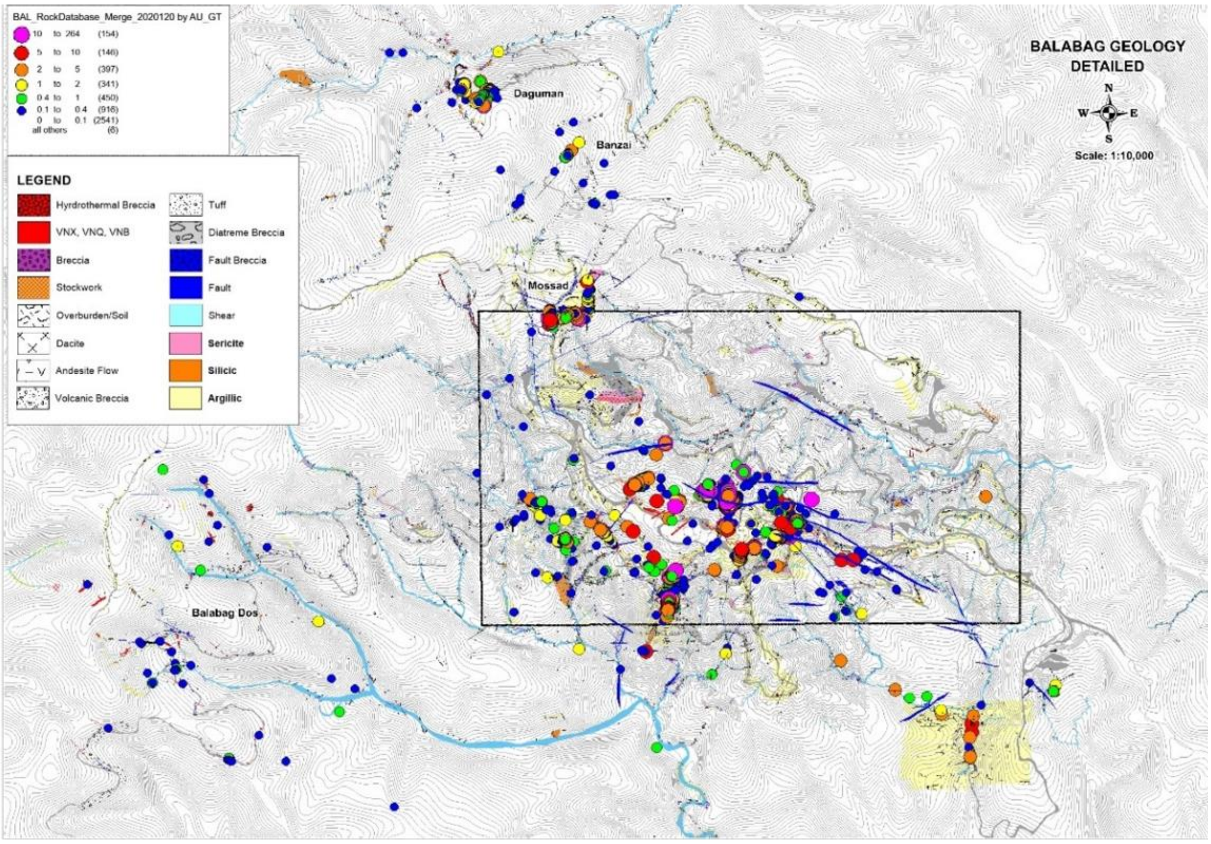


Figure 9-6: Gold results in rock samples.

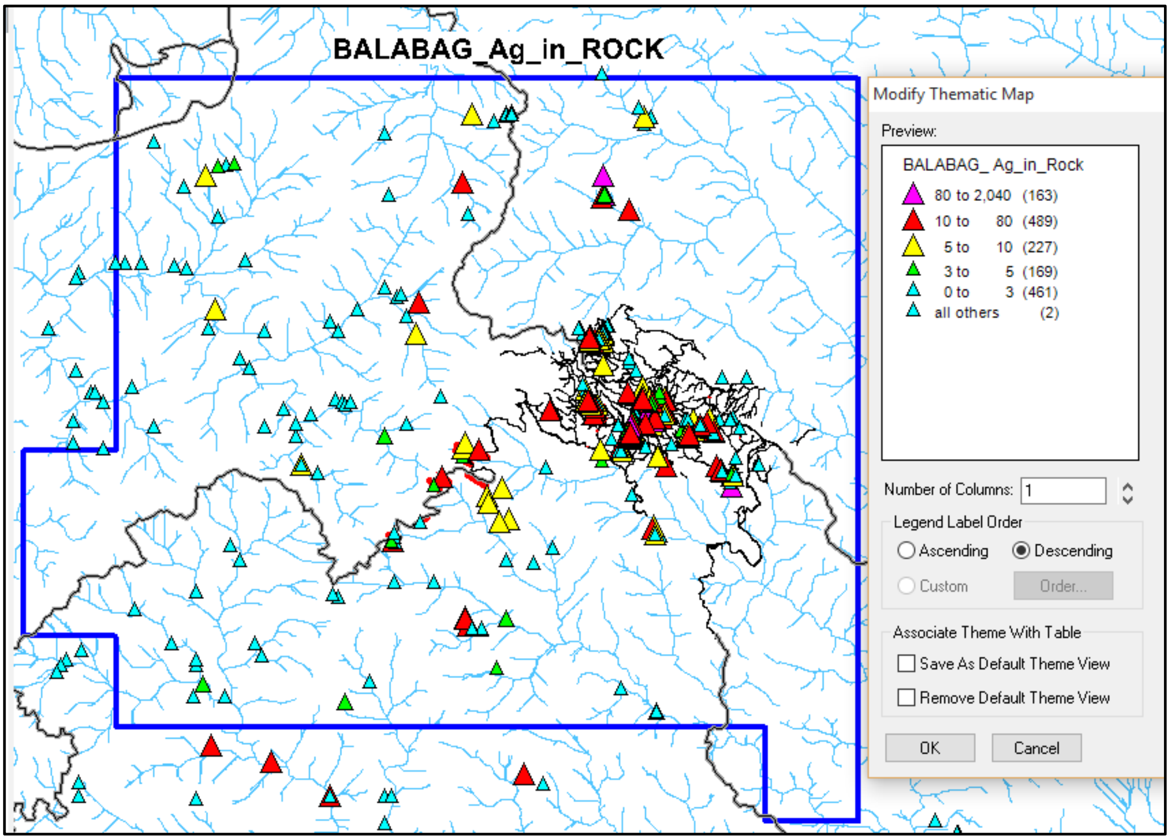


Figure 9-7: Silver results in rock samples.

9.2.3.3 Test Pitting and Trenching

Test pitting was conducted to determine if gold values define a vertical zonation along projected vein zones. Geological observations of the test pits were used to correlate the intensity of weathering and oxide minerals with gold values at projected vein zones.

Test pitting was initiated after several surface samples returned anomalous gold values. The test pits have a one (1) meter by one (1) meter dimension with a maximum depth of 3 meters. Samples are collected from 10 centimeter wide by 10 centimeter deep channels on two opposite walls of the test pit. Samples are collected vertically at one (1) meter intervals.

Figure 9-8: Section view of a test pit.

Trenching along the projected strike of the Tinago, Lalab and Miswi veins was also implemented to determine vein continuity. The trenches were spaced about 50 meters apart and oriented almost perpendicular (northwest to southeast) to the general trend of the veins. A total of 33 trenches with a total length of 1,066 meters were dug. Channel samples were taken along the trenches at one (1) meter intervals.

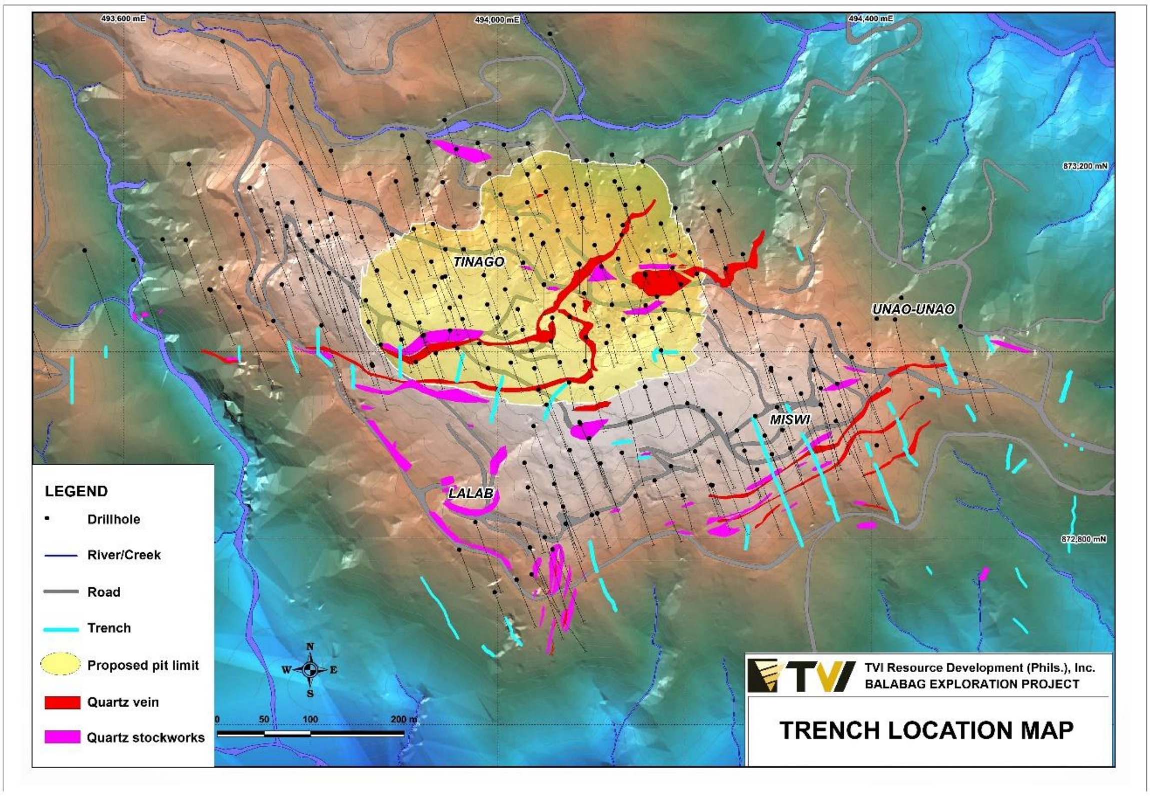


Figure 9-9: Trench location map.

Figure 9-10: Trenches in South Miswi Area.

9.3 Underground Mapping and Sampling

TVIRD conducted mapping and sampling of some of the artisanal miners' underground tunnels after small-scale mining activities were stopped in Tinago, Unao-Unao, Lalab and Miswi. This was done to precisely measure the attitudes of the veins, verify their width and strike continuity as well as collect vein samples. Sample points selected underground were recorded with reference to the distance from the tunnel's portal.

Underground sample locations were determined by the geometry of the tunnels. Samples were taken perpendicular to dip to reflect true widths. However, none of the samples represent the full width of the veins as the footwall was not exposed. The samples in any one stope represented the same preferred, approximately planar, portion of the vein. In the wider stopes, it was occasionally possible to take composite samples, as vein width was more than a meter wide.

Predetermined sampling sites were marked with spray paint. A channel cut was about six inches wide and two inches deep. Chip sampling was from bottom to top, or from "sill" of the tunnels to the "back". This system eliminates contamination from top material adhering to the lower portions of the channel if sampling was taken from top to bottom. After the samples were taken, the sample locations were spray-painted. The samples were chipped manually using a heavy hammer and a steel moil/chisel. The chipped rock was caught on a canvas sheet placed immediately below the sampling area. Channel spacing on the vein was 1.5 meters.

When Balabag exploration resumed during the 4th quarter of 2017, the artisanal small-scale miners' tunnels were prioritized for re-mapping and sampling prior to drilling. A total of 89 artisanal small-scale mine tunnels were rehabilitated, mapped, and sampled. The majority of the tunnels were in Lalab, Miswi and Unao-Unao.

9.3.1 Lalab Area

Underground mapping of the small-scale-tunnels in Lalab, revealed stacked quartz veins showing a northeast-southwest and southeast strike, steeply dipping vein attitude. At the Bola tunnel, two main massive veins were mapped. The first intercept was around 0.6 to 0.8meters wide striking at N35°east dipping 55°southeast located about 45 meters from the portal. The second vein measured 1.1 meters wide with N35°E strike and dipping 50°SE. Textures of both veins were dominantly massive, oxidized and pyritic with sections of brecciation. A strong fault was manifested in both walls of the vein, indicating that the hydrothermal fluids tapped the fault for mineralization.

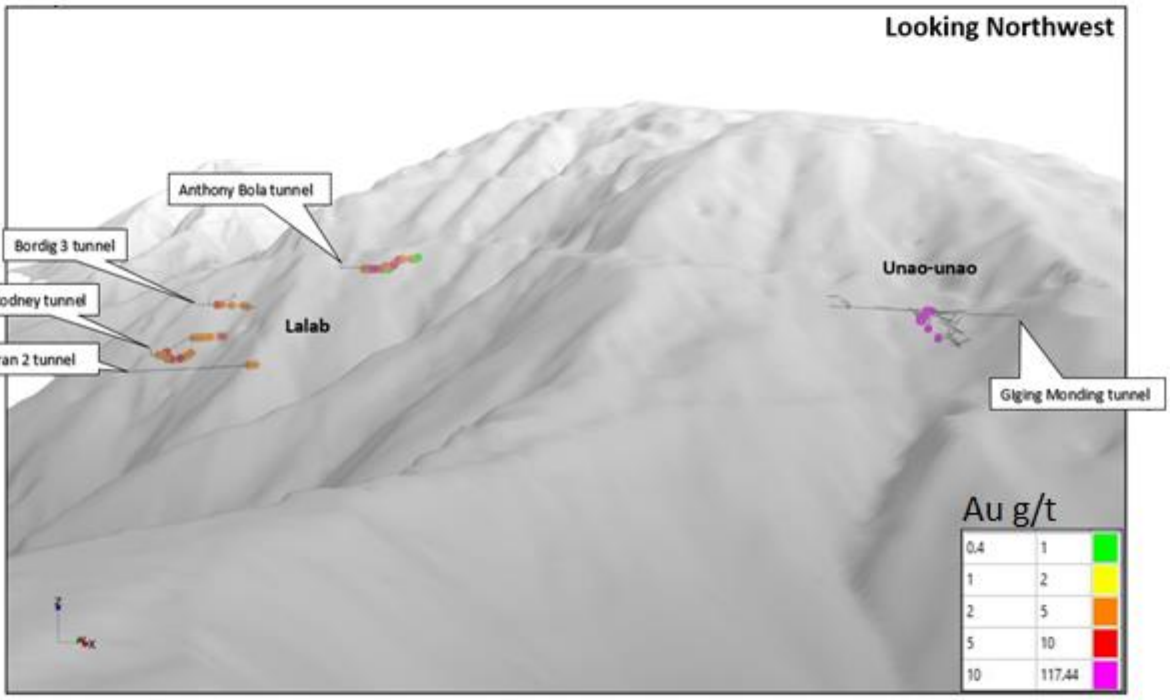


Figure 9-11: Location of small-scale tunnels in Lalab Area.

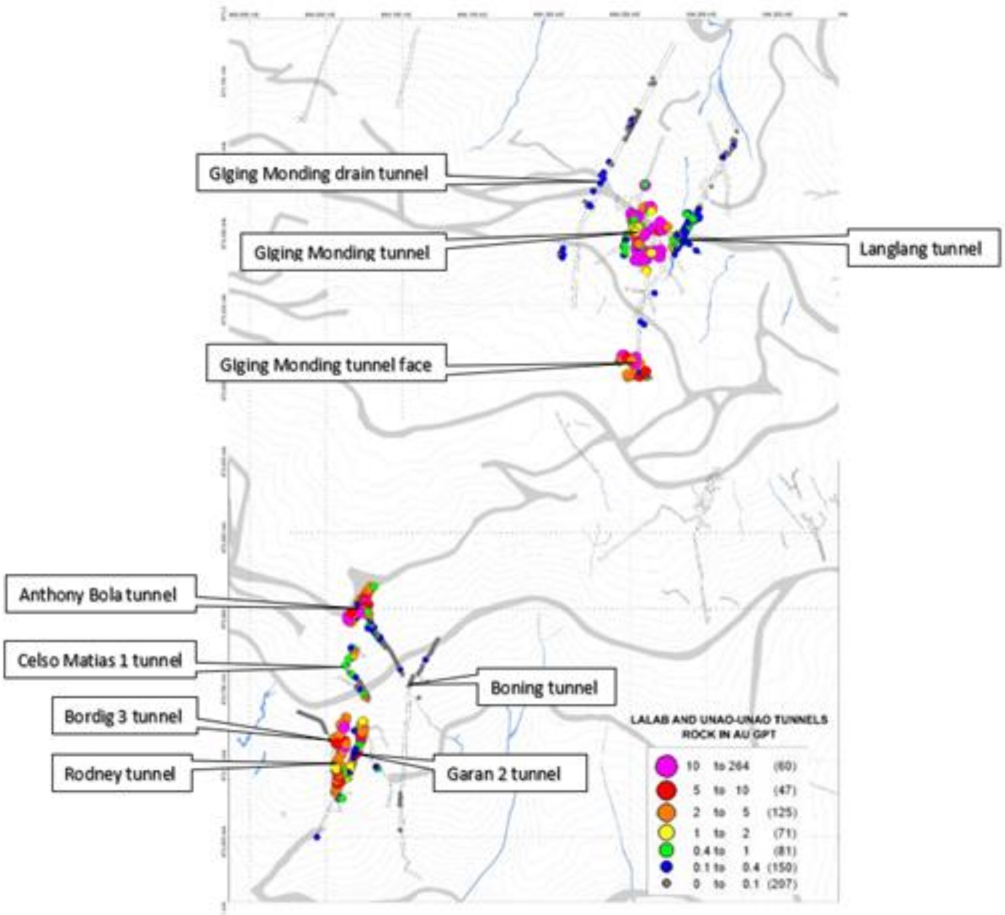


Figure 9-12: Location of tunnels at Lalab and Unao-Unao Area.

9.3.2 Miswi Area

Unlike the steeply dipping vein system in Lalab, Miswi veins tend to be gently to moderately dipping (40°-70°) as clearly shown at the Bob Lopez tunnel. The vein trend is almost the same as Lalab on a NNE-SSW trend. On the eastern flank from the Bob Lopez tunnel, several tunnels were found to be of the same trends with varying dip angles:

- Epher Tunnel – Quartz veining is fine to subhedral ranging from 0.2 meters to 1.0 meters in width, highly oxidized with no traces of fresh pyrite, also vuggy often lined with goethite possibly a pseudomorph of pyrite. A younger normal fault trending north-northeast, dipping 65°SE cuts the vein around 20 meters from the portal and has displaced it at around 0.8 meters length. The drive runs at the apparent down dip of the vein. About 48 samples were collected returning an average assay of 1.7 g/t Au and 15.5 g/t Ag.
- De Los Reyes 1 Tunnel – Located close to Epher tunnel it is only a short drift. It has similar characteristics of the Epher vein, being its downdip extension. The vein at this section swelled a little to more than one (1) meter width.
- Teddy 1 Tunnel – Quartz vein shows similarly fine-subhedral, oxidized and vuggy appearance but likely starting to pinch out at this section. Yet, unlike Epher and De Los Reyes 1, this has two sub-parallel veins as seen at the portal – one has 0.4 meters width while the other is much thinner at 20 centimeters width. These veins represent the further down dip continuity of the Epher-De Los Reyes intercept. Five samples were collected with an average grade of 0.30 g/t Au and 4.19 g/t Ag.
- Teodore Ductin Tunnel – Has three sub-parallel veins ranging from 0.20 meters to 0.60 meters widths, highly oxidized and broken. Veins behave similarly, striking east-northeast and dipping north-northwest. These three veins separately lie further down - deeper from the above Epher-De Los Reyes-Teddy 1 intercepts.
- Gino Tunnel – With fine to massive texture, oxidized and broken for around 0.40 meters width it similarly has an ENE/NNW attitude. This vein is a separate vein. It is exposed by the side-cut trench on the road.
- Fajardo 2 Tunnel – Located about 50 meters southwest of the Gino 2 tunnel, this vein represents the up-dip extension of the Epher-De Los Reyes-Teddy 1 vein intercept. Vein samples returned insignificant gold values.
- Bob Lopez Tunnel – The vein inside the tunnel varies from massive, chalcedonic to subhedral texture and is enveloped by a variably altered argillic hanging wall zone containing <4 centimeters crisscrossing milky quartz-pyrite oxidized to goethite veinlets. Its footwall displayed a clay-FeO assemblage, often with associated gouge at the immediate vein contact. The quartz vein is coarsely crystalline and brecciated on the inferred swelled portion to nearly 3 meters true width. The vein strikes north-northeast gradually shifting to a northeast direction, dipping southeast, and averaging an approximately 30 degrees angle. Along its strike, the vein plunges due north and is cut sharply by a reverse fault at the middle drive making the succeeding block uplifted and exposed for an almost 3 meters vein width. Total vein exposure is almost 40 meters strike length with >0.5 meters to <3 meters width. The quartz vein is still open northeast and southwest and along southeast dip.

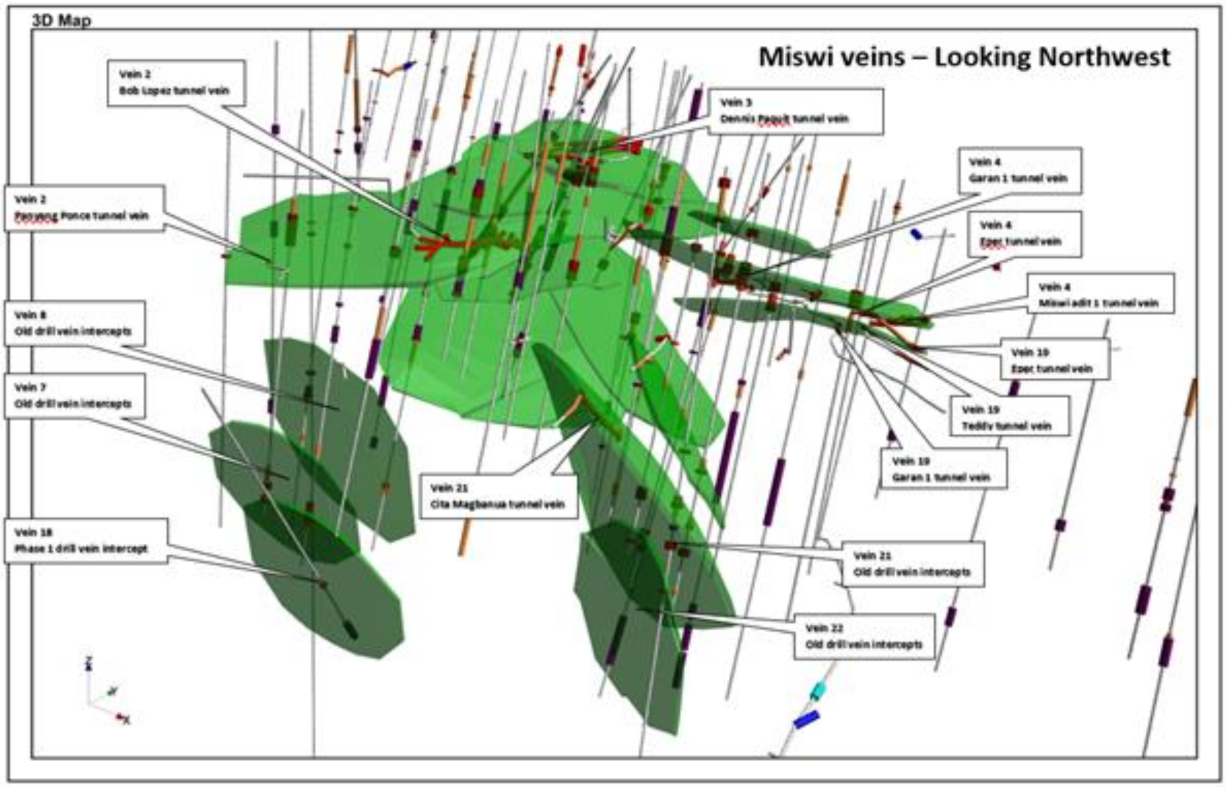


Figure 9-13: Section looking northwest showing the location of small-scale tunnels at Miswi Area.

9.3.3 Unao-Unao Area

At Unao-Unao, four (4) tunnels were rehabilitated, mapped and sampled, namely: Monding, Sitong, Langlang and Monarca tunnels. At the Monding tunnel, quartz sulphide veins with a presence of base metals returned significant gold values ranging from 2.0 g/t Au to117.43 g/t Au. The quartz sulphide vein breccia is characterized with crackled breccias composed of BX2 domain (VNQ-VNX-VNB + black sulphides) cemented by epithermal quartz veins.

- Sitong Tunnel – Massive quartz veining with 30-50 centimeters width located 34 meters from the portal was mapped. Sulphides were disseminated in this vein composed of pyrite, chalcopyrite, sphalerite with minor amounts of bornite and galena. Visible amounts of azurite and malachite fill are on fractures. The vein generally strikes northwest and dips southeast and northwest.
- Allan Monarca Tunnel – Generally, the tunnel is on porphyritic/brecciated andesite flow altered to an assemblage of clay +silica ±chlorite ±pyrite and cut by a fault striking northwest and dipping northeast. The alteration gets intense inside the tunnel to silicified brecciated andesite flow with millimeter-sized hairline quartz stringers partly chloritic with 5-6% pyrite. There is another fault striking northeast and dipping 48°NW which cuts a 10 centimeter to 50 centimeter quartz vein. Several meters before the tunnel's face, a 0.9 meter to 1 meter vein zone was identified with 20 centimeters to 25 centimeters VNQ in the hanging wall and 75 centimeters QSW in the footwall. Four (4) samples were collected returning average assays of 0.29 g/t Au and 7.12 g/t Ag.
- Monding Tunnel – the mineralized zone in this tunnel is approximately 6 meters to 7 meters wide and exhibits several mineralization styles and textures. This mineralized

zone width or thickness is open at both the hanging wall and footwall. Several mineral domains were identified in this area consisting of the following: quartz-sulfide banded breccia ("**QSB**"), VNX, VNQ, QSW, and silica flooding or silica replacement. QSB, characterized by light to dark grey color, monomict quartz vein clasts cemented by chalcedonic quartz matrix with common dark grey color sulfide bands and clusters appears in both the foot wall and hanging wall of the identified mineralized zone. QSB also exhibits a pinch and swell characteristic ranging from 15 centimeters to 1.20 meters thick. Historic assays from this vein type returned bonanza gold and silver grades. VNX is characterized by its light grey color, monomict clasts of phyllic altered andesite and cryptocrystalline quartz veins cemented by chalcedonic quartz matrix with common fine sulfide clusters. VNQ is characterized by its pale to bleached color massive cryptocrystalline quartz vein, in some portions it is highly fractured and manganiferous. Quartz stockworks were observed near hanging walls and characterized by silicified wall rock and centimeter wide saccharoidal quartz stockworks with occasional sulphide bands. These other mineralization domains may contain lower gold grades than QSB but due to its large volume these mineralization domains are a great potential target. A total of 306 samples were collected giving an average grade of 12.6 g/t Au and 97.26 g/t Ag.

- Lang-Lang Tunnel – This tunnel is located 50 meters northeast of Monding tunnel on a lower elevation with four short drives at both sides of the tunnel; one drive crossed the down dip extension of Monding tunnel. A mineralized hydrothermal breccia zone was observed comprising a clast supported breccia with angular wall rocks cemented with epithermal quartz veins with visible stains of malachite and manganese. The rock sample assays are less than 2.0 g/t Au. A total of 153 samples were collected with an average grade of 0.42 g/t Au and 14.99 g/t Ag.

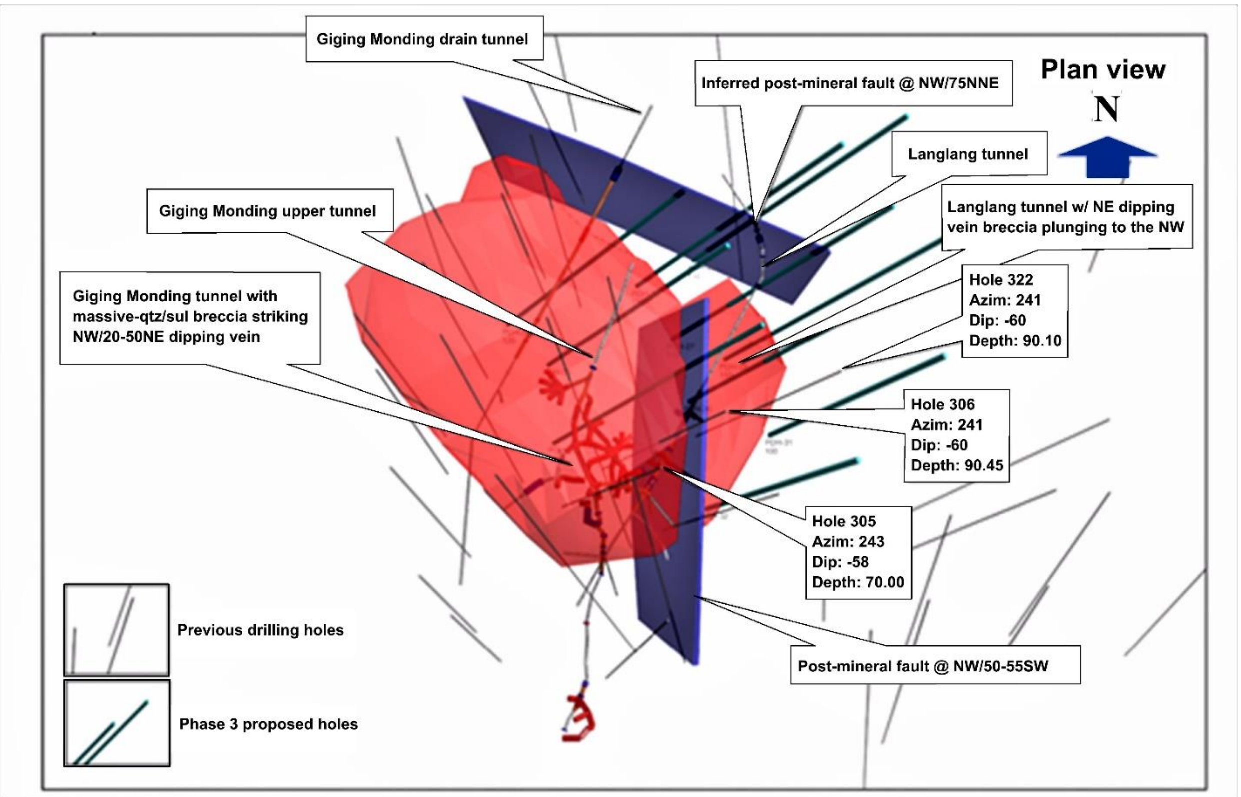


Figure 9-14: Plan view of Unao-Unao Vein System showing the location of small-scale tunnels.

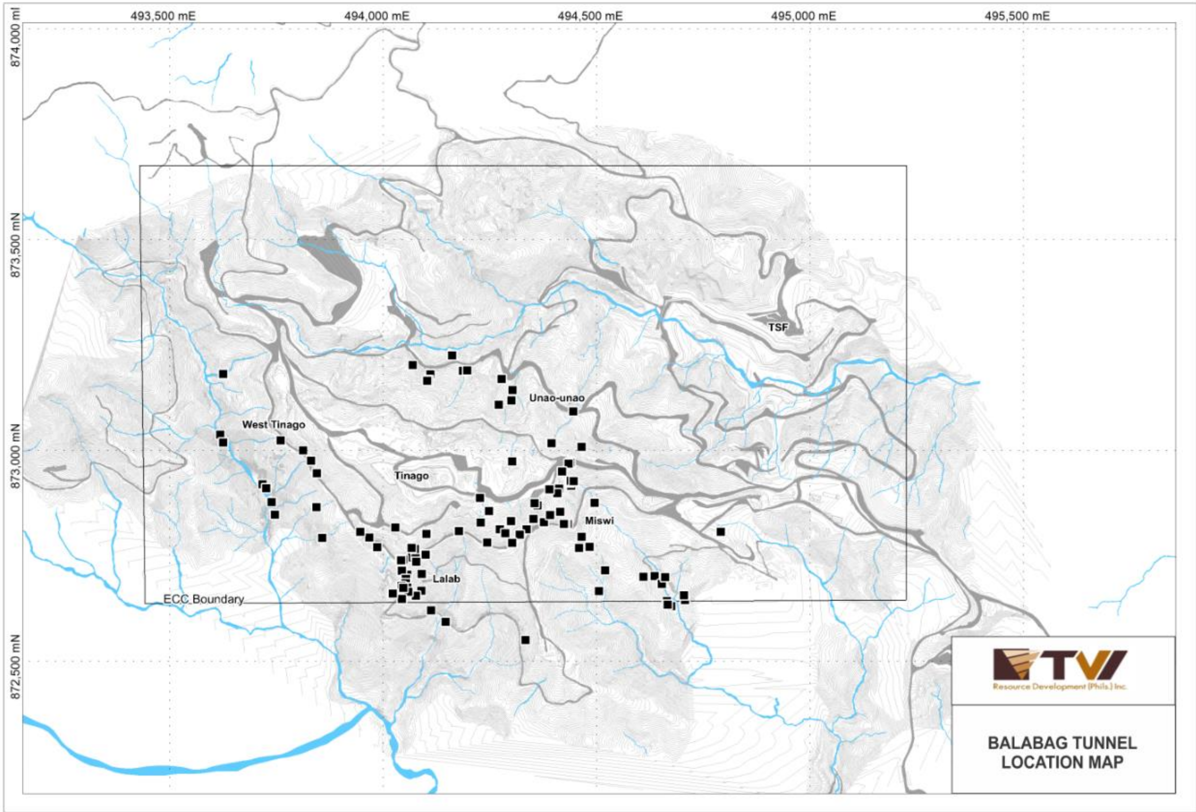


Figure 9-15: Location of small-scale tunnels within Balabag Hill.

9.5 Geophysical Exploration

An Induced Polarization and Resistivity survey was conducted over Balabag Hill by RTEPC with McPhar Geo-services as the contractor. A total of 9.6 line-km consisting of six (6) lines were surveyed. No ground geophysical work was done by TVIRD. The results of the survey are shown in Figures 9-16 and Figure 9-17.

Three areas with IP and resistivity anomalies are identified – Unao-Unao, Miswi East and Lalab West.

Unao-Unao shows a high resistivity zone along Unao-Unao creek. This anomaly is prominent in 500 meter to 200 meter level plans with a diameter of around 500 meters. There are no drill holes yet to the north of the creek where the high resistivity anomaly is found.

Miswi East shows a high IP anomaly similar to that found in Balabag Hill.

The fault zone in Lalab West could contribute to the shallow high resistivity and truncated high IP anomalies. However, following the high resistivity anomaly pattern at lower elevations points towards Lalab on the east. This may be an extension of the Lalab veins. Also, the high IP zone can be traced further west of the area.

McPhar Geo-services recommended drill-testing the high-chargeability anomalies since the higher the response would indicate a higher likelihood of sulphide mineralization.

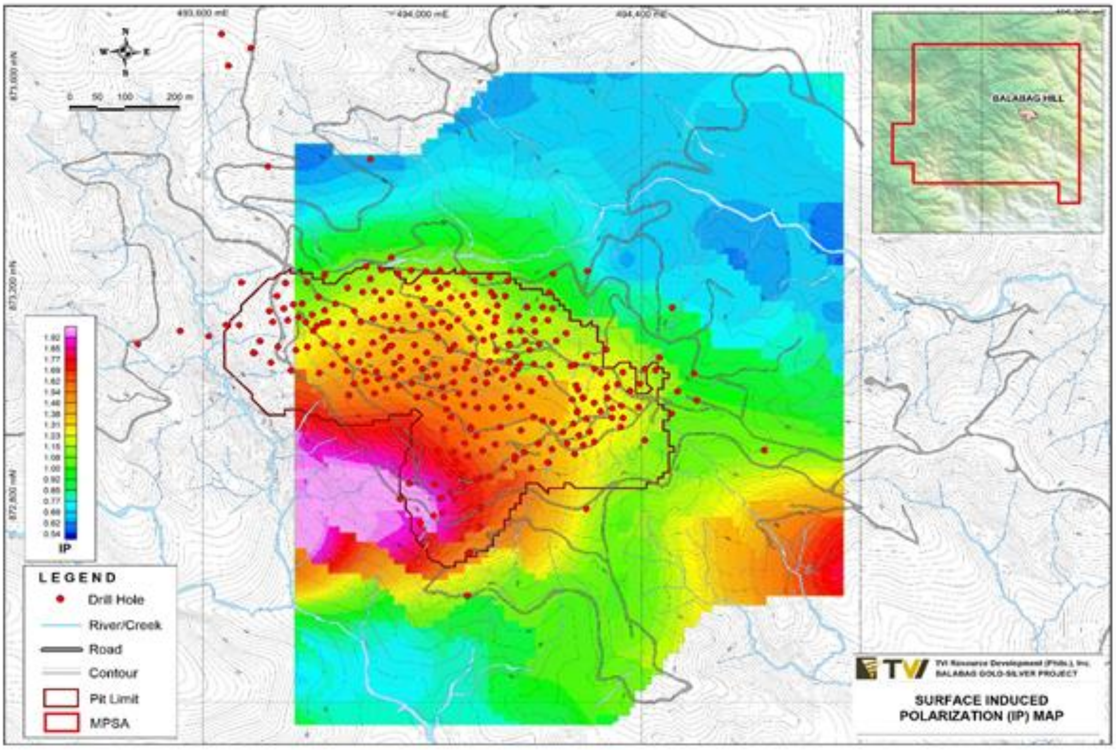


Figure 9-16: IP map over Balabag Hill.

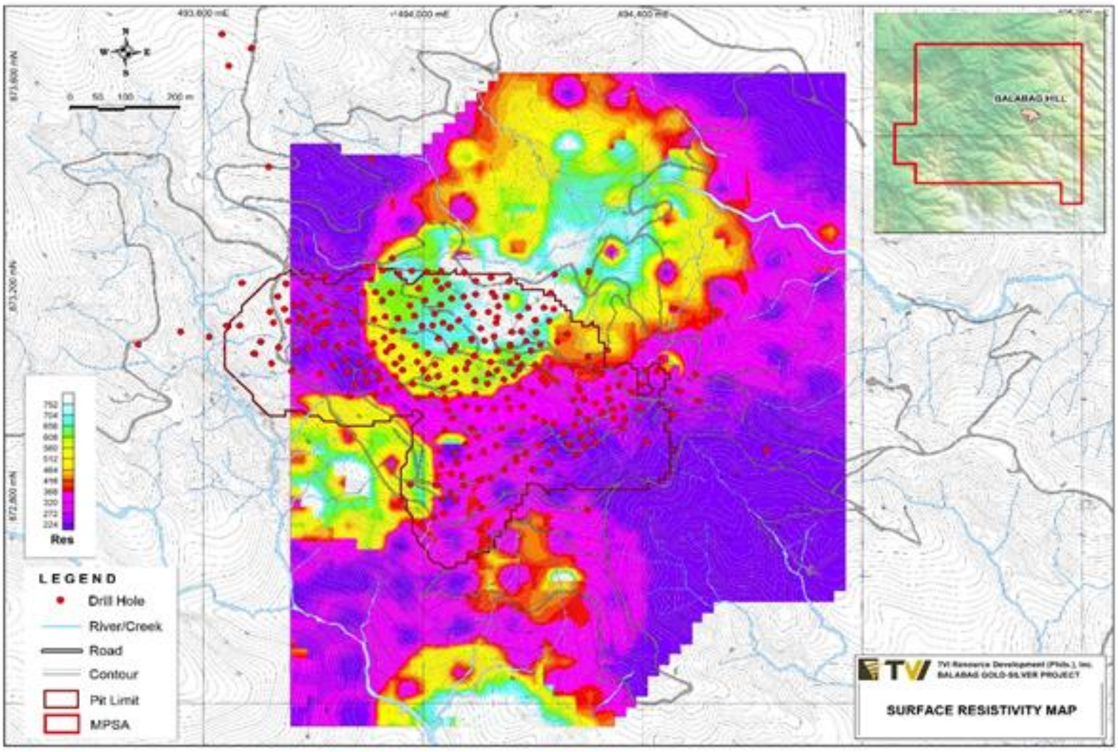


Figure 9-17: Resistivity map over Balabag Hill.

10 DRILLING

The drilling program in Balabag Hill was implemented by a single drilling contractor, Exploration Drilling Corporation ("**EDCO**") which is wholly owned by TVIRD. Several types of diamond drill machines were used, including four LY-38s, two CS-1000s, one Gopher-160, two Edson 150s, one HYDX-150 and two EDCO-150s. Core sizes varied from PQ-HQ with the core diameter reduced to NQ in the lower portions of the deep holes. PQ size core diameter is 85 millimeters, HQ is 63.5 millimeters while NQ is 47.6 millimeters. Drilling was done using a triple tube.

The proposed drill hole coordinates were prepared by the geologist and approved by the project manager. The geologist provided the field surveyor with the proposed drill hole coordinates and corresponding location map and in turn the drill hole collar location was marked and surveyed using a Nikon Total Station (NPL -322+) with an accuracy of one (1) centimeter on the ground. If any deviations in the proposed drill hole location are encountered due to topography or other reasons, an alternative location was determined by the surveyor and communicated to the geologist for approval before pad construction began.

Prior to any drilling commencement, the assigned rig geologist prepared a Drill Hole Commencement Approval Form to signify the formal start of drilling operations on a corresponding drill hole. The form included information on the drilling parameters, drill hole design and site set-up.

During the drilling operation, all real-time monitoring and related activities at the drill site were noted by the Core Checker on the Core Checker's Report. These include, but were not limited to:

a) Mixing of mud and additives;
b) Actual time the operation started;
c) Coring and retrieval;
d) Time duration of stand-by due to mechanical breakdown, oil spillage, limited water supply and the like'
e) Adding of rods (PQ/HQ);
f) Pulling out and putting down of rods due to drill bit replacement or loss core; and,
g) Hole conditioning.

Orientation runs (using spear and crayon) were undertaken by the driller at least every six meters. In cases where the orientation mark was of poor quality, another attempt was made in the next run. A straight line was also marked along the nearest edge of the bottom split tube closest to the notch as core orientation reference. The drill core was transferred from the split tubes to the core boxes after the marks had been made.

Once the drill hole had been completed, the surveyor returned to pick up the "final collar coordinate" using a total station GPS. This information was sent to the senior geologist and the database administrator who then saved the file.

10.1 Drill Core Sampling

Drill core sampling was undertaken after geological, structural and geotechnical core logging. Sampling intervals are selected by the geologist, and for both PQ and HQ drill core sizes (with drill core diameter of 85 millimeters and 63.5 millimeters, respectively) conform to a minimum sample length of 30 centimeters and maximum of 100 centimeters, (Figure 10-2, Drilling Operation Protocol). Sampling is confined and should not cross along lithological boundaries as defined by the logging and are defined within similar alteration zones and structural features.

- A colored orientation line is marked along the length of the core to indicate where the core should be cut in two equal halves. The line is traced perpendicular to the stratification; where there is mineralization the optimum distribution is used so that 50% of mineralization is represented in each half of the core. The same side of the cut core is removed consistently throughout the drill hole (i.e. the right-hand side from the top to the bottom of the hole).
- A sampling form is completed with the intervals indicated for the samples. Ticket forms are completed with the drill hole ID number and FROM-TO interval for the sample. The sample numbers must be in consecutive order and are derived from the sample ticket book. Only the sample numbers are written on the plastic sample bags.
- Marker blocks are inserted at the start and end of each sample and the number of the corresponding sample is written with a felt-tip pen on the core box to the side of the marker. Samples of approximately 2 to 3 kilograms are collected carefully and placed in plastic bags. The sample number is written on the plastic sample bag with a permanent marker pen. The sample ticket is stapled on the upper part of the bag, and the bag sample number is checked against ticket sample number. The bag is sealed with plastic ties.

Figure 10-1: (A) Receiving of drill core samples from the drill site; (B) Core photography by a core house aide; (C) Wrapping of samples using clear packaging tape prior to cutting; (D) Core cutting by samples by designated core cutters; (E) Geologist conducting detailed core logging; (F) Sample preparation by a core house aide; (G) 25 samples with sample numbers ready for dispatch.

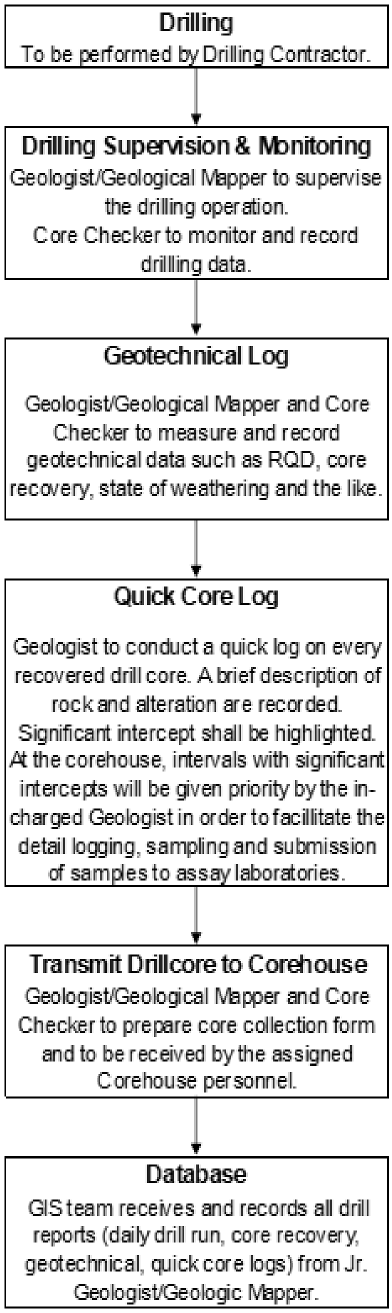


Figure 10-2: Drilling operation protocol.

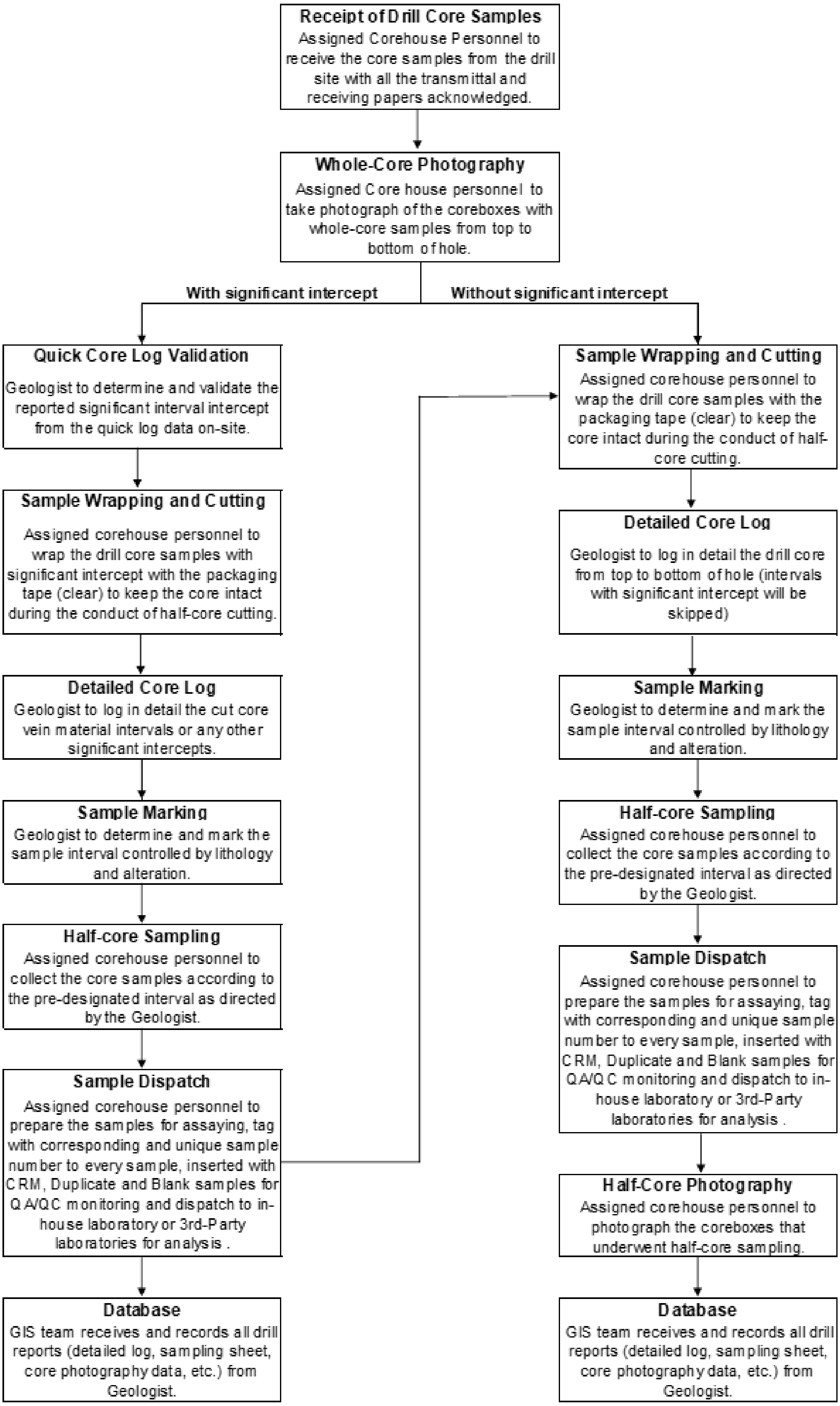


Figure 10-3: Core logging and sampling procedure.

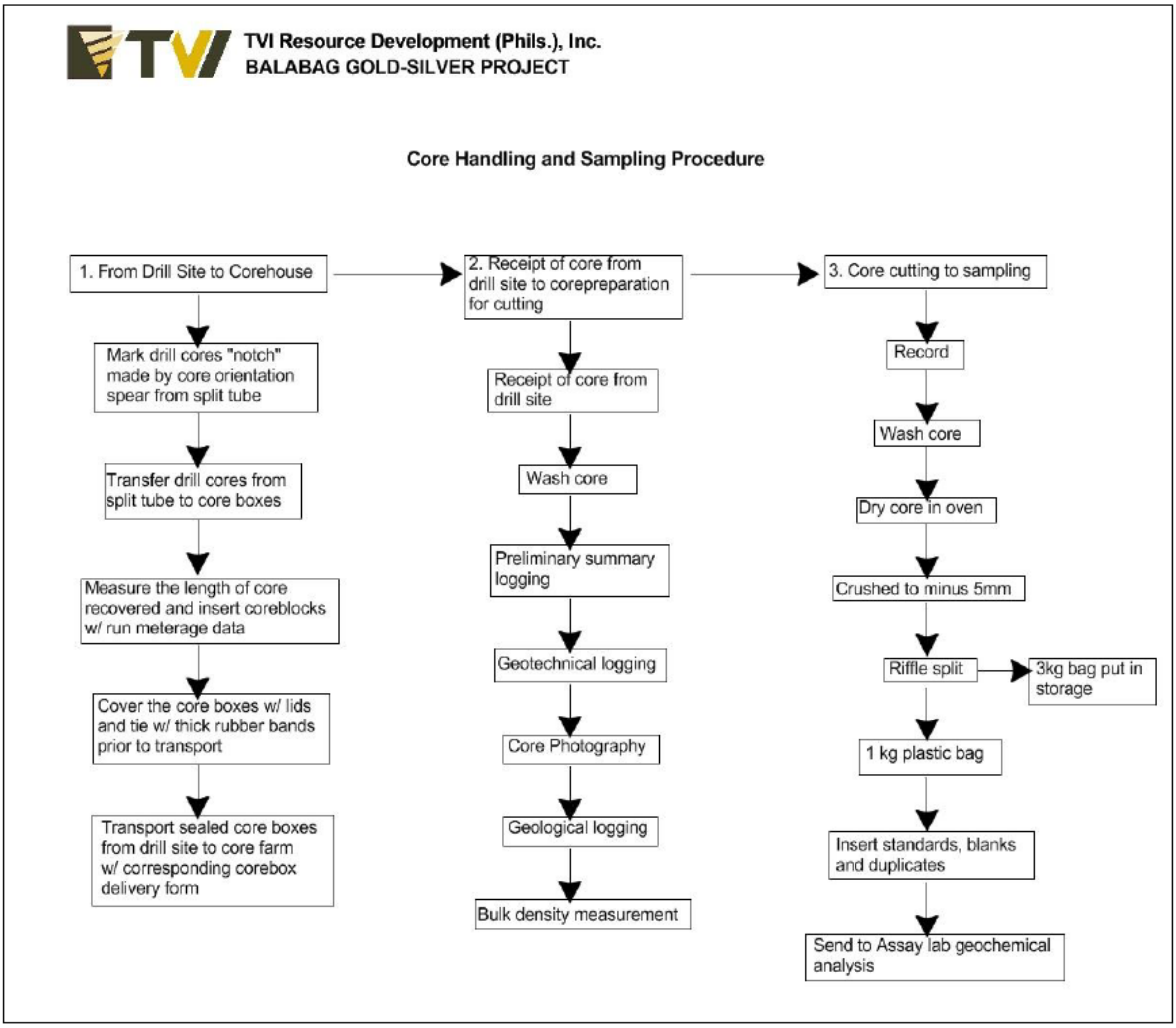


Figure 10-4: Core handling and sampling procedures.

10.2 Density Sampling

Dry bulk density is measured using the paraffin method. Samples are selected at 10 meter intervals but also ensuring that mineralized intersections are well represented. Long core samples (up to 30 centimeters) are prioritized because the bigger the samples the more representative they are of the rocks. Each sample is placed in an aluminum tray and a sample card is filled in detailing the hole ID, core size, meterage interval, tray number and date. The core sample is tied with a thin cotton thread at its approximate midpoint and then hang-dried and weighed using an electric digital scale to 0.10 gram accuracy, after which the core sample is then totally immersed in pre-heated and liquefied paraffin and again hang-dried to harden the paraffin. Once dry, the sample is again weighed and the captured data is recorded in the Bulk Density Measurement Sheet.

A one-meter long, 150-millimeter PVC-pipe, is fabricated for dry bulk density measurements. The bottom 10 centimeters of the pipe is concreted and sealed. A spout is fitted at 70 centimeters from the bottom of the pipe.

Figure 10-5:

Fabricated PVC pipes for specific gravity measurements

The PVC pipe is then filled with water up to the level of a spout and the water is drained until there are no more drops dripping from the spout. The paraffin coated sample is totally immersed in the PVC pipe (leaving the untied end of the cotton thread outside the pipe so the sample can be pulled out easily) and displaced water is collected in a small plastic bucket at the end of the spout and weighed. The plastic bucket is initially weighed empty before being placed under the spout and the weight of the displaced water is calculated as the difference between the two weights. Once all data gathered is entered into the log sheet, the dry bulk density, which is also equivalent to the specific gravity, is automatically calculated for each sample using the following mathematical formula:

$$\text{Density} = \frac{Wdc}{Vdw - (Wcw - Wdc)/Dw}$$

Where:

Wdc - weight of dry core in air (in gram, gr)

Wcw - weight of dry core with wax (in gram , gr)

Vdw - volume of displaced water (in milliliter, ml)

Dw - density of wax (0.89mg/l)

Figure 10-6:

Formula used in computing dry density or specific gravity.

Bulk dry density is equivalent to the specific gravity as normal density of water of 1 ton /cubic meter or 1 gram / milliliter is being used as the conversion factor to arrive at the volume of the core sample.

Table 10.1 shows the result of density analysis done on different mineralized domains as well as the host volcanic rocks.

Table 10-1: Result of Density analysis

Rock Type / Domain	Number of Samples Analyzed	Average Dry Density
BX1, BX2, BX3 (massive, banded veins/ vein breccias)	197	2.422
QSW, QSX1 (quartz stock works, sheeted veinlets in silicified and brecciated rock)	410	2.495
Andesite, Volcanic breccia	636	2.628

10.3 Drilling Program Details

TVIRD started its own drilling program on November 17, 2005 with the first hole, BDDH-05-01, collared at central Tinago area. Two drill holes were completed during the year incurring a total meterage of 131.30 meters.

The following year, drilling accelerated and 57 drill holes at 50-meter intervals were completed with a total meterage of 6,822.10. Further to the encouraging results, TVI embarked on an infill drilling campaign in 2007 with drillhole spacing reduced to 25 meters. Accumulated drilling meterage incurred through this initiative in 2007 was 4,021.30 meters from 42 drillholes.

In February 2010, TVI resumed infill drilling after a three-year hiatus with the collaring of BLDH-10-100 in Unao-Unao. Several subsequent phases of drilling were completed until the second quarter of 2012, including sterilization holes along the proposed sites of the mill, mine camp, waste dump and tailings storage area. A total of 177 drillholes incurring a total of 21,960.35 meters were generated from the year 2010 to 2012.

Several holes were also drilled to the west of Balabag Hill to chase the possible western extension of the Tinago vein system. Drilling restarted in February 2013 and another 18 holes with a total of 1,220.55 meters were completed until April 2013. In-fill drilling consisting of the Phase 1 to 4 drilling program resumed in the latter part of the year 2018 and continued through to the end of year 2020, incurring an additional 86 drill holes with a total of 7,031.90 meters (Figure 10-7).

The total number of holes drilled by TVIRD since 2005 to the end of 2020 at Balabag is 382 drill holes equivalent to 41,161.60 meters (Table 10-2).

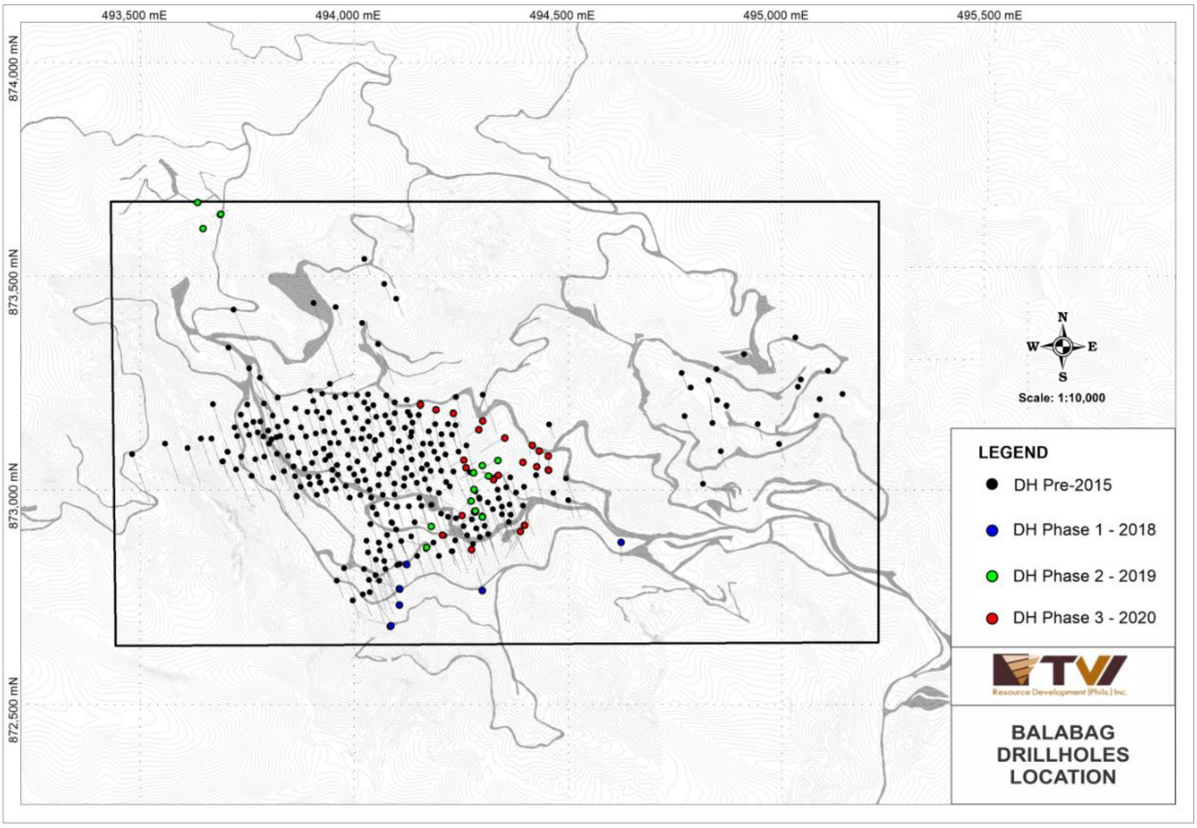


Figure 10-7: Balabag drillhole location map.

Table 10-2: Balabag exploration drilling statistics

Year	Number of Drillholes	Meterage
2005	2	131.30
2006	57	6,822.10
2007	42	4,021.30
2010	54	7,595.15
2011	118	13,185.60
2012	5	1,179.60
2013	18	1,220.55
2018	12	1,068.10
2019	15	1,211.95
2020	59	4,725.95
Total	**382**	**41,161.60**

Figure 10-8:

EDCO diamond drill rig set-up in Lalab Area.

The initial drilling program in 2005-2006 consisted of holes drilled at a 50 meters x 50 meters grid on a baseline oriented N60°E. From 2007 onwards, the drillhole spacing was reduced to 25 meters in order to upgrade the resource into the indicated and measured category. The holes were generally oriented S20°E with inclination of -60 degrees. In 2019, drillhole directions at Lalab were oriented at different directions after the review and interpretation of the previous drill cores using structural studies and results from underground tunnel mapping. The depth of the holes ranged from 9 meters to 505 meters with an average depth of 115.4 meters.

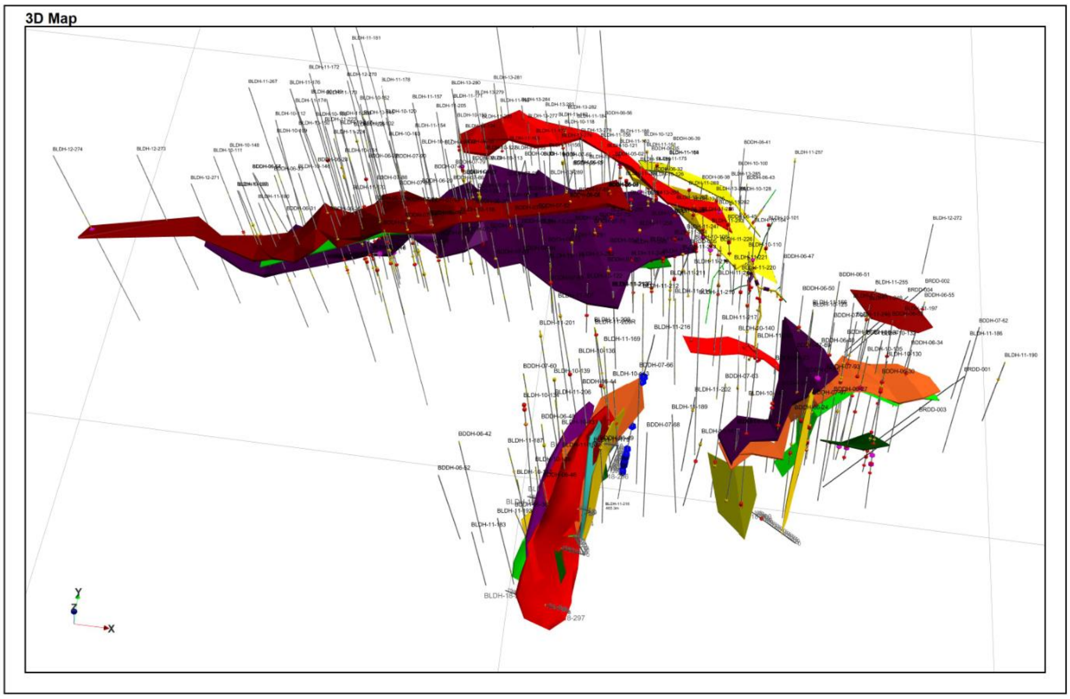


Figure 10-9: Three-dimensional view of the major veins in Balabag Hill as intercepted by drillholes.

10.3.1 Factors Influencing the Accuracy of Drilling Results

10.3.1.1 Drillhole Location

The proposed drill hole coordinates are prepared by the geologist and approved by the project manager. The geologist provides the surveyor with the proposed drill hole coordinates and corresponding location map; and the proposed coordinates are saved in the drill hole database.

The drill hole collar location is marked and surveyed using a Nikon Total station. If any deviations in the proposed drill hole location are encountered due to topography or other reasons, alternative locations should be determined by the field surveyor and communicated to the geologist for approval before pad construction begins.

Once the position of drill hole collar is defined, it is marked up using a stake labelled with the hole ID, azimuth and dip (the stake is either painted or marked with fluorescent tape). Once the planned hole has been marked up the drill platform is then constructed (usually by an excavator or bulldozer) based on the requirements of the drilling equipment to be utilized.

With the platform constructed, the geologist and field technician return to re-mark the proposed collar location with a single stake where the hole is to be collared. If the proposed drill hole is inclined, the geologist marks-up the orientation of the drill hole (azimuth) with two additional stakes referred to as a front-site and a back-site and finishes by marking the line (created by the three points) with flagging tape. If the proposed drill hole is vertical, the topographer leaves the single stake.

Once the drill has been installed and setup based on the stakes and/or flagging tape line the geologist completes a pre-start geology checklist ensuring that the drill is on the correct platform and correctly aligned.

Before the drill crew initiates its activities a senior geologist, drilling supervisor and/or a representative from the safety department completes a pre-start safety checklist.

Once the drill hole has been completed, the surveyor returns to pick up the final coordinate with a total station. This information is then sent to the senior geologist and the database administrator who save the file.

10.3.1.2 Downhole Survey

A single shot downhole survey using the Reflex EZ Shot survey tool is completed in all diamond drill holes. Hole ID and depth are manually entered into the EZ palm. The drill crew is responsible for completing the survey. The first survey or shot is collected within the first run (3 rods or 9 meters) and subsequently at 30 meter-intervals. The last run to the end of hole (“**EOH**”) must be surveyed. The down hole survey is monitored by the rig geologist while drilling so that any excessive deviation (0.2 degrees per meter) can be identified and resurveyed.

The Reflex EZ Shot tool is a completely manual single shot tool and only gives a read out of the basic azimuth (“**AZ**”), dip (“**Incl**”), temperature (“**Temp**”) and magnetic susceptibility (“**Mag Field**”) data which are manually recorded and reported via a Reflex data template which is signed by the drilling supervisor.

Once the survey has been completed the driller communicates with the project geologist to report the results (Az, Incl, Mag Field and Temp data). The driller also notes the data in a prepared sheet which is submitted to the drill supervisor or project geologist at the end of each drill hole. The Project geologist is responsible for downloading the raw data from the EZ palm (via USB) on a weekly basis.

10.3.1.3 Core Recovery

Core recoveries are typically calculated at the drilling site by qualified core checkers and recorded in the geological logs. The core is transferred from the trays and pieced together on a V-rail (angle iron) rack and the recoveries calculated. Alternatively, core recoveries are recorded once the trays are delivered back to the core facility/yard and recorded in the geological logs. The recording of recoveries is the responsibility of the geologist. Core recoveries are typically in excess of 92%.

10.3.1.4 Core Handling

Core is carefully handled by the drill crew, correctly oriented with regard to the down hole direction and then carefully placed directly on to pre-marked core trays. Prior to loading with core, core boxes are labelled with the drill hole number, box sequence and depth recorded in permanent marker. The core is placed in the trays starting from the top left corner. The core is placed neatly in the trays. Wooden block markers are inserted by the driller to record depth.

Orientation runs using spear and crayon are undertaken by the driller at least every 6 meters of run. In cases when the orientation mark is of poor quality, another attempt is made in the next run. A straight line is also marked along the nearest edge of the bottom split tube closest to the notch as core orientation reference. The drill core is transferred from the split tube to the core box after the marks have been made.

The core is marked with a red permanent marker in the bottom hole position and a directional arrow put on at regular intervals to record the down hole direction.

The core is transported carefully back to the core yard. The core is laid out in plastic core trays that can accommodate 5 meters of core.

The transporting personnel turn over the Core Collection Form to the assigned core house personnel upon arrival of the transported core samples to the core house. The assigned core house personnel check if delivered core boxes and core blocks are properly and correctly labeled. The Core House Leadman supervises the cleaning and labeling of meterage intervals.

10.3.1.5 Core Photography

The core house leadman supervises the whole core photography of every core box. The method of taking photographs is from top to bottom of every hole. Natural sunlight is needed when conducting this activity so as not to alter the color of the photo. Orientation of the core box and the photo is in landscape position and a wooden stand where the core box is placed is used to properly follow this orientation. A small white board is placed at the top of the core box where labels such as hole ID, box number and meterage (from and to) are written. In taking the photo, the drill core should be wet to show the natural colors of the core.

10.3.1.6 Core Logging

After unloading the boxes in the core logging room and placing them on the logging table, the geologist checks all the boxes to verify the correct box numbering and the correct place for the wood depth markers. Ideally several lengths of core are placed together in order to provide an overview of a number of drill core runs. Logging records include the prospect name, hole ID, person logging, date of logging, depth from/to.

Core logging includes lithological identification, defining alteration intensity and minerals including the presence of sulphide minerals and type. Structures, including the dip and strike, veining and veining density are also recorded.

Once logged, the core is boxed and stored. The logging detail is considered appropriate for the nature and style of the mineralization and suitable for Mineral Resource estimation and related studies.

10.3.1.7 Geotechnical Logging

The geologist records the data of the depth markers in the geotechnical logging form; the geologist verifies that the blocks are marked in the box trays and checks the run length data. The geotechnical characteristics of the rock mass are described based on international standard practices and is structured to provide all necessary data for rock mass classification schemes. Geotechnical logging records include:

- Depth from/to;
- Core diameter;
- Recovery - determined by adding the length of all core pieces greater than 10 cm. If the core is split by natural fractures, this technically does not qualify as an intact piece of core;
- Rock quality designation - calculated by dividing the total length of core pieces greater than 10 cm with the total length of core run and multiplying it by 100%;
- Lithology;
- Weathering, Alteration;
- Planarity, roughness;
- Infill type and thickness;
- Hardness;
- Broken zone; and,
- Orientation.

10.3.1.8 Core Cutting

Once logged, the core is carefully marked for sampling. Core boxes are arranged in an organized manner by placing one next to the other horizontally on an appropriate stand. The core is carefully removed and placed in the core holder such that it fits and can be taken out with ease. Loaded blocks are placed in the core feed area in sequential order and the sequence of core blocks is maintained. Broken cores are wrapped with clear packaging tape to keep the core intact during half-core cutting.

The core is cut completely in two halves using an electric diamond blade saw. The core holder containing the cut core is removed from the machine and the core is replaced in its original position in the core tray.

The standard protocol is that the cut is made 1 cm to the right in a down hole direction of the orientation line, with the left side being retained and the other half submitted for assay.

10.3.1.9 Core Storage

After samples are dispatched to the laboratory, drill core boxes are stored in order. The drill core boxes are properly labelled with the drill hole ID, box number and from and to depths. Core boxes are sent for final storage. The core is stored following geological logging, photography, core cutting and sampling.

TVIRD has the temporary core shed facility located at the project site with a dedicated core saw. A permanent core shed facility is located at Ipil, Zamboanga Sibugay which has a more spacious core logging facilities and core storage with elevated core box racks on concrete floors that are sheltered from wind and rain.

10.4 Comments on Section 10: Drilling

The QP has reviewed the details of the drilling program implemented by TVIRD during his visit to the Balabag site, including the drilling and sampling procedures and the quality of the geological, geotechnical, collar and down-hole survey data collected. In the opinion of the QP, the procedures employed and the data collected are sufficient to support the mineral resource estimation as follows:

- Drilling procedures and core logging meet industry standards;
- Collar surveys have been performed using industry-standard survey instruments;
- Down-hole surveys were collected at the time of the drilling programs using industry-standard instrumentation;
- Drill orientations are generally appropriate for the mineralization style and have been drilled at directions that aimed to give optimal information regarding the orientation and projections of mineralized zones;
- Drill spacing has been adequate to first outline and to then infill and define mineralized zones;
- Recovery data from drill core data is acceptable with core recoveries typically in excess of 92%;
- All assay samples and lithology intervals have been reviewed for overlaps and duplicate records and no issues have been identified;
- No factors were identified with the data collection from the drill program that could materially affect resource estimation accuracy or reliability.

11 SAMPLE PREPARATION, ANALYSES AND SECURITY

11.1 Sample Preparation and Submission to Laboratory

After core logging, the Exploration Geologist identifies the drill core intervals for sampling and fills out the Drill Core Sampling Sheet (TVIRD-BGSP-FOR-EXP-010). Once the sampling sheet is completed, the drill cores are turned over to the core house leadman for sample preparation.

Significant drill hole intercepts are prioritized for sampling. The intervals are marked with paper tapes to ensure that correct samples are taken. The core samples are placed in a clear sample bag with its sample number.

Twenty-five (25) samples for every sample batch are prepared. Three QA/ QC samples are inserted in the set of samples of each batch to ensure and check the quality of sample preparation, possible contamination of samples and accuracy and precision of laboratory:

- Certified Reference Material (CRM) – insert 1 CRM sample for every batch;
- Blank Sample – insert 1 blank sample for every batch;
- Duplicate Sample – insert 1 duplicate sample for every batch.

The CRM, blank, and duplicate samples are assigned sample numbers in sequence with the sample number of the whole sample batch using the Sample Ticket Booklet.

The Data Specialist of the GIS team prepares the Sample Submittal Form (TVIRD-BGSP-FOR-EXP-009) for laboratory dispatch of samples indicating details of sample preparation and analyses, as needed. Two copies of the form are prepared, one copy for the exploration file and one copy for the laboratory.

11.2 Sample Preparation

Sample preparation is carried out at the Balabag onsite laboratory. Samples are initially hand crushed into ≤40 mm diameter. The samples are then poured into two clean sample pans with the accompanying sample tag and barcode placed over the sample. The sample pans are then placed in an oven with a maintained temperature of 105°C and dried for 6-7 hours. The dried samples passed through a Boyd crusher to a final reduction of ≤2 mm. The crushed sample is then split progressively into a 1 kg sample using a Jones splitter. The 1 kg split is then packed, with a duplicate of the sample ticket, in a plastic bag inside a calico bag for submission to the Balabag Fire Assay Laboratory.

The remaining crushed split sample is properly labeled and stored at site.

Sample preparation equipment at the Balabag onsite laboratory includes:

- Drying oven –used to dry samples prior to their preparation for assaying. All samples are dried as metal contents are reported in dry weights.
- Boyd crusher –designed to finely crush the sample to not more than 2mm.
- Jones Splitter –used to evenly reduce the volume of samples for pulverizing.

- Pulverizer – A Rocklabs Ring Mill, used to pulverize the samples to a fine grind of 90% passing -75 microns.

11.3 Analyses

From 2005 to 2006, all samples were analyzed by the Mcphar Laboratory in Manila. From 2007 until 2012, all samples were analyzed by the company's internal assay laboratory at the Canatuan Mine, Siocon, Zamboanga del Norte. During the resumption of exploration activities in 2017-2018, samples were analyzed at the Agata Mine Site, Agusan. Commencing in 2019 to present, all samples are analyzed in the Balabag laboratory. TVIRD's Balabag Fire Assay Laboratory has appointed an Analytical Chemist to ensure that sampling procedures are strictly followed and to implement and monitor the internal QA/QC program of the laboratory.

The various stages in fire assaying are described as follows:

a) Fusion – a 50g sample is fused in the furnace with the aid of a flux (litharge, soda ash, borax) at a temperature of 1100°C. Silver is added in the flux mixture when silver is to be determined (1pc silver in quartz). The precious metal is collected by the lead in the flux and the slag is decanted. When the melt solidifies, the resulting lead button is pounded with a hammer into a cube.
b) Cupellation – the lead cube is charged in a magnesia cupel into the furnace set at a temperature of 900°C. The lead is absorbed in the cupel leaving the button or "prill".
c) Weighing – The "prill" or "dore" is weighed if silver is to be determined.
d) Finishing –This is the final step undertaken wherein gold is dissolved in the acid and the gold in the acid solution is determined.
    - Gravimetric Method – the prill is placed in the porcelain crucible with nitric acid, the silver is dissolved but not the gold. After dissolution of the silver, the prill is annealed.
    - Atomic Absorption Spectroscopy ("**AAS**") Finish –the prill is dissolved in aqua regia and gold solution is directly aspirated in the AAS.

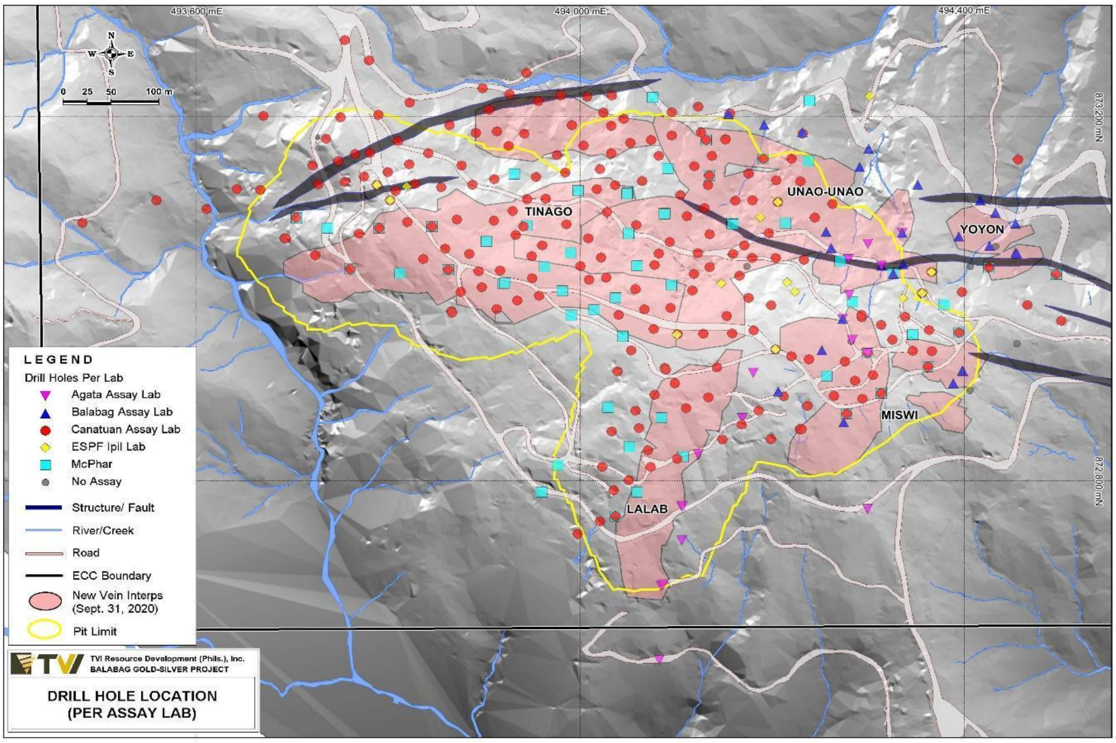


Figure 11-1: Sample location map per laboratory submission.

11.4 Security

All samples are collected by well-trained core and/or field samplers under the supervision of the geologist and geologic assistant on site. All drill core and rock and samples from the field are bagged in polyethylene. The duplicate copy of the sample number from the sample card is then inserted into the bag and sealed by a twist tie. The plastic bag is, in turn, inserted into a calico bag and tied using the built-in cord. The calico bag is then labeled on its side with the corresponding sample number as the sample card using a permanent marker. The samples are then arranged, packed in sacks, sealed, and stored in the camp while waiting for dispatch to the Fire Assay Balabag laboratory or to the Exploration Sample Preparation Facility ("**ESPF**") located at Ipil, Zamboanga Sibugay.

11.5 Quality Assurance and Quality Control

Quality Assurance and Quality Control ("**QA/QC**") measures were implemented to monitor the accuracy and precision of assay data from analytical laboratories.

The following quality control materials were processed along with regular core samples:

- Commercially purchased standards were inserted at random intervals.
- Coarse blanks were inserted to detect potential contamination during the sample preparation.
- Duplicate split (1-kg) samples were included in the sample dispatch.

- Pulp duplicates were also analyzed to check the degree of repeatability of assay results.
- Some samples were also submitted for analysis at the umpire laboratory.

Four laboratories were engaged in processing the Balabag core samples. From 2005 to 2007, samples were analyzed at the McPhar Laboratory in Manila, an ISO 9001/2000 accredited laboratory. A total of 4,045 samples were sent to McPhar which is 16% of the overall number of drilling exploration samples used in the resource modeling.

In mid-2007 to 2013, drill samples were analyzed at the Canatuan Mine Laboratory, an independent company-run laboratory situated at TVIRD's Sulphide Project in Zamboanga del Norte. The total number of samples submitted (17,208) represents 70% of the overall drill core samples analyzed for the Balabag Project.

Meanwhile, a total of 721 (3%) samples were dispatched to the Agata Mine Laboratory in the years 2018 to 2019 when Phase 1 drilling resumed. The Agata Mine Laboratory is certified with the Environmental Management System – ISO 14001:2005 and is located at TVIRD's Nickel Project in Agusan del Norte. The transfer of sample dispatch to Agata Mine was due to the closure of the Canatuan Mine as a result of Canatuan having reached the end of its mine life.

Phase 2, Phase 3 and Phase 4 drilling samples from year 2019 to 2021 were analyzed at the Balabag Mine Laboratory, another independent laboratory of TVIRD that is currently undergoing the ISO certification process. A total of 2,779 (11%) samples have been analyzed in the Balabag Mine Laboratory.

Table 11-1 shows the breakdown by laboratory of all drill core samples submitted commencing in 2005 and through to 2021. A total of 24,753 core samples were analyzed through this period, though to the end of Phase 4 drilling.

Table 11-1: Total Balabag sample dispatch per laboratory from year 2005 to 2021

Analytical Lab →	**McPhar**	**Canatuan**	**Agata**	**Balabag**	**Total**
Year	2005-2007	2007-2013	2018-2019	2019-2021	2005-2021
Number of Samples	4,045	17,208	721	2,779	24,753
Percentage	16%	70%	3%	11%	100%

All analytical data were reviewed on the day of receipt and were examined per batch to ensure that unacceptable delays to the flow of assay data did not occur. The internal QC data generated by the laboratory in the course of conducting analysis were also supplied to the Exploration Department for examination.

Assay results for blanks, standards and duplicate samples were monitored and verified along with the bulk of the data being collected. Routine data verification procedures involved checking outliers and abnormal values in duplicates. Graphs and scatter diagrams were generated to look for trends and biases.

In the evaluation of standards, results were required to fall within the *2 x Standard Deviation* in order to pass the quality control requirement. Assay data were plotted on a scatter diagram superimposed on the predetermined running mean value and standard deviations.

Assay results of blanks plotted above the threshold value were investigated to detect any possible contamination.

For duplicate samples, a comparison of the original assay and duplicate assay was conducted. Both assays were required to return values within the limits of the laboratory precision.

Table 11-2 summarizes the reference material, the target value quality control threshold, the threshold acceptable values and failure criteria applied for both gold and silver.

Table 11-2: Quality control pass/fail criteria for both gold and silver.

QC Material	Target Pass Criteria	Acceptable Pass Criteria	Practical Failure Criteria
Certified Reference Materials (CRM)	<1 Standard Deviation 0% Bias 90% within 5%	<2 Standard Deviations <2.5% Bias 90% within 10%	>2 Standard Deviations >5% Bias <90% within 10%
Coarse Blanks	0.03g/t	<0.05g/t	>0.05g/t
Coarse Duplicates	90% within 20% 0% Bias	90% within 30% <5% Bias	<90% within 40% >5% Bias
Laboratory Repeats	90% within 5% 0% Bias	90% within 10% <2.5% Bias	<90% within 15% >5% Bias
Independent Check Assays	90% within 10% 0% Bias	90% within 20% <2.5% Bias	<90% within 20% >5% Bias

11.5.1 Certified Reference Materials

The insertion of Certified Reference Materials ("**CRMs**") aims to monitor the accuracy and precision of the assay results relative to standard values. Significant variations from the recommended values of certified reference materials indicate that bias is present in the laboratory procedure and rectification is in order.

McPhar Laboratory

From November 2005 to the first quarter of 2007, core samples were submitted to McPhar Laboratory. During this period, the monitoring of assay quality was mostly based on the internal CRMs used by the laboratory.

Eight (8) different CRMs were used by McPhar in the analysis of the core samples. These CRMs were obtained from ROCKLABS Ltd. (New Zealand). Table 11-3 details the certified values and corresponding standard deviations.

Table 11-3: Certified reference materials used by McPhar Laboratory (2005-2007)

Reference Material		Certified Value (Au ppm)	STD	(-) 1SD	(+) 1SD	(-) 2SD	(+) 2SD	(-) 3SD	(+) 3SD
Low Ore Grade	OxC44	0.197	0.013	0.184	0.210	0.171	0.223	0.158	0.236
	OxD43	0.401	0.021	0.380	0.422	0.359	0.443	0.338	0.464
	OxE42	0.610	0.028	0.582	0.638	0.554	0.666	0.526	0.694
Intermediate Ore Grade	OxF41	0.815	0.024	0.791	0.839	0.767	0.863	0.743	0.887
	OxG46	1.037	0.041	0.996	1.078	0.955	1.119	0.914	1.16
	OxH37	1.286	0.039	1.247	1.325	1.208	1.364	1.169	1.403
	OxI40	1.857	0.044	1.813	1.901	1.769	1.945	1.725	1.989
High Ore Grade	OxL34	5.758	0.173	5.585	5.931	5.412	6.104	5.239	6.277

The gold assays of the CRMs generally plotted within the first-degree standard deviation. Bias above the mean value is apparent with the first half of the analyzed CRMs while low bias was evident in the latter portions. No CRM data for silver were provided for review during this stage of drilling. The following control charts demonstrate the gold results of the CRMs analyzed at McPhar Laboratory.

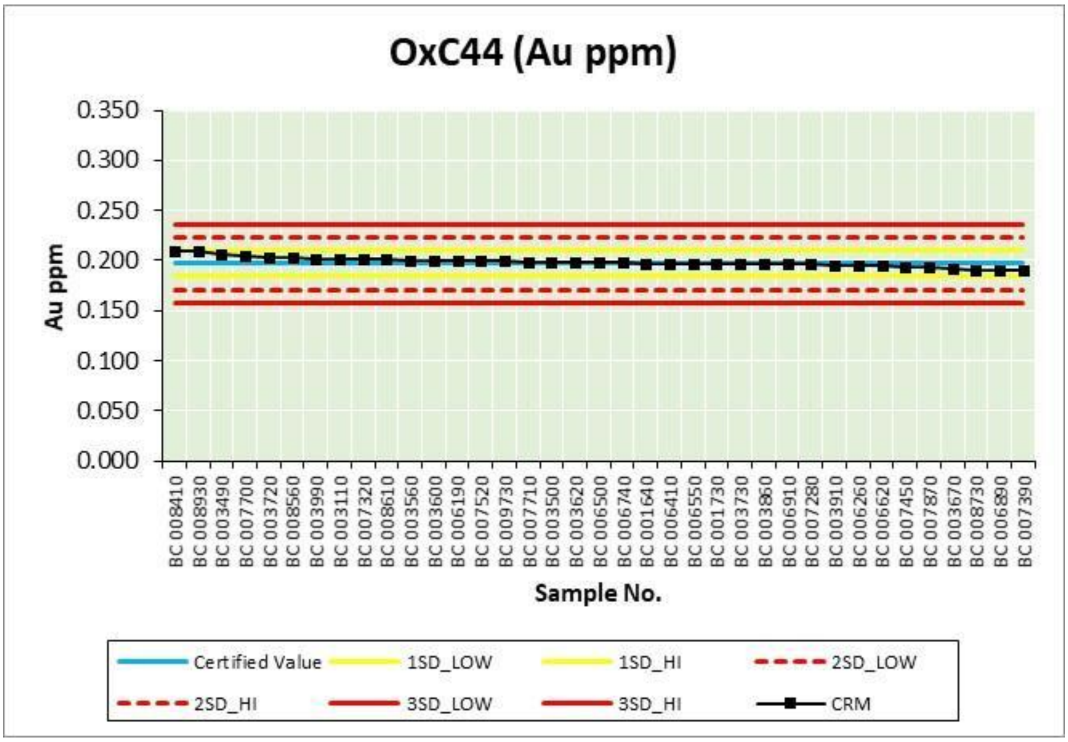


Figure 11-2: Standard control chart for OxC44 (Au ppm), analyzed at McPhar Laboratory.

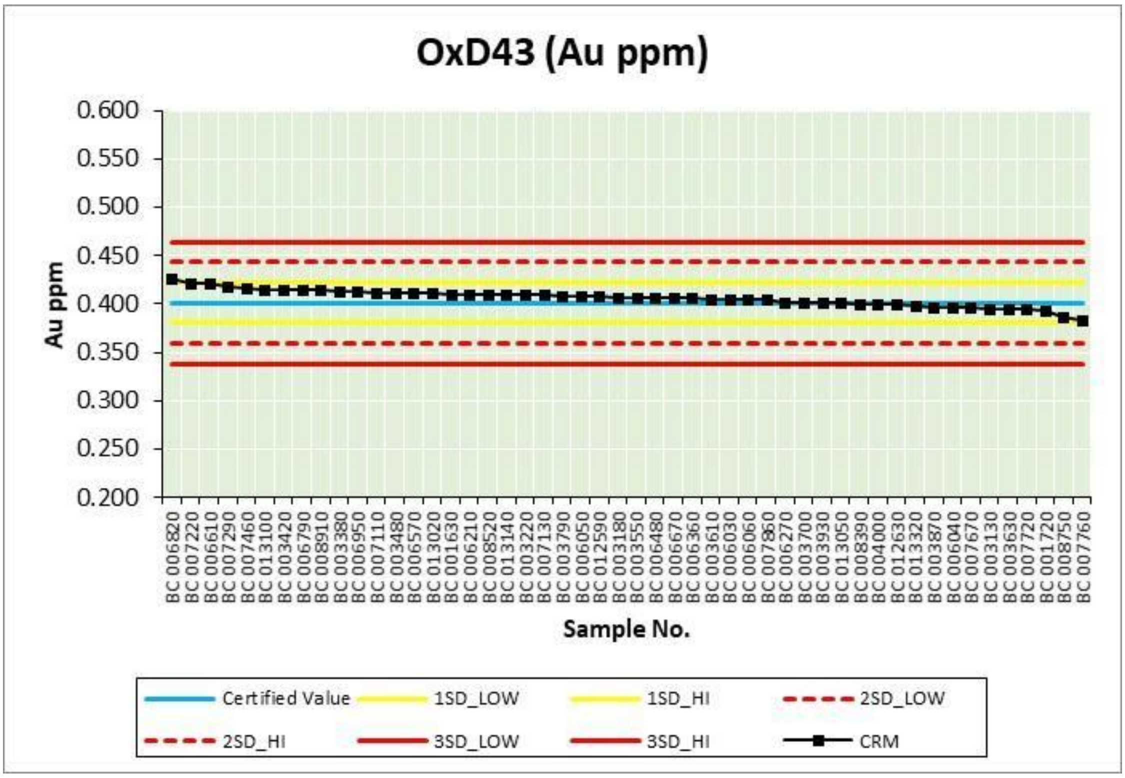


Figure 11-3: Standard control chart for OxD43 (Au ppm), analyzed at McPhar Laboratory.

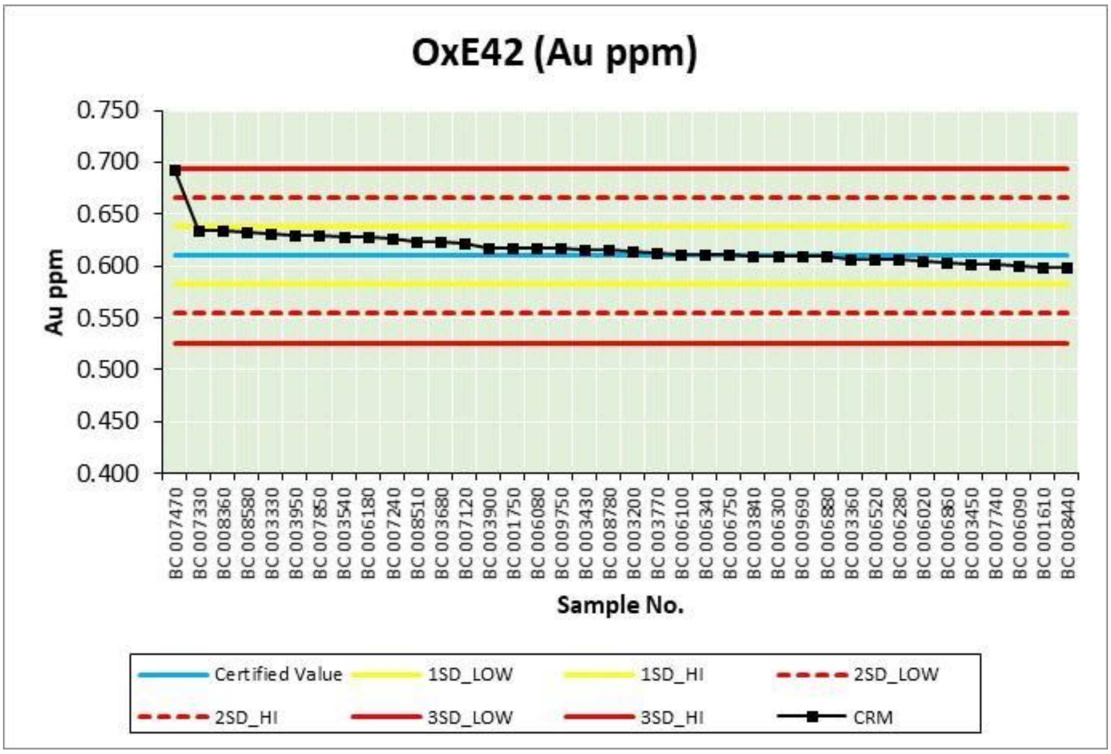


Figure 11-4: Standard control chart for OxE42 (Au ppm), analyzed at McPhar Laboratory.

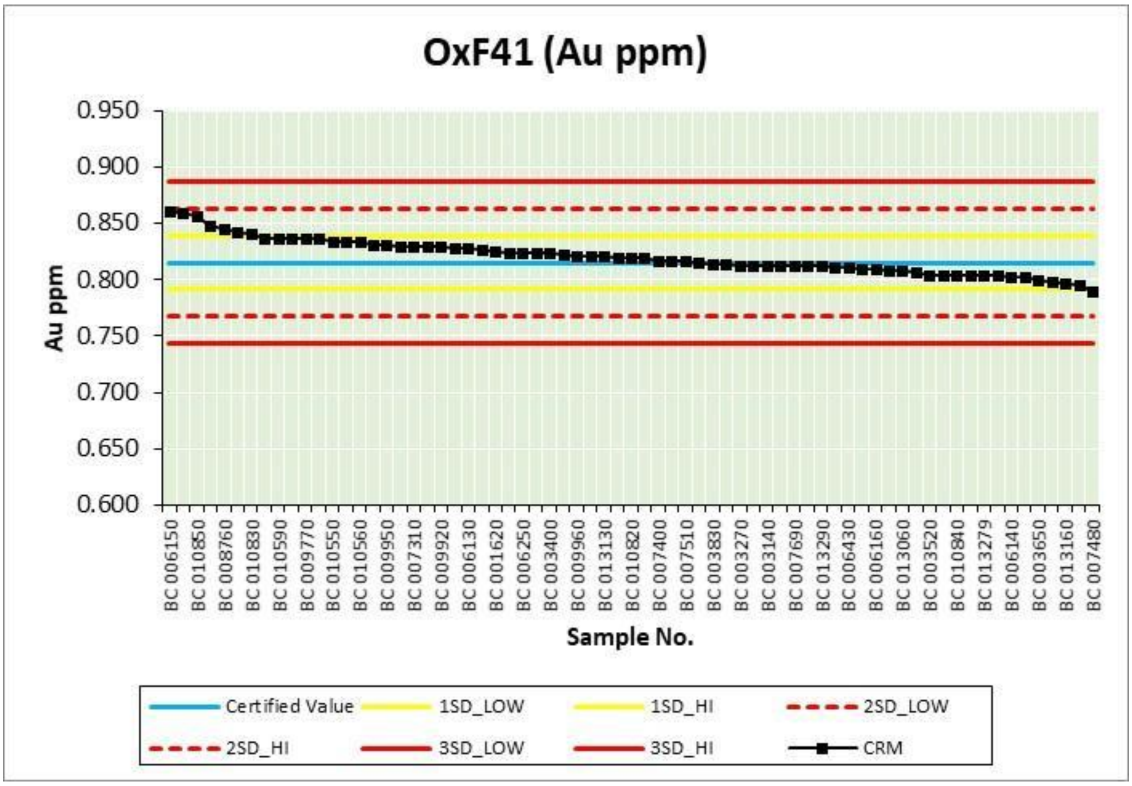


Figure 11-5: Standard control chart for OxF41 (Au ppm), analyzed at McPhar Laboratory.

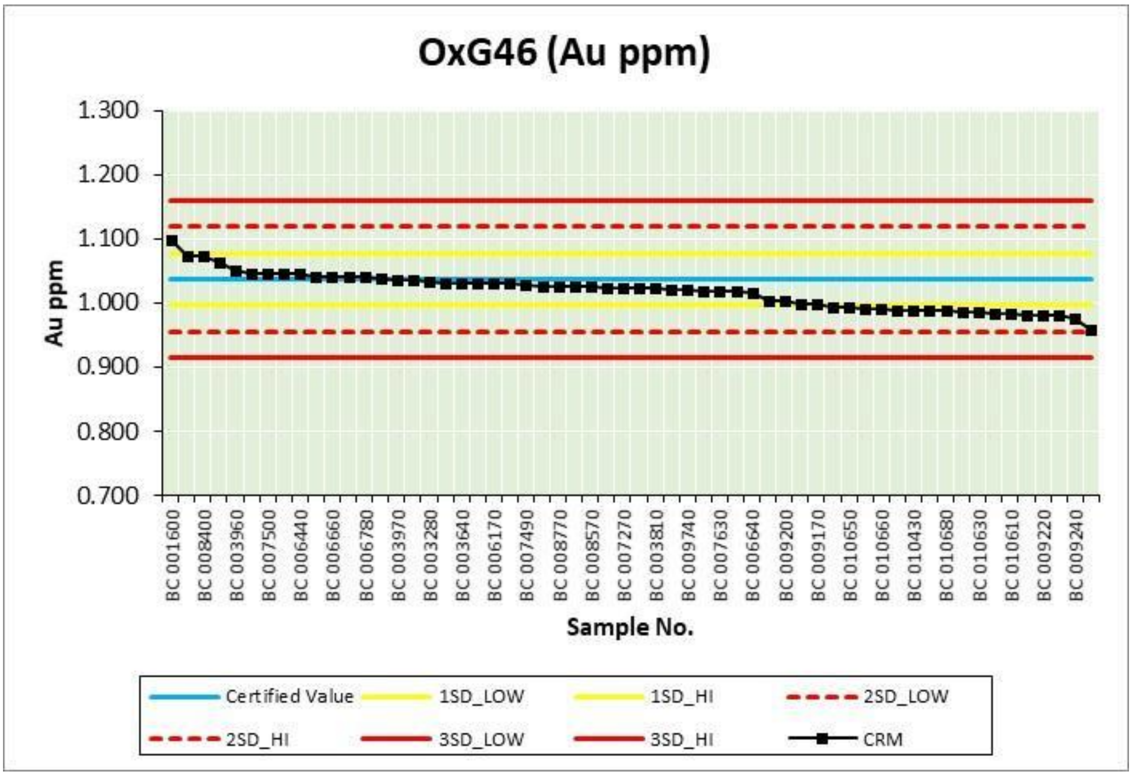


Figure 11-6: Standard control chart for OxG46 (Au ppm), analyzed at McPhar Laboratory.

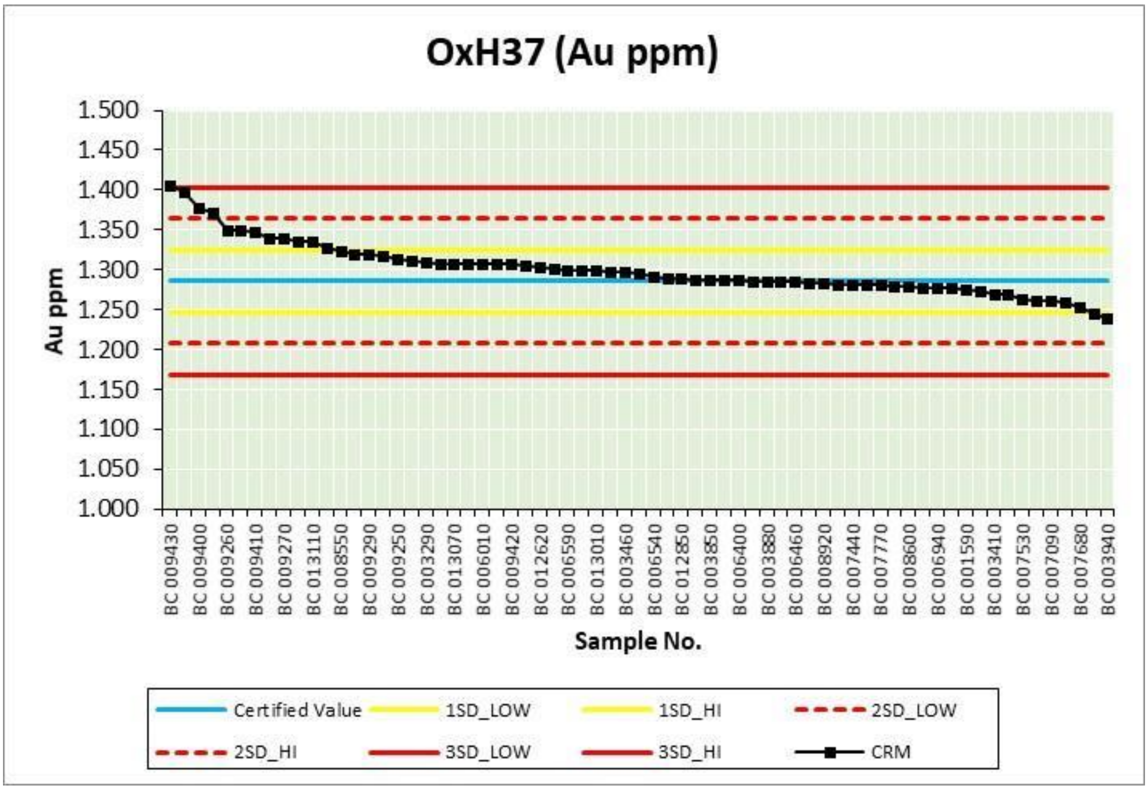


Figure 11-7: Standard control chart for OxH372 (Au ppm), analyzed at McPhar Laboratory.

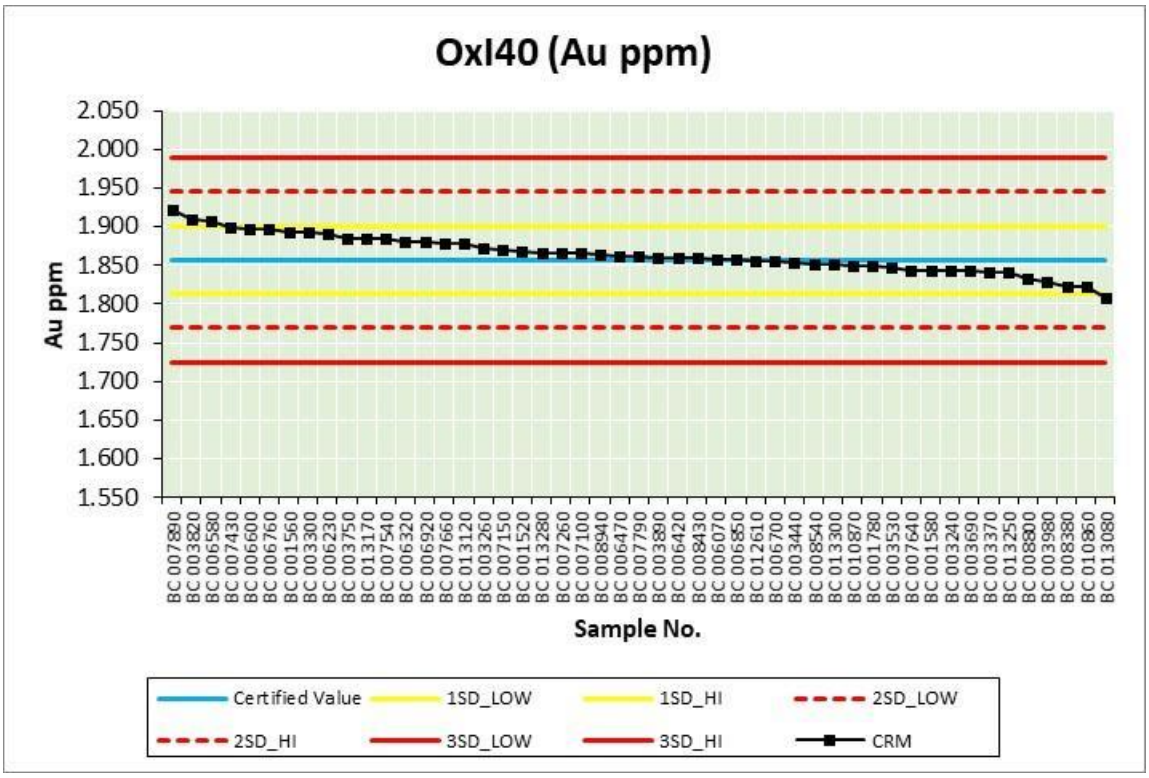


Figure 11-8: Standard control chart for OxI40 (Au ppm), analyzed at McPhar Laboratory.

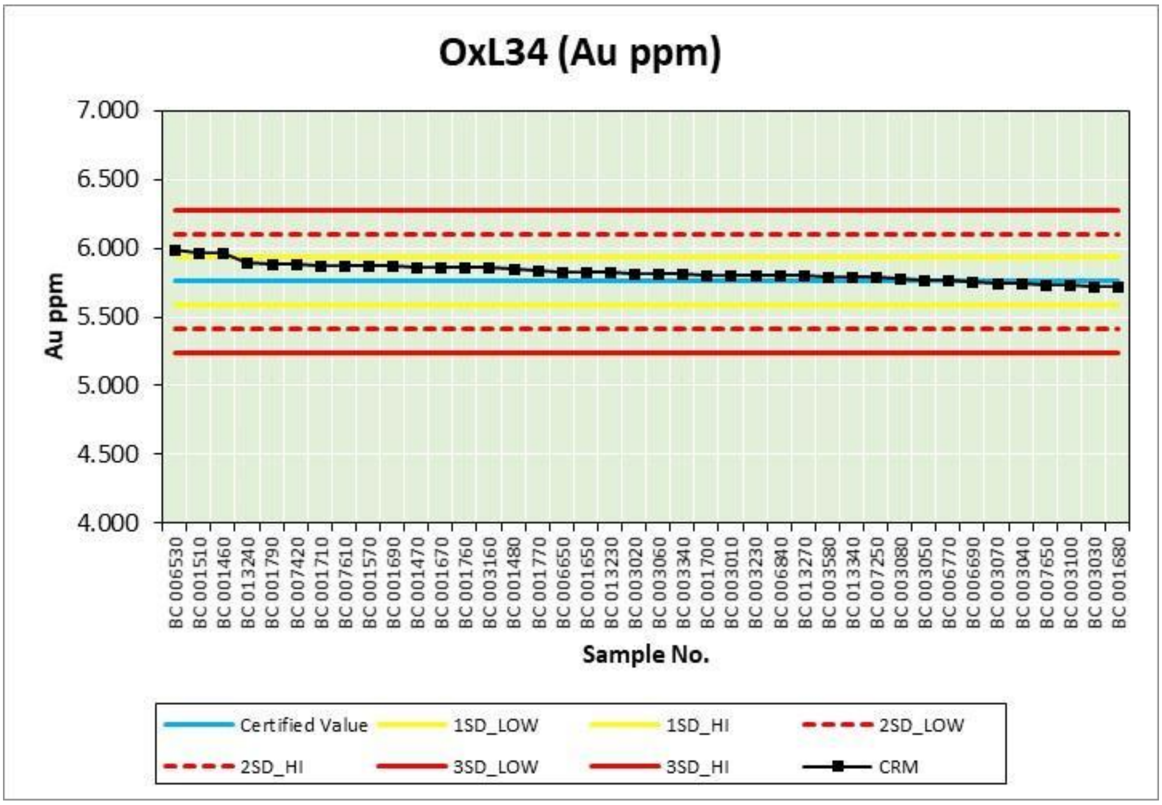


Figure 11-9: Standard control chart for OxL34 (Au ppm), analyzed at McPhar Laboratory.

Canatuan Mine Laboratory

The majority of the Balabag core samples were analyzed at the Canatuan Mine Laboratory since the latter part of 2007. Fourteen (14) commercial reference materials or standards were routinely employed, and these were prepared by Ore Research and Exploration Pty. Ltd. in Australia. Table 11-4 is a summary of CRMs which accompanied the drill samples submitted to the laboratory.

Table 11-4: Certified Reference Materials analyzed at Canatuan Mine Laboratory (2007-2013)

Reference Material		Certified Value (Au ppm)	(-) 1SD	(+) 1SD	(-) 2SD	(+) 2SD	(-) 3SD	(+) 3SD
Low Ore Grade	OREAS 65a	0.52	0.50	0.54	0.49	0.55	0.47	0.57
	OREAS 15g	0.53	0.50	0.55	0.48	0.57	0.46	0.60
	OREAS 53Pb	0.62	0.60	0.64	0.58	0.67	0.56	0.69
Intermediate Ore Grade	OREAS 6Pc	1.52	1.46	1.59	1.39	1.66	1.32	1.72
	OREAS 15d	1.56	1.52	1.60	1.48	1.64	1.43	1.69
	OREAS 16a	1.81	1.75	1.87	1.68	1.93	1.62	1.99
	OREAS 16b	2.21	2.14	2.28	2.06	2.36	1.99	2.43
	OREAS 67a	2.24	2.14	2.33	2.05	2.43	1.95	2.53
	OREAS 60b	2.57	2.46	2.68	2.35	2.78	2.25	2.89
	OREAS 54Pa	2.90	2.79	3.01	2.68	3.12	2.57	3.23
	OREAS 18c	3.52	3.41	3.63	3.31	3.73	3.20	3.84
High Ore Grade	OREAS 62c	8.79	8.58	9.00	8.36	9.21	8.15	9.42
	OREAS 62d	10.50	10.17	10.83	9.84	11.16	9.51	11.49
	OREAS 12a	11.79	11.55	12.03	11.31	12.27	11.07	12.51

Low grade CRMs were used to monitor the assays of materials with grade below 1.0 g/t Au. Included in this set are OREAS 53Pb, OREAS 65a and OREAS 15g.

OREAS 53Pb was mainly used in 2010. The gold results of this CRM were fairly acceptable during the first half of the year with minor deviations. However, pronounced low bias was noted by the second half with significant outliers below second-degree standard deviation.

OREAS 65a and OREAS 15g, on the other hand, were then used in 2011, showing relatively precise results yet low bias at second degree standard deviation.

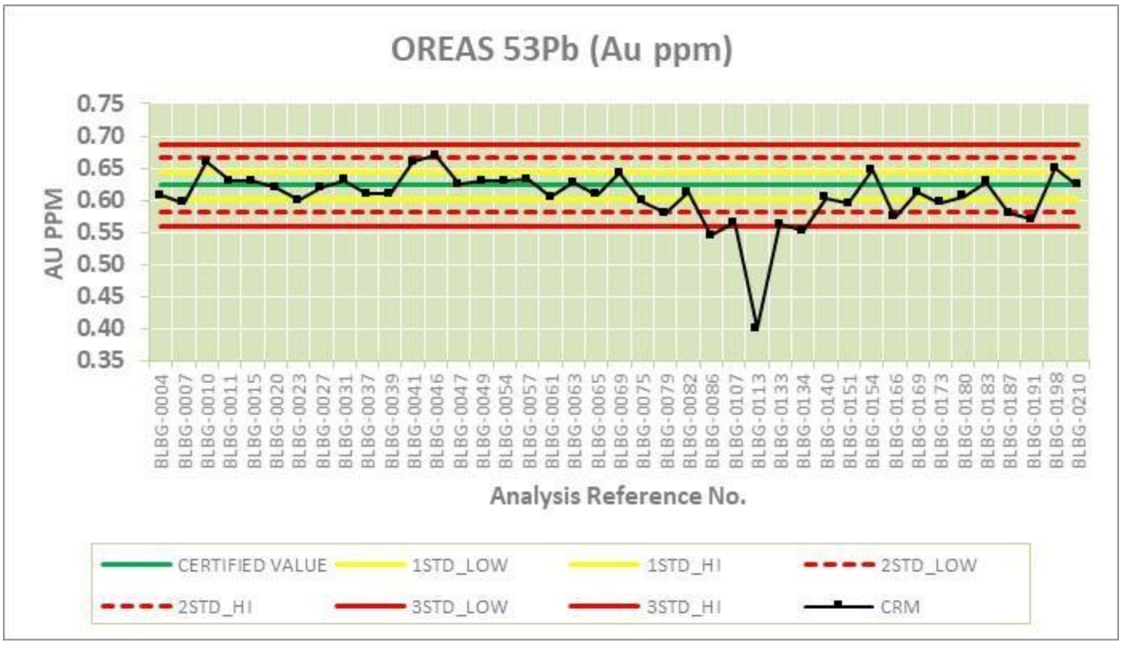


Figure 11-10: Standard control chart for OREAS 53Pb (Au ppm) analyzed at Canatuan Mine Laboratory.

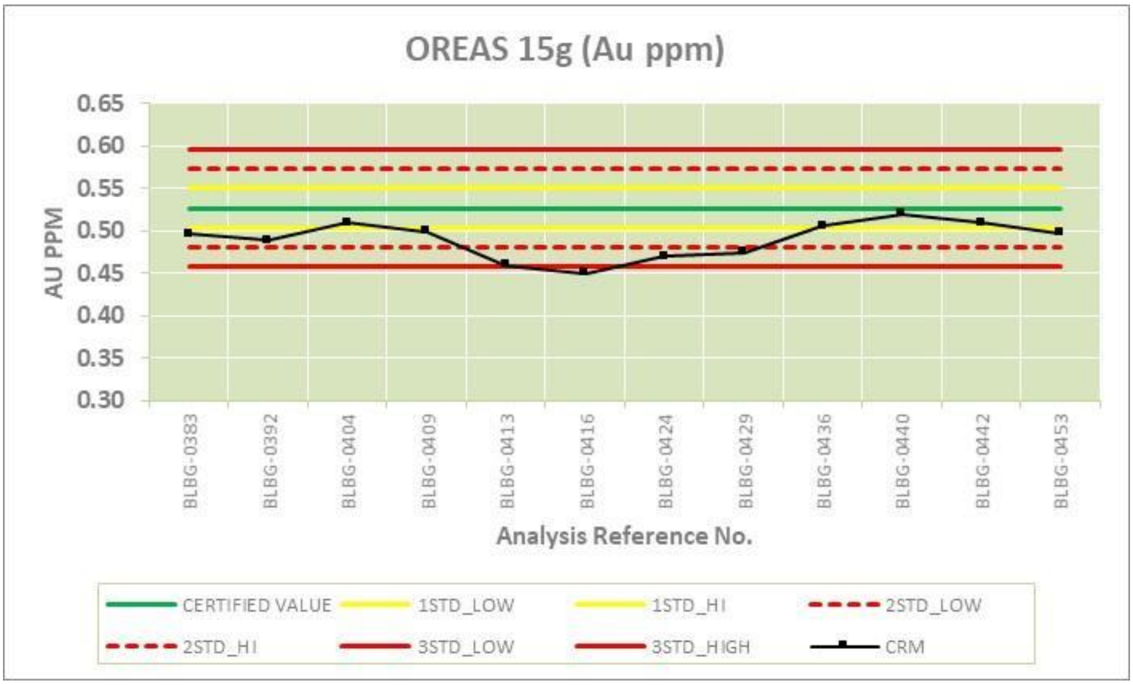


Figure 11-11: Standard control chart for OREAS 15g (Au ppm) analyzed at Canatuan Mine Laboratory.

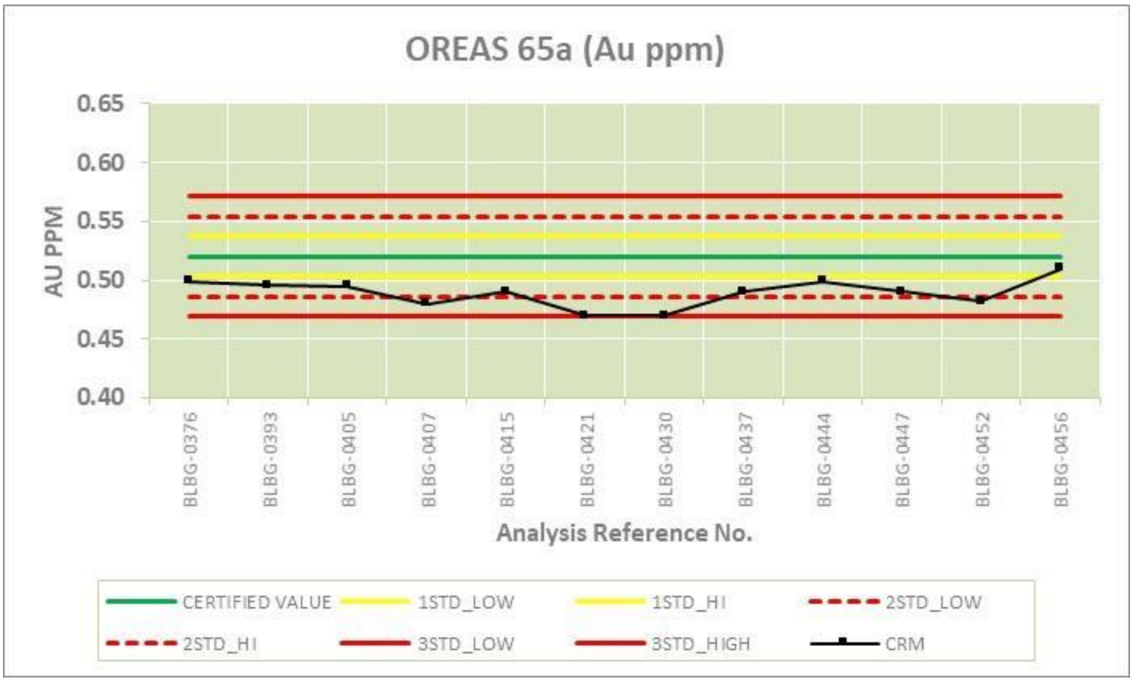


Figure 11-12: Standard control chart for OREAS 65a (Au ppm) analyzed at Canatuan Mine Laboratory.

The second group of CRMs included those with standard values ranging from 1.5 g/t to 3.5 g/t Au. These were categorized as the intermediate grade CRMs that were intended to monitor the accuracy of medium grade samples. Eight sets of CRMs were analyzed under this group: OREAS 6Pc, OREAS 15d, OREAS 16a, OREAS 16b, OREAS 67a, OREAS 60b, OREAS 54Pa and OREAS 18c. Plots are presented from Figure 11-12 to 11-19.

These CRMs exhibited variable assay performance and outlying values that are attributed to possible mix-ups in sample insertion. Results were generally plotted below the first-degree standard deviation indicating significant low bias.

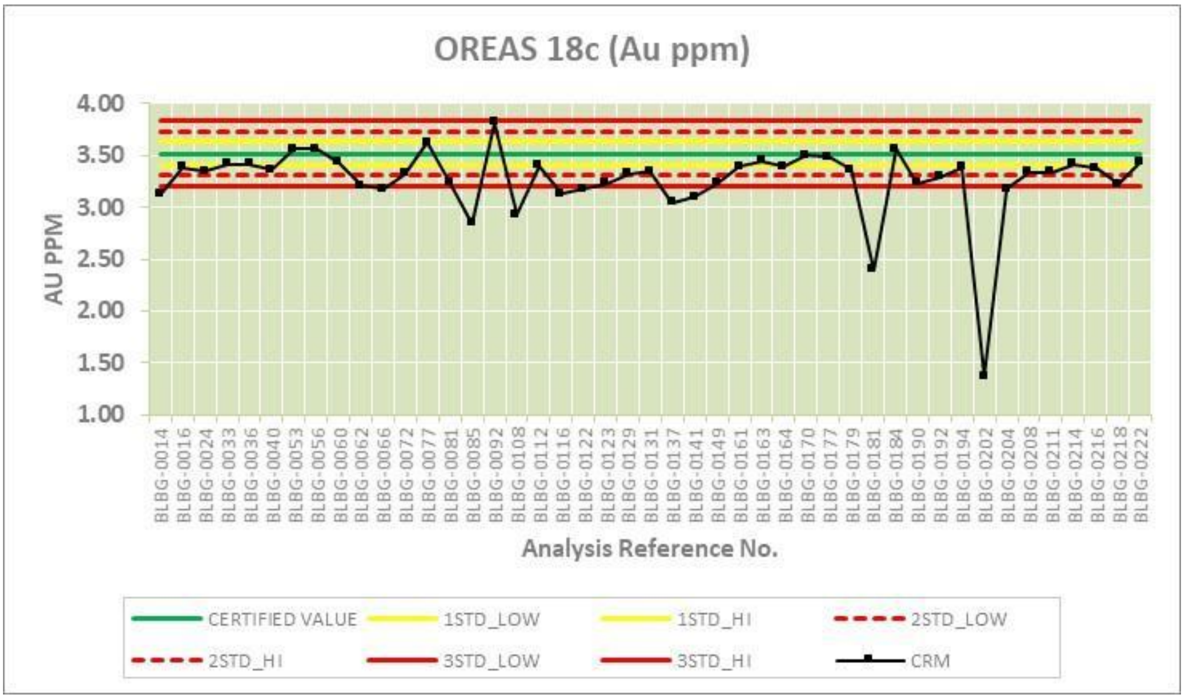


Figure 11-13: Standard control chart for OREAS 18c (Au ppm) analyzed at Canatuan Mine Laboratory.

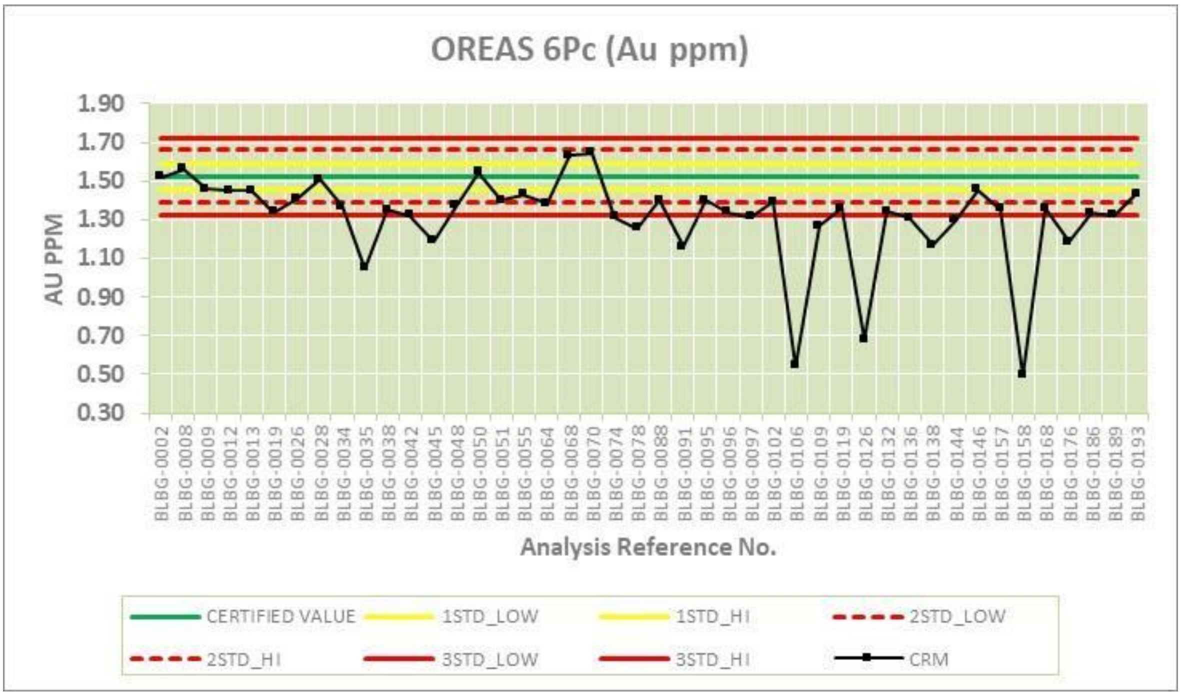


Figure 11-14: Standard control chart for OREAS 6Pc (Au ppm) analyzed at Canatuan Mine Laboratory.

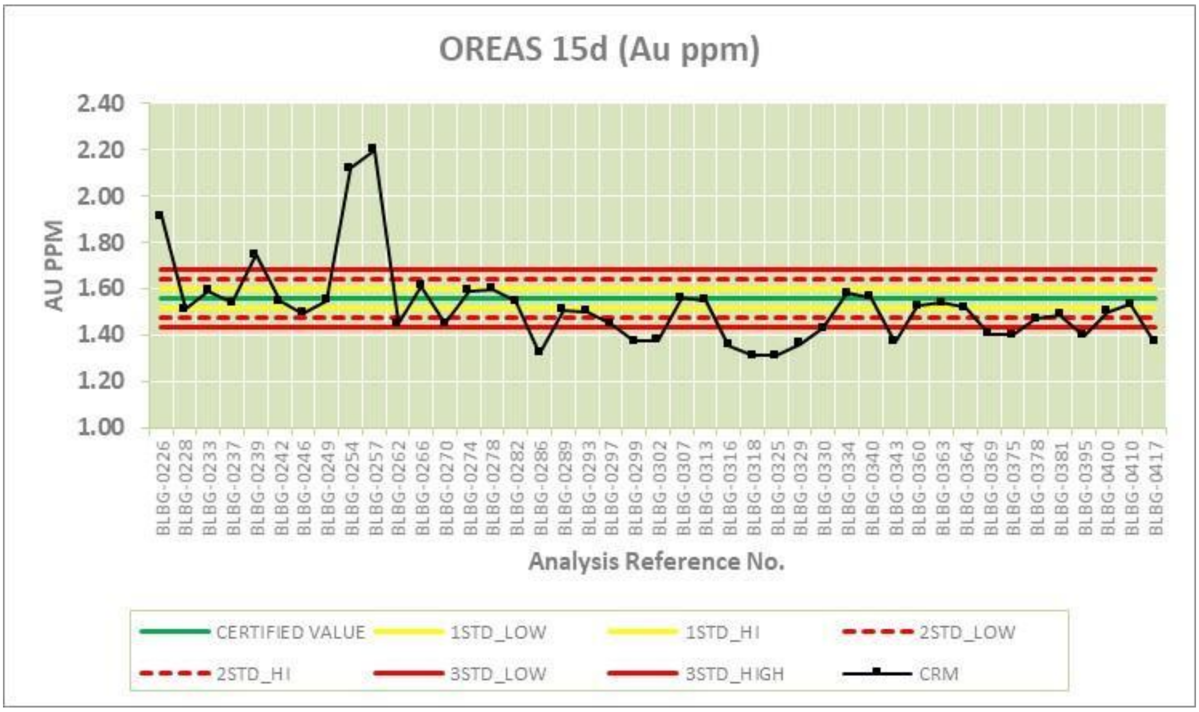


Figure 11-15: Standard control chart for OREAS 15d (Au ppm) analyzed at Canatuan Mine Laboratory.

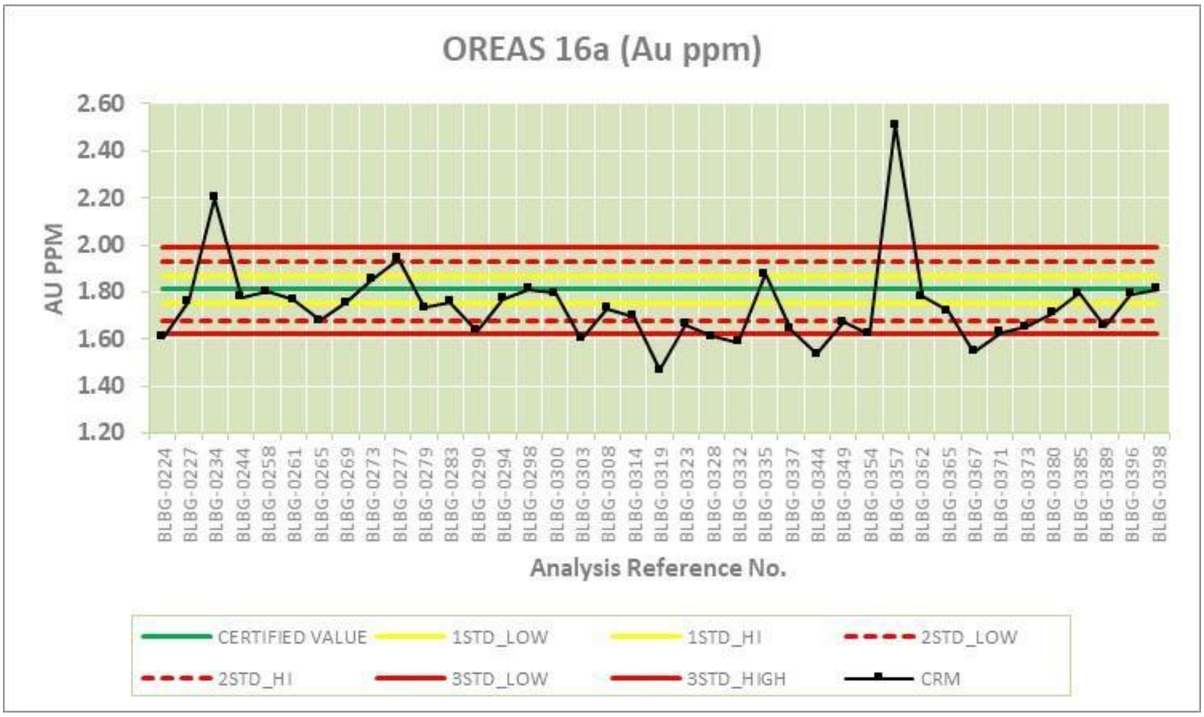


Figure 11-16: Standard control chart for OREAS 16a (Au ppm) analyzed at Canatuan Mine Laboratory.

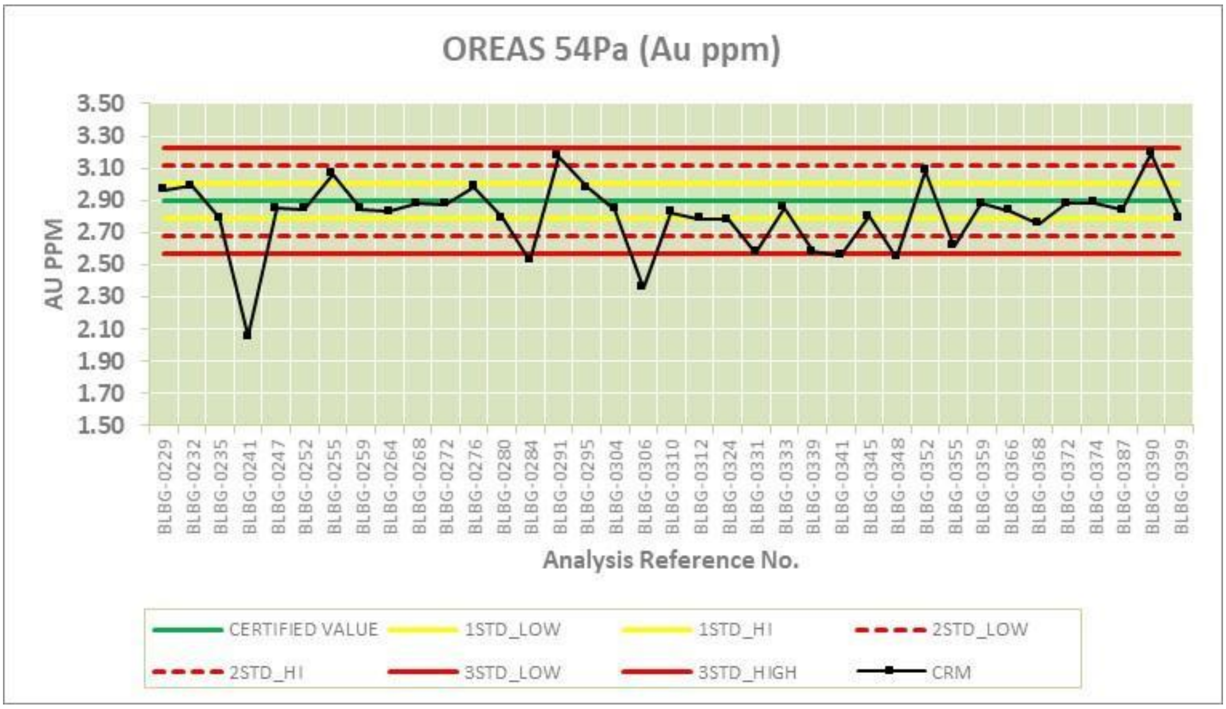


Figure 11-17: Standard control chart for OREAS 54Pa (Au ppm) analyzed at Canatuan Mine Laboratory.

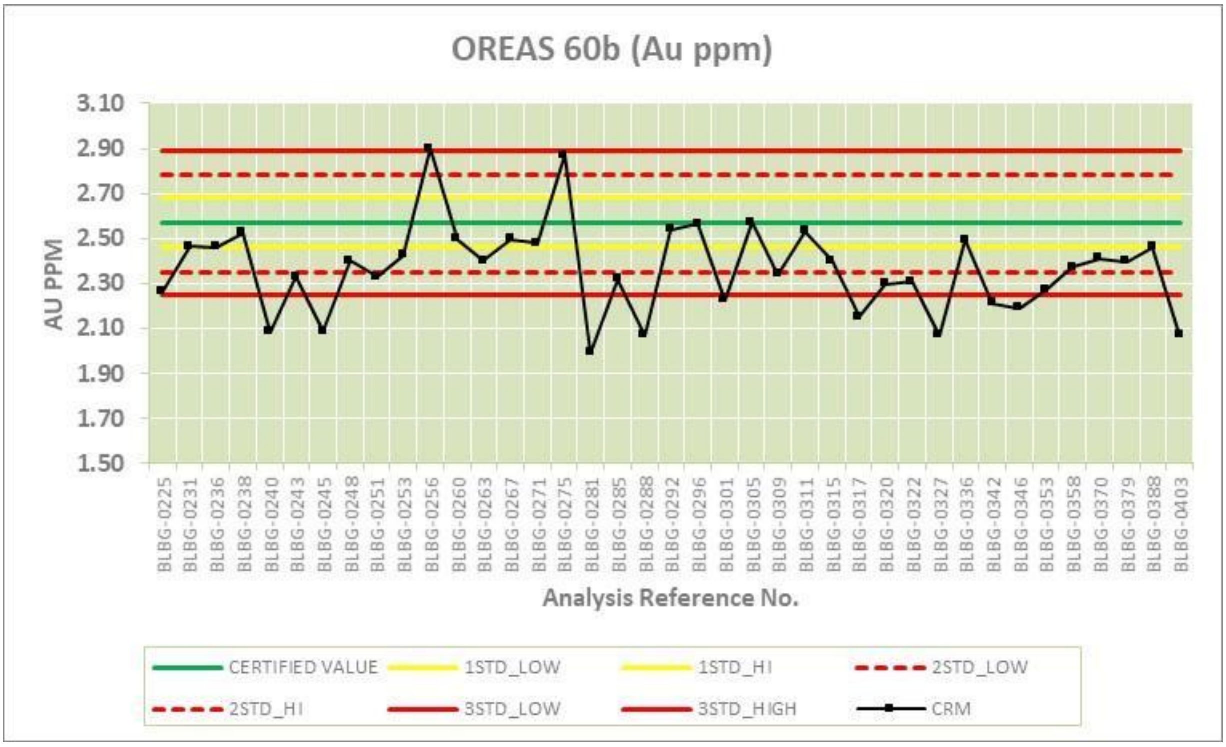


Figure 11-18: Standard control chart for OREAS 60b (Au ppm) analyzed at Canatuan Mine Laboratory.

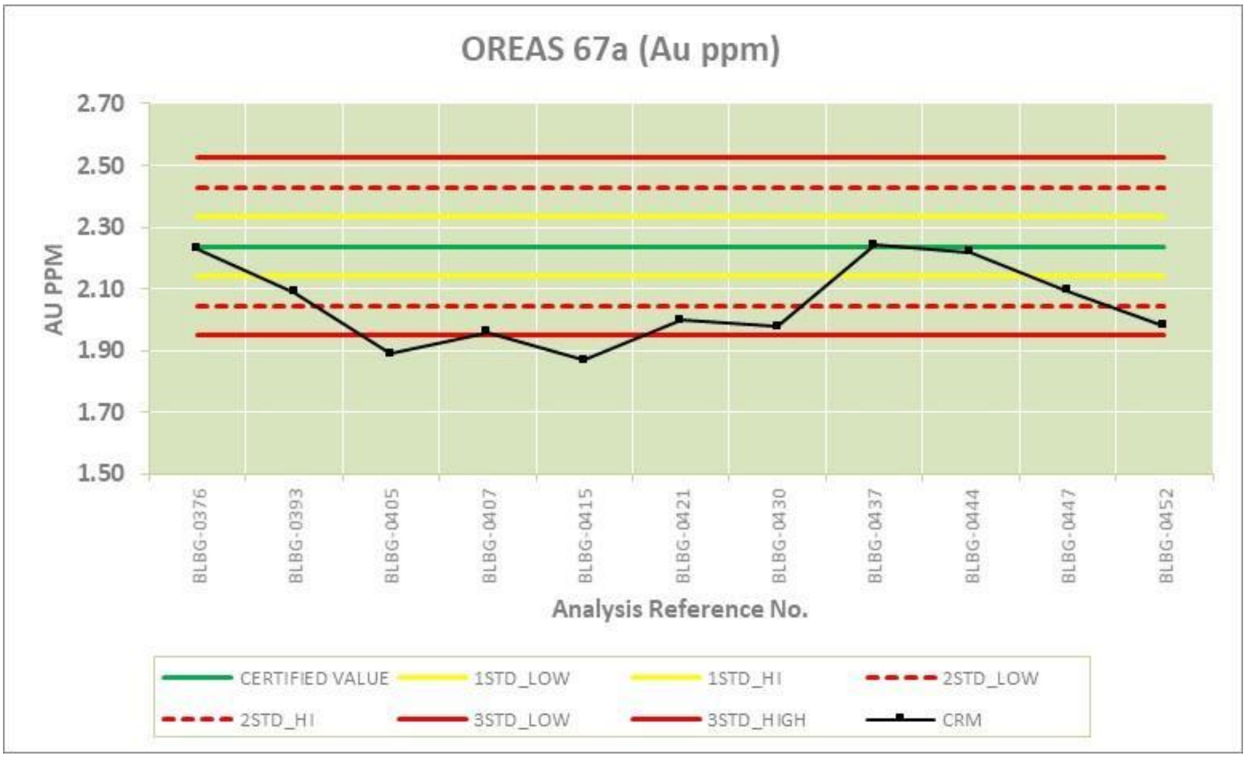


Figure 11-19: Standard control chart for OREAS 67a (Au ppm) analyzed at Canatuan Mine Laboratory.

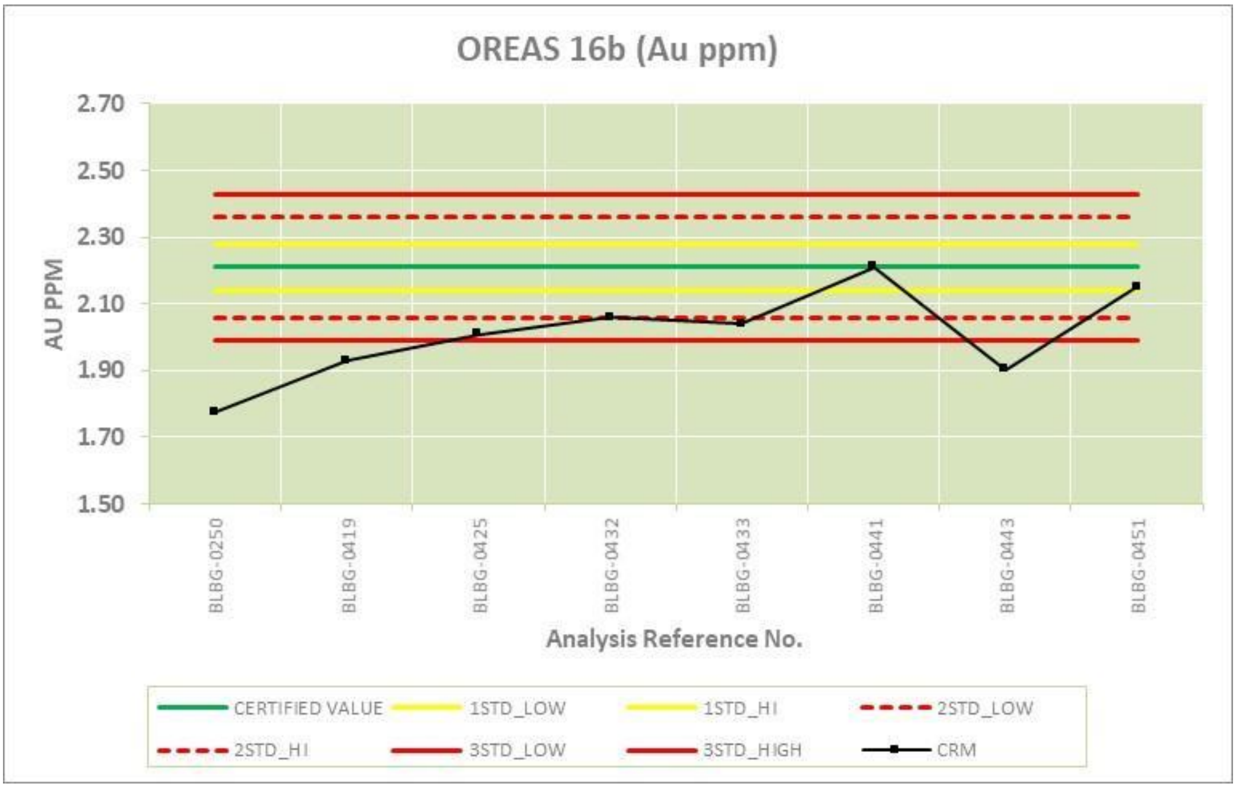


Figure 11-20: Standard control chart for OREAS 16b (Au ppm) analyzed at Canatuan Mine Laboratory.

The high-grade CRMs which include OREAS 12a, OREAS 62d and OREAS 62c range from 8.0 g/t Au to 12.0 g/t Au. These standards are intended to monitor the laboratory performance in analyzing high grade samples.

Although some outliers were noted, the majority of the CRM results were plotted within first-degree standard deviation. Analytical drift was apparent in some of the early OREAS 12a results. Improvements were observed with the latter portions of OREAS 62c and OREAS 62d as the results are within the first-degree standard deviation with minor outliers. Plots are presented in charts Figure 11-20 to Figure 11-22.

In assessing the silver grades, laboratory CRMs were used: GBM996-3 and GBM300-5. Results are shown in Figures 11-23 and 11-24.

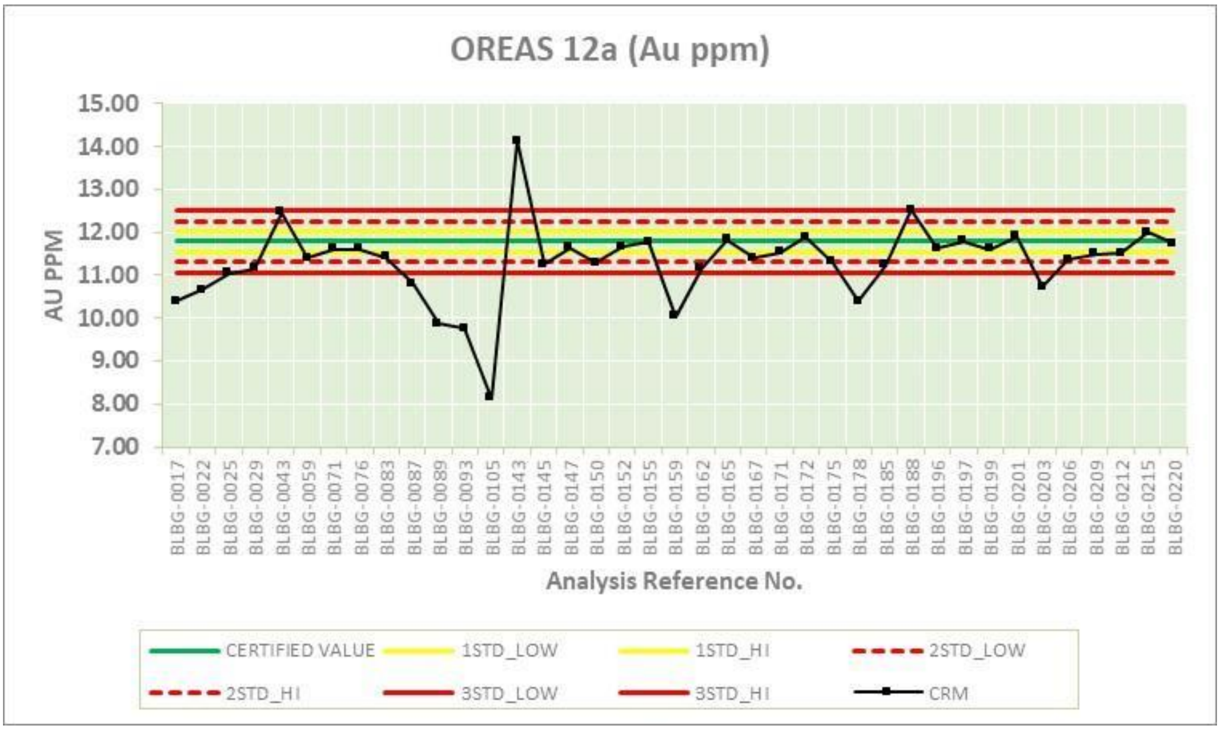


Figure 11-21: Standard control chart for OREAS 12a (Au ppm) analyzed at Canatuan Mine Laboratory.

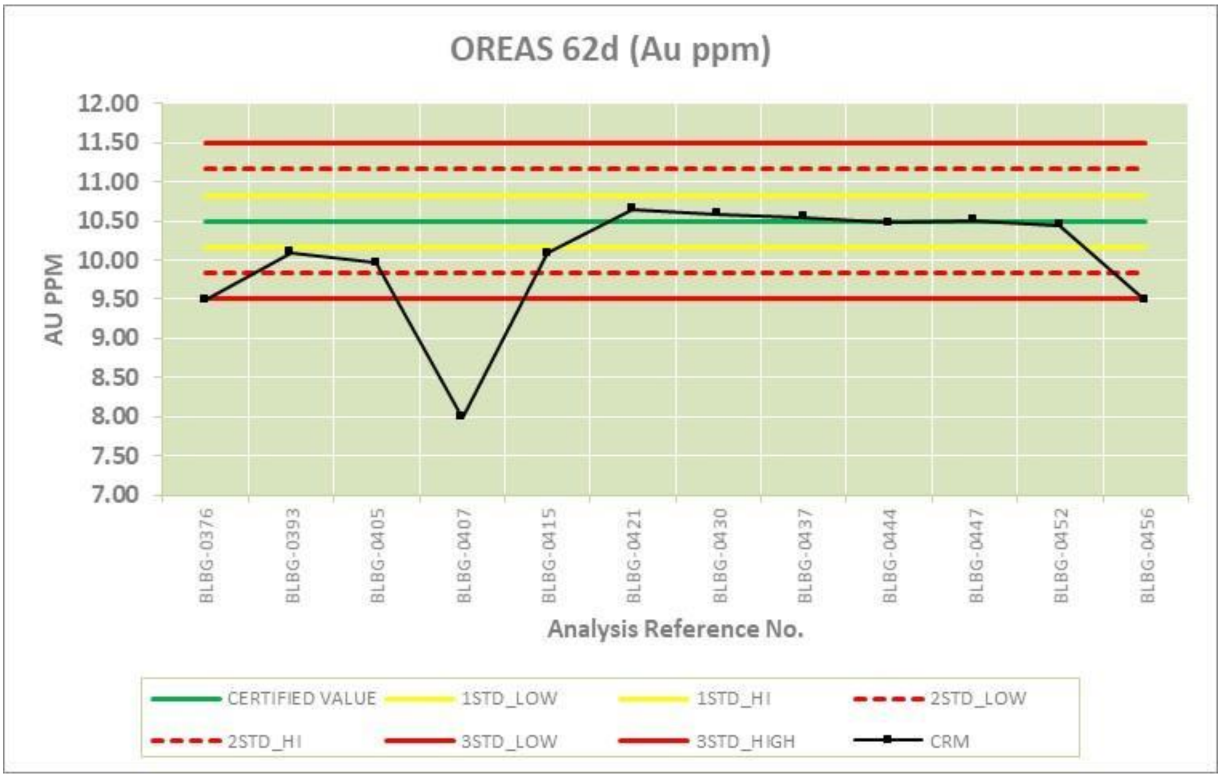


Figure 11-22: Standard control chart for OREAS 62d (Au ppm) analyzed at Canatuan Mine Laboratory.

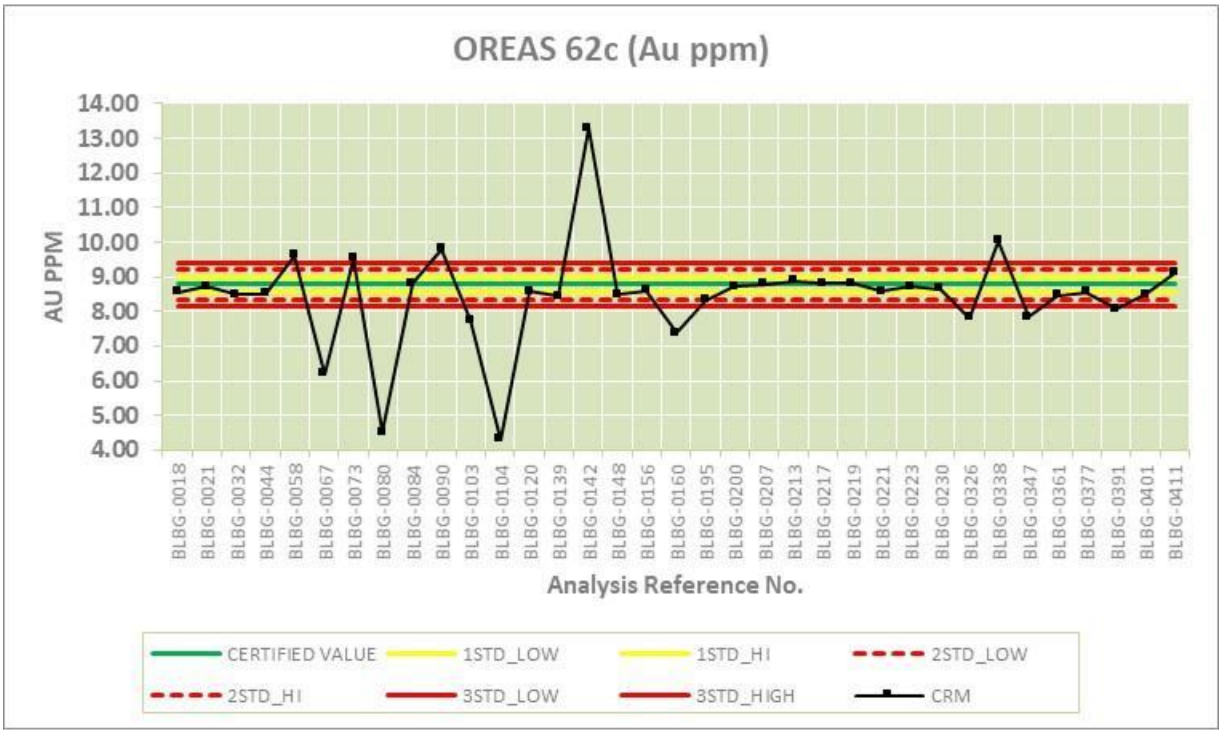


Figure 11-23: Standard control chart for OREAS 62c (Au ppm) analyzed at Canatuan Mine Laboratory.

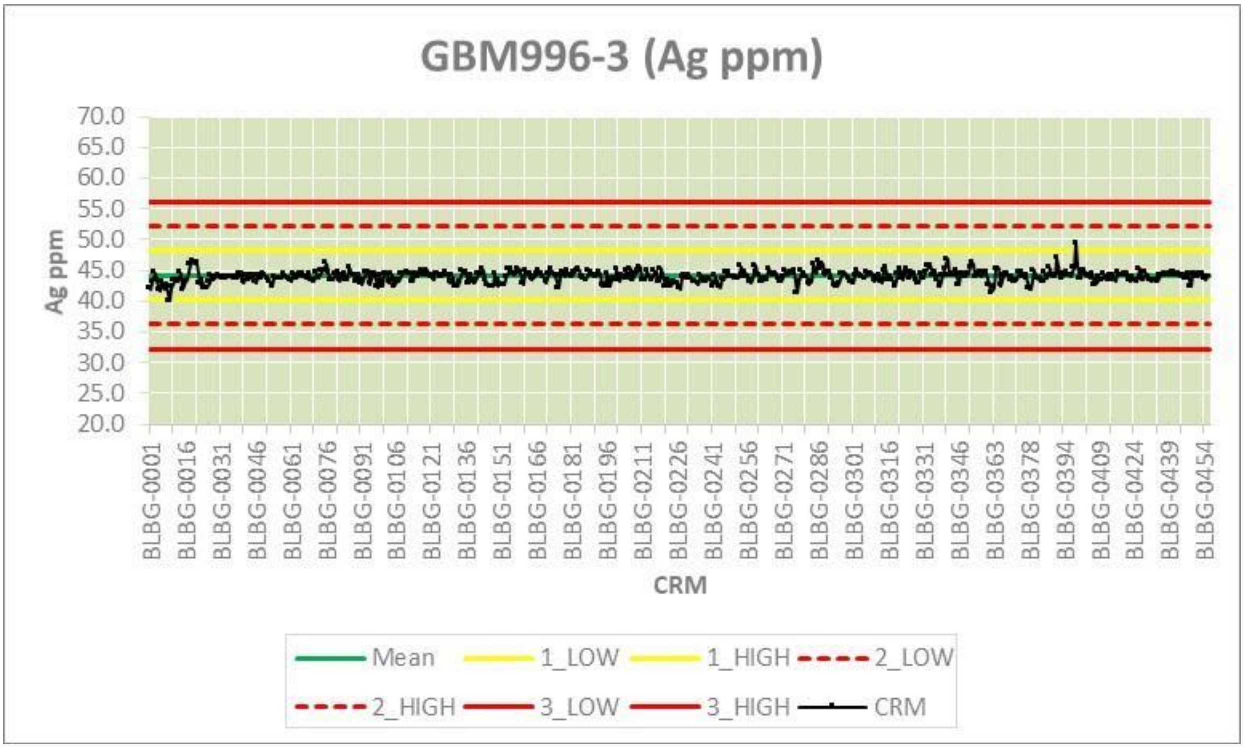


Figure 11-24: Standard control chart for GBM996-3 (Ag ppm) analyzed at Canatuan Mine Laboratory.

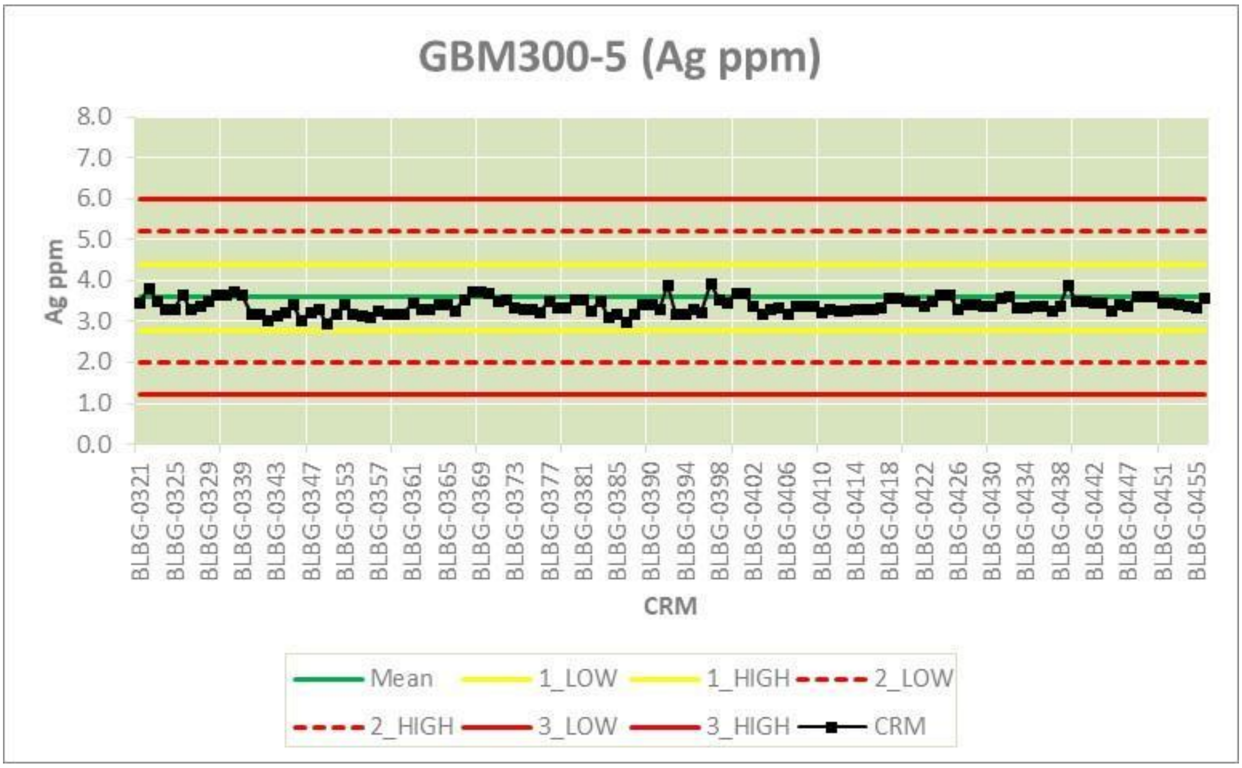


Figure 11-25: Standard control chart for GBM300-5 (Ag ppm) analyzed at Canatuan Mine Laboratory.

Balabag Mine Laboratory

Ten (10) CRMs, also from Ore Research and Exploration Pty. Ltd. were utilized to monitor the assay quality of samples submitted to the Balabag Mine Laboratory. The standard gold grades and corresponding standard deviations are presented in Table 11-5.

Table 11-5: Certified Reference Materials analyzed at Balabag Mine Laboratory (2019-2020)

REFERENCE MATERIAL		Certified Value (Au ppm)	(-) 1SD	(+) 1SD	(-) 2SD	(+) 2SD	(-) 3SD	(+) 3SD
Low Grade	OREAS 600	0.200	0.194	0.206	0.189	0.211	0.183	0.217
	OREAS 607	0.690	0.666	0.714	0.641	0.739	0.617	0.763
	OREAS 601	0.780	0.749	0.811	0.717	0.843	0.686	0.874
Intermediate	OREAS 608	1.210	1.171	1.249	1.130	1.290	1.090	1.330
	OREAS 602	1.950	1.884	2.016	1.820	2.080	1.750	2.150
	OREAS 602b	2.290	2.196	2.384	2.100	2.480	2.010	2.570
	OREAS 60d	2.470	2.391	2.549	2.310	2.630	2.230	2.710
High grade	OREAS 61f	4.600	4.466	4.734	4.340	4.870	4.200	5.010
	OREAS 603b	5.210	5.001	5.419	4.790	5.620	4.580	5.830
	OREAS 62f	9.710	9.471	9.949	9.240	10.190	9.000	10.430

The low-grade CRMs include: OREAS 600, OREAS 607 and OREAS 601. Gold results were generally within 3rd degree standard deviation. Some notable outliers with OREAS 600 and OREAS 607 were observed. Plots of CRMs are shown in Figures 11-25 to 11-27.

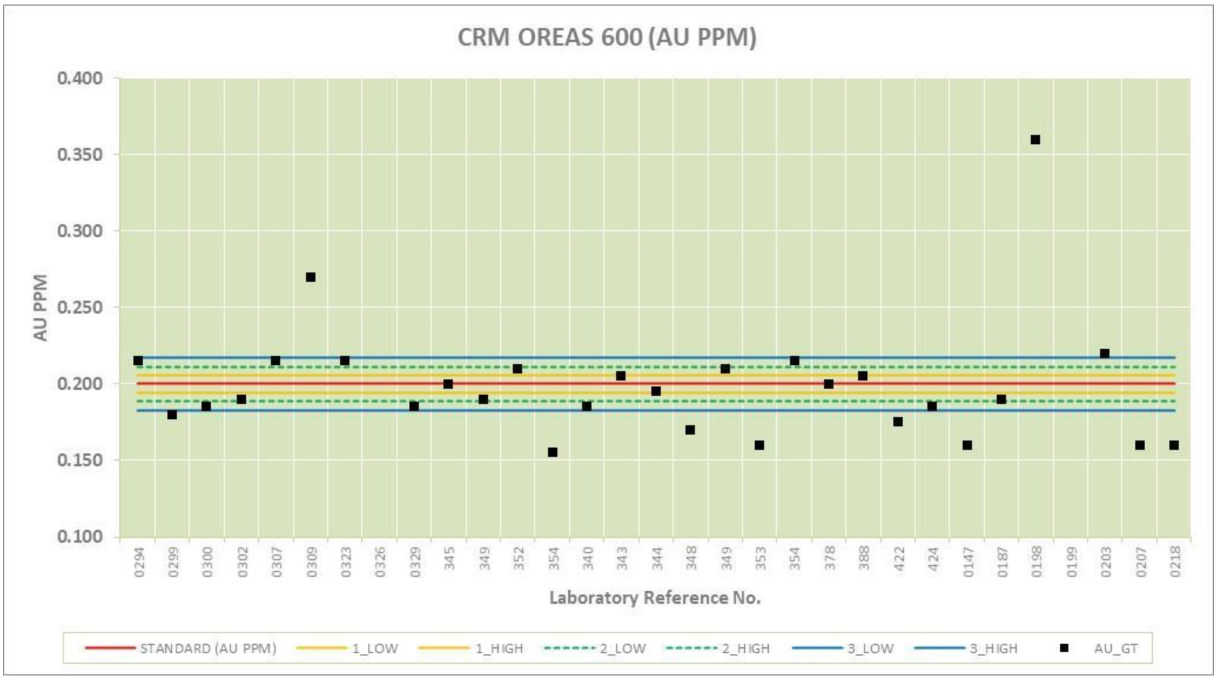


Figure 11-26: Standard control chart for OREAS 600 (Au ppm) analyzed at Balabag Mine Laboratory.

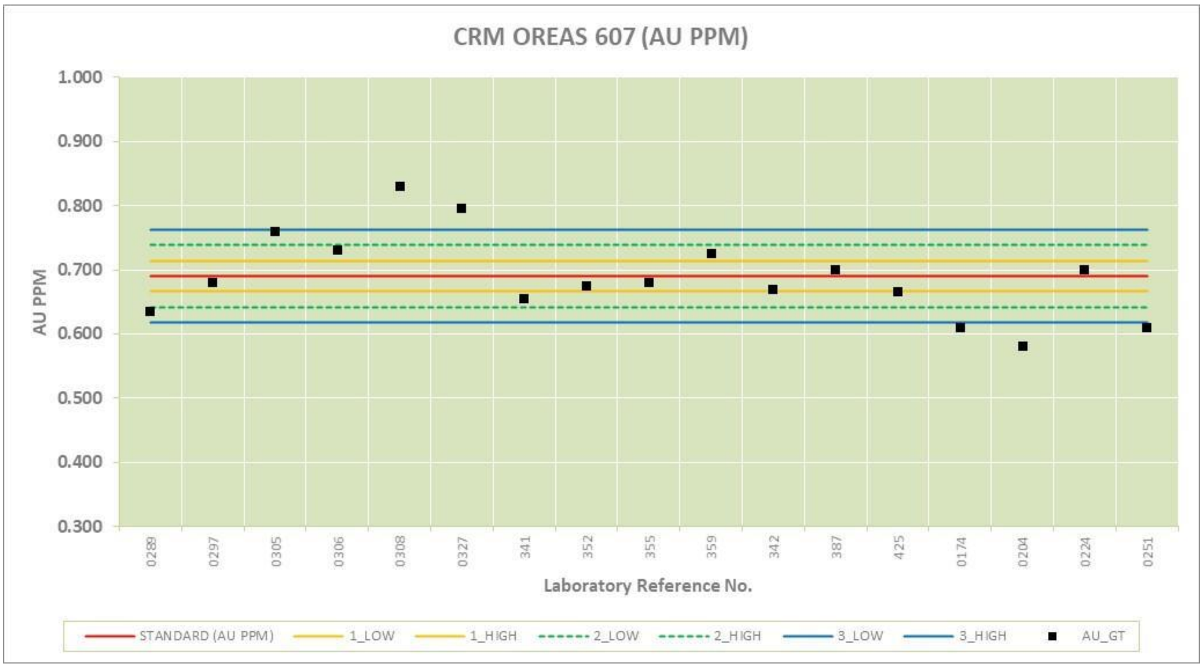


Figure 11-27: Standard control chart for OREAS 607 (Au ppm) analyzed at Balabag Mine Laboratory.

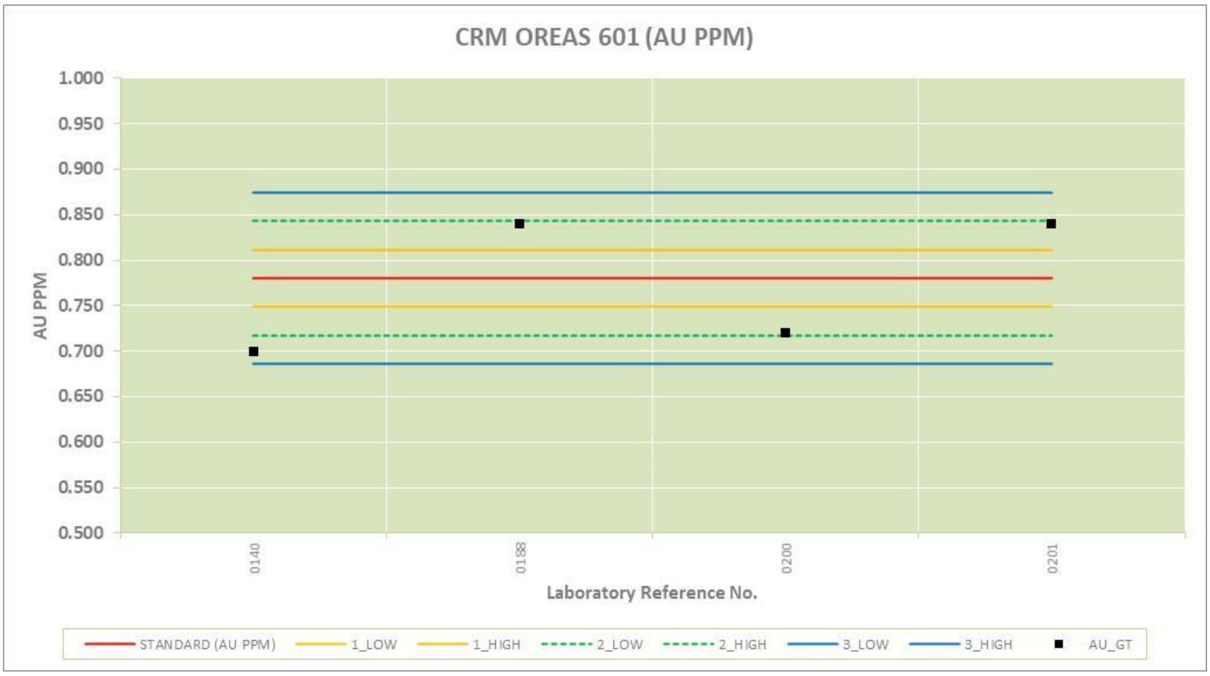


Figure 11-28: Standard control chart for OREAS 601 (Au ppm) analyzed at Balabag Mine Laboratory.

Four intermediate grade CRMs were used: OREAS 608, OREAS 602 and OREAS 602b and OREAS 60d. From the plots presented in Figures 11-28 to 11-31, results are generally low-biased relative to the standard gold values.

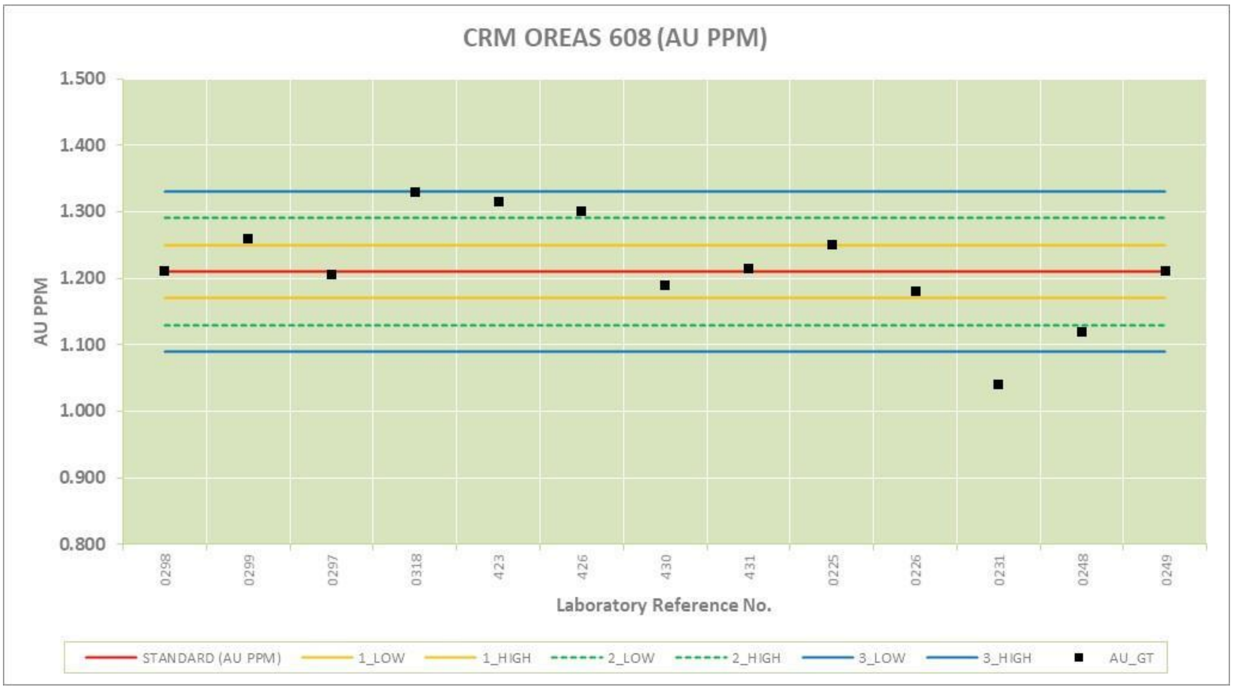


Figure 11-29: Standard control chart for OREAS 608 (Au ppm) analyzed at Balabag Mine Laboratory.

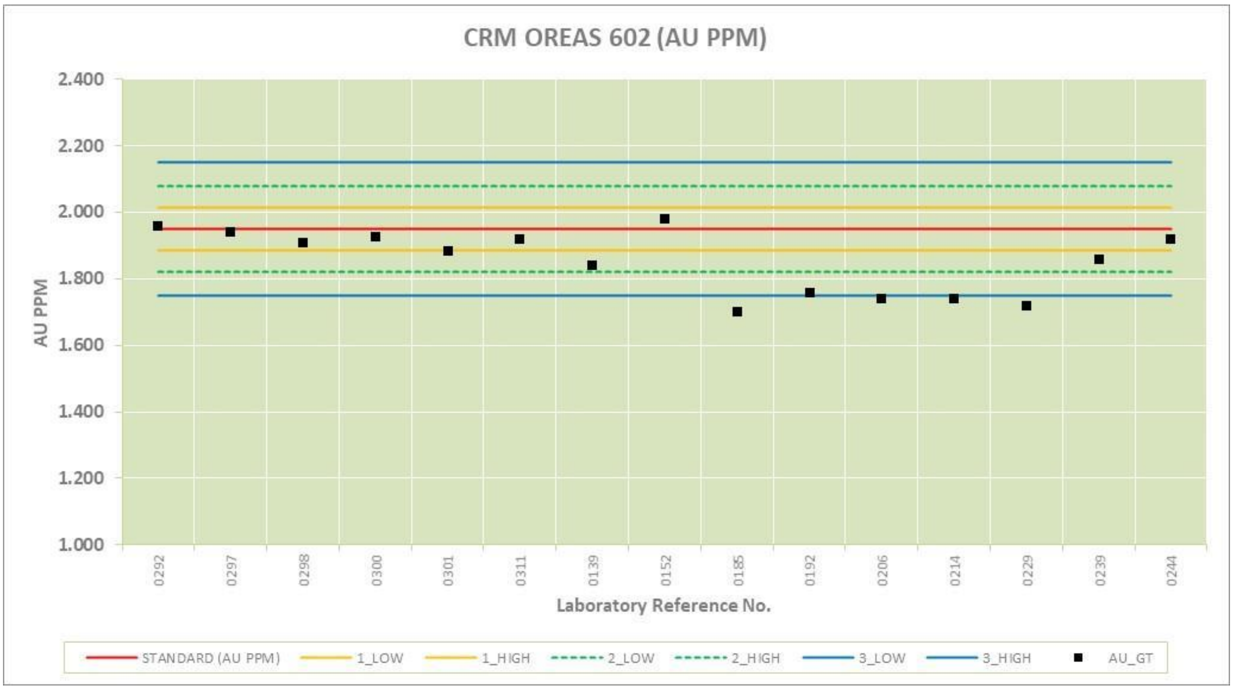


Figure 11-30: Standard control chart for OREAS 602 (Au ppm) analyzed at Balabag Mine Laboratory.

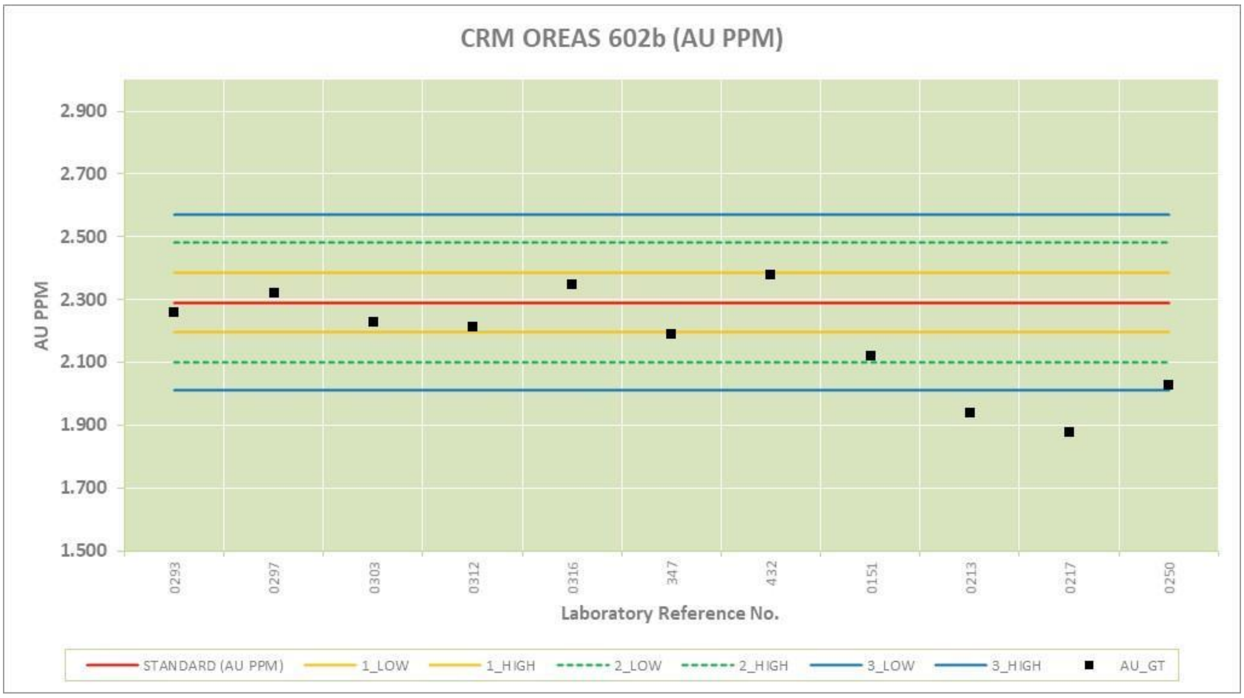


Figure 11-31: Standard control chart for OREAS 602b (Au ppm) analyzed at Balabag Mine Laboratory.

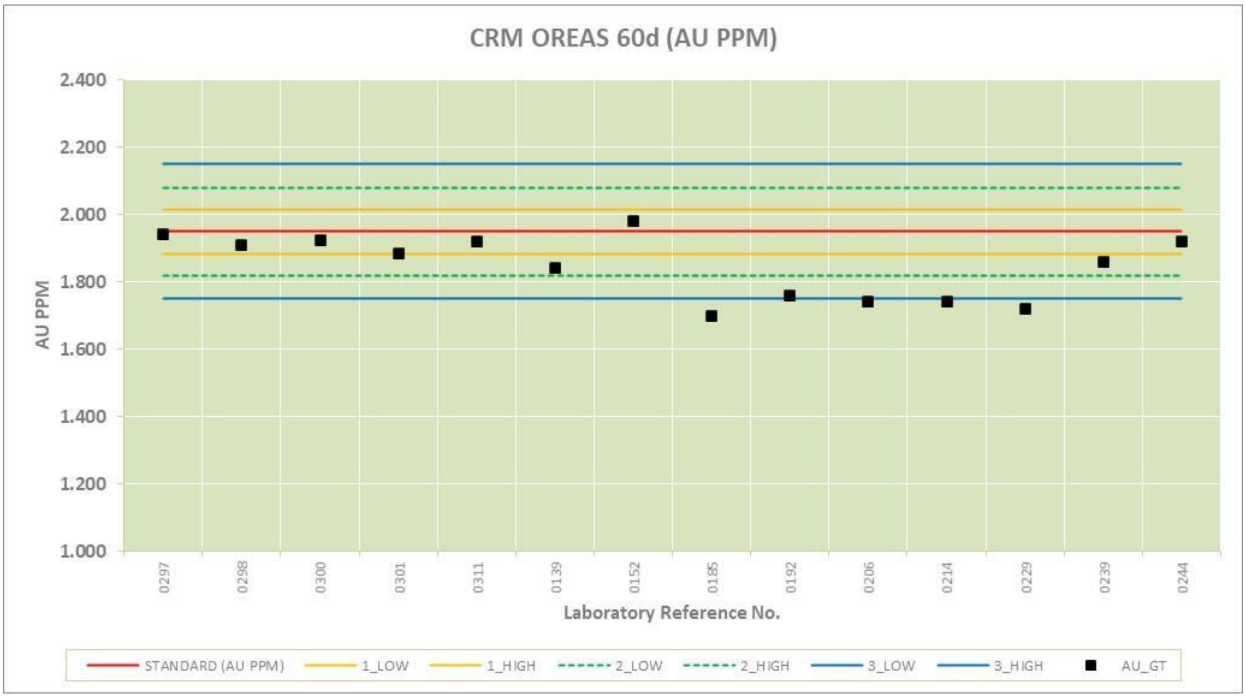


Figure 11-32: Standard control chart for OREAS 60d (Au ppm) analyzed at Balabag Mine Laboratory.

To monitor the high grades, the following CRMs were used: OREAS 61f, OREAS 603b and OREAS 62f. Results of the high-grade CRMs are also low biased relative to the standard gold grades. Figure 11-32 to 11-34 show the trend of the assay data.

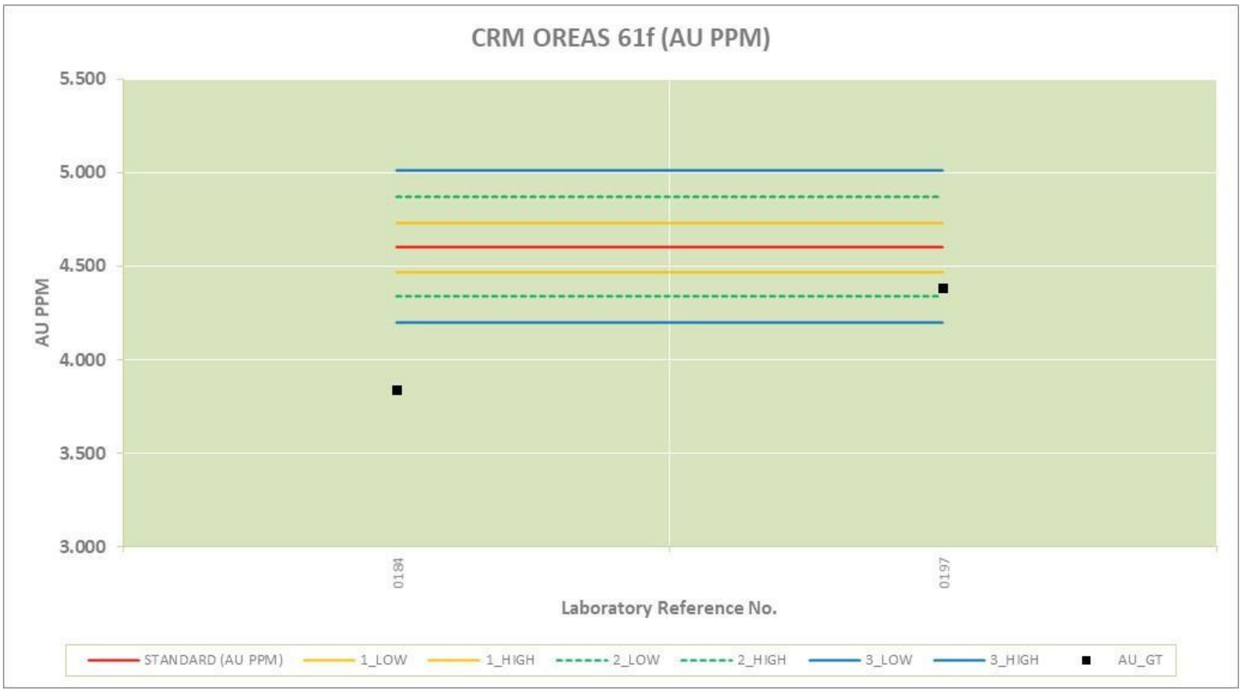


Figure 11-33: Standard control chart for OREAS 61f (Au ppm) analyzed at Balabag Mine Laboratory.

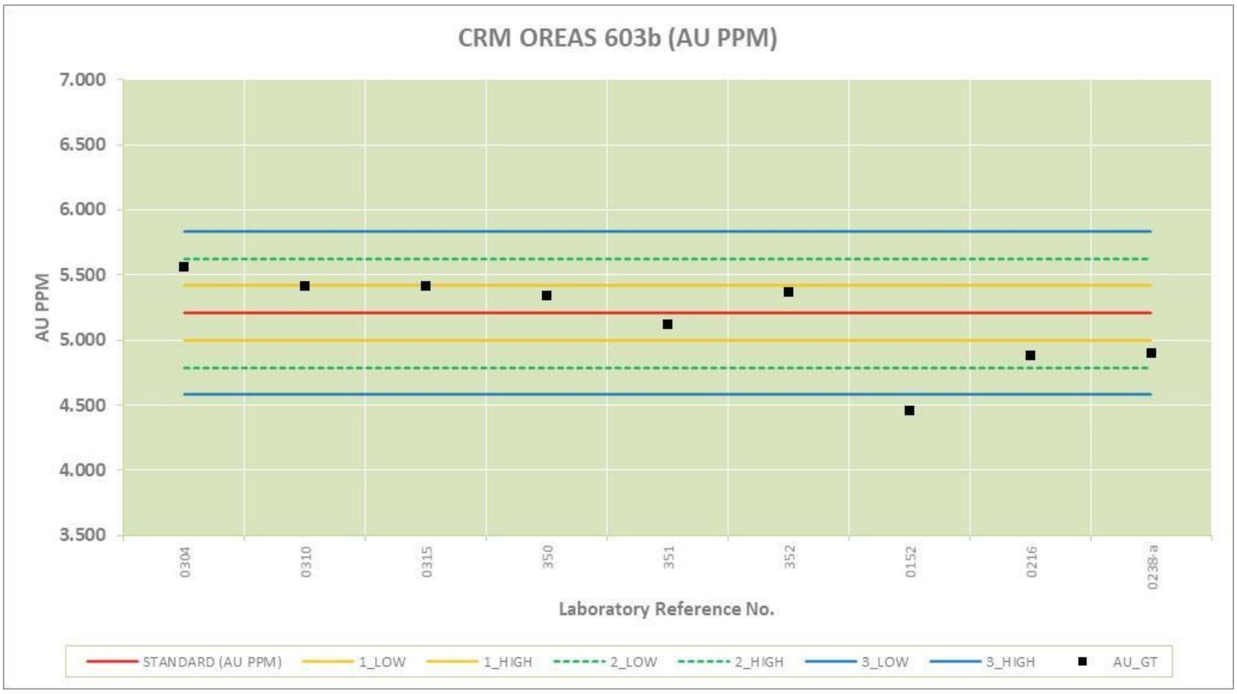


Figure 11-34: Standard control chart for OREAS 603b (Au ppm) analyzed at Balabag Mine Laboratory.

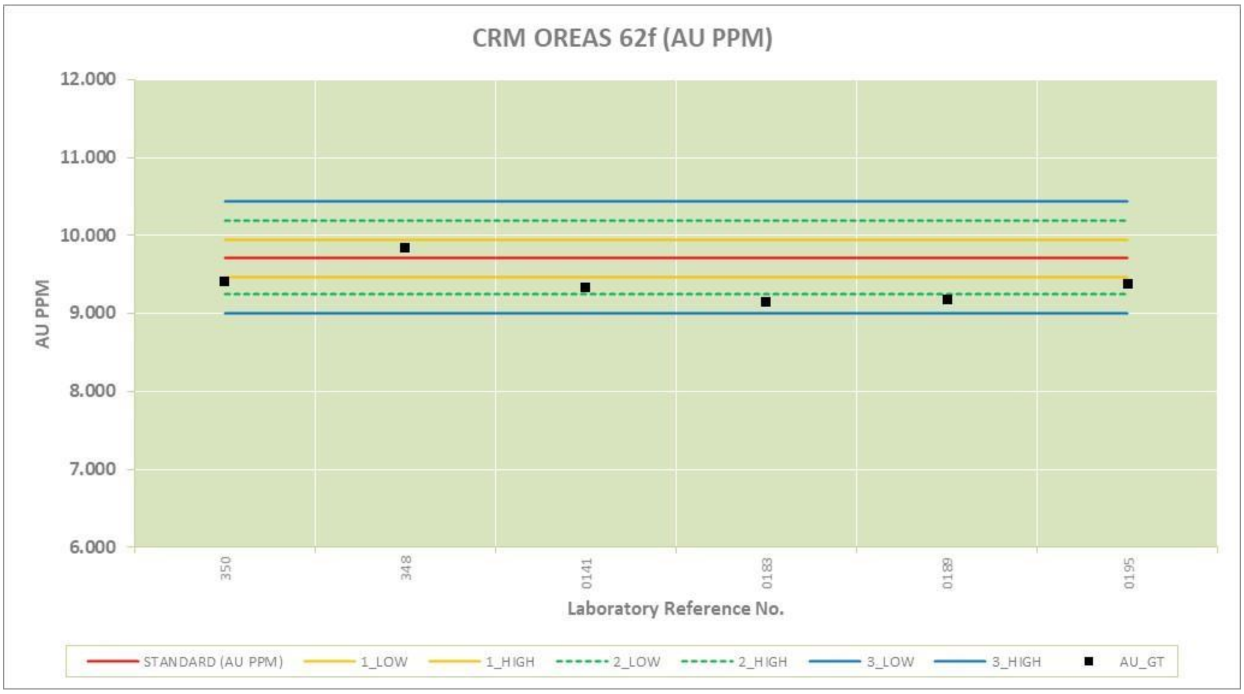


Figure 11-35: Standard control chart for OREAS 62f (Au ppm) analyzed at Balabag Mine Laboratory.

The silver assays of the same CRMs used to monitor gold were plotted to assess the performance of the Balabag Mine Laboratory. Details of the standards used are presented in the following table.

Table 11-6: Certified Reference Materials analyzed at Balabag Mine Laboratory (2019-2020)

Reference Material	Certified Value (Ag ppm)	(-)]1SD	(+) 1SD	(-)]2SD	(+) 2SD	(-) 3SD	(+) 3SD
OREAS 61f	3.64	3.49	3.79	3.34	3.93	3.19	4.08
OREAS 60d	4.57	4.39	4.75	4.22	4.93	4.04	5.11
OREAS 62f	5.42	5.10	5.74	4.78	6.06	4.46	6.38
OREAS 607	5.88	5.69	6.07	5.50	6.26	5.31	6.44
OREAS 608	14.70	14.18	15.22	13.60	15.70	13.10	16.20
OREAS 600	24.80	23.790	25.810	22.700	26.800	21.700	27.800
OREAS 601	49.40	47.93	50.87	46.50	52.40	45.00	53.80
OREAS 602	115.00	110.00	120.00	105.00	125.00	100.00	130.00
OREAS 602b	118.00	114.00	122.00	109.00	126.00	105.00	130.00
OREAS 603b	297.00	289.00	305.00	282.00	313.00	274.00	321.00

The following CRM charts show the trend of the silver assays analyzed at the Balabag Mine Laboratory. Majority of the results fall outside the second-degree standard deviation. Generally, results are low biased relative to the standard silver values.

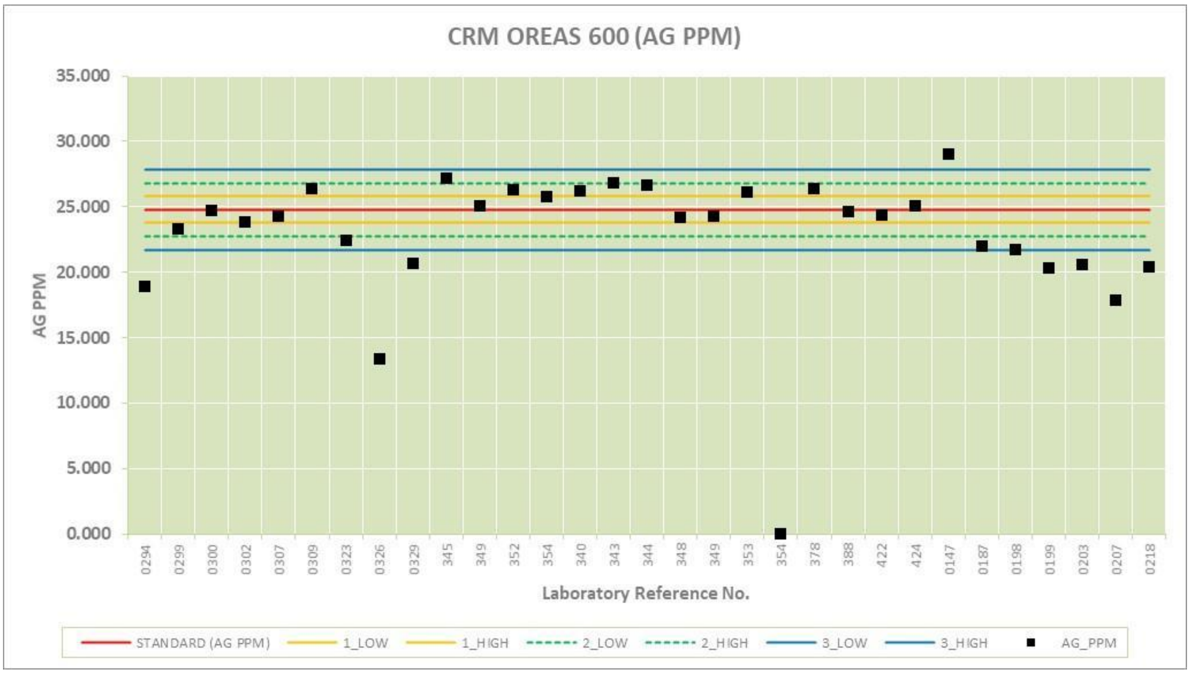


Figure 11-36: Standard control chart for OREAS 600 (Ag ppm) analyzed at Balabag Mine Laboratory.

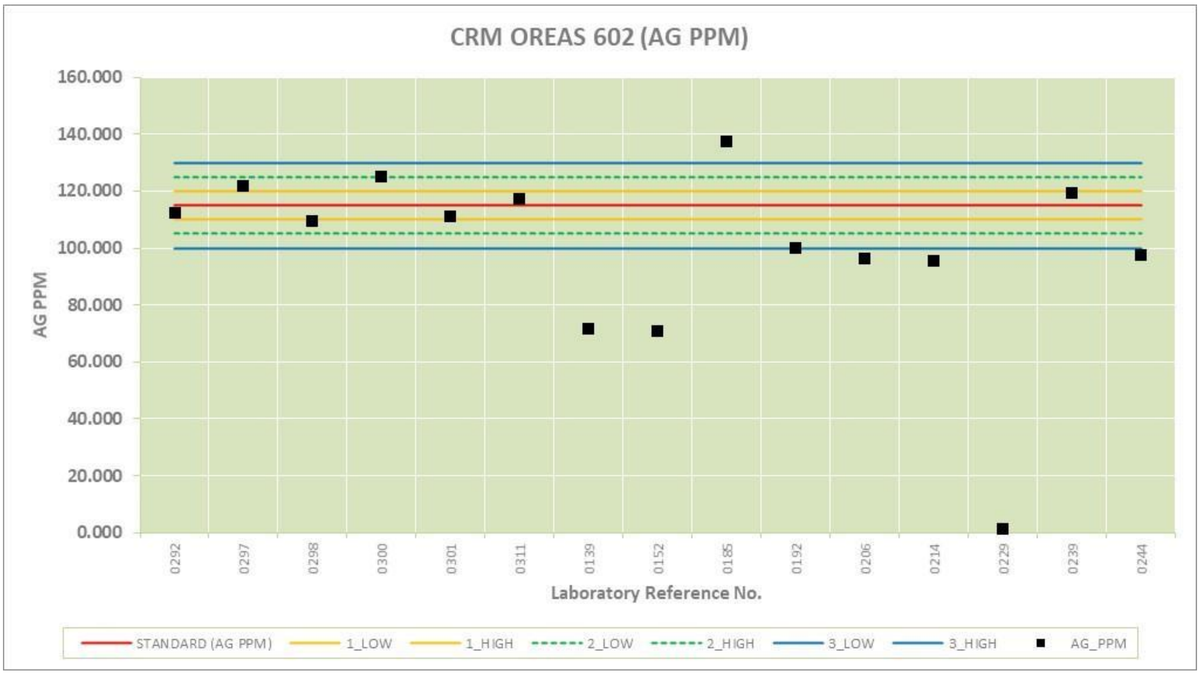


Figure 11-37: Standard control chart for OREAS 602 (Ag ppm) analyzed at Balabag Mine Laboratory.

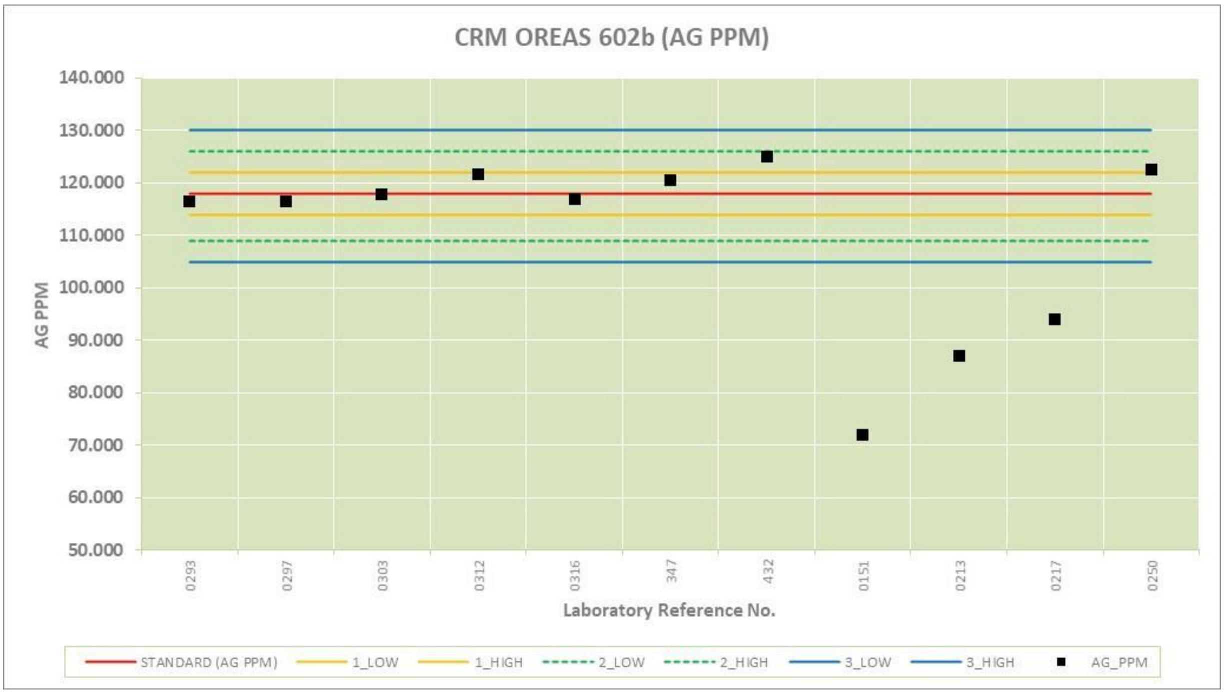


Figure 11-38: Standard control chart for OREAS 602b (Ag ppm) analyzed at Balabag Mine Laboratory.

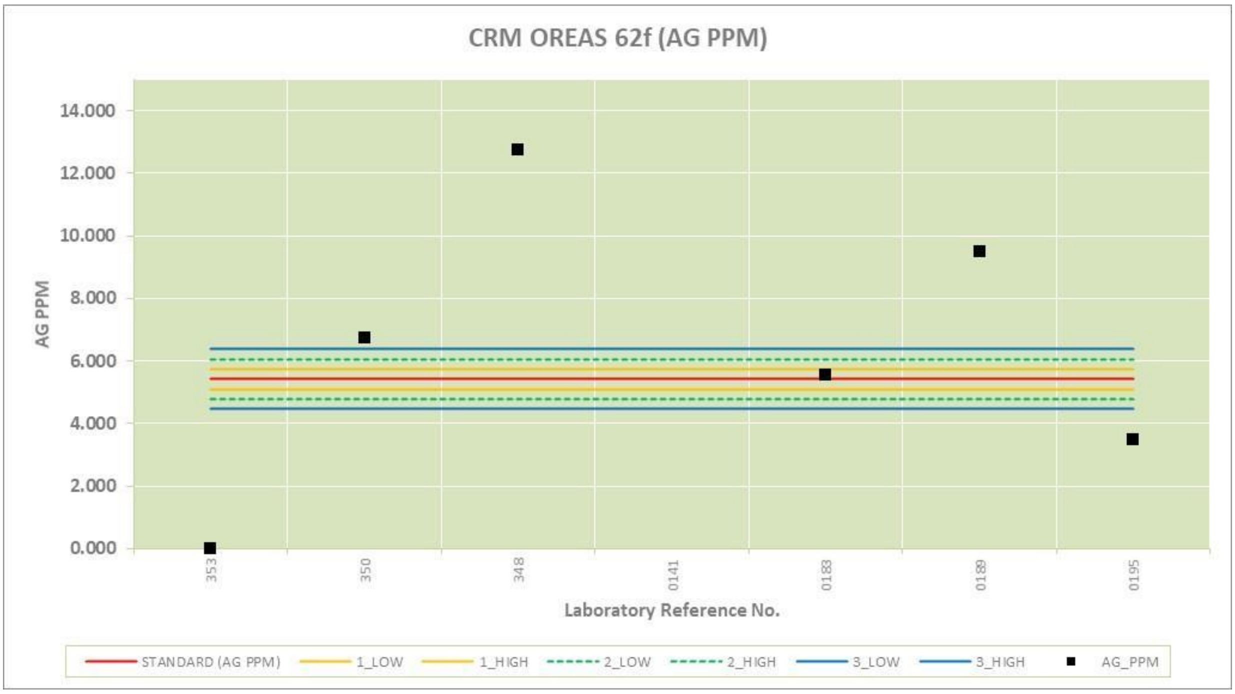


Figure 11-39: Standard control chart for OREAS 62f (Ag ppm) analyzed at Balabag Mine Laboratory.

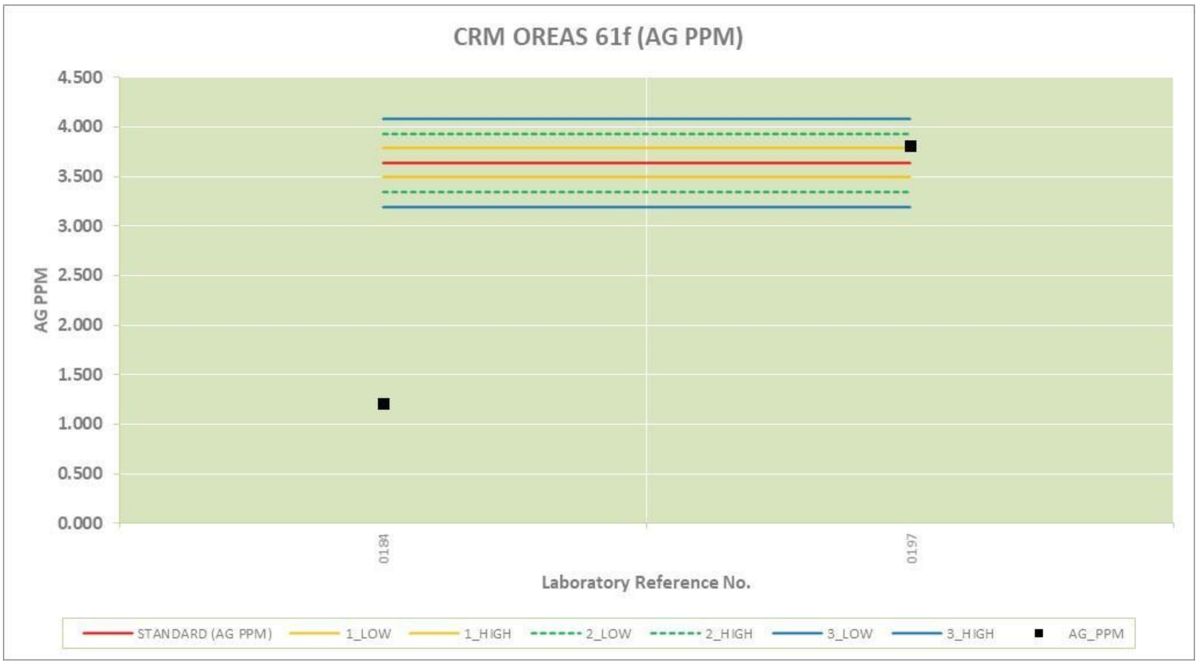


Figure 11-40: Standard control chart for OREAS 61f (Ag ppm) analyzed at Balabag Mine Laboratory.

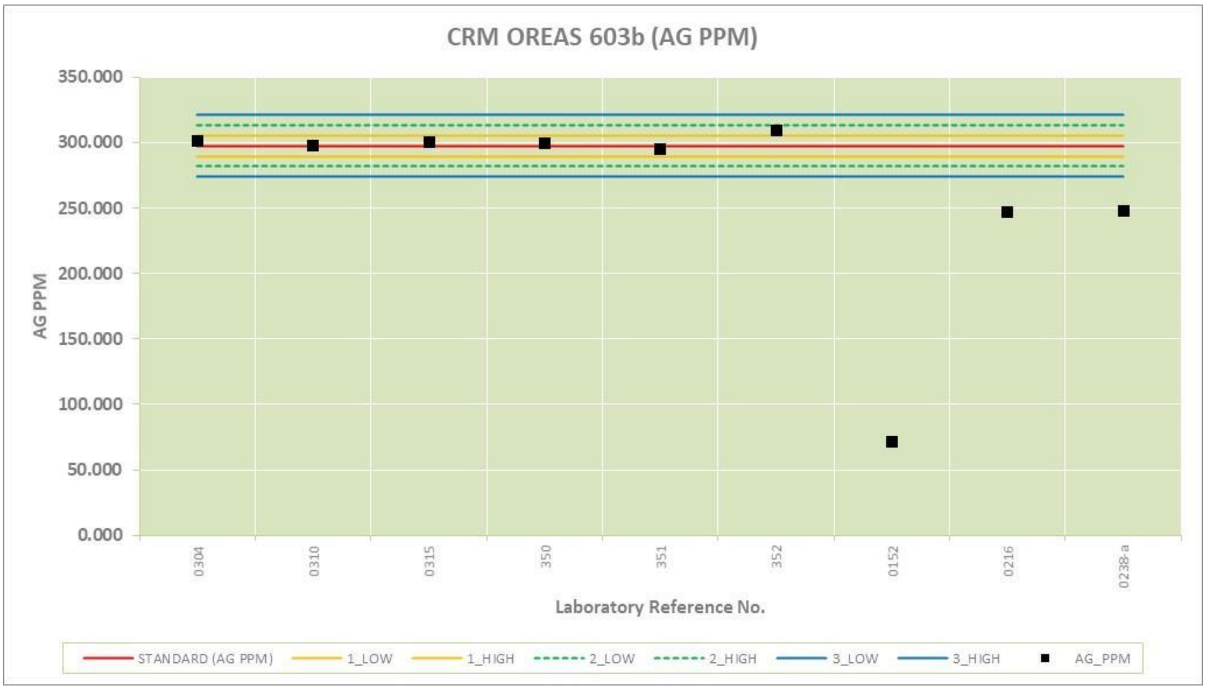


Figure 11-41: Standard control chart for OREAS 603b (Ag ppm) analyzed at Balabag Mine Laboratory.

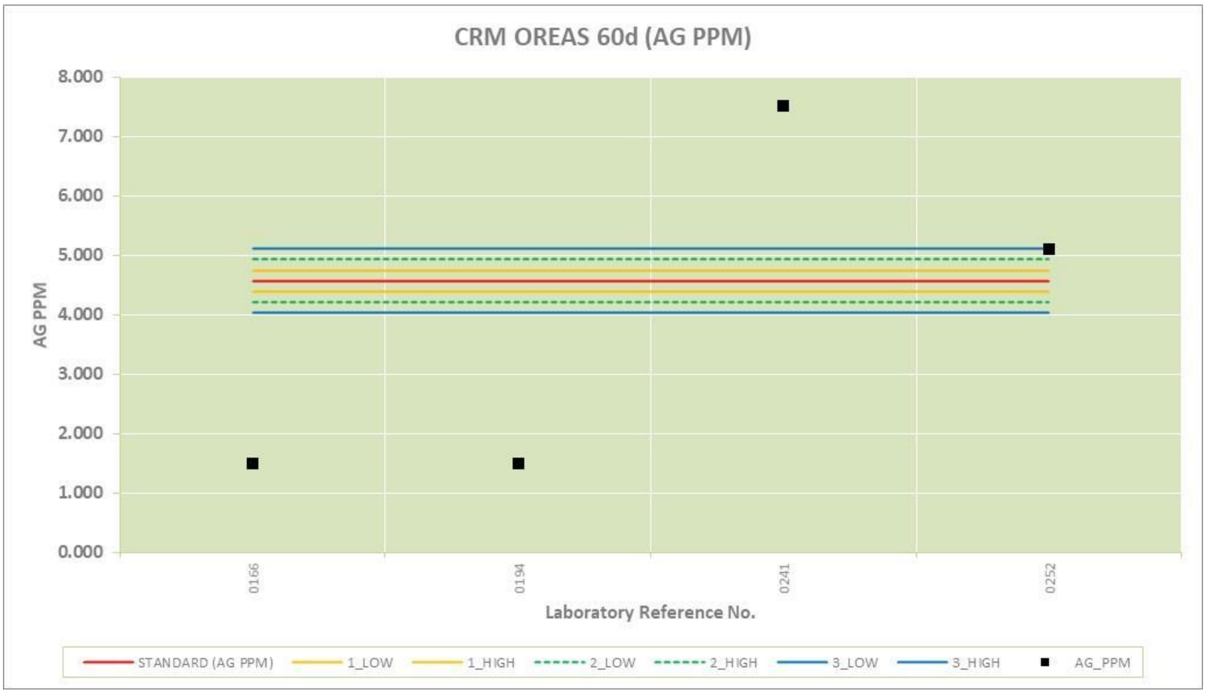


Figure 11-42: Standard control chart for OREAS 60d (Ag ppm) analyzed at Balabag Mine Laboratory.

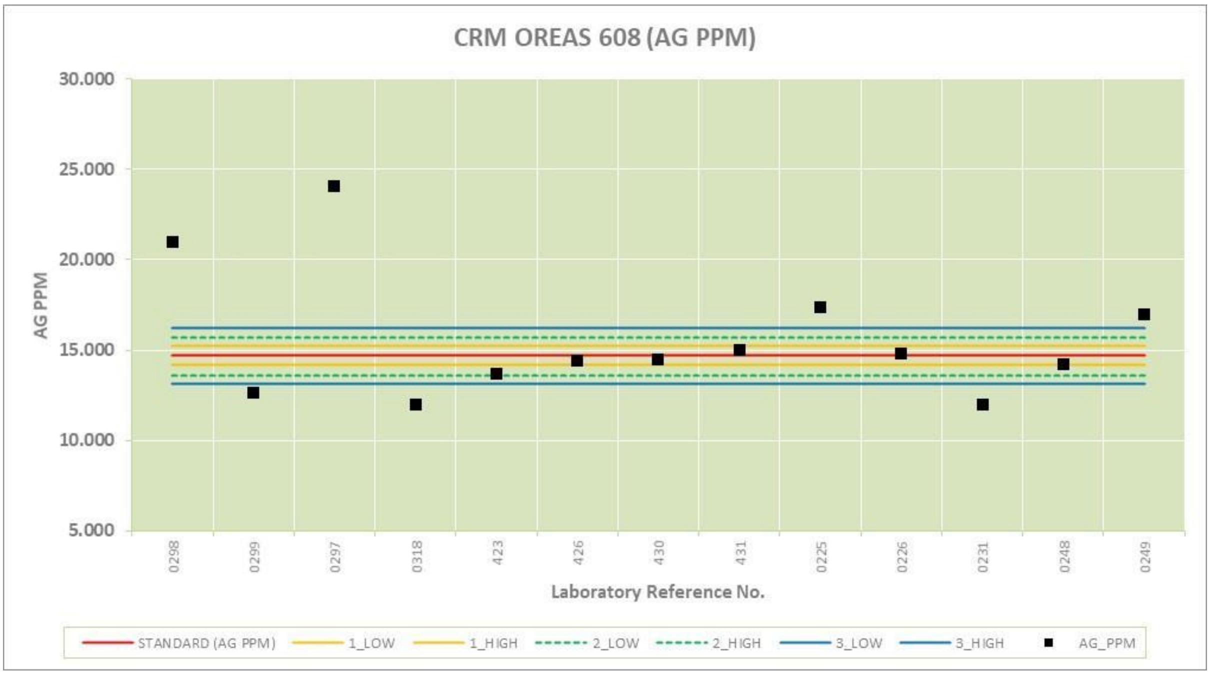


Figure 11-43: Standard control chart for OREAS 608 (Ag ppm) analyzed at Balabag Mine Laboratory.

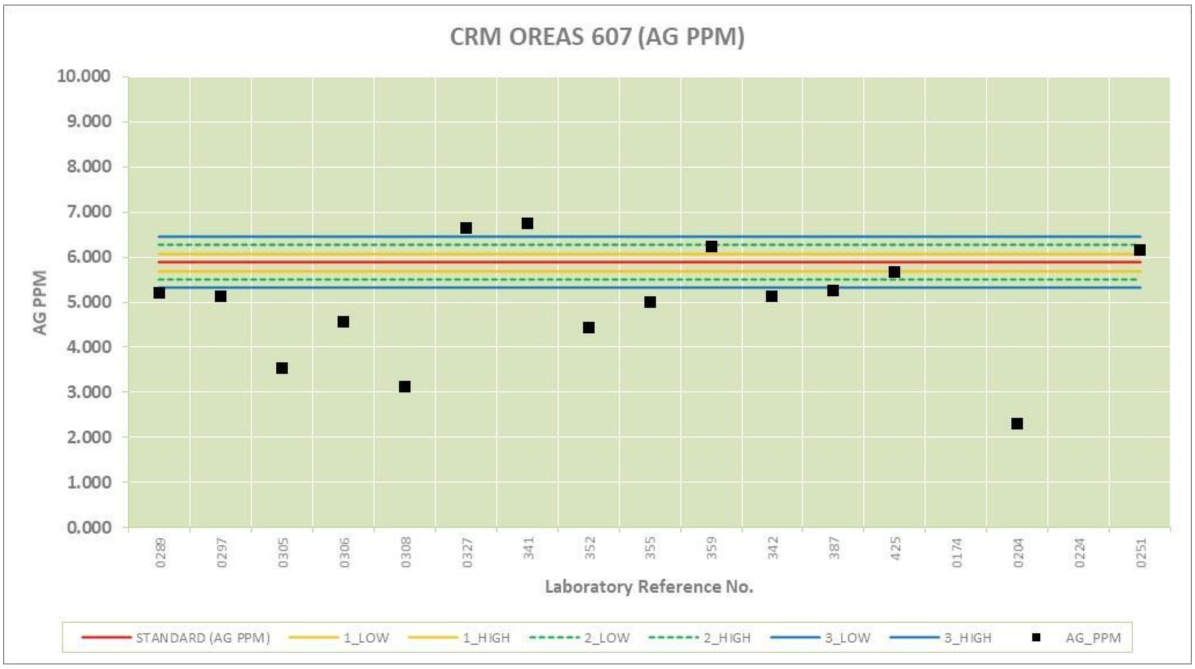


Figure 11-44: Standard control chart for OREAS 607 (Ag ppm) analyzed at Balabag Mine Laboratory.

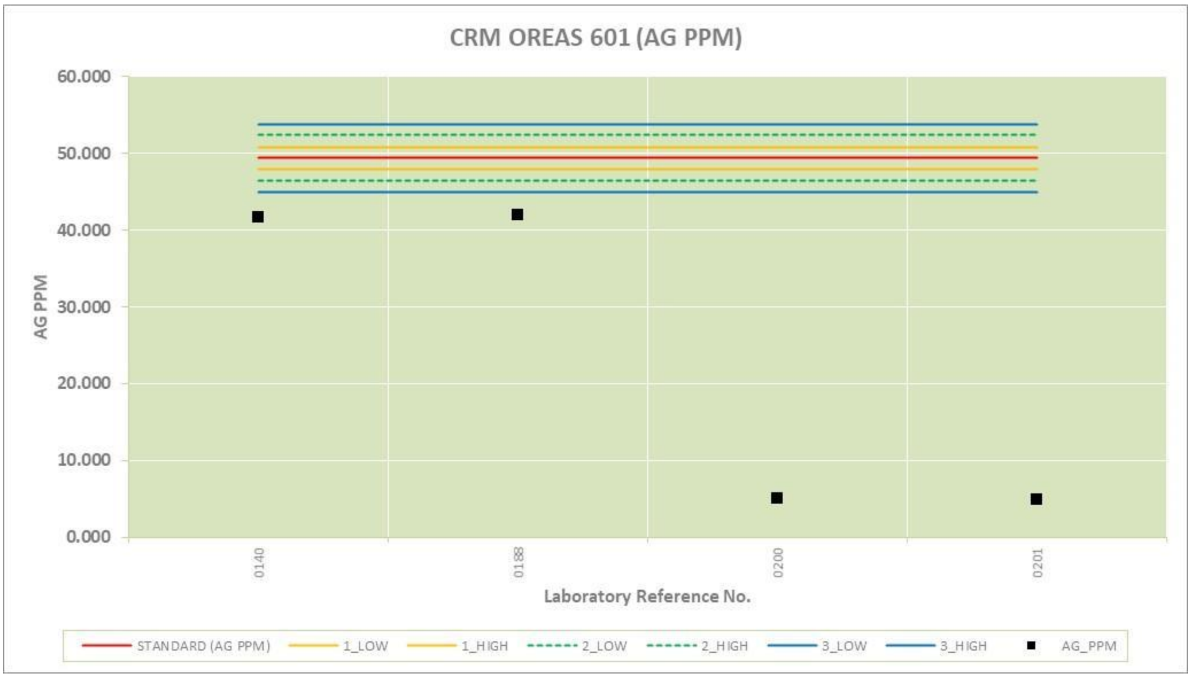


Figure 11-45: Standard control chart for OREAS 601 (Ag ppm) analyzed at Balabag Mine Laboratory.

11.5.2 Duplicates

Coarse and pulp duplicates were inserted to test the repeatability of gold and silver assays. The results of the duplicates were compared with the original assay values derived during the first round of analysis and were plotted in percentile chart and relative difference plot. Notable deviations are not untypical for vein type gold deposits.

McPhar Laboratory

Coarse duplicates, split of a collected sample at the collection site were submitted in the sample stream. A total of 144 pairs were analyzed. Gold results of the coarse duplicates are generally plotted within the +20% pass/fail criteria as shown Figure 11-38.

Retrieved pulp rejects were also analyzed as pulp duplicates. Results of 196 pairs are shown in Figure 11-39. The data on silver were not processed for analysis during this time.

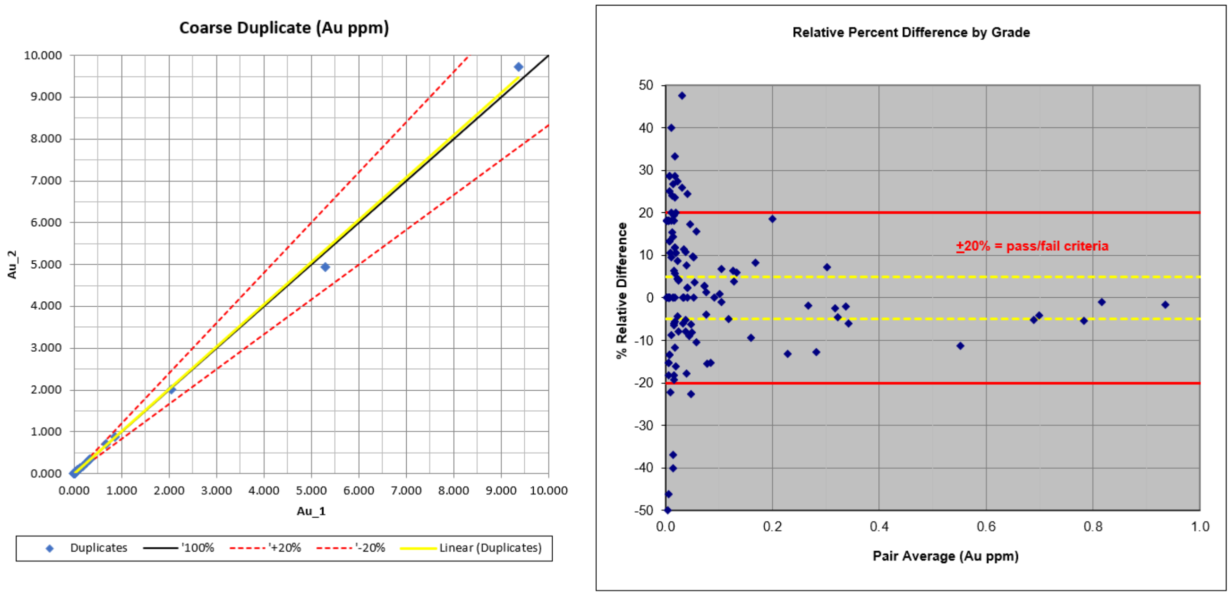


Figure 11-46: Coarse Duplicates (Au ppm) analyzed at McPhar Laboratory.

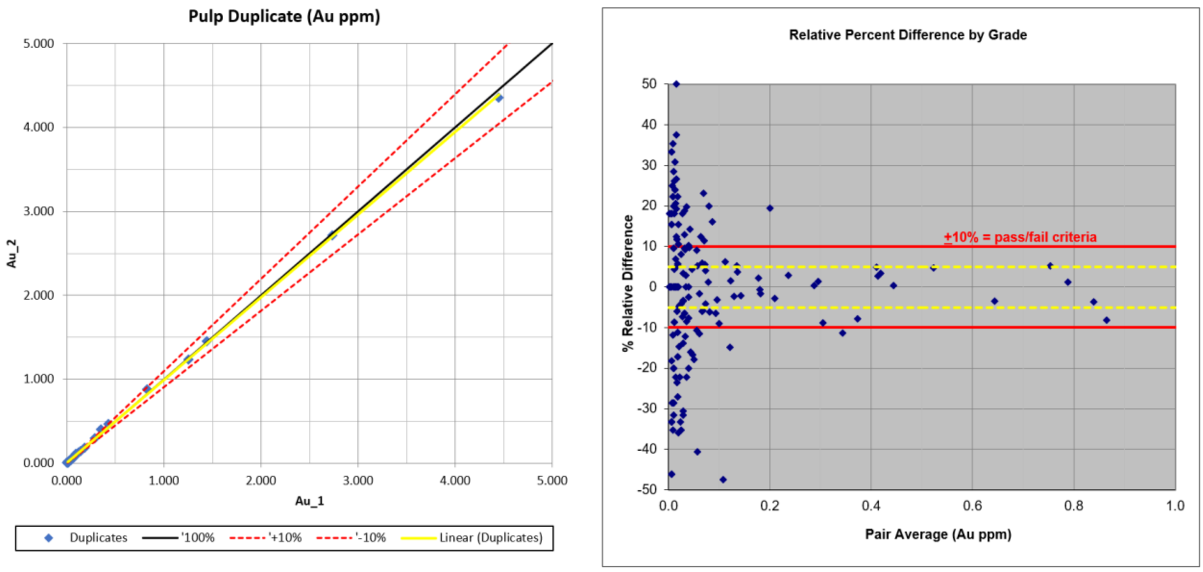


Figure 11-47: Pulp Duplicates (Au ppm) analyzed at McPhar Laboratory.

Canatuan Mine Laboratory

The insertion of coarse duplicates remained a part of the sample submission protocol at the Canatuan Mine Laboratory. A total of 427 pairs were analyzed during this phase of drilling. The gold results are generally within ±20% pass/fail criteria as shown in Figure 11-40.

Meanwhile, the silver assays of the duplicates are also within the acceptable limit, however, bias on the original sample was noted. (Figure 11-41).

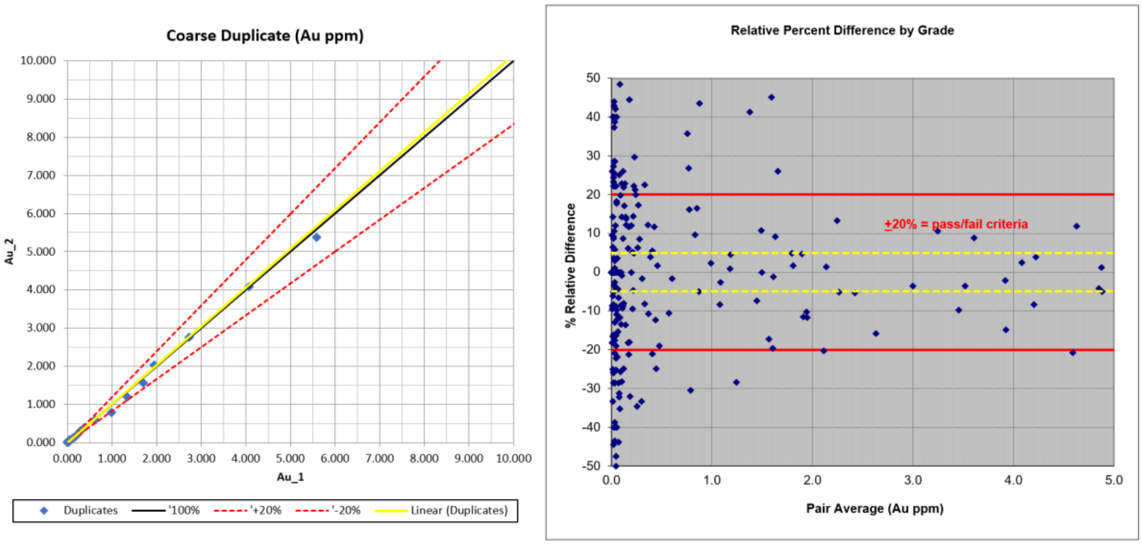


Figure 11-48: Coarse Duplicates (Au ppm) analyzed at Canatuan Mine Laboratory.

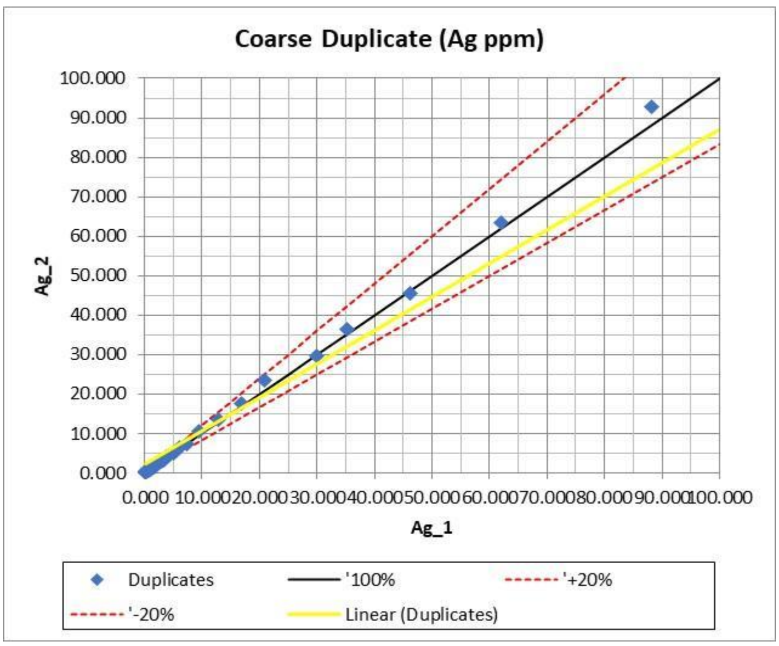


Figure 11-49: Coarse Duplicates (Ag ppm) analyzed at Canatuan Mine Laboratory.

Balabag Mine Laboratory

A total of 82 pairs of coarse duplicates were analyzed during the 2019-2020 drilling campaign. Gold and silver plots are presented in Figure 11-42 and Figure 11-43, respectively.

The scatter plot shows notable dispersion outside 10% acceptable limit.

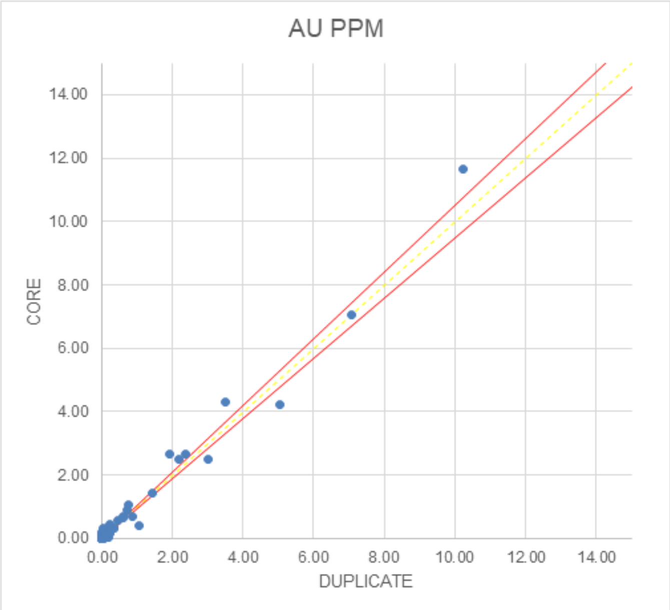


Figure 11-50: Coarse Duplicates (Au ppm) analyzed at Balabag Mine Laboratory.

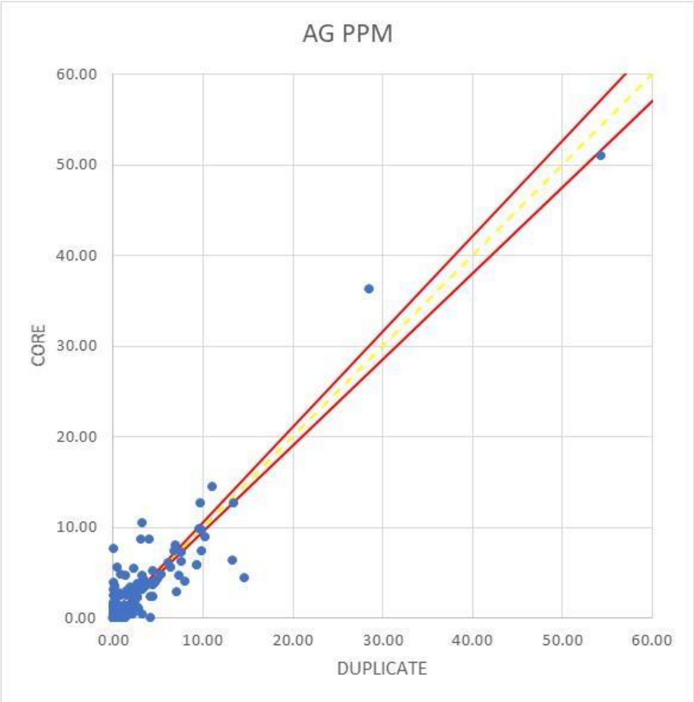


Figure 11-51: Coarse Duplicates (Ag ppm) analyzed at Balabag Mine Laboratory.

11.5.3 Blanks

Blanks are used to monitor contamination during laboratory sample comminution. In the submission of samples to the Canatuan and Balabag Mine Laboratory, blanks were randomly inserted and, at times, adjacent to a suspected high-grade sample.

Like the CRMs, internal blanks from the McPhar Laboratory were analyzed and assessed for quality control.

McPhar Laboratory

The control chart (Figure 11-44) for blanks analyzed at the McPhar Laboratory from the last quarter of 2005 to early 2007 shows consistent grades below cut-off (0.010 g/t Au) except for few major outliers which were possibly results of erroneous data capture. The assays were generally reported as 'below detection limit' which is 0.005 g/t Au. A value that is half of the detection limit was used for database input.

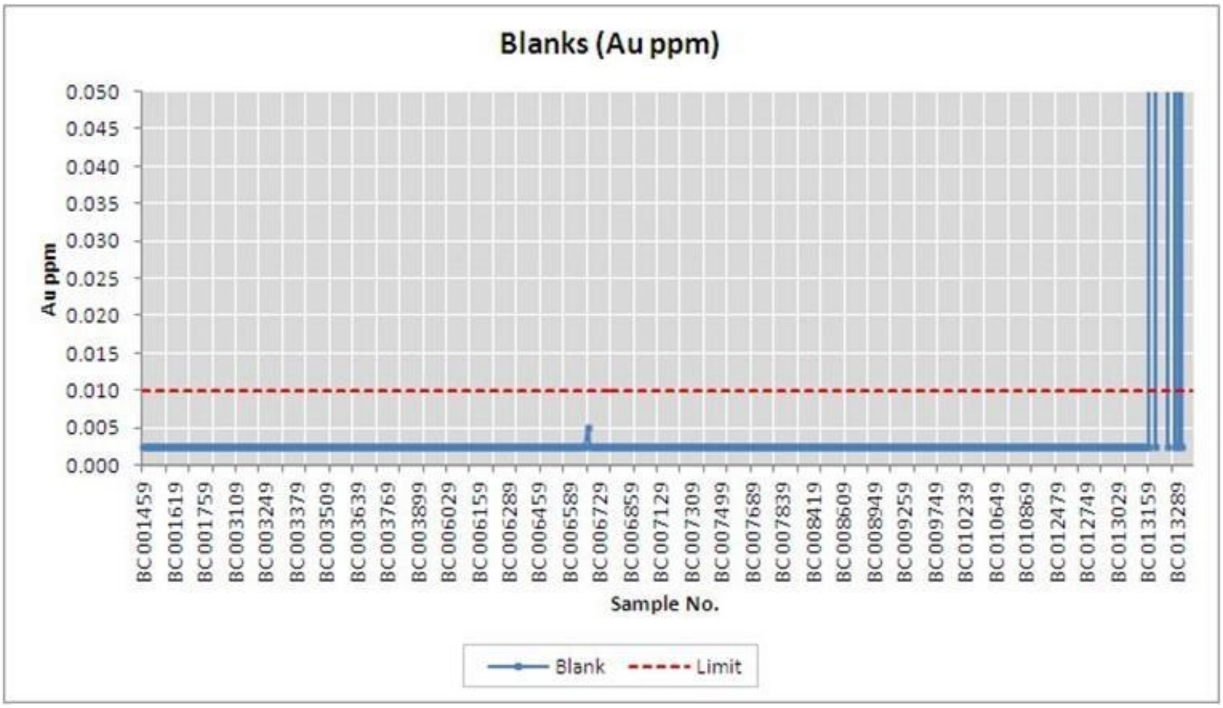


Figure 11-52: Blank samples (Au ppm) analyzed at McPhar Laboratory

Canatuan Mine Laboratory

The control charts for coarse blanks, as analyzed, at the Canatuan Mine Laboratory used a pass/fail criteria of 10% of the resource modeling cut-off grade (0.1 g/t Au). From the total number of coarse blanks analyzed, 80% are below the designated limit (0.01 g/t Au) while roughly 17% reached up to 0.03 g/t Au.

The silver grades of the coarse blanks were also plotted against a cut-off of 0.5 g/t Ag. It has been noted that 75% of the samples are below the assigned limit while the rest fall in the range of 0.5 g/t to 1.0 g/t Ag (Figure 11-46).

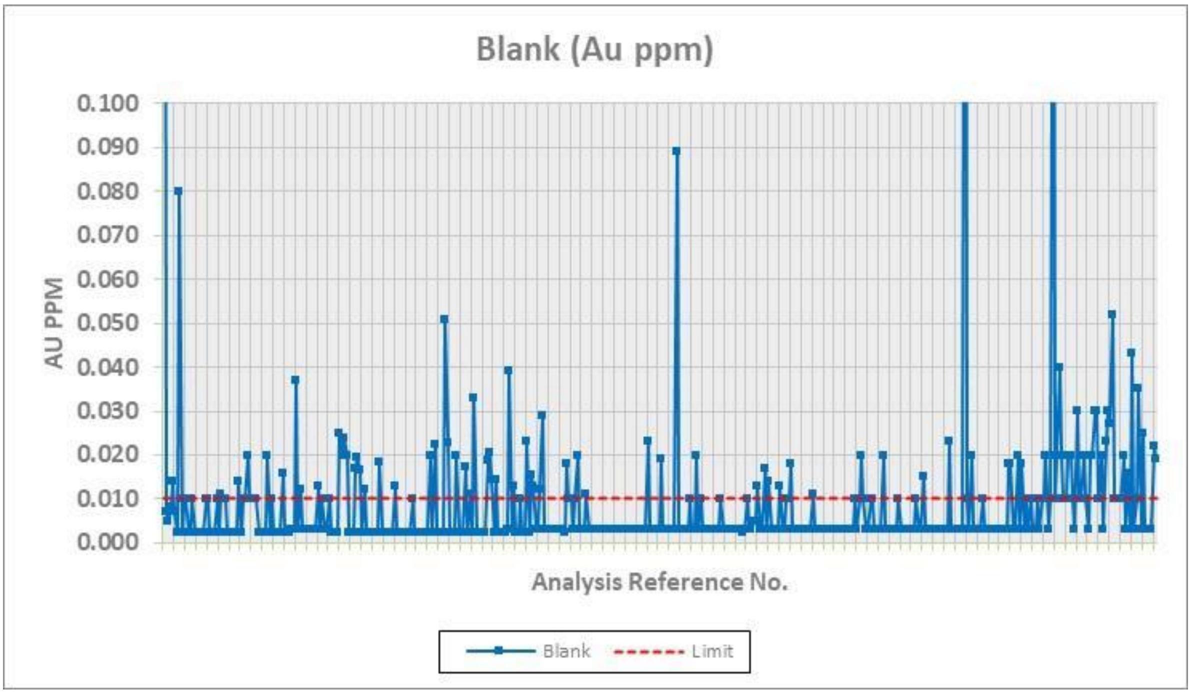


Figure 11-53: Blank samples (Au ppm) analyzed at Canatuan Mine Laboratory.

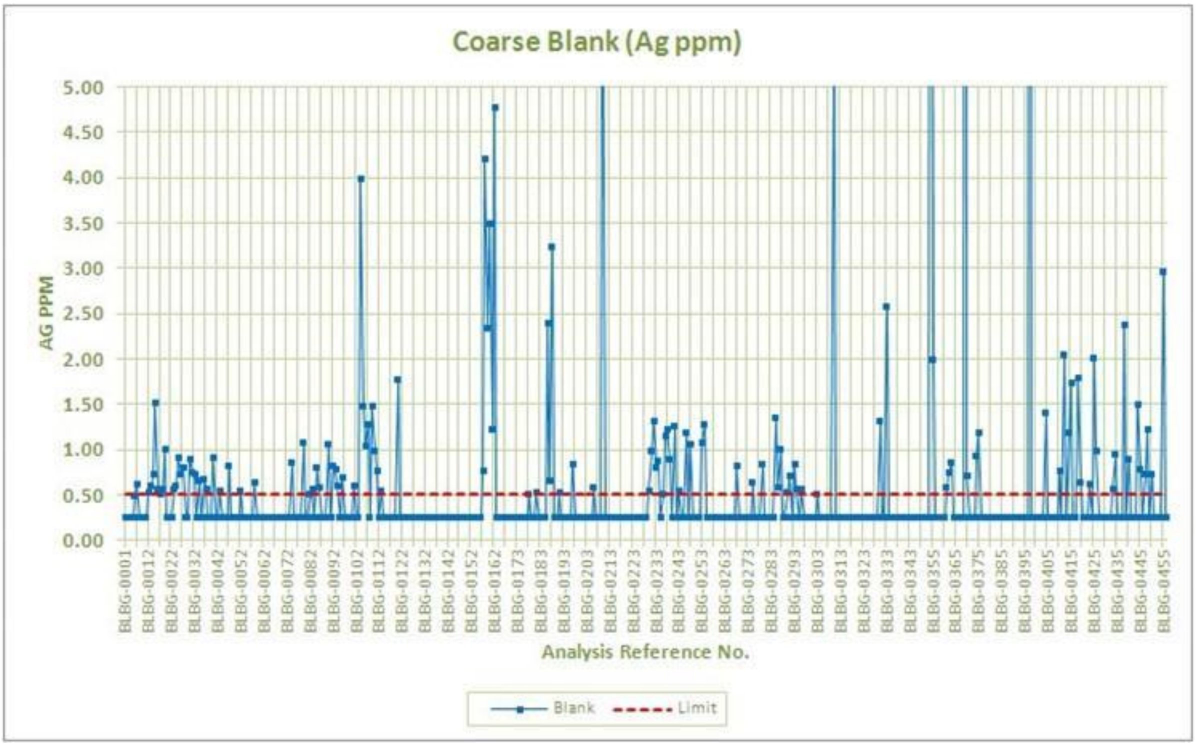


Figure 11-54: Blank samples (Ag ppm) analyzed at Canatuan Mine Laboratory.

11.5.4 Check Assay

Coarse and pulp rejects from the Canatuan Mine Laboratory were submitted to ALS Chemex in Australia for independent check assaying. Table 11-7 summarizes the number of samples dispatched to ALS Chemex in 2010 and 2011.

Table 11-7: Samples submitted to ALS Chemex for re-analysis

	2010	2011
Coarse Duplicate	120	289
Pulp Duplicate	80	148
Total no. of samples for re-assay	**200**	**437**

The relative % difference plot (Figure 11-47) of the coarse duplicates shows that ALS Chemex assays returned higher grades than the equivalent Canatuan Mine Laboratory assays. This is also evident from the percentile chart and scatter plot which may imply bias. Dispersion beyond the +20% passing criteria is notable at grades below 1.0 g/t Au. At intermediate and higher grades, results are mostly confined within the acceptable limit.

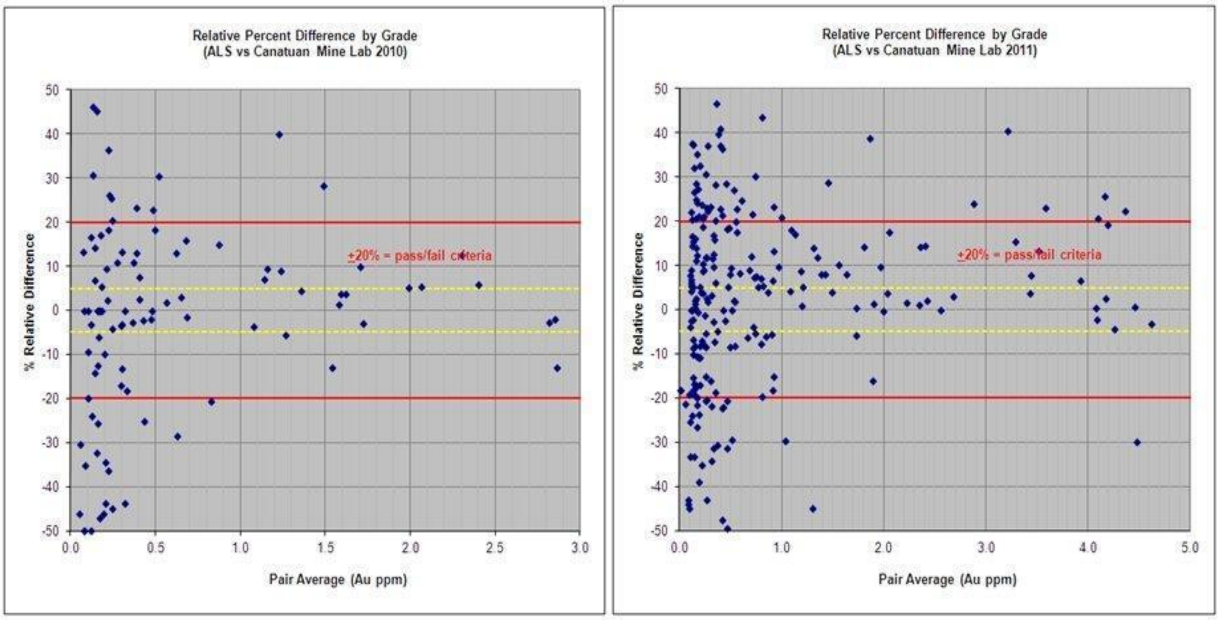


Figure 11-55: Relative difference plot of coarse duplicates (Au), ALS vs primary assays.

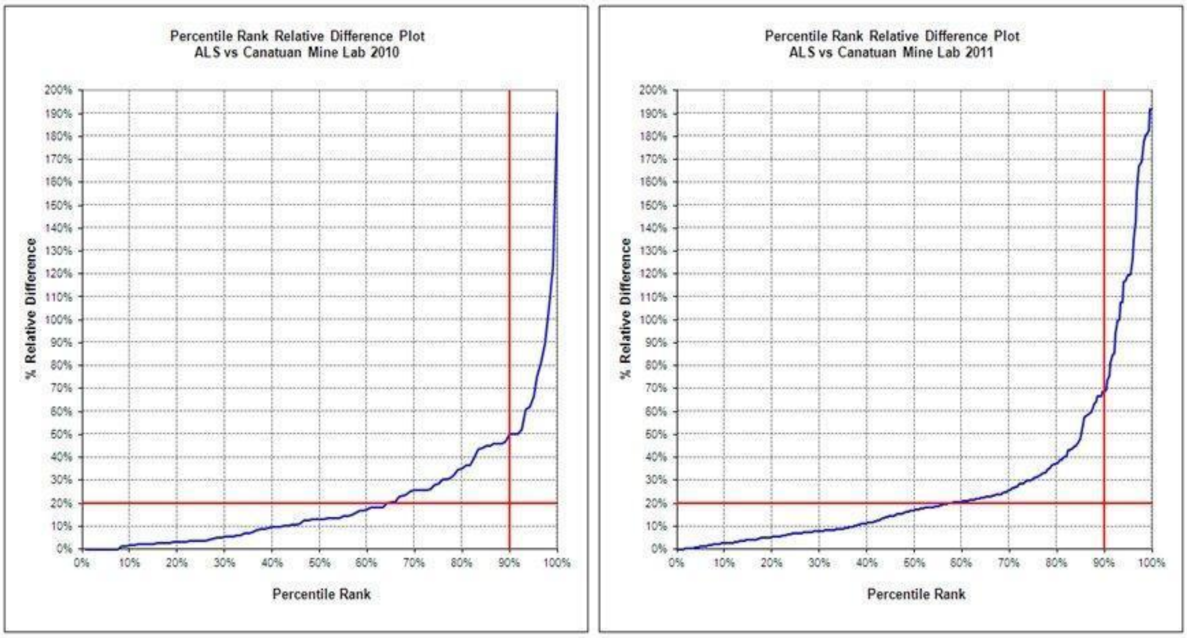


Figure 11-56: Percentile chart of coarse duplicates (Au), ALS vs primary assays.

Likewise, ALS Chemex assays returned higher grades than the Canatuan Mine Laboratory assays with the pulp samples. Dispersion beyond the passing ±10% criteria is apparent below 0.5 g/t Au.

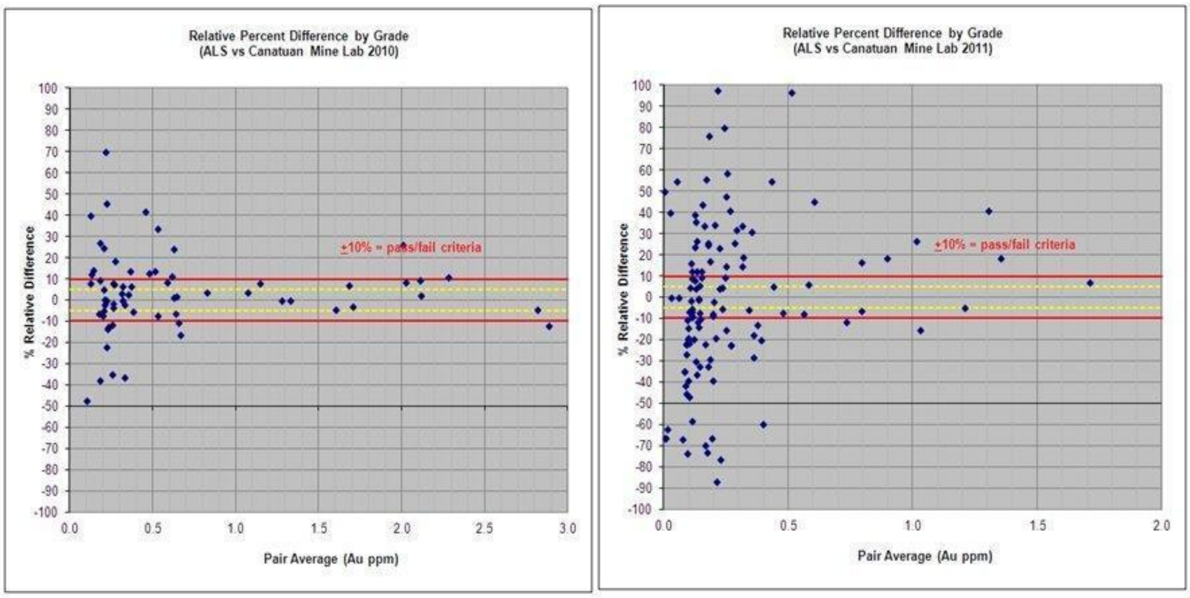


Figure 11-57: Relative difference plot of pulp duplicates (Au), ALS vs primary assays.

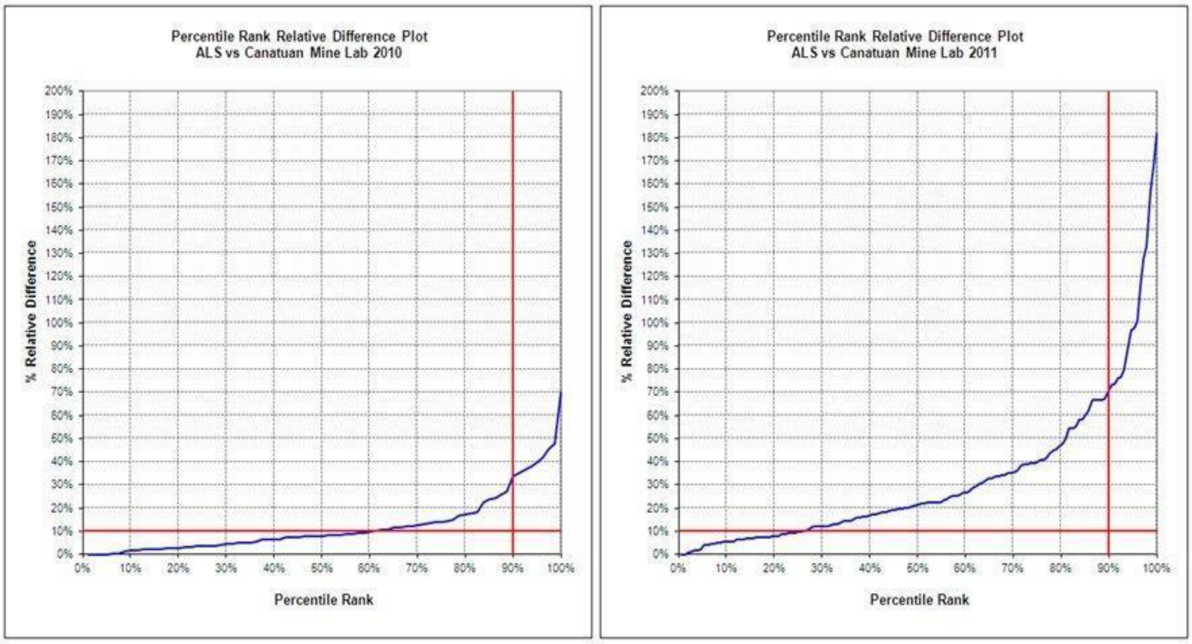


Figure 11-58: Relative difference plot of pulp duplicates (Au), ALS vs primary assays.

Pulp rejects of Balabag core samples retrieved from Agata Mine Laboratory in 2018 were submitted to Ostrea Laboratory in Australia for analysis. A total of 146 samples were dispatched to the said third party laboratory. A high bias of 10% was noted from samples analyzed in Agata as shown in Figure 11-51.

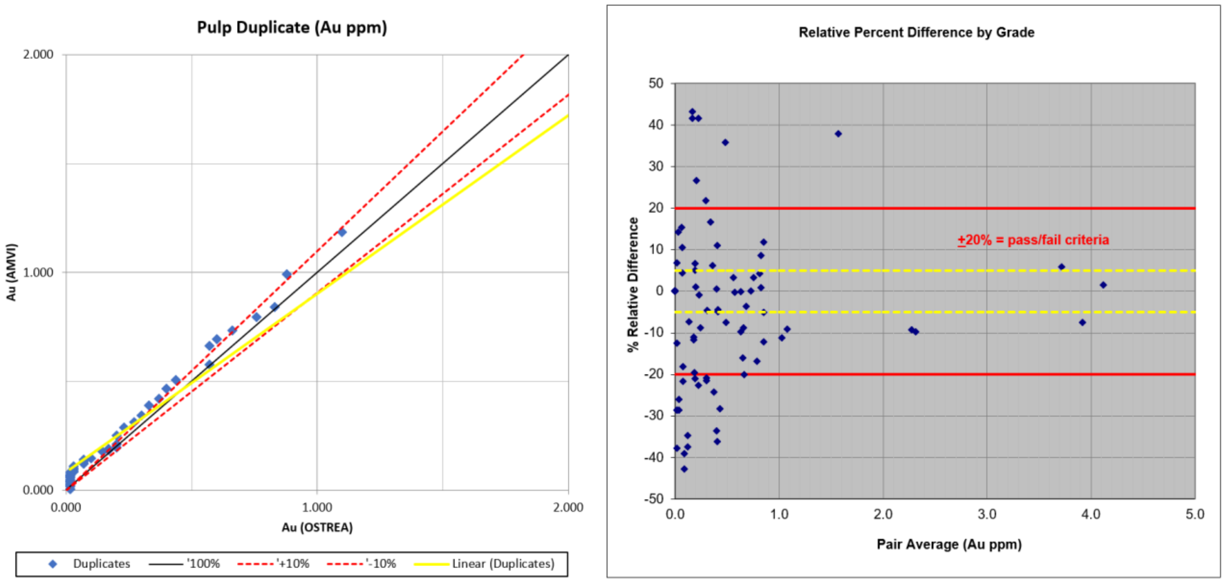


Figure 11-59: Percentile chart samples analyzed at Agata Lab vs Ostrea Lab.

12 DATA VERIFICATION

Verification of data serving as critical input for this report was limited to confirmation, by the author, of the existence, in good order, of:

a) The Balabag drill core remaining after cutting for assay;
b) Photographs of all drill core before cutting;
c) The associated assay results in both their paper and digital form and associated drill logs in their digital form;
d) Documentation of the quality control carried out on borehole sample assays;
e) Interpreted geological sections drawn on down hole borehole log and assay plots, which were reviewed in detail with project staff both in Manila and at Balabag,

12.1 Site Visit

The QP, Mr. Jaime Zafra, visited the site between January 16 and January 19, 2021, at which time he verified the property access and logistics, audited drilling and logging procedures as well as assaying procedures for both Au and Ag and visited both surface exposures of the deposit and the rehabilitated underground tunnels left by small-scale miners at the Balabag Hill area.

Mr. Zafra checked and examined some of the remaining half drill cores that were core logged, sampled and submitted for assaying and verified that the database given in both hard and digital copies, including the assay results, is true and correct and that the data coincides with the actual drill core interval and/or drillhole length.

The geology and interpreted selected drill hole sections, including assay results and their plotting, were further checked and discussed in detail between the QP and the TVIRD exploration staff. Selected drillholes at TVIRD's core house logging area were also further verified and inspected. Overall, the selected drillhole sections discussed agreed with the examined drillholes at the logging area.

The QP also visited TVIRD's fire assay laboratory located at the Balabag project site. Together with the copy of procedures for Au and Ag assaying, Mr. Zafra verified and interviewed the analytical chemist responsible for the laboratory to confirm the step-by-step methodology employed in the assaying procedure. The QP is satisfied with the current set-up of the fire assay laboratory, the QA/QC procedures implemented and that the assay results are accurate and can be used for the estimation of mineral resource.

12.2 Database Audit

Collar and Survey Data

Drill collar locations, in addition to the downhole survey table, were audited through examination in the three-dimensional GEMs software to ensure that collars were properly located and coincide with the surveyed topographic surface and to examine the changes from one survey to the next in all holes for both azimuth and dip. No anomalies were noted by the QP.

Assay Data

A check was performed between the gold and silver values in the GEMs database and values on the assay certificates for assays from within the resource solids for possible gaps, non-numeric assay values, negative numbers and duplicates. Assays from the years 2018 to 2020 were validated by comparing the database values to certificates obtained directly from the Balabag analytical laboratory. Assays from certificates representing selected samples from each year were evaluated. No discrepancies were found.

The QP is satisfied that all the above currently exist in a form readily available for inspection, either in TVIRD's office in Manila or at its Balabag site office in Zamboanga, and that they are of a quality that supports the accurate estimation of project mineral resources using the methods described in this report.

13 MINERAL PROCESSING AND METALLURGICAL TESTING

13.1 Nature and Extent of Testing and Analytical Procedures

No new metallurgical tests have been conducted related to this resource update. It is anticipated that the mineralogy and metallurgical characteristics will not significantly differ from those identified following earlier drilling campaigns because of their proximity within the targeted resource.

13.2 Basis of Assumptions Regarding Recovery Estimates

Recoveries of 90% for gold and 95% for silver were assumed to initially determine whether the mineralization is economically extractable. These are consistent with the recoveries achieved by cyanidation of similar high silver gold ores and recoveries achieved from the initial internal scoping studies.

13.3 Representativeness of Samples

No new metallurgical tests were conducted related to the resource update.

13.4 Deleterious Elements for Extraction

No minerals detrimental to processing were identified other than trace amounts of As/Sb - bearing minerals. It is anticipated that these deleterious elements are not present in significant amounts that will affect economic extraction of the mineral resource.

14 MINERAL RESOURCE ESTIMATES

The Mineral Resource Estimate for the Balabag Gold and Silver Project was completed using exploration drillhole data, constrained by geologic vein boundaries with an Inverse Distance Weighted ("**ID**") algorithm. The metals of interest at Balabag are gold and silver.

The Mineral Resource contained within this report has been classified under the categories of Measured, Indicated and Inferred in accordance with standards as defined by the 2019 CIM Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines. Classification of the resource reflects the relative confidence of the grade estimates.

14.1 Data Set

As of December 2020, the Balabag Project exploration database includes a total of 382 diamond drillholes with a cumulative meterage of 41,161.60 meters.

From 2005 to 2013, 268 drillholes with an overall meterage of 31,945 meters were drilled and used in prior resource estimations. As exploration drilling resumed in 2018, Phase 1 drilling was initiated to further infill the Lalab and Miswi targets and included 12 holes drilled with a total meterage of 1,068.10 meters. A further 15 drillholes summing up to 1,211.95 meters were completed in Phase 2 drilling in 2019 while the Phase 3 drilling program completed in 2020 added an additional 24 drillholes with a total meterage of 1,859.45 meters. This report also includes the most recently completed Phase 4 drilling program that included 35 drillholes with a total meterage of 2,866.50 meters and was completed in December 2020.

Drillholes intended for sterilization and geotechnical drilling, which are mostly located outside the target area, were excluded from the resource modeling process. Drillhole data from Templar Gold N.L., which included five surface boreholes of 593.20 meters, was not considered in the interpolation of grades. The exclusion of Templar Gold N.L. drillhole assay data is due to lack of quality control reports to support the validity of the grades of the core samples. However, lithologic logs were considered in the geological interpretations.

The drilling data includes downhole survey information, taken at 50-meter increments from the collar. Other datasets include specific gravity measurements; assay results for quality control samples (standard, blank, duplicate and check samples); Rock Quality Designation ("**RQD**") measurements; lithological logs; gold and silver assays of core samples as well as results from multi-element analysis.

Grab, chip and channel samples from outcrops and tunnels were also collated and used in the delineation of the mineralized zones together with surface and tunnel mapping information.

14.2 Exploratory Data Analysis

The Balabag Project database is being managed by TVIRD's in-house Resource Geologist and GIS/Database Specialist. Raw data from the field is encoded and compiled in MS Excel format while the main dataset used in resource modeling is updated and organized using 3D modeling software, GEMS 6.8.2.

The Database Specialist ensures the accuracy of data prior and during compilation. The encoded information is verified against the actual field data on a regular basis. The validated data is submitted to the Resource Geologist to update the main database organized in the GEMS 6.8.2 software. This software has a data validation tool used to further review the datasets. Exploration data is managed in a central database and data management protocols are followed to eliminate redundancy and to maintain integrity and accuracy of stored information.

During the geological interpretation process, gold and silver grades were plotted against the lithologic logs in vertical sections. Field geologists reviewed each interval to make sure grades and vein interpretations were consistent. Anomalous intervals were verified along with the actual core samples or by visually reviewing the core photos.

Analytical results for quality control materials were monitored and verified along with the bulk of the data collected. Routine data verification procedures involved checking outliers and abnormal values in duplicates with the use of graphs and scatter diagrams.

14.2.1 Geological Domains

Five mineralized rock units were established in the Balabag Project identified as: BX1, BX2, BX3, QSW and QSX1. The “BX” stands for hydrothermal breccia while the succeeding number denotes the sequence of deposition. Quartz stockworks that are hosted by wall rock are under the “QSW” domain whereas quartz stockworks that are hosted by BX1 are designated as QSX1 domain.

- BX1 is mostly silicified breccia with volcanic breccia clasts cemented by grey quartz with crisscross hairline-mm white-translucent quartz stockwork. Clasts are normally altered to silicification and argillized, and also appear in irregular bodies.
- BX2 displays overprinting of typical epithermal textures in one body. Clasts consist of wallrock and VNQ-VNB matrix or cement material of the ore. Ginguro texture is also common in BX2 and often reflects high Au grades.
- BX3 recorded the highest and consistent Au grade in the model. Breccia clasts here are not only the altered and mineralized wallrock but also the Au-bearing quartz vein itself. Ginguro texture is palpably substantial and so reflects a much higher Au grade than BX2. This type of breccia also appears in irregular bodies but exhibits grade uniformity. Sulphide minerals are notable in this rock type.
- QSX1 covers quartz stockworks which occur in between mineralized veins, particularly associated with BX1.
- QSW are the typical stockworks found in the deposit.

BX2 and stockworks have been observed in the main vein systems - Tinago, Miswi and Lalab. BX1 and BX3 are notable along the Lalab and Unao-Unao trend. It was observed that the mineralized stockworks are common along structures and true veins.

The vein interpretation was based mainly on lithological logs of drill core samples. Vein textures, mineral assemblages and wallrock alteration were considered in the rock classification.

The three-dimensional wireframe of the lithological domains was generated by modeling the vein interpretations plotted in each cross section at 25 meter-intervals. Geological solid models (Figure 14-1) were checked for triangulation errors using the modeling software, GEMS.

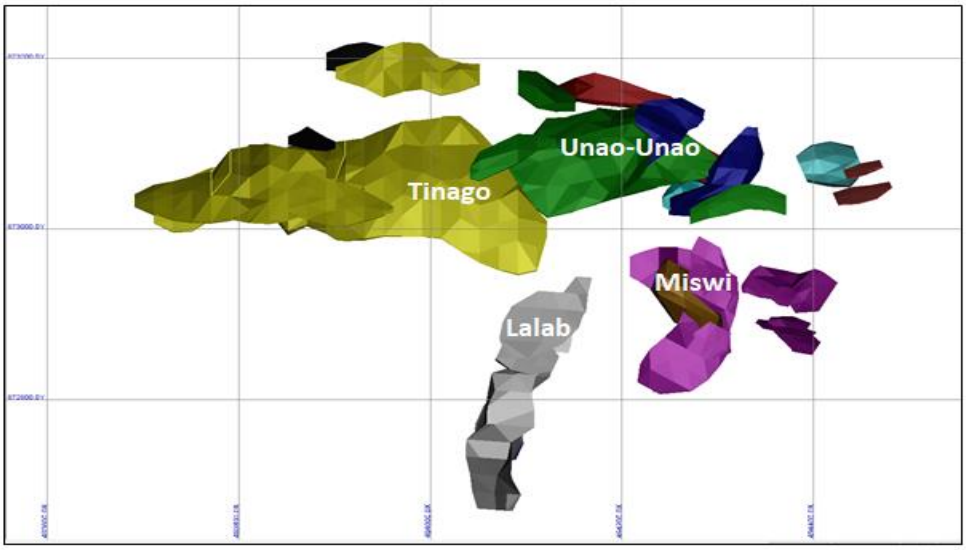


Figure 14-1: Three-dimensional representation of mineralized bodies (plan view).

Geological domains were validated by running basic statistics with the intersected drillhole sample points and by visual check of the lithologic logs and assay relative to the geologic interpretation in each cross section. This statistical approach has included analysis on mean, mode, median and distribution of grades in each domain.

To further constrain the veins, a nominal cut-off grade of 0.2 g/t Au was used as a guide in delineating the trend of mineralization. BX3, BX3 and QSW were found to carry gold and silver grades, so these were considered in the block model domaining process.

The BX2 domain covers the majority of the deposit while BX3 is mostly observed in the eastern portion of Tinago and the Unao-Unao area. The mineralized stockworks are found in between layers of main vein systems. Some thin layers of BX1 and QSX1 were observed to occur within BX2. To simplify the domaining process, these materials were already lumped as part of BX2 in the final domains.

Three wireframes were used to generate blocks in the resource model. Each domain was assigned a numerical code to facilitate identification in the block modeling process. Table 14-1 presents the rock codes used in the block model.

Table 14-1: Rock code assignment for each domain / rock type

Domain / Rock Type	Rock Code
BX2	12
BX3	13
QSW	14

14.2.2 Outlier Values

A total of 24,735 samples were extracted from the drillhole database and used in the resource model data analysis. Grade capping is the practice for replacing any statistical outliers with a maximum value from the assumed sample distribution. This is done statistically to better understand the true mean of the sample population. The estimation of highly skewed grade distribution can be sensitive to the presence of even a few extreme values.

Table 14-2: Basic statistics of gold, silver assays and capped values

Variable	Au g/t	Au g/t (capped)	Ag g/t	Ag g/t (capped)
Number of samples	24,735.00	24,735.00	24,725.00	24,725.00
Minimum value	0.00	0.00	0.00	0.00
Maximum value	268.69	30.00	5,234.30	500.00
Mean	**0.31**	**0.28**	**9.33**	**7.96**
Median	**0.03**	**0.03**	**0.93**	**0.93**
Variance	6.52	2.47	5,132.58	1,533.53
Standard Deviation	2.55	1.57	71.64	39.16
Coefficient of variation	8.32	5.53	7.68	4.92
Skewness	55.30	12.27	31.10	9.55
Kurtosis	5,138.60	191.08	1,589.69	105.79
5.0 Percentile	0.00	0.00	0.06	0.06
10.0 Percentile	0.00	0.00	0.25	0.25
15.0 Percentile	0.01	0.01	0.25	0.25
20.0 Percentile	0.01	0.01	0.25	0.25
25.0 Percentile	0.01	0.01	0.25	0.25
30.0 Percentile	0.01	0.01	0.25	0.25
35.0 Percentile	0.02	0.02	0.50	0.50
40.0 Percentile	0.02	0.02	0.62	0.62
45.0 Percentile	0.02	0.02	0.78	0.78
50.0 Percentile (median)	0.03	0.03	0.93	0.93
55.0 Percentile	0.03	0.03	1.14	1.14
60.0 Percentile	0.04	0.04	1.39	1.39
65.0 Percentile	0.04	0.04	1.70	1.70
70.0 Percentile	0.05	0.05	2.14	2.14
75.0 Percentile	0.06	0.06	2.75	2.75
80.0 Percentile	0.09	0.09	3.67	3.67
85.0 Percentile	0.14	0.14	5.30	5.30
90.0 Percentile	0.28	0.28	9.02	9.02
95.0 Percentile	0.92	0.92	23.44	23.44
97.5 Percentile	2.46	2.46	58.92	58.92

The highest gold assay reported among the samples is at 286.69 g/t Au while 5,234.3 g/t Ag was the highest reported for silver. Cumulative frequency plots were used to define the capping of high-grade outliers.

Gold and silver grades were capped at 30 g/t and 500 g/t, respectively. A total of 23 samples were capped at 30 g/t Au. The 500 g/t Ag top-cut, on the other hand, was applied on 66 samples.

Table 14-2 shows the comparison of gold and silver grades relative to the capped values.

From a calculated mean of 0.31 g/t Au, the grade was reduced to 0.28 g/t Au after applying the capped value. Similarly, the average silver grade was reduced from 9.33 g/t Ag to 7.96 g/t Ag after capping.

14.2.3 Sample Support and Compositing

Basic statistics on gold and interval lengths in the assay table were carried out to determine the optimum length for compositing. From the plot shown in Figure 14-2, one meter (1 m) is the optimum composite length for the core samples. Since the sampling was done at every one-meter interval on average, no compositing in the assay data was necessary.

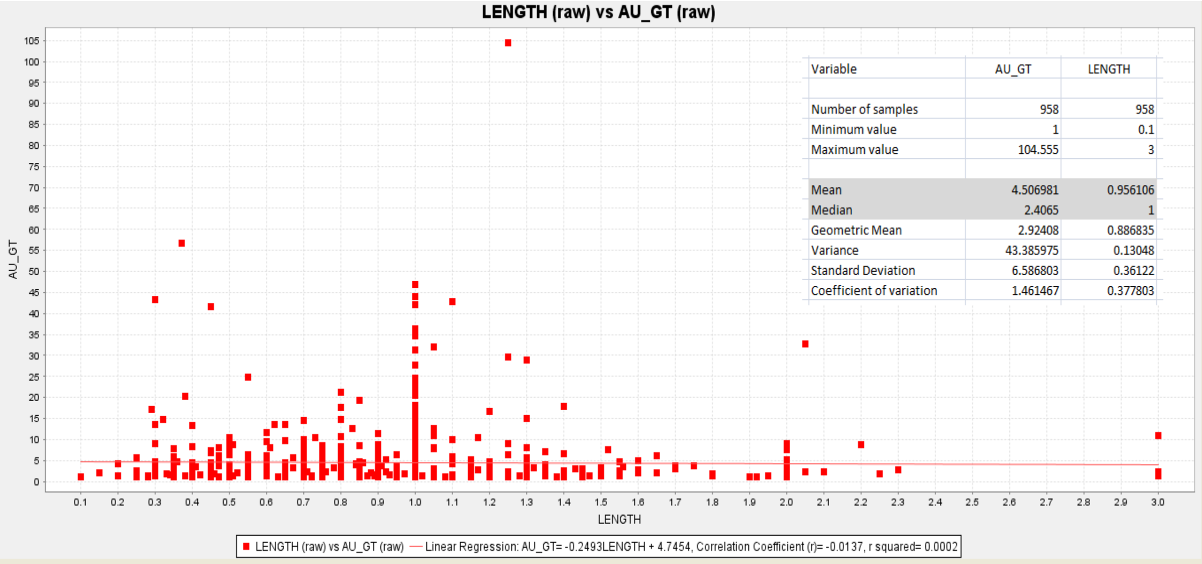


Figure 14-2: Interval length vs. gold grade for determination of optimum composite length.

Summary statistics and histograms for the key variables gold and silver were generated to further validate the rock domains.

Statistical analysis in Figure 14-3 shows that both gold and silver histograms are strongly log-normal in their distributions in both massive veins and stockworks. The scatter plot (Figure 14-4) also shows correlation between gold and silver.

Histograms for the mineralized domains are presented in Figure 14-5, Figure 14-6 and Figure 14-7. The corresponding gold and silver statistics are also provided next to each chart.

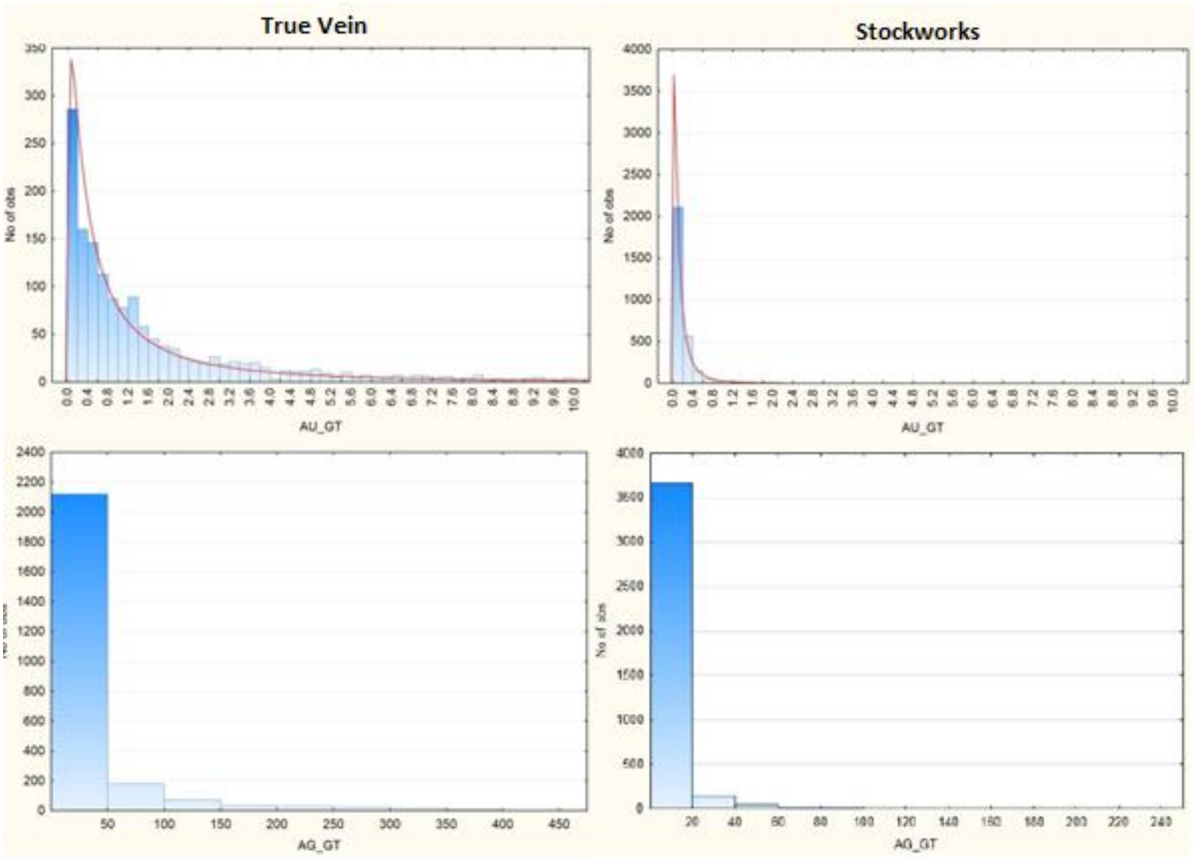


Figure 14-3: Gold and silver histograms for true veins and stockworks.

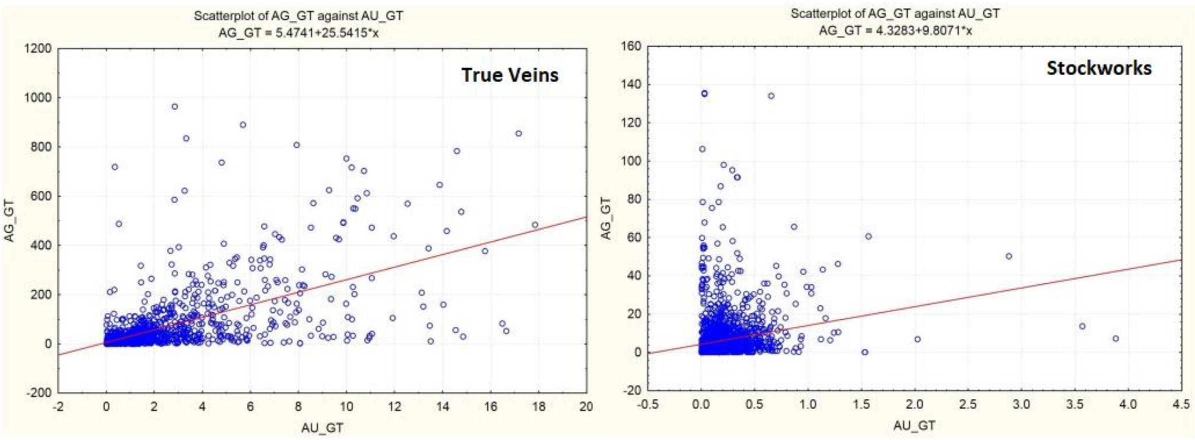
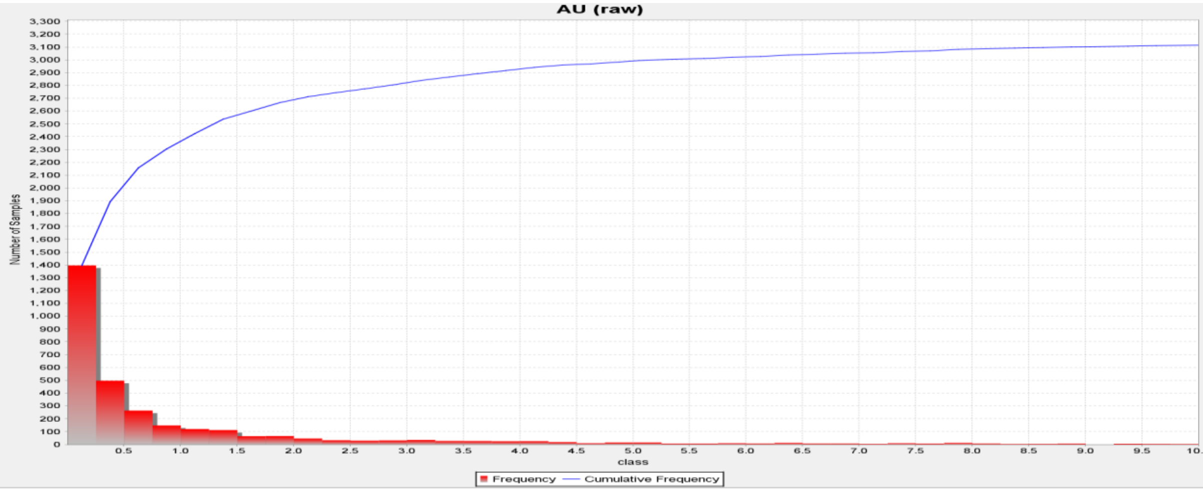


Figure 14-4: Scatter plot of gold vs silver.



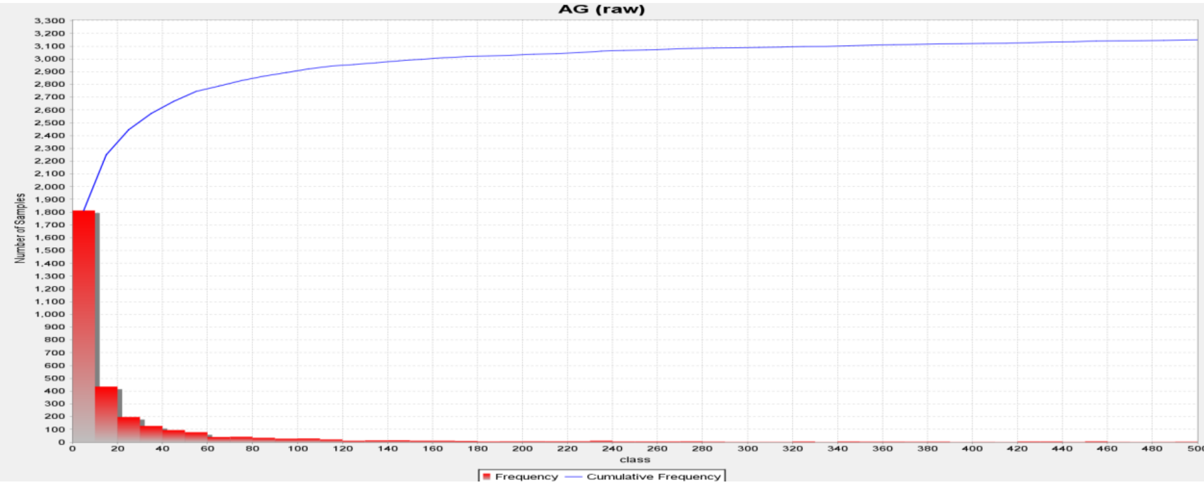
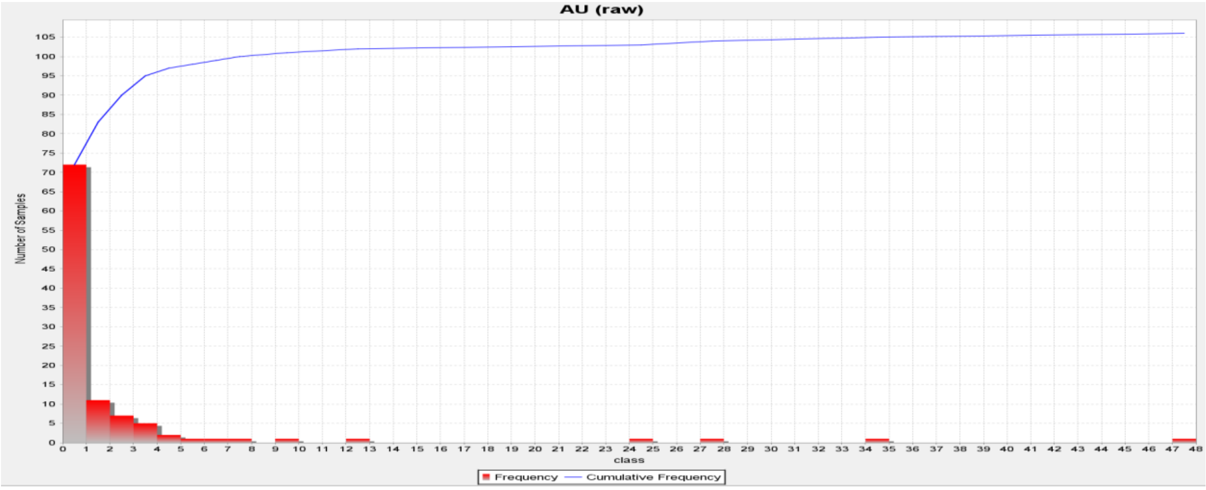


Figure 14-5: Gold and silver histogram for BX2

Table 14-3: Basic statistics for BX2

Variable	AU	AG
Number of samples	3207	3202
Minimum value	0.003000	0.000000
Maximum value	268.690002	5234.299805
	Ungrouped Data	Ungrouped Data
Mean	1.617001	47.476055
Median	0.320000	7.390000
Geometric Mean	0.343279	Not Calculated
Variance	40.252803	29077.304296
Standard Deviation	6.344510	170.520686
Coefficient of variation	3.923628	3.591720
Moment 1 About Arithmetic Mean	0.000000	0.000000
Moment 2 About Arithmetic Mean	40.252803	29077.304296
Moment 3 About Arithmetic Mean	6666.955592	68543592.709239
Moment 4 About Arithmetic Mean	1637610.621924	272829813744.930500
Skewness	26.105581	13.824061
Kurtosis	1010.690979	322.688541



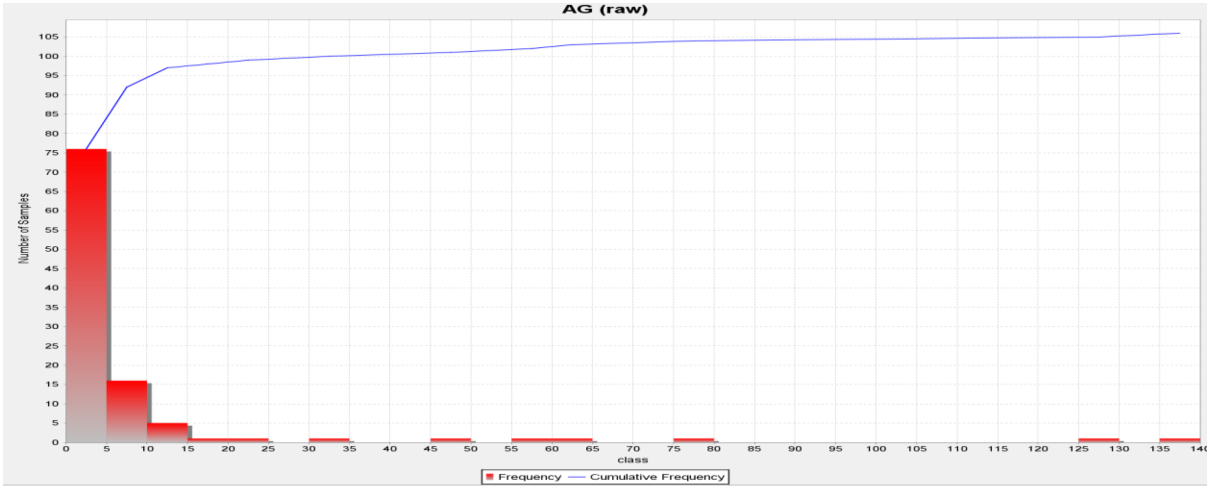


Figure 14-6: Gold and silver histogram for BX3.

Table 14-4: Basic statistics for BX3

Variable	AU	AG
Number of samples	106	106
Minimum value	0.000000	0.000000
Maximum value	47.639999	139.600006
	Ungrouped Data	Ungrouped Data
Mean	2.408962	7.866698
Median	0.443500	1.420000
Geometric Mean	Not Calculated	Not Calculated
Variance	45.019969	458.680141
Standard Deviation	6.709692	21.416819
Coefficient of variation	2.785304	2.722466
Moment 1 About Arithmetic Mean	0.000000	0.000000
Moment 2 About Arithmetic Mean	45.019969	458.680141
Moment 3 About Arithmetic Mean	1452.264050	44561.684836
Moment 4 About Arithmetic Mean	55932.978653	5218425.631297
Skewness	4.807705	4.536247
Kurtosis	27.596727	24.803880

Figure 14-7: Gold and silver histogram for QSW.

Table 14-5: Basic statistics for QSW

Variable	AU	AG
Number of samples	457	456
Minimum value	0.003000	0.000000
Maximum value	1.620000	98.099998
	Ungrouped Data	Ungrouped Data
Mean	0.232534	3.433070
Median	0.212000	1.655000
Geometric Mean	0.139167	Not Calculated
Variance	0.045609	41.933639
Standard Deviation	0.213561	6.475619
Coefficient of variation	0.918410	1.886247
Moment 1 About Arithmetic Mean	0.000000	0.000000
Moment 2 About Arithmetic Mean	0.045609	41.933639
Moment 3 About Arithmetic Mean	0.022664	2191.640133
Moment 4 About Arithmetic Mean	0.026439	184475.803000
Skewness	2.326848	8.070964
Kurtosis	12.710116	104.909374

14.2.4 Bulk Density

The average rock densities for each mineralized domain are presented in Table 14-6. Figures were based on the calculated average density of the core samples.

Table 14-6: Density factor for each domain / rock type

Domain / Rock Type	Density (g/cm^3)
BX2	2.4
BX3	2.6
QSW	2.5

The stockworks exhibit higher density than the true veins due to the presence of denser host rocks (i.e. andesite). Meanwhile, the true veins have been observed to be generally altered and brecciated in fractured zones. It is recognized that the density and hardness characteristics of ore-grade material will vary locally, primarily as a function of weathering and alteration. The density of BX3 is relatively higher due to the presence of sulphide minerals.

14.3 Topography

A digital terrain model ("**DTM**") has been generated from the survey data captured by the project surveyor. Total stations — Topcon GTS-229 and South NTS-325 — were used in conducting the ground survey. The map projection used in the Balabag Project is Philippine Transverse Mercator ("**PTM**") Zone 4. The latest update of the topography model was completed in October 2020.

14.4 Variography

A variography analysis was completed to establish the continuity of gold within the modeled veins. Variograms were generated to determine the presence of anisotropy for a given plane. The selection of the orientation of the plane was based on the geometry of the three-dimensional zone containing the gold data points.

Variography was analyzed using the GEMS 6.8.2 software. The continuity is established by analyzing variogram contour fans, in the horizontal, across-strike and dip planes to determine the direction of maximum continuity within each plane. The primary variogram was first calculated to determine the orientation of the major axis which has the lowest variance for the longest distance. The semi-major axis was then calculated based on the selected direction of the maximum continuity in the secondary variogram. The minor axis was automatically calculated based on the orientation of the semi-major axis.

The subsequent variograms defining maximum continuity along the strike of the vein were modeled with a spherical variogram. Three variograms were generated for domains BX2, BX3 and QSW. It was noted that gold grades are generally not continuous beyond 75 meters.

The resulting ranges were used as a guide in projecting solid interpretations and in generating the search ellipse for grade interpolation.

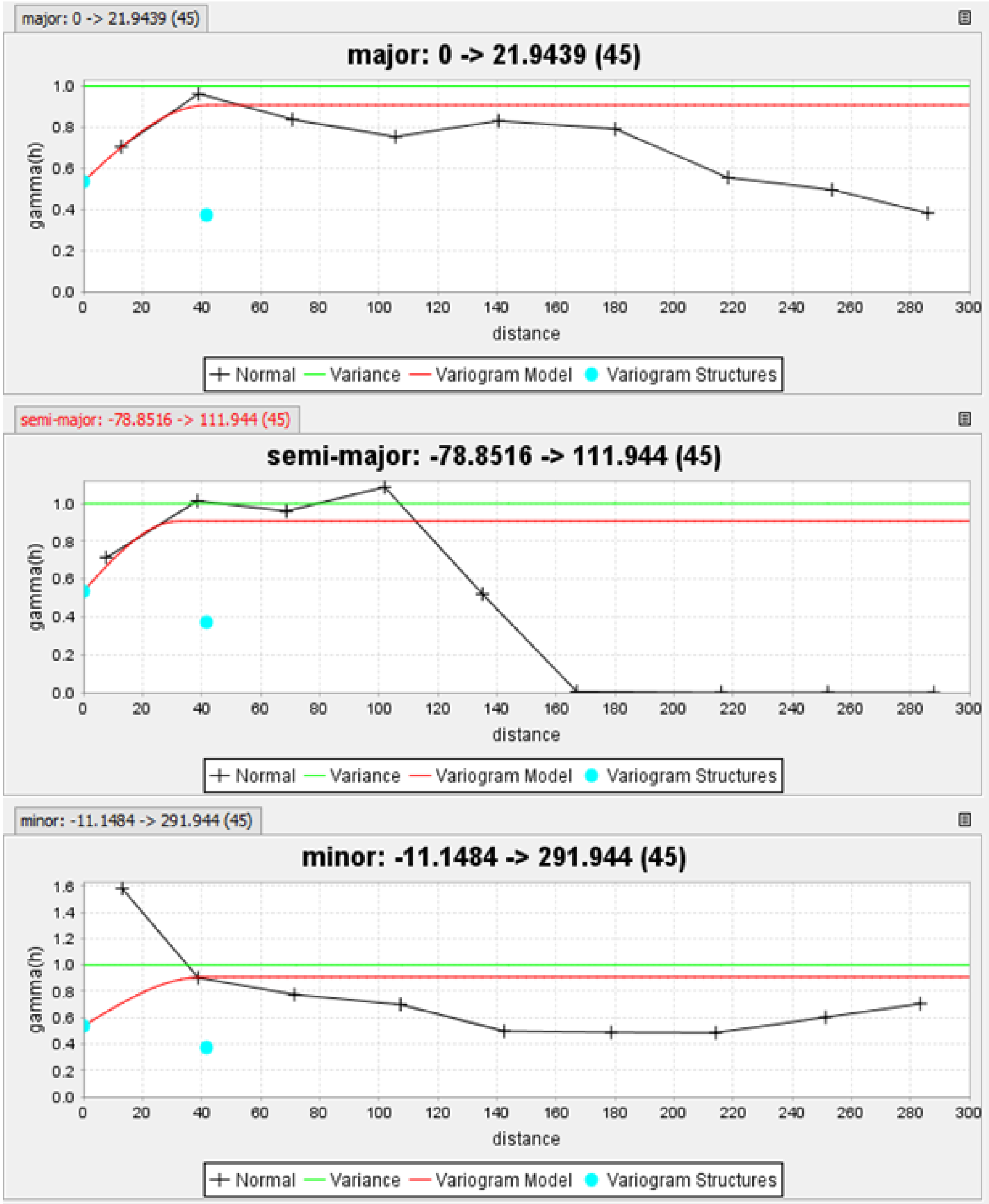


Figure 14-8: Variogram model for BX2.

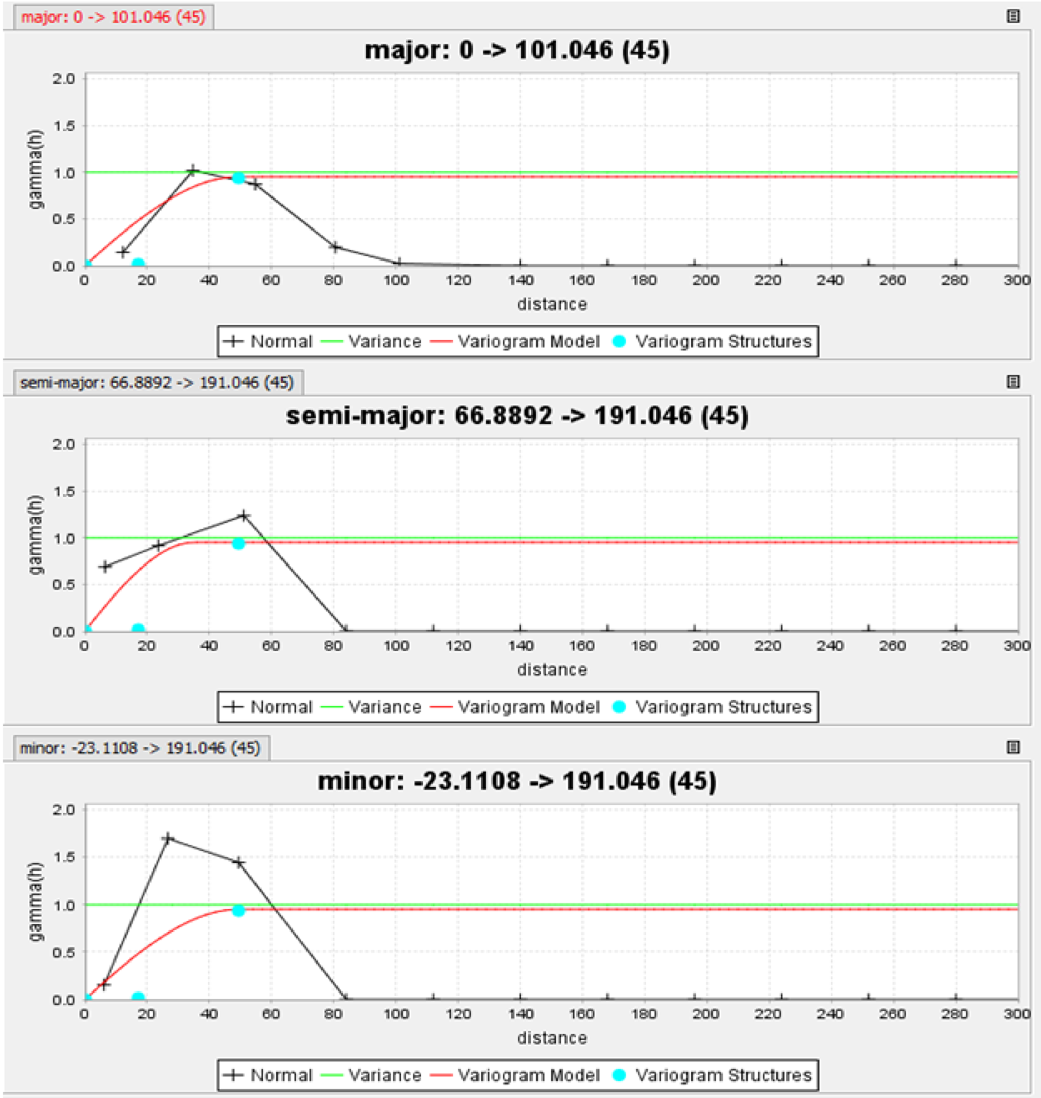


Figure 14-9: Variogram model for BX3.

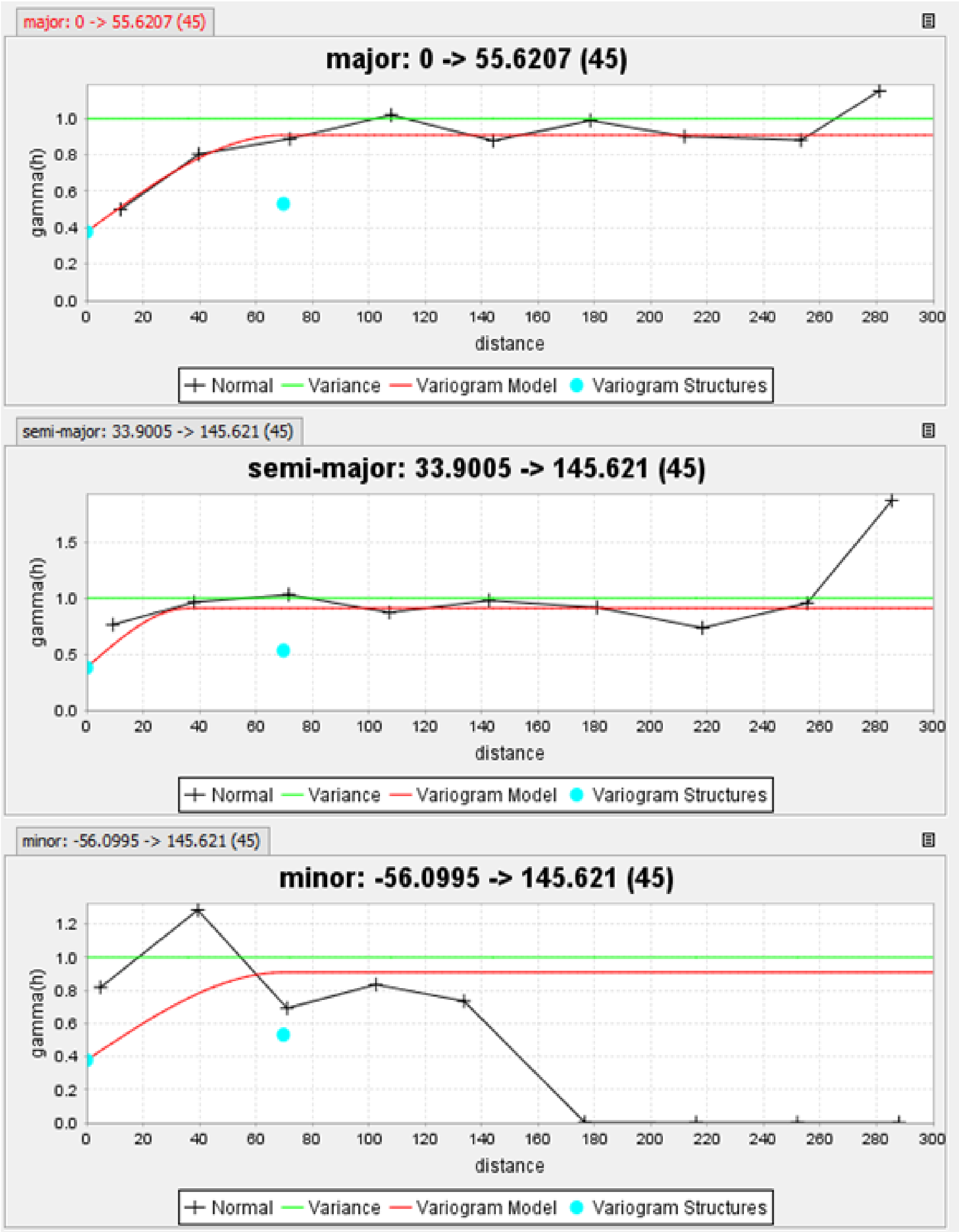


Figure 14-10: Variogram model for QSW.

14.5 Mineral Resource Block Model

The Balabag Mineral Resource was estimated using a conventional geostatistical block modeling approach constrained by mineralization wireframes. Geostatistical analysis, capping, variography and estimation were conducted on the in-situ gold and silver data.

A resource block model was generated using the software, GEMS 6.8.2, to represent the lithological and structural characteristics specific to the Balabag deposit. A block size of 5 meters x 2.5 meters x 2.5 meters was determined to be an appropriate size along strike and down dip, with consideration of the narrow vein nature of the deposit. Details of the block model such as origin (x, y, z coordinates), number of columns, rows and levels as well as block size are presented in Figure 14-11. The extent of the north-south oriented block model was based on the data limits of the drillholes and geological data.

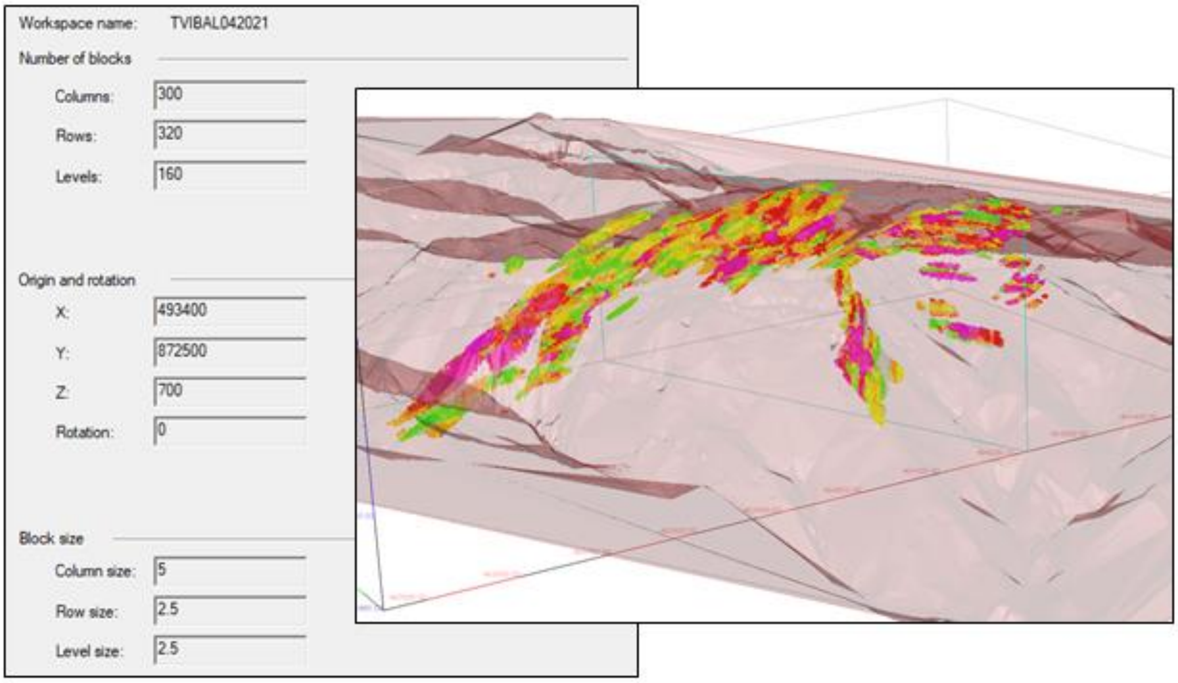


Figure 14-11: Block model details—origin and block size.

Given the erratic nature of gold and silver grades, and the varying geometry of the mineralized veins, the estimation method used was Inverse Distance Squared (“**ID^2**”). This method is preferred over ordinary kriging because the configuration of the veins vary per location and structures such as faults are apparent in the deposit, resulting to a number of discontinuous veins. The ID^2 method of estimation is a more practical approach to run grade interpolation for this project since it relies mainly on the neighboring samples.

Gold and silver grade interpolation was carried out per major vein location. Separate search ellipses were used for each general vein structure, following the strike of the deposit. The orientation of each search ellipse was based on the geological interpretation made on three major locations in the project area which include Tinago, Miswi and Lalab (Figure 14-12).

The dimension of the search ellipse was constrained to 30 meters in X and Y directions to prevent overestimation of grades.

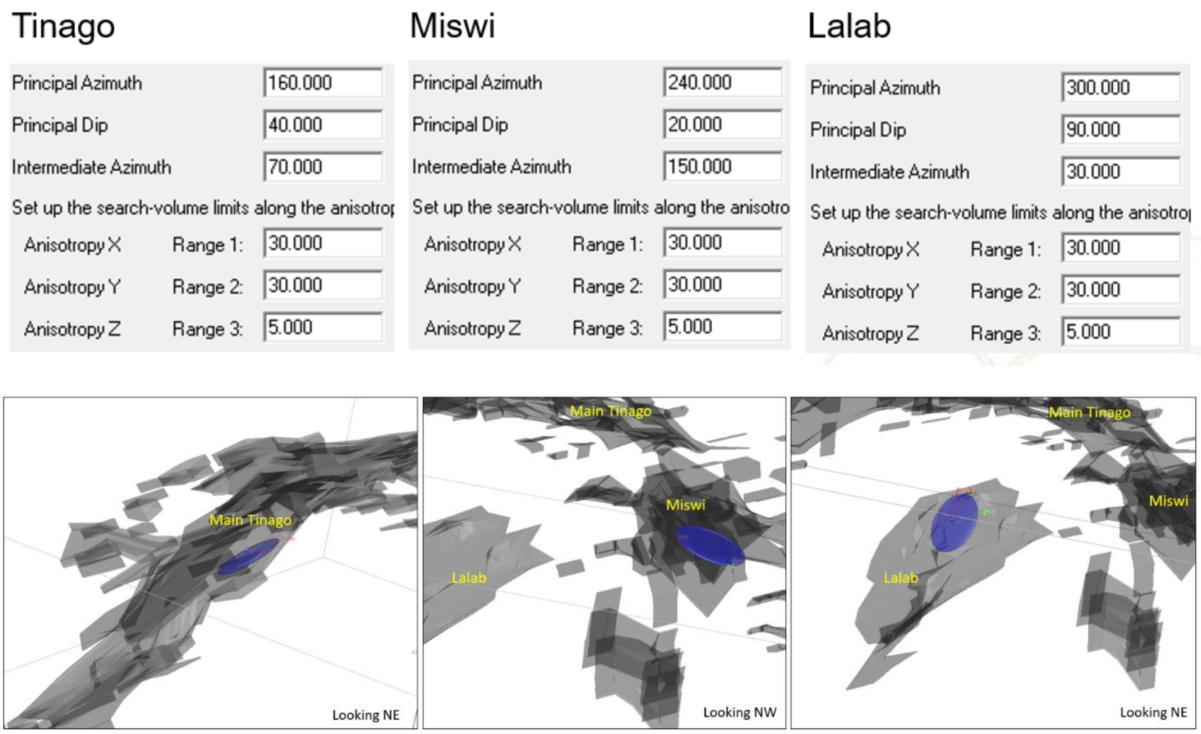


Figure 14-12: Details of search ellipse per vein group (location)

14.6 Resource Block Model Validation

The block model validation was undertaken to ensure the interpreted geological and grade characteristics have been correctly modelled and estimated.

The block model grade distribution has been visually validated comparing the drill hole composites with the estimated grade in the block model. A reference plan and example sections are shown below in Figure 14-13 to Figure 14-15, showing blocks located in the main Tinago zone and considered to be potentially mineable prospects due to proximity to surface. All figures display drill holes as lines colored by gold grade (legend displayed) and with blocks also colored with the same legend. The QP considers that the composite grades correlate well with the block model grades with no inconsistencies identified in plan or vertical section views.

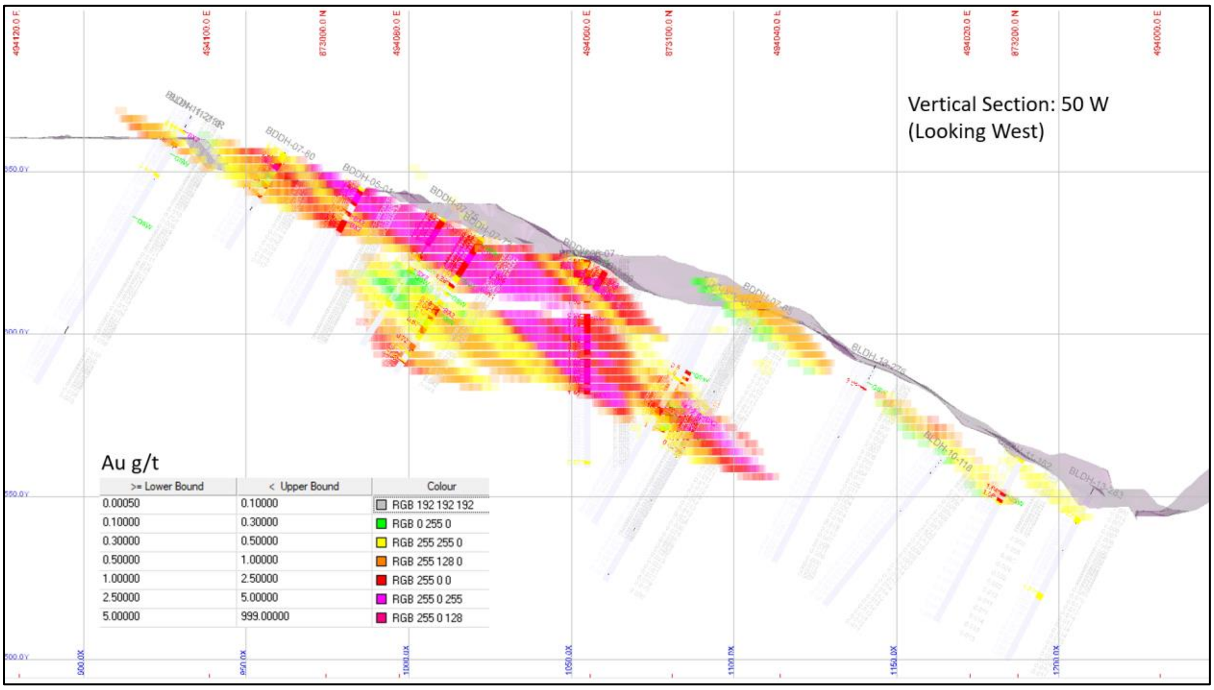


Figure 14-13: Block model section at 50W, looking West

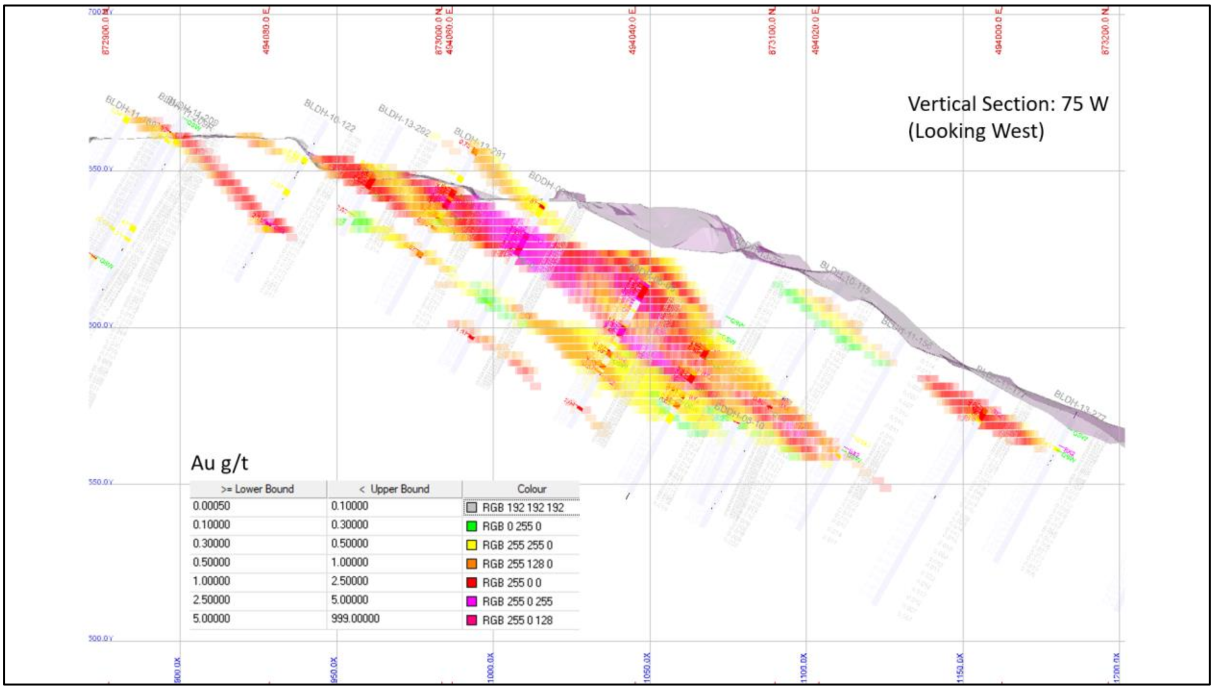


Figure 14-14: Block model section at 75W, looking West

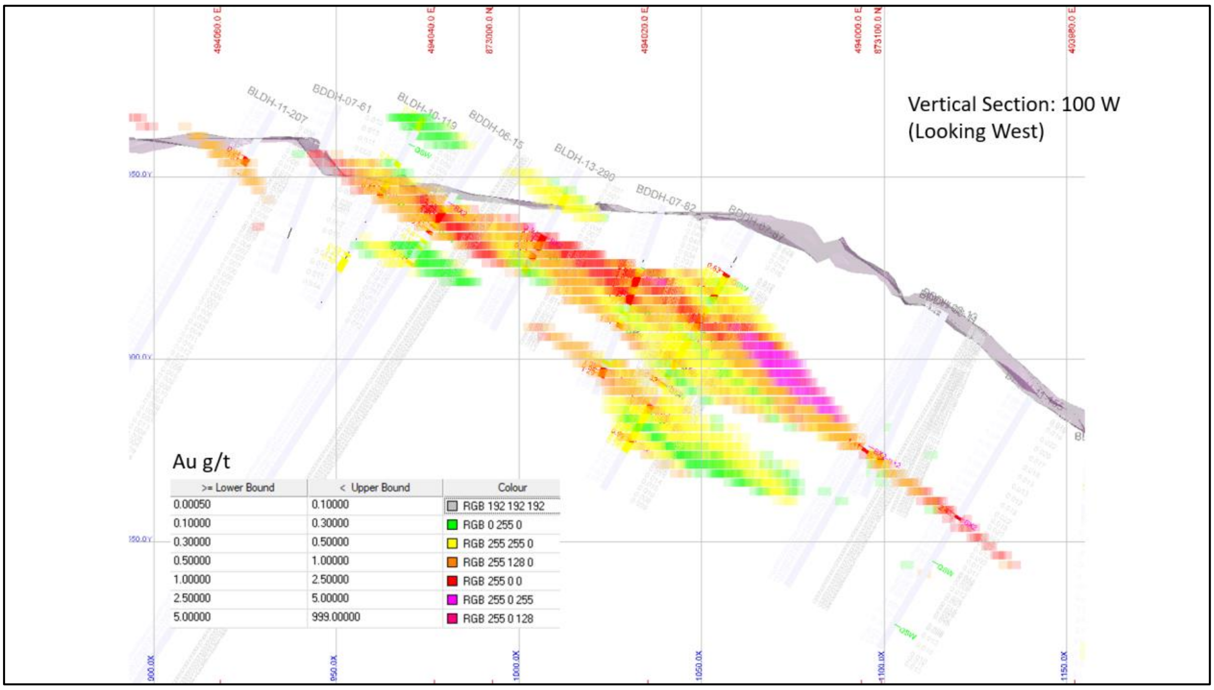


Figure 14-15: Block model section at 100W, looking West

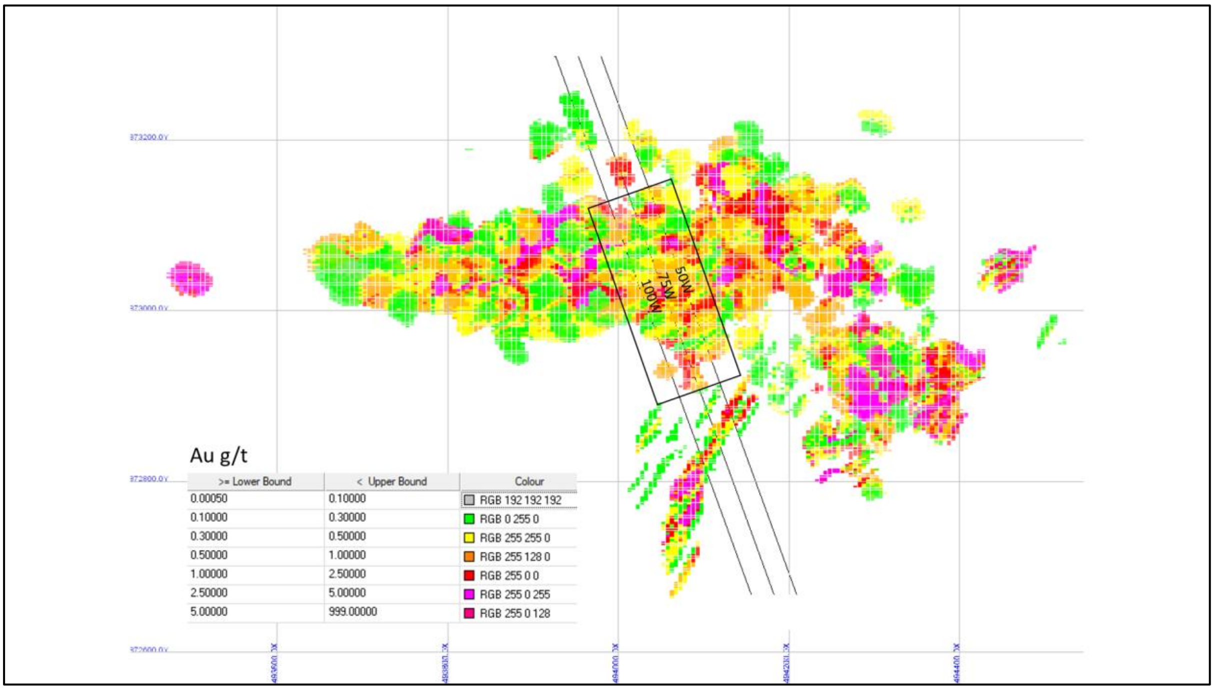


Figure 14-16: Plan map showing reference plane in main Tinago area

A comparison of gold grades between the block model and actual ground samples was made to further validate the resource model. Selected blocks from the model were located on the ground thru survey. Samples were collected from exposed zones and submitted to the Balabag analytical laboratory for assaying. The gold assays of the actual samples were found to be consistent with the block model data (lithology and gold grade).

The trend of gold average of actual samples per elevation relative to the block model data is presented in Figure 14-17.

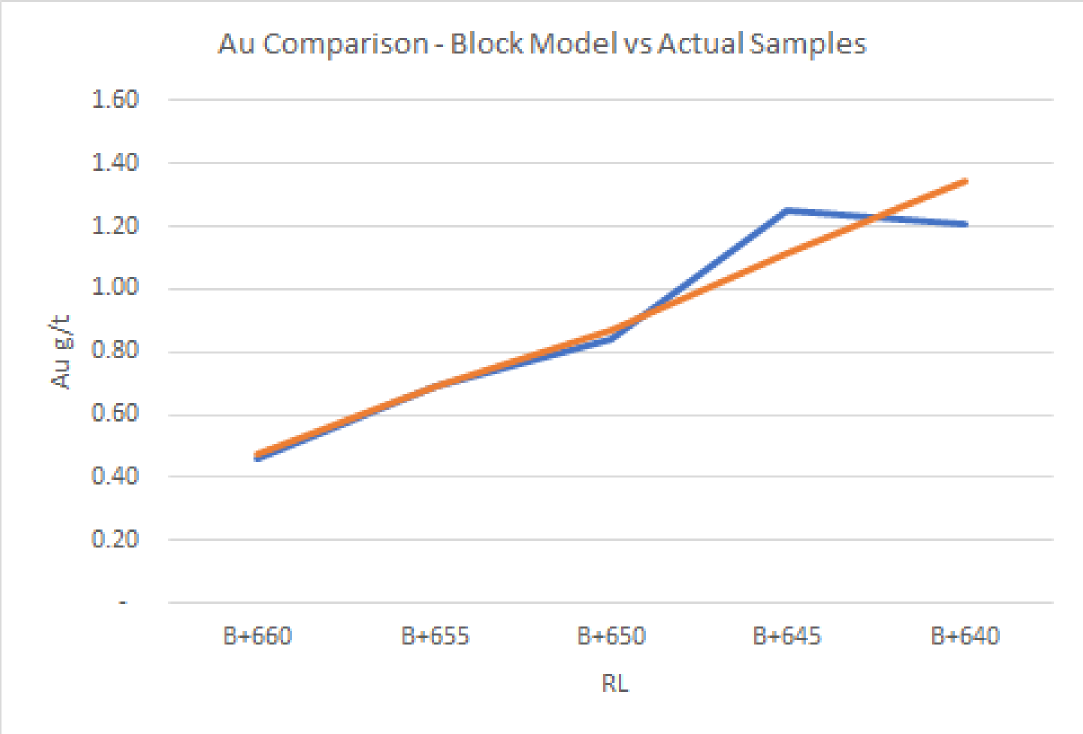


Figure 14-17: Block model gold grade versus actual samples per elevation

14.7 Mineral Resource Classification

Mineral resource categories used in this report are Measured, Indicated and Inferred. Several methods were used to determine the resource category. Blocks generated within 25 to 50 meter-drill-spacing were classified as Indicated Resource while blocks within a 25 meter-drill spacing were coded as Measured Resource.

The average drill spacing in the Balabag Hill is within 25-50 meters and therefore the majority of the resource blocks fall within the Measured and Indicated categories.

Meanwhile, Inferred blocks were generated in areas with significant gold intercepts, where more drilling is required to better define a resource category.

The distribution of Measured, Indicated and Inferred blocks is shown in Figure 14-18.

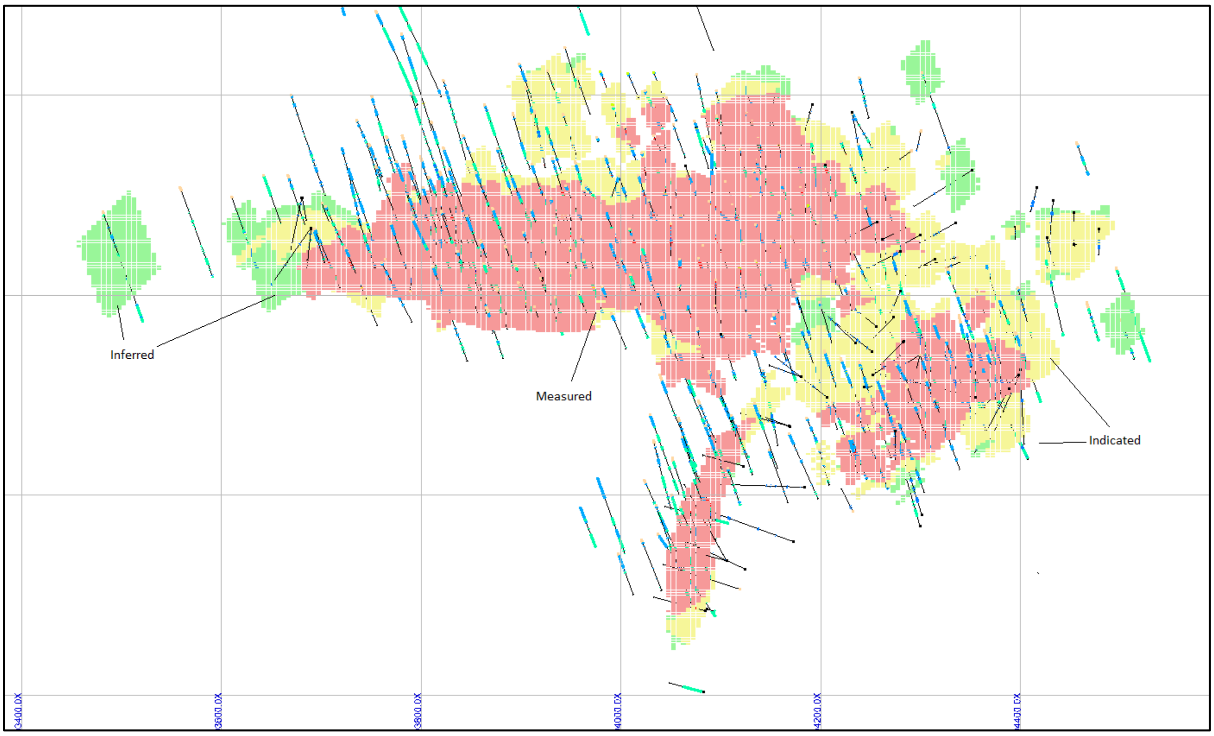


Figure 14-18:

Plan view showing the distribution of Measured, Indicated and Inferred Resource relative to drillholes.

	Measured
	Indicated
	Inferred

The following definitions were used as a guide in categorizing the blocks:

- ***Indicated Mineral Resource***
  An "Indicated Mineral Resource" is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics can be estimated with a level of confidence sufficient to allow the appropriate application of technical and economic parameters, to support mine planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings, and drillholes that are spaced closely enough for geological and grade continuity to be reasonably assumed.

- ***Measured Mineral Resource***
  A "Measured Mineral Resource" is that part of a Mineral Resource for which quantity, grade or quality, densities, shape, and physical characteristics are so well established that they can be estimated with confidence sufficient to allow the appropriate application of technical and economic parameters, to support production planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes that are spaced closely enough to confirm both geological and grade continuity.

- ***Inferred Mineral Resource***
  "Inferred Mineral Resource" is that part of a mineral resource for which tonnage, grade and mineral content can be estimated with a low level of confidence. It is inferred from geological evidence, sampling and assumed but not verified geological and/or grade continuity. It is based on information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drillholes which maybe limited or of uncertain quality and reliability.

14.8 Mineral Resource Statement

As of May 15, 2021, the estimated Measured and Indicated Mineral Resource for the Balabag Gold-Silver Project using a cut-off grade of 0.4 g/t AuEq is 4.35 million tonnes at 1.79 g/t Au and 43.08 g/t Ag for 2.36 g/t AuEq. This is equivalent to approximately 331,000 AuEq oz at metal prices of US$1,500/oz Au and US$20/oz Ag. The estimated Inferred Resource is 140,919 tonnes at 2.78 g/t Au and 64.11 g/t Ag for 3.63 g/t AuEq at a cut-off grade also of 0.4 g/t AuEq. The overall Mineral Resource as of May 15, 2021 is summarized in Table 14-7.

Table 14-7: Mineral Resource Estimate of the Balabag Gold-Silver Project, May 15, 2021

Category	Tonnage	Au (g/t)	Ag (g/t)	AuEq (g/t)	AuEq (oz)
Measured	3,016,143	1.80	50.80	2.48	241.000
Indicated	1,338,029	1.74	25.69	2.08	90,000
TOTAL	**4,354,172**	**1.79**	**43.08**	**2.36**	**331,000**
Inferred	140,919	2.78	64.11	3.63	16,000

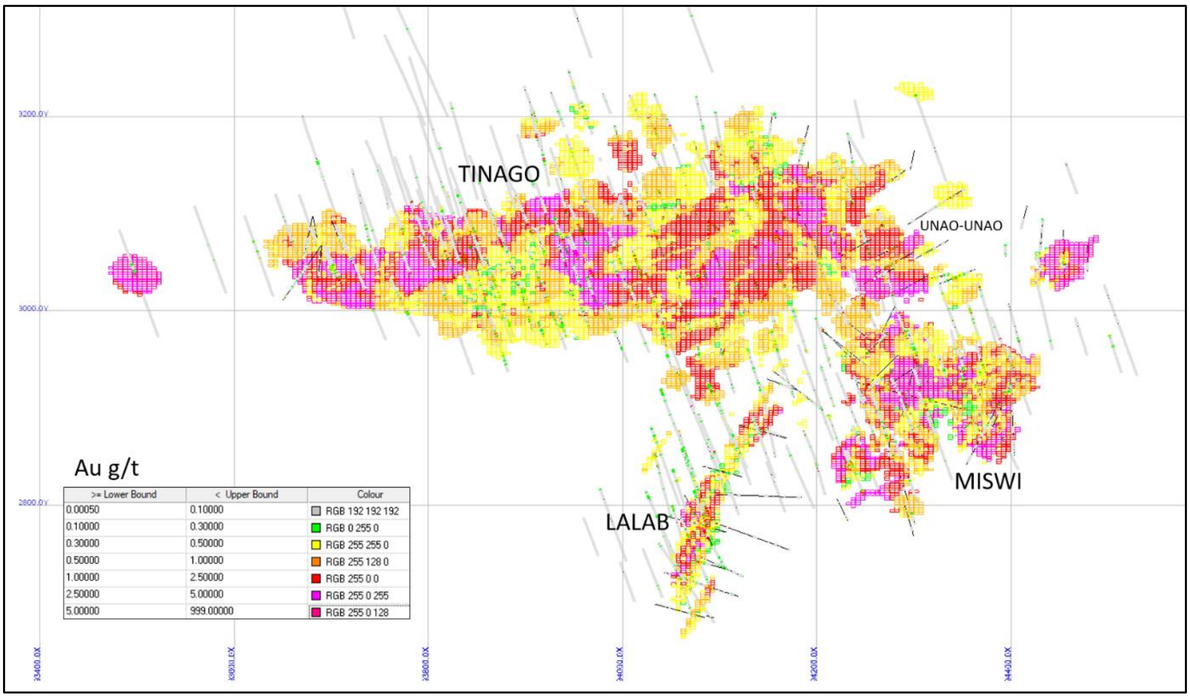


Figure 14-19: Distribution of Mineral Resource Blocks at a 0.4 g/t AuEq cut-off grade.

The breakdown of the Measured and Indicated Resource per AuEq grade range is presented in Table 14-8 and the Inferred Resource is detailed in Table 14-9.

Table 14-8: Breakdown of Measured and Indicated Mineral Resource of the Balabag Gold-Silver Project arranged per AuEq* grade

	MEASURED				INDICATED			
AuEq Range	Tonnage	Au (g/t)	Ag (g/t)	AuEq (g/t)	Tonnage	Au (g/t)	Ag (g/t)	AuEq (g/t)
0.4-0.5	209,574	0.34	7.90	0.45	192,114	0.36	6.20	0.45
0.5-0.6	182,380	0.41	10.48	0.55	229,064	0.47	8.13	0.58
0.6-0.7	167,229	0.46	13.73	0.65	18,862	0.56	9.96	0.69
0.7-0.8	130,899	0.54	15.49	0.75	81,366	0.61	10.63	0.75
0.8-0.9	129,754	0.62	17.62	0.85	79,156	0.69	11.77	0.85
0.9-1.0	127,856	0.68	20.08	0.95	67,456	0.78	12.54	0.95
1.0-1.1	107,731	0.76	21.49	1.05	66,355	0.87	13.52	1.05
1.1-1.2	103,029	0.83	23.81	1.15	46,428	0.91	17.97	1.15
1.2-1.3	93,968	0.90	26.09	1.25	39,950	1.02	17.34	1.25
1.3-1.4	94,437	0.96	29.18	1.35	29,784	1.12	17.11	1.35
1.4-1.5	87,200	1.01	32.96	1.45	27,878	1.19	19.27	1.45
1.5-1.6	80,194	1.11	33.43	1.55	27,366	1.33	16.85	1.55
1.6-1.7	77,657	1.22	32.37	1.65	25,931	1.42	17.14	1.65
1.7-1.8	68,033	1.25	37.40	1.75	19,016	1.50	18.40	1.75
1.8-1.9	55,418	1.31	40.57	1.85	17,125	1.60	18.26	1.85
1.9-2.0	57,720	1.37	43.80	1.95	15,078	1.66	21.66	1.95
2.0-999	1,243,065	3.32	92.60	4.55	355,100	4.57	65.12	5.44
TOTAL	**3,016,143**	**1.80**	**50.80**	**2.48**	**1,338,029**	**1.74**	**25.69**	**2.08**

**No Au and Ag recovery applied in calculating the AuEq.*

Table 14-9:

Breakdown of Inferred Mineral Resource of the Balabag Gold-Silver Project arranged per AuEq* grade.

**No Au and Ag recovery applied in calculating the AuEq.*

	INFERRED			
AuEq Range	Tonnage	Au	Ag	AuEq
	Tonnes	g/t	g/t	g/t
0-0.1	483,465	0.00	0.02	0.00
0.1-0.2	29,544	0.13	2.09	0.16
0.2-0.3	53,637	0.23	2.42	0.26
0.3-0.4	27,975	0.30	3.39	0.34
0.4-0.5	17,819	0.38	4.75	0.44
0.5-0.6	21,012	0.50	5.85	0.58
0.6-0.7	1,800	0.58	8.48	0.69
0.7-0.8	6,750	0.65	7.67	0.75
0.8-0.9	8,400	0.74	8.26	0.85
0.9-1.0	4,875	0.83	8.46	0.94
1.0-1.1	4,437	0.77	20.98	1.05
1.1-1.2	3,975	0.64	38.66	1.15
1.2-1.3	3,525	0.80	33.87	1.25
1.3-1.4	4,725	0.74	46.49	1.36
1.4-1.5	3,525	0.89	42.30	1.45
1.5-1.6	1,725	1.10	33.65	1.55
1.6-1.7	1,275	1.45	15.64	1.66
1.7-1.8	1,725	1.51	17.59	1.74
1.8-1.9	1,650	1.56	20.96	1.84
1.9-2.0	2,025	1.78	13.17	1.96
2.0-999	51,675	6.41	149.87	8.40
TOTAL	**735,540**	**0.57**	**12.68**	**0.74**

14.8.1 Reasonable Prospect for Eventual Economic Extraction

For determination of a resource cut-off grade, a preliminary analysis including a review of cost information from similar gold projects was performed. The following assumptions were used:

- Gold and silver price
- Metal recovery
- Mining cost
- Processing cost
- General and site administration cost

The baseline assumptions have been provided in Table 14-10.

Table 14-10: Baseline assumptions used in calculating the gold equivalent cut-off grade

INPUT	UNIT	Gold	Silver
METAL PRICES	USD/oz	1,500	20
REFINING CHARGE	USD/oz (in dore')	0.25	
REFINING PAYABLE	%	99.95%	99.50%
FREIGHT	USD/oz	2.1	
METALLURGICAL RECOVERY	%	90.00%	88.28%
NSR / grade unit	USD/ton	$ 17.39	
MINING COST	USD/ton	$ 1.30	
PROCESSING	USD/ton	$ 14.50	
Site SG & A	USD/ton	$ 1.17	
Total Incremental Costs	USD/ton	$ 17.14	
CUT-OFF GRADE	**AuEq Grade, g/t**	**0.40**	

A nominal cut-off grade of 0.4 g/t AuEq was used in reporting the Mineral Resource. Gold equivalent was used to give credit to both gold and silver values at prices of US$1,500/oz and US$20/oz, respectively. A metallurgical recovery factor of 95% for silver, as discussed in Section 13 of this report, was used to calculate the gold equivalent.

Below is the formula used to compute the gold equivalent value for each block:

$$AuEq = Au\ Grade + \frac{(Ag\ Grade\ x\ Ag\ Rec\ X\ Ag\ Price)}{Au\ Price}$$

Ag Recovery: 95%
Ag Price: $ 20/oz
Au Price: $ 1,500/oz

Figure 14-20: Formula for gold equivalent conversion

The gold and silver prices used in calculating the gold equivalent are guided by the World Bank five-year forecast (Table 14-11). The projected average gold price from year 2021 to

2025 is US$1,596/oz Au while silver price is expected to approximate US$17.38/oz Ag. Figure 14-21 shows the trend of gold and silver price in the next five years.

The current resource estimate of the Balabag Project has been evaluated using a gold price of US$1,500/oz Au and silver price of US$20/oz Ag.

Table 14-11: World Bank Price Forecast for Gold and Silver from Year 2021 to 2025

Metal	Unit	2021	2022	2023	2024	2025	Average
Gold	$US/oz	1,730	1,661	1,594	1,528	1,465	1,596
Silver	$US/oz	18	17.7	17.4	17.1	16.7	17.38

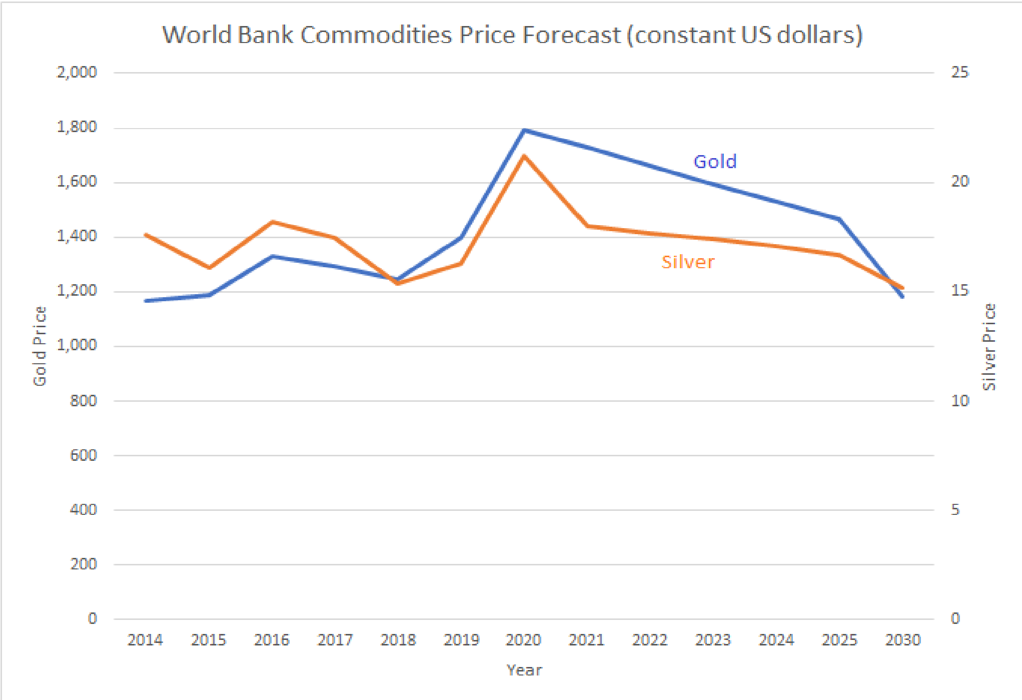


Figure 14-21: World Bank Price Forecast for precious metals (US dollars).

The geometry of the mineralized veins, particularly in Tinago, are generally gently dipping to the north, following the contour of the Balabag Hill, and the majority are located relatively proximal to the surface. Based on the initial mining assessment done supported by preliminary pit shell and cost assumptions, the geometry of the Balabag Mineral Resource is potentially extractable by open pit method at the specified cut-off grade. Figure 14-22 shows the configuration of the Mineral Resource at a cut-off grade of 0.4 g/t AuEq relative to the topography model.

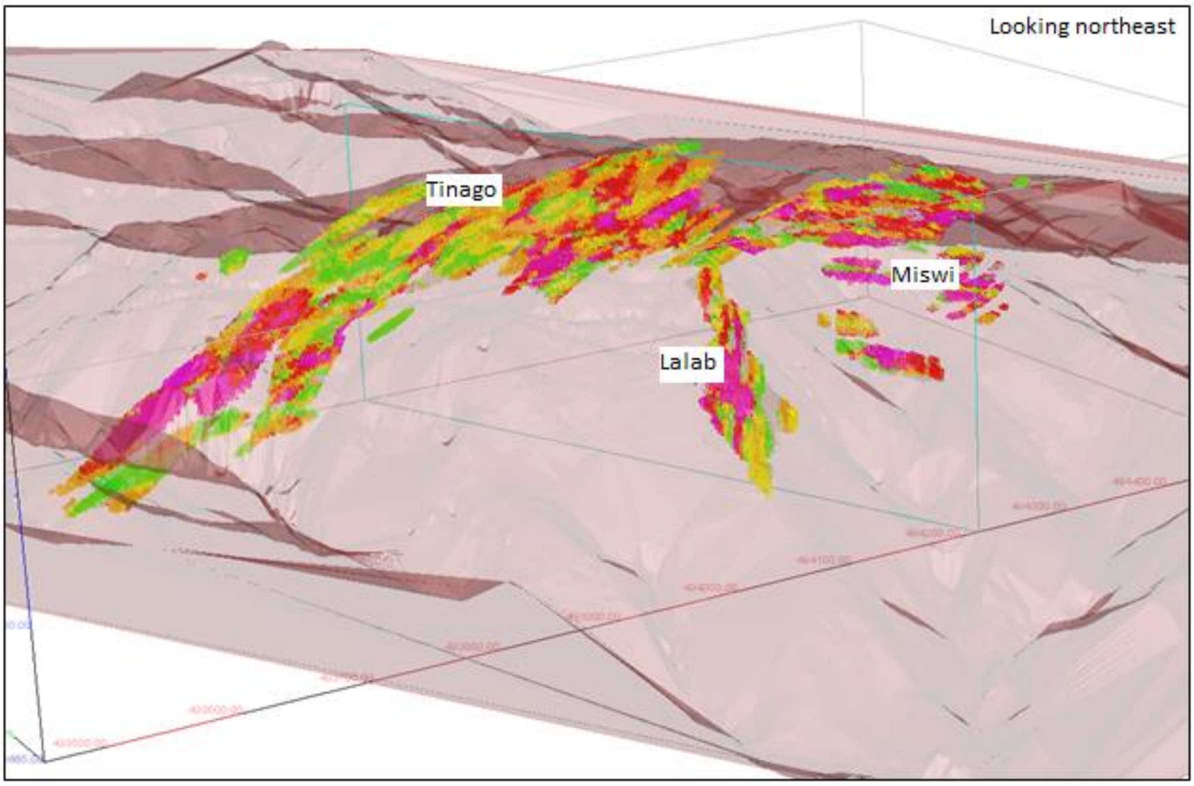


Figure 14-22: Block distribution relative to topography model

The grade-tonnage curve shown in Figure 14-23 demonstrates the intersection of tonnage and gold equivalent at 0.4 g/t AuEq. This implies that the tonnes can be maximized above this cut-off grade.

Given the shape of the deposit and cut-off grade used, the QP considers that the reported Mineral Resource has reasonable prospects for eventual economic extraction.

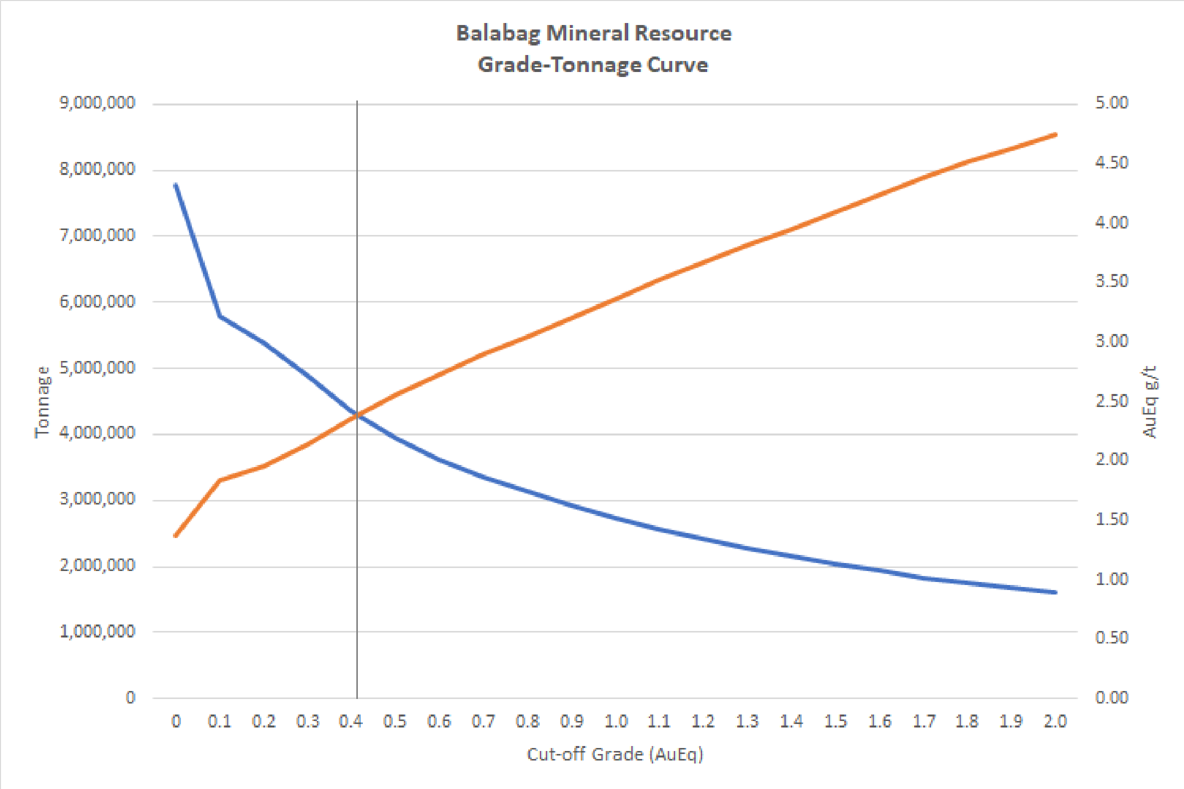


Figure 14-23: Resource grade-tonnage curve (BM: TVIBAL042021).

14.8.2 Resource Adjustments

Roughly 70,000 tonnes grading 2.18 g/t Au and 71.56 g/t Ag have been estimated as small-scale mining depletion below the October 2020 surface. This has been deducted from the overall resource estimate. A solid model of the small-scale mining workings was generated based on the tunnel mapping data. This solid wireframe was used to constrain and code blocks that have been potentially mined by the small-scale miners.

Location of excavated tunnels relative to the resource model are shown in Figure 14-24 and Figure 14-25.

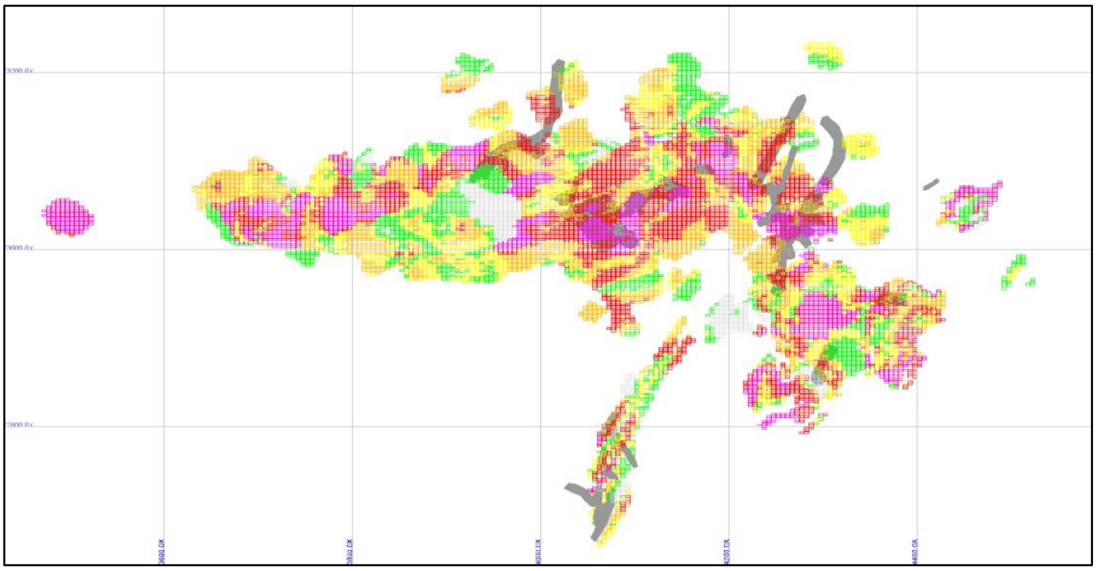


Figure 14-24: Location of old tunnels (gray outline) relative to the resource block model.

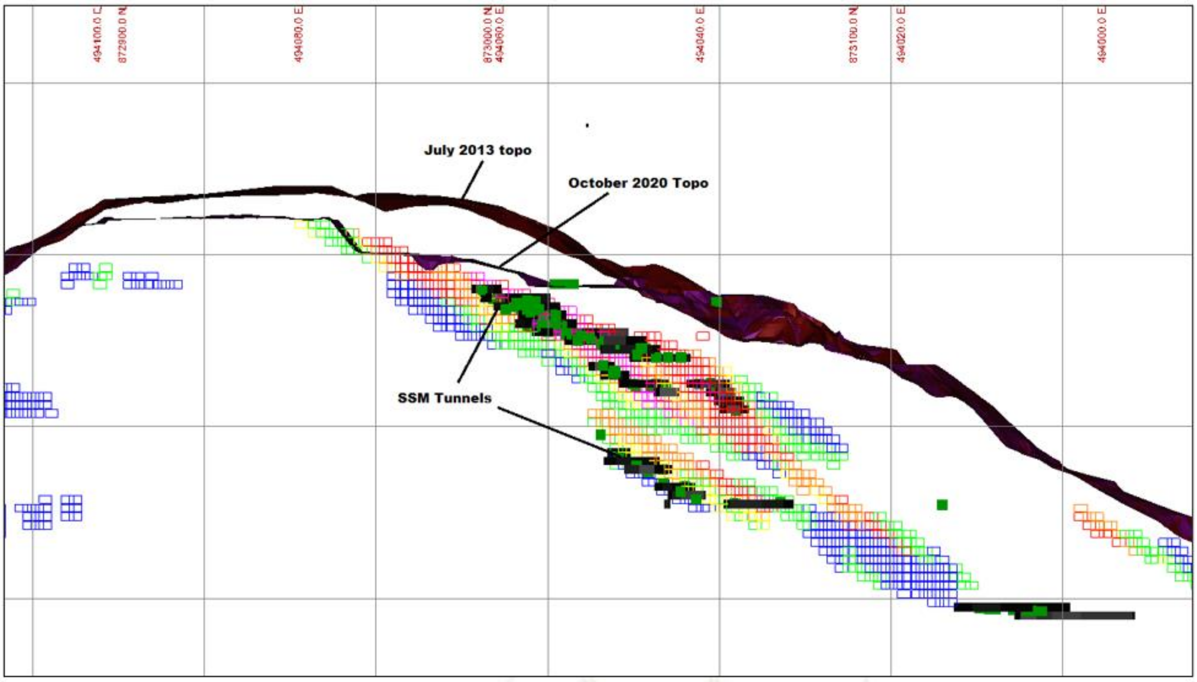


Figure 14-25: Cross-section view showing location of tunnels relative to October 2020 topography,

14.9 Mineral Resource Peer Review

The successful Canatuan Gold Plant Operations and the Copper-Zinc Mine of TVIRD formed the basis for laying out the baseline assumptions for the Balabag Project with adjustments made to reflect the necessary ore processing requirements.

A preliminary valuation study patterned after the Canatuan Mine was initiated to assess the economic potential of the Balabag Mineral Resource. A sensitivity analysis was conducted to test the impact of varying economic and operating criteria to the project. The resource model is found to be sensitive to variations in gold and silver price as well as metal recovery.

The actual experience of TVIRD in selective mining approach (i.e. equipment size) demonstrated in Canatuan also served as a basis in determining the practical block size for the Balabag resource model.

14.10 Mineral Resource Risk Assessment

There are no additional environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or any other relevant factors that the author of this report is aware of that could materially affect the Mineral Resource estimate.

TVI Pacific announced on November 22, 2019, that TVIRD had determined to advance the Balabag project towards commercial production and clarified also that in making the decision to put Balabag into production, TVIRD, a Philippine corporation that TVI Pacific does not control, relied exclusively on technical and economic analysis prepared under Philippine regulations and did not rely on any feasibility study classifying mineral reserves prepared in accordance with NI 43-101. Historically such projects have a much higher risk of economic and technical failure.

The exploration for and development of mineral deposits, which includes the Balabag project, involves significant risks which even a combination of careful evaluation, experience and knowledge may not eliminate. While the discovery of an ore body may result in substantial rewards, few properties that are explored are ultimately developed into producing mines. Major expenses may be required to locate and establish mineral reserves, to develop metallurgical processes and to construct mining and processing facilities at a particular site. It is impossible to ensure that such exploration or development programs will result in a profitable commercial mining operation. Whether a mineral deposit will be commercially viable depends on a number of factors, some of which are: the particular attributes of the deposit, such as size, grade and proximity to infrastructure; metal prices which are highly cyclical; and government regulations, including regulations relating to prices, taxes, royalties, land tenure, land use, importing and exporting of minerals and environmental protection. The exact effect of these factors cannot be accurately predicted but, as noted previously, the author of this report has indicated that, with specific reference to the Balabag project, he is not aware of any additional environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other relevant factors that could materially affect the current Mineral Resource estimate.

15 MINERAL RESERVE ESTIMATES

Not applicable at this stage of the Project.

16 MINING METHODS

Not applicable at this stage of the Project.

17 RECOVERY METHODS

Not applicable at this stage of the Project.

18 PROJECT INFRASTRUCTURE

Not applicable at this stage of the Project.

19 MARKET STUDIES AND CONTRACTS

Not applicable at this stage of the Project.

20 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT

Not applicable at this stage of the Project.

21 CAPITAL AND OPERATING COSTS

Not applicable at this stage of the Project.

22 ECONOMIC ANALYSIS

Not applicable at this stage of the Project.

23 ADJACENT PROPERTIES

At the effective date of this report, the Balabag Gold-Silver Project database does not contain any records for mineral exploration properties in the areas adjacent to the Property that could influence the findings of this report.

There are numerous mining tenements surrounding the Balabag MPSA tenements, however, there are no known exploration or development activities in these areas despite the general area's favorable geology. None of the tenement holders or operators of adjacent properties have published a mineral resource. No representation is made here implying continuity of mineralization from any adjacent property.

One mining tenement worthy of mentioning is the Depore gold prospect which is owned by Cebu Ore Mining and Mineral Resources Corporation ("**COMMRC**"). The mining claim lies directly south of the Balabag MPSA where history of gold small -scale mining activities began during the early 1980's. The technical information below has been sourced from the geological evaluation report dated September to December 2017 prepared by O.B. Garcia, (2017) ("**Garcia**").

The gold mineralization in Depore is hosted by a volcanic breccia exhibiting pervasive phyllic/argillic and propylitic alterations. Its rock composition is more defined under propylitic wherein the rock is composed of andesite, lithic lapilli and tuffaceous clasts. But the greater part of the gold mineralization as manifested by old small-scale tunnels is mostly in phyllic/argillic alteration (silica-clay-pyrite-FeO) which occur very extensive from the central north-half of the tenement towards its north boundary. This zone within the COMMRC claim is delineated for over 1.5kmx 2km wide exposed surfaces.

Garcia reported an epithermal vein type system and associated hydrothermal breccia**.** The breccia is pyrite-rich silicified/argillized hydrothermal breccia with silica-pyrite-clay altered angular clasts cemented by grey-quartz with fine sulphide dissemination cut by oxidized drusy quartz veinlets. The vein samples range in gold assay from 1.5g/t Au to as high as 11.8g/t Au. Some significant base-metals and copper minerals are associated with quartz veins consisting of galena, sphalerite, chalcopyrite, bornite and covellite. Assay results returned 2g/t Au, 26g/t Ag, 0.06%Cu, 1.1%Pb and 1.7%Zn.

The mineralization type may imply: (1) likely deep level low-sulphidation epithermal gold system as evidenced by the increased content of base-metal sulfides and low silver and the medium crystalline-translucent nature of the vein quartz; and, (2) sulphide-bearing silicified/argillized hydrothermal breccias. The hydrothermal breccia is enveloped by a vast variably altered phyllic/argillic (silica-clay-pyrite-FeO) zone and later overprinted by gold-base metal veins.

The reader is cautioned that the Qualified Person has been unable to verify the information in this section and such information is not necessarily indicative of the mineralization on the property that is the subject of this Report.

24 OTHER RELEVANT INFORMATION

Philippine mining tenements are geographically precise, and the MGB manages the processing and granting of titles for tenements diligently. These factors, combined with the fact that the resource is well within the Balabag property, suggest the risk of conflict with other tenements or property holders is remote.

There is opportunity for the discovery of epithermal Au-Ag, porphyry Cu-Au and massive sulfide-style mineralization within the MPSA boundaries and region of the Balabag Gold-Silver Project. Historic mining shows that Au-Ag, Cu, and Zn are present in the region and may contain significantly larger resources than the current and historical workings have exploited and are currently exploiting.

TVI Pacific announced on November 22, 2019, that TVIRD had determined to advance the Balabag project towards commercial production and development works have been ongoing since that time. TVI Pacific clarified also that, in making the decision to put Balabag into production, TVIRD, a Philippine corporation that TVI Pacific does not control, relied exclusively on technical and economic analysis prepared under Philippine regulations and did not rely on any feasibility study classifying mineral reserves prepared in accordance with NI 43-101. Historically such projects have a much higher risk of economic and technical failure.

Commissioning of the front-end circuits of the Balabag plant commenced in December 2020 and in May 2021 the carbon-in-leach ("**CIL**") tanks were loaded with activated carbon and leaching at the CIL tanks commenced. In May 2021 also, ore from the low grade run of mine ore stockpile started to be fed on a test basis in preparation for the commencement of continuous milling operations. The last remaining major equipment arrived onsite in April 2021 and infrastructure including the gold room, power plant, water supply, the assay and metallurgical laboratory, explosives magazine, helipad, warehouse and shops, offices, accommodation facilities, mine roads and other access roads has been constructed. Completion of the Tailings Storage Facility ("**TSF**") remains as the critical path to bringing the Balabag Mine online with first doré production, which is being constructed in stages to accommodate progressively increasing resources as they are defined.

25 INTERPRETATION AND CONCLUSIONS

Geology and Mineral Resource:

- The Balabag gold-silver mineralization is categorized as a low-sulphidation epithermal vein system hosted in andesitic lava flows and pyroclastics. It is characterized by multiple-stage massive to crustiform banded fracture-fill and breccia cement assemblages mostly comprising of chalcedonic to mosaic quartz, in paragenetic association with less abundant adularia, chlorite, illite and carbonate enclosing and dispersed with only minor amounts of sulphide, which define a low-sulphidation epithermal environment of precious metal mineralization.

- Three major quartz vein systems identified in the Balabag Hill area are the Tinago-Unao-Unao-Yoyon veins to the north, Miswi veins in the east and Lalab veins to the south (Figure 8-6). The veins exhibit various epithermal quartz vein textures such as colloform, crustiform, massive, drusy, vuggy, comb and cockade textures. Multiphase brecciation textures are also dominant probably because of several pulses of rising hydrothermal fluids. Quartz stringers and quartz stockworks also occur adjacent to most quartz veins ranging from hairline to centimeter sizes. The geometry of the veins and the associated stockworks are generally sub-horizontal at Tinago and Miswi areas while a sub-vertical attitude of veins is exhibited in the Lalab area.

- Appropriate quality assurance / quality control procedures for all phases of exploration activities have been implemented in accordance with industry best practices. The sample preparation, analysis and security procedures were carried out to a high standard and are therefore appropriate in performing the mineral resource estimation.

- The review of the Balabag Gold and Silver Project concluded that the practices and procedures used to generate the Balabag database are acceptable to support a Mineral Resource estimation.

- The assumptions, parameters, and methodology used for the Balabag Mineral Resource estimates are appropriate for the style of mineralization. The review of provided data and the site visit have shown the exploration activities at Balabag to be reliable for resource estimation.

- The recent diamond drilling, logging, sampling, and assaying have been carried out in a manner consistent with industry best practice.

- The core handling and sample security protocols employed are consistent with industry best practice.

- Balabag has used its own assay laboratory for most of the assay database but implemented QA/QC exercises consistent with industry best practice.

- The assay database for the Balabag Project is considered appropriate for use in estimation of its mineral resources, and the samples analysed for this database are considered representative of the deposit.

- Any significant risks or uncertainties that could reasonably be expected to affect the reliability or confidence in the exploration information or mineral resource estimates have not been observed.

- Additional new gold prospects have been outlined by in-house geological staff that warrant further detailed exploration.

26 RECOMMENDATIONS

The following recommendations are offered:

- It is recommended that exploration continue on prospect areas that have shown indications of mineralization in drill core with limited drilling and to also drill in mineralized areas identified by surface mapping that are currently untested.

- Drilling of prospect areas should be in two (2) phases. One phase should include drill holes that are exclusively for exploration purposes while the second phase should include drill holes that define resources. If results from the first phase are satisfactory, the next phase should commence.

- It is recommended that with the mineral resource defined already, the mineral reserves must be estimated now with the definition of an appropriate mining plan.

- New metallurgical tests should be conducted in order to update the average metal percentage recoveries for gold and for silver derived from the metallurgical test work previously conducted.

The QP considers that there are several prospective targets within the Balabag MPSA with potential of hosting similar mineralization with the main Balabag mineral resource. The projected vein splays beyond the known Balabag vein system represent good exploration targets that could potentially add to the present resource tonnage.

In following the recently completed four-phase drilling program, a further two-phase exploration program is hereby proposed within the Balabag MPSA.

Proposed Phase 5A Exploration Program

This exploration program is proposed to involve both resource definition and exploratory drilling. The resource definition drilling would aim to: (a) fill the gaps between areas of the defined deposit such as in Central Miswi to Unao-unao and in Yoyon to Unao-unao as they may be linked as one ore body; (b) prove the west continuity of the West Tinago vein and the east continuity of the Miswi vein; and (c) prove the down dip continuity of the Lalab vein system.

The target for exploratory drilling would be the prospective areas for gold mineralization at the Upper Dipili - Daguman -Banzai areas. These prospects are defined based on recent follow-up geological and geochemical exploration work undertaken. Potential of the Daguman - Banzai areas to host gold-bearing veins is high as the mineralization zone is hosted by a silicic to argillic alteration appearing to about 100m x 100m wide, open at both ends in a northwest direction. The proposed drilling would prove the lateral and down dip continuity of the identified three gold-bearing veins. Drilling would be expected to total 4,000 meters.

An exploration budget for the proposed Phase 5A exploration program is presented below. The Phase I exploration program is expected to be implemented during the year 2021.

Table 26-1: Proposed Phase 5A Exploration Program Budget

Phase 1 Exploration Program Budget			
Item			**Amount ($US)**
I.	Capital Expenses		125,000
II.	Operating Expenses		
	2.1	Salaries and Wages	510,000
	2.2	Supplies and Materials	220,000
	2.3	General and Administrative	165,000
	2.4	Drilling (4,000 meters)	1,280,000
Total Estimate			**$ 2,300,000**

Proposed Phase 5B Exploration Program

The following exploration program is recommended to follow the previously proposed Phase 5A pending the receipt of favorable results. This program would involve further resource definition drilling that would aim to continue to prove the extensions of the Lalab, Miswi and West Tinago vein system in both lateral and down dip extensions. Drilling would be expected to total 5,000 meters.

The budget of the proposed Phase 5B exploration program is presented below. It is expected that this phase 5B exploration program will be implemented between 2021 and 2022.

Table 26-2: Proposed Phase 5B Exploration Program Budget

Phase 2 Exploration Program Budget			
Item			**Amount ($US)**
I.	Capital Expenses		150,000
II.	Operating Expenses		
	2.1	Salaries and Wages	640,000
	2.2	Supplies and Materials	270,000
	2.3	General and Administrative	200,000
	2.4	Drilling (5,000 meters)	1,600,000
Total Estimate			**$ 2,860,000**

27 REFERENCES

Angeles, Ciceron, Jr., 2012. April 2012 Progress report for TVI Resource Development (Phils.) Inc. (TVIRD internal report)

Angeles, Ciceron, Jr., 2012. October 2012 Progress report for TVI Resource Development (Phils.) Inc. (TVIRD internal report)

Aurelio, Mario A., 2013. Structures in the Balabag Epithermal Gold Vein Deposit, Bayog, Zamboanga del Sur, Mindanao

Acharya,H.K. and Aggarwal, Y.P., 1981. Seismicity of the Philippine Islands, Philippine Geologist, v. 35, no 2, pp 36-81, June 1981.

Corbett, G., 2002. Controls to Low Sulphidation Epithermal Au-Ag Mineralization.

Flint, A. R., 2005. Technical due diligence: Balabag Gold Project, Zamboanga, Philippines (TVI internal report)

Flores, R.A.L., 1999. Prioritization of Exploration Areas With a Possible High-Grade 0.5 Moz Contained Gold Resource in the Bicol, Eastern Mindanao and Zamboanga Mineral Districts, Philippines for P.T. Austindo Mining Corporation

Garcia, O. B. 2017. Geological Evaluation Report on the Depori Gold Prospect.

Genivar LP, 2008. Scoping Study of the Balabag Project.

Knight Piesold and Co., 2013. Balabag Gold Project Tailings Facility Design Report Prepared for TVI Resource Development (Phils.) Inc.

Lafleur, P.J., 2007. 43-101 Technical Report for the Mineral Resources at the Balabag project of TVI Pacific, Inc.

Manuel E..et. al. Final Report on the Mineral Exploration Conducted Within the Zamboanga Mineral Corporation MPSA Area, Zamboanga del Sur, Mindanao, Philippines. Rio Tinto Exploration Philippines Corporation (A member of the Rio Tinto Group)

Mason, D. R. Jr., 2010. Petrographic and fluid inclusion studies of rock samples from the Balabag epithermal Au-Ag deposit in Mindanao, Philippines (unpublished report)
.
Medina, C., 2009. Review of the Balabag Gold Project: Implications to Further Exploration (TVI Internal Report)

Mumm, A.S. 2010. Balabag gold: fluid inclusion analysis of samples BAL-TIN #2010-02 and BAL-TIN 2010-03. (unpublished report)

Plata, O., 2012. Technical Report: Metallurgical Feasibility Study on the Balabag Gold – High Silver Ore

SGS Lakefield Research Ltd., 2007. An Investigation into the Recovery of Gold and Silver from the Balabag Project.

Smyth, C.P., 2012. NI-43-101 Technical Report on the Balabag Gold Project, Zamboanga Province, Philippines.

TVIRD, 2012. Environmental Impact Statement Report for the Balabag Gold-Silver Project.

TVIRD, 2014. Environmental Protection and Enhancement Program and Final Mine Rehabilitation and Decommissioning Plan Balabag Gold-Silver Project.

Zhou Jou, 2011. Deportment study of gold in five head samples from the Balabag Gold-Silver Deposit, Philippines

SCHEDULE "A"

CERTIFICATE OF QUALIFIED PERSON

I, Jaime C. Zafra, of Baliuag, Bulacan, Philippines, hereby certify that:

1. I am a Professional Geologist who has worked as an independent consultant for a period of more than 20 years.

2. I supervised the preparation of the technical report titled `NI 43-101 EXPLORATION RESULTS AND MINERAL RESOURCE UPDATE REPORT ON THE BALABAG GOLD - SILVER PROJECT, MPSA No. 086-1997-IX Zamboanga del Sur, Mindanao, Philippines', dated July 19, 2021 with an effective date of May 15, 2021 concerning the Balabag gold and silver project owned by TVI Resource Development (Phils.) Inc. ("**TVIRD**") located within the Municipalities of Bayog, Diplahan and Kabasalan, Provinces of Zamboanga Del Sur and Zamboanga Sibugay, Island of Mindanao, Philippines (the "**updated Mineral Resource Report**").

3. I am a Fellow of the Australasian Institute of Mining and Metallurgy (FAusIMM) with Member No. 992551.

4. I am a Registered Geologist No. 0000671 with the Philippines' Professional Regulations Commission.

5. I am a Member of the Geological Society of the Philippines and accredited as a Competent Person on Reporting Exploration Results and Mineral Resources for Philippine Mineral Reporting Code with Registration No. 14-05-01.

6. I am a graduate of the Mapua Institute of Technology (now Mapua University) of Manila, Philippines (B. S. Geology 1979).

7. I have practiced my profession continuously for the past 42 years. I have been involved in mineral exploration, project development, mining operations, resource/reserve modeling and studies and property evaluation on gold and silver properties in the Philippines, Indonesia, Papua New Guinea, South Sudan and Lao PDR. More specifically, my experience is spread approximately 50% over hard rock projects such as base metals and gold, 30% over nickel laterite/saprolite and onshore/offshore magnetite sand projects and 20% over non-metallics cement raw materials and construction rock aggregates/armor rocks. My most relevant experience has been in Lao PDR as Technical Consultant with the comprehensive drilling of the Phu Kham Gold Project of Nikki Lao Sole Co. Ltd., as Consultant to the Sultan Kudarat Gold Project (Philippines) under GRCO Isulan Mining Corporation, and as Chairman of the Board of Directors and President of Geotechniques and Mines, Inc. in joint venture with F. A. Nepomuceno Construction & Development, Inc. for its Mariveles, Bataan, Philippines Armor Rock and Rock Aggregates Project.

   My experience also includes:

   i. Gold Resource and Geological modeling with Phu Kham Gold Mine where the most advanced 3D geological modeling system was used (primarily Surfac);

ii. Working with Placer Dome in joint venture with BHP-Utah to:

a) Perform due diligence and exploration programming of projects in North Sulawesi, Indonesia primarily for gold;

b) Supervise exploration, geology, resource and reserve modeling; and

c) Manage a team of 24 geologists in Indonesia.

iii. Formation of an exploration and mining company to work on gold, nickel, chrome, manganese and cement raw materials and rocks for construction purposes;

iv. Managing large drilling programs, mine development, grade control, operations and performing resource and financial modeling for the preparation of Mineral Resource and Mineral Reserve Reports for iron ore, magnetite sands, nickel and gold projects for companies in the Philippines and Lao PDR;

v. Director and Senior Vice-President/COO of Batangas Exploration and Development, Inc. which worked on the evaluation of projects in the Philippines, including gold, nickel and iron sand projects;

vi. Preparation of a preliminary economic evaluation, exploration and mine development as Chairman of the Board and President of Geotechniques and Mines, Inc. for Iron Ore and Gold Projects (Philippines);

vii. Preparation of a Nickel laterite resource report and completion of a pre-feasibility study for nickel laterite projects in the Philippines; and

viii. Various other exploration projects as a Project Consultant or Geologist (Competent Person) with Eramen Mining Corp. (Philippines), Baraka Resources Ltd. (Philippines), Howerstock Ltd. (South Sudan), Voco Point Trading Pty. Ltd. (Papua New Guinea), and other mining companies with respect to gold, iron sand and nickel laterite projects.

8. I certify that by reason of my education, Fellow of Australasian Institute of Mining and Metallurgy, registration as an Accredited Competent Person with the Geological Society of the Philippines and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for the purposes of NI 43-101.

9. I am independent of TVIRD and its affiliates for the purposes of NI 43-101 and as set out in the Companion Policy to NI 43-101, as a result of the following:

i. I do not have any employment relationship or ongoing contractual arrangement with TVIRD or its affiliates.

ii. Other than compensation for my services in supervising the preparation of the technical report certified hereunder and compensation for the applicable site visit performed in connection therewith, I received no compensation from TVIRD or its affiliates in 2021 or 2020.

iii. I do not own or expect to receive any interest (direct, indirect or contingent) in the properties described herein. I do not own any securities of TVIRD, TVI Pacific Inc. or any of their respective affiliates.

iv. The compensation I received from TVIRD in 2020 and 2021 represented less than 10% of my annual income for those years. I am not aware of any other factors that would impair my objectivity with respect to the Balabag project and the technical report certified hereunder.

10. This technical report is based on my personal visits to the property, review of available published data and company reports. I have spent a total of 3 days visiting the project site. My visit to the property was in January 16 to 19, 2021.

11. The resource estimates of the Balabag Gold-Silver Project are, in my professional opinion, valid, have passed quality assurance and controls, and the estimation methods used are in accordance with NI 43-101 and the standards of the Canadian Institute of Mining and Metallurgy.

12. I have read NI 43-101 and Form 43-101F1. The Technical Report has, in my professional opinion, been prepared in accordance with both documents.

13. I am not aware of any material fact or material change with respect to the subject matter of this Technical Report which is not reflected in this report, the omission to disclose which would make this report misleading.

14. I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them for regulatory purposes. I consent to the filing of extracts from the Technical Report. I also consent to the inclusion of parts of the Technical Report as electronic publication on the companies' websites that are accessible to the public.

Signed in Baliuag, Bulacan, Philippines on July 19, 2021.

PHILIPPINES
JAIME C. ZAFRA
LICENSED GEOLOGIST
NO. 0000671
Fellow-AusIMM| CP-PMRC

JAIME C. ZAFRA
FAusIMM, No. 992551