

# NI 43-101 Technical Report

# Mineral Resource Estimate for the

# Corihuarmi Mine Property - Minera IRL Limited

**Central Peru** 

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Date of Report: August 9th, 2021

Effective Date of Resource Estimate: February 28th, 2021

María Muñoz - Geol MAIG (QP)

	NI 43-101 Technical Report Mineral Resource Estimate for the Corihuarmi Mine Property	REVISION	
		No.	DATE
Minera IRL		01	09/08/21

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# **SIGNATURE PAGE**

This Technical Report is effective as of August 9<sup>th</sup>, 2021

Name	Signed	Dated Signed (dd/mm/yyyy)
Maria Muñoz	María del Carmen Muñoz Lizarve	09/08/2021 Lima, Peru



#### Certificate

I, María del Carmen Muñoz Lizarve, Geol MAIG (QP), do hereby certify that I am author of the Technical Report titled "Mineral Resource Estimate for the Corihuarmi Mine Property" with the effective date of February 28th, 2021.

- My current work address is Avenida Jose Pardo 513, Office 1001, Miraflores, Lima, Peru, 15074.
- 2. I am an independent Senior Resource Geologist currently employed by Mining Plus Perú S.A.C.
- 3. I graduated with a Bachelor of Science in Geological Engineering from the National University of Saint Agustine, Arequipa Peru in 2003.
- 4. I have practiced my profession continuously since 2003. I have read he definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
- I am solely responsible for the preparation of sections 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 23, 24, 25, 26 and 27 of this Technical Report.
- 6. I have not had prior involvement with the property that is the subject of the Technical Report.
- 7. I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Technical Report, the omission to disclose which makes the Technical Report misleading.
- 8. I am independent of Minera IRL Limited (the Issuer) applying all of the tests in section 1.5 of National Instrument 43-101.
- 9. I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.
- 10. I visited the Property on February 23rd and 24th 2021. This is the only time I have spent at the Property.
- 11. 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, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

Dated this 9th day of August, 2021.

Maria del Carmen Muñoz Lizarve

María del Carmen Muñoz Lizarve, Geol MAIG (QP). Member of the Australian Institute of Geoscientists – Membership Number 7570.



# **1. EXECUTIVE SUMMARY**

#### 1.1 Introduction

Mining Plus was commissioned by Minera IRL Limited (MIRL) to complete a Technical Report in accordance with National Instrument 43-101 (NI 43-101) for their Corihuarmi Mine in Peru.

Corihuarmi has been in production since 2008. An initial NI 43-101 compliant Feasibility Study completed in April 2006 (the "2006 Technical Report") provided for a mine with a life span of only four years.

The LOM has been extended twice since the 2006 Technical Report, with the last extension completed by Mining Plus in 2018 ("2018 Technical Report"). The 2018 Technical Report provided for a 2.8-year LOM extension that expired in October 2020. Between 2008 and 2020, Corihuarmi has produced more than 366,000 ounces of gold.

Gold mineralization at Corihuarmi is mined by open pit methods. In 2020, the average grade produced was 0.25 grams per tonne ("g/t") gold, with 22,593 ounces of gold recovered through a leaching process.

Over a four-month period between March and July 2021, the Corihuarmi Mine extracted a total of 1,973,600 tonnes of mineralized material with a grade of 0.25 g / t Au. The total ounces of gold recovered for this period was 9,950 oz.

Mining at Corihuarmi uses a conventional truck and excavator configuration. Open pits are mined on 5-meter-high benches through drilling, blasting, loading and hauling unit operations. The material transportation circuit is performed in two parts. First is from the pit to the crusher, and the second one from the crusher to the leach pad. If the mineralized material does not warrant crushing, the material is transported directly to the leach pad as run-of-mine. The waste is transported to the waste dump.

The estimated resources at the end of February 2021 have not been subjected to any extensive economic analysis, so they have not been shown to be economically viable beyond the reasonable test for economic extraction to justify classification as Resources.

#### **1.2 Property Description**

Corihuarmi (the Property) is located in the high Andes of Central Peru, straddling the regions of Lima, Junín and Huancavelica approximately 160 km southeast of Peru's capital city, Lima.

The Property is comprised of 14 concessions totalling approximately 9830 hectares. These concessions include 6 mining concessions held in the names of Minera Andes Exploration



(Minandex) and 7 mining concession and 1 beneficiation concession held by MIRL. There are nine mine zones (open-pits) at the Property; Laura, Cayhua, Cayhua Norte, Diana Ampliación, Susan, Scree Slope, Ampliación Scree Slope, Coyllor, Ely Norte.

An agreement between MIRL and Minandex states that Minandex maintain a variable Net Smelter Return (NSR) for production from within mining concessions TUPE 2, TUPE 3 and TUPE 5. Gold production from the Property is also subject to an NSR payment to the Peruvian government which varies according to total sales.

All concessions are in good legal standing and Mining Plus is not aware of any pending litigation or legal issues relating to the Property.

#### **1.3 Geology and Mineralisation**

The Property is located at the northern extent of the southern Peru Au-Ag epithermal belt. Mineralisation identified at the Property is of a high-sulphidation (HS) epithermal type hosted in volcanic rocks close to the Chonta fault, a regionally significant NNW trending structure. The Chonta fault is a major geological break which separates Cenozoic volcanic deposits from folded Paleozoic sediments. Zoned alteration and mineralisation are centred on dacitic and rhyodacitic domes intruded close to the Chonta Fault at its intersection with subordinate NE faults.

#### 1.4 Exploration

The Property was first identified in 1996 via colour anomalies on Landsat imagery. Subsequent, mapping, geochemistry, geophysics and drilling in the area led to the identification of nine centres mineralised with gold and economically less significant silver.

The Fugro target and other areas around show CSAMT anomalies similar that the nine mine zones which have not yet been drill tested.

#### 1.5 Drilling

The update of the resources has been carried out using the support of data generated by the site. Gold grade was estimated using Reverse Circulation Drill holes (RCD), Diamond Drill holes (DDH) and supported with rotary air drilling called long holes (LH) drilled in areas with limited assay information.

Comparison between LH (2018-2021) and RCD and DDH suggests that the grades from LH are biased positive for samples with gold grade over 0.2 g/t Au, due purely to the drilling technique. LH bias can be adjusted by multiplying by 0.9 the LH grades to compensate for this apparent bias.



#### **1.6 Mineral Resource**

Mineral resources were estimated by Ms Muñoz (QP), who considers that the input data was suitable for use in a Mineral Resource Estimate and it was estimated by applying industrystandard estimation methodology. Mineral resources are reported above a reasonable cutoff grade based on production costs and metallurgical recovery currently in use at the Corihuarmi Gold Mine.

The mineral resources have been estimated in accordance with widely accepted CIM Estimation of Mineral Resource and Mineral Reserves Best Practices Guidelines (November 2019) and are reported in accordance with NI 43-101. The mineral resources are summarized as follows at an effective date of February 28, 2021.

The Mineral Resource is reported at a cut-off grade of 0.1 g/t Au inside the latest pit design for 2021 to constrain the resource and carries a low strip ratio. Both the pit design and cut-off grade were calculated using a gold price of US \$1,500/oz Au.

Resource Category	Tonnes (Mt)	Au (g/t)	Au Ounces (kt)
Measured	8.00	0.20	51.1
Indicated	5.83	0.22	41.2
Measured & Indicated	13.83	0.21	92.3
Inferred	0.2	0.2	1.50

1. Mineral resources are not mineral reserves and have not demonstrated economic viability.

2. All figures are rounded to reflect the relative accuracy of the estimates. Minor discrepancies may occur due to rounding to appropriate significant figures.

- 3. All tonnages reported are dry metric tonnes and ounces of contained gold are troy ounces.
- 4. The Mineral Resource was estimated by Ms. Maria Muñoz, MAIG, QP, Independent Qualified Person under NI 43-101, of Mining Plus Consultants who takes responsibility for it.
- 5. The Mineral Resource is sub-horizontal, outcropping or close to surface, and has been proven to be mineable by open pit methods with a low strip ratio.
- 6. The Mineral Resource is reported inside a pit designed with a cut-off grade of 0.1 g/t gold, estimated using a gold price of US \$1500; the cut-off assumed is slightly higher than the marginal cut-off.
- 7. The metal recovery assumed was 70.6% for gold, and total operating costs of US\$ 4.51 /t.
- 8. The resources have been estimated with RC and DDH drillings and supported with rotary air drilling called long holes drilled in areas with limited assay information.
- 9. Drilling results as of end of February 2021 are included.
- 10. Mining Plus is not aware of any environmental, permitting, legal, title, taxation, sociopolitical, marketing, or other relevant issues that could materially affect the potential development of the Mineral Resource Estimate.

#### **1.7** Conclusions and recommendations

• The QP considers the drillhole data is suitable for estimation and reporting of the Mineral Resource estimates.

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• Deep exploration opportunities for sulphide mineralization are still open.

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- Future drilling should be done with RCD or DDH for expand resource in adjoining areas to the mine.
- Improve QA / QC controls for all future drilling that will be included in the resource estimate.
- The exploration samples should preferably be carried out with external and certified laboratories.
- Increase density samples in areas with limited information.
- The resource estimation has been carried out from a conservative position considering restriction to outlier grade values and application of an adjustment factor to the long hole samples due to a bias detected between the RCD and DDH drillings.
- The estimated resources are located mostly in production areas, with some neighboring areas no farther than 300 m from the current pit.
- The estimated resources are superficial with a low strip ratio. These are approximately in the first 20 to 30 meters below the surface in areas with LH drilling and becoming a little deeper in areas with RCD and DDH drilling.
- Corihuarmi is a mine that has been in production since 2008, with more than 366,000 ounces of gold produced until the end of 2020, therefore, the estimated resources stated in this report are considered low risk, likewise any investment needing to be made for extraction these resources are considered minimal.
- The QP considers that there are no significant risks associated with the project except those associated with metal prices and variations in processing costs.

In the opinion of Mining Plus, the estimated resources are suitable for a public reporting and represent the metal content in-situ close to the surface with reasonable prospects for economic extraction.



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# 2. INTRODUCTION

Mining Plus was commissioned by Minera IRL Limited (MIRL) to complete a Technical Report in accordance with NI 43-101 for their operating Corihuarmi Mine in Peru (the Property).

The purpose of this report is to provide an updated Mineral Resource statement for the Corihuarmi Mine.

Mining Plus is a professional services company wholly independent of MIRL.

MIRL, headquartered in Lima, Peru, is listed on the Canadian Securities Exchange (CSE) under the ticker "MIRL". The Property is MIRL's only producing mine and it has been in production since 2008.

This report complies with the disclosure and reporting requirements set forth in the Toronto Stock Exchange Manual, National Instrument 43-101 Standards of Disclosure for Mineral Projects (NI 43-101), Companion Policy 43-101CP to NI 43-101, and Form 43-101F1 of NI 43-101.

Information used in the preparation of this technical report was taken from various sources:

- Estimation de Reservas Prepared by Minera IRL (2017) ["MIRL 2017"]
- Estimación de Recursos y Reservas Prepared by Minera IRL (2021) ["MIRL 2021"]
- National Instrument 43-101 Technical Report Prepared by Mining Plus (2018) ["Mining Plus 2018"]
- Geology and Exploration Summary of Corihuarmi Property Central Peru Prepared by AMEC (2006) ["Amec 2006"]
- Corihuarmi Feasibility Study 1,000,000 Tonne per Year Heap Leach Project, Junín, Peru
   Prepared by Kappes Cassiday and Associates (2006) ["KCA 2006"]
- 1:50k mapsheet 26L-1 "Mapa Geológico del Cuadrangulo Tupe" Prepared by INGEMMET (2009) ["INGEMMET 2009"]
- Boletín #44 "Boletín de Mala (26-J), Lunahuana (26-K), Tupe (26-L), Conaica (26-M)"– Prepared by INGEMMET (1993) ["INGEMMET 1993"]
- Data tables compiled by Minera IRL (2021)
- Assay certificates
- Discussions between Ms Muñoz and Minera IRL staff



• Independent sampling and notes

For the purposes of this technical report, Ms Muñoz (QP), employed full-time by Mining Plus, undertook a personal inspection of the Property on February 23rd-24th, 2021. Ms Muñoz (QP) verified the scope of exploration work completed since 2018 to 2021 including, drilling, sampling, database management, assay laboratory and understanding of the geology context.

Ms Muñoz (QP) is responsible for all sections of the Technical Report.

#### 2.1 Units of Measure

The metric system has been used throughout this report. Tonnes are dry metric of 1,000 kg, or 2,204.6 lb. All currency is in US dollars (US\$), and referenced as '\$', unless otherwise stated.

#### 2.2 Effective Date

The effective date of the mineral resource in this report is February 28<sup>th</sup>, 2021. The date of this report is August 9th, 2021.



# **3. RELIANCE ON OTHER EXPERTS**

Neither Mining Plus nor the author of this report are qualified to provide comment on legal issues associated with the Project included in Section 4 of this report. Inclusion of these aspects was based on information provided by MIRL solicitors, Marco Arevalo, Arevalo Abogados & Consultores and has not been independently verified by Mining Plus.



### 4. PROPERTY, DESCRIPTION AND LOCATION

The Property is located in the high Andes of Central Peru, straddling the regions of Lima, Junín and Huancavelica, approximately 160 km southeast of Peru's capital city, Lima (Table 4-1).

The approximate centre of concession P0000207 ("Corihuarmi"), as defined in the WGS84 Latitude/Longitude coordinate system and UTM WGS 84 (zone 18S) is given in Table 4-1:

Geographic		UTM WGS 84 (Zon	ie 18S)
Latitude -12.57053		Easting	437474
Longitude	-78.57637	Northing	8610332

#### **Table 4-1 Project Coordinates**

The Property is comprised of 14 concessions totalling approximately 9830 hectares (Figure 4-1 and Table 4-2). These concessions include 6 mining concessions held in the name of Minera Andes Exploration (Minandex) and 7 mining concession and 1 beneficiation concession held by MIRL. Mining activities, infrastructure and the Mineral Resource are all contained within the central block of mining concessions (Figure 4-1).

#### **Table 4-2 Property Concession Details**

Concession Name	Concession Code	Concession Holder	Concession Type	Region	Hectares
VERA IX	10131705	MIRL	Mining	HUANCAVELICA	900
TAMBO NUEVO 11	10109515	MIRL	Mining	JUNIN	400
FIOPO I	10337905	MIRL	Mining	HUANCAVELICA / JUNIN	1000
EL ALCATRAZ 12	10207994	MIRL	Mining	HUANCAVELICA	1000
CORIHUARMI	P0000207	MIRL	Beneficiation	JUNIN/ LIMA	127.5
CHANTAL 3	10132715	MIRL	Mining	LIMA	1000
CHANTAL 2	10110115	MIRL	Mining	LIMA	900
CHANTAL 1	10109715	MIRL	Mining	LIMA	1000
VERA III	10379704	Minandex	Mining	JUNIN / LIMA	500
VERA II	10379604	Minandex	Mining	JUNIN	700
VERA I	10379504	Minandex	Mining	JUNIN/ LIMA	800
TUPE 5	10363594	Minandex	Mining	LIMA	300
TUPE 3	10201794	Minandex	Mining	JUNIN / LIMA	600
TUPE 2	10201694	Minandex	Mining	LIMA	600
			•		9827.5

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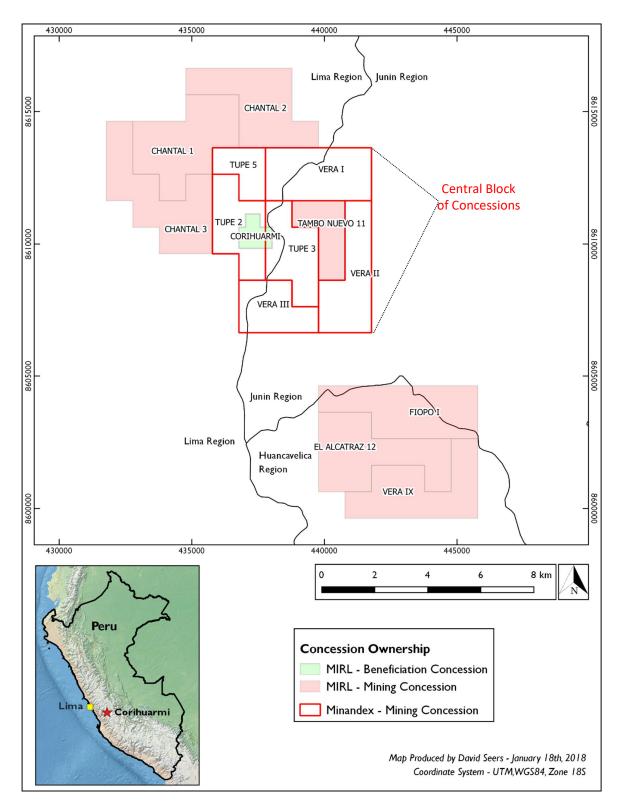


Figure 4-1 Concession Map



All concessions are in good standing. Mining Plus are not aware of any pending litigation or legal issues relating to the Property. Assuming the requisite annual investment is achieved and annual "derecho de vigencia" payments are made, concessions are considered irrevocable.

Mine production in Peru is subject to a Royalty payable to the government, this royalty is based on a percentage of the sale value ranging between 1% and 3% (Table 4-3).

Total Sales	Royalty to Government
Less than US\$60M	1.00%
US\$60M to <us\$120m< td=""><td>2.00%</td></us\$120m<>	2.00%
US\$120M and greater	3.00%

#### Table 4-3 Royalties payable to government

Minandex retain a Net Smelter Royalty (NSR), based on the price of gold (Table 4-4), for gold production from Mining Concessions: Tupe 2, Tupe 3 and Tupe 5.

#### Table 4-4 NSR Payable to Minandex

Gold Price (\$/Troy Ounce)	Royalty Payable
< 300	1.50%
300 to 350	2.00%
>350	3.00%

The Environmental and Social Impact Assessment (EIA), completed as part of a feasibility study issued in 2006 by Vector Engineering, rates Corihuarmi as having limited adverse social and environmental impact. Those impacts identified are considered by Vector to be largely reversible and readily mitigated.

#### 4.1 Permitting

Like other mines, Corihuarmi is subject to various Peruvian mining laws, regulations and procedures. Mining Activities in Peru are subject to the provisions of the Uniform Code of the General Mining Law ("General Mining Law"), which was approved by Supreme Decree No. 14-92-EM, on June 4, 1992 and its subsequent amendments and regulations, as well as other related laws. Under Peruvian law, the Peruvian State is the owner of all mineral resources in the ground. The rights to explore for and develop these mineral resources are granted by means of the "Concessions System".



Mining concessions are considered immovable assets and are therefore subject to being transferred, optioned, leased and/or granted as collateral (mortgaged) and, in general, may be subject to any transaction or contract not specifically forbidden by law. Mining concessions may be privately owned and the participation in the ownership of the Peruvian State is not required. Buildings and other permanent structures used in a mining operation are considered real property accessories to the concession on which they are situated.

#### 4.2 Annual Fees and Obligations

#### 4.2.1 Maintenance Fees

Pursuant to article 39 of the General Mining Law, title holders of mining concessions pay an Annual Maintenance Fee (Derecho de Vigencia). The Derecho de Vigencia is due on June 30 of each year and is paid one year in advance and is calculated at \$ 3.00 per hectare. Failure to pay Derecho de Vigencia for two consecutive years causes the termination (caducidad) of the mining concession. However, according to article 59 of the General Mining Law, payment for one year may be delayed with penalty and the mining concessions remain in good standing. The outstanding payment for the past year can be paid on the following June 30 along with the future year.

#### 4.2.2 Minimum Production Obligation

Legislative Decree 1010, dated May 9, 2008 and Legislative Decree 1054, dated June 27, 2008 amended several articles of the General Mining Law regarding the Minimum Production Obligation, establishing a new regime for compliance ("New MPO Regime").

According to the New MPO Regime, title holders of metallic mining concessions must reach a minimum level of annual production ("Minimum Production") of at least one (1) Tax Unit or "UIT" (PEN S./ 4,400 in 2021, approximately US \$1,110) per hectare, within a period of ten years. The ten-year period begins on January 1st of the year following granting of the concession.

In the case of mining concessions that were granted on or before October 10, 2008, until the ten (10) year term for reaching Minimum Production established by the New MPO Regime elapses (on January 1st, 2019), these mining concessions will be subject to the former provisions of the General Mining Law.

Once the deadline to comply with the minimum production of the New MPO Regime has passed, and if the Company fails to comply with production requirements, it will be obliged



to pay the Penalty of the New MPO Regime and will be subject to the termination of the mining concession.

#### 4.3 Ownership of Mining Rights

Pursuant to the General Mining Law:

Mining rights may be forfeited only due to a number of circumstances defined by law (i.e. non-payment of the maintenance fees and/or noncompliance with the Minimum Production Obligation).

The right of concession holders to sell mine production freely in world markets is established. Peru has become party to agreements with the World Bank's Multilateral Investment Guarantee Agency and with the Overseas Private Investment Corporation.

#### 4.4 Taxation and Foreign Exchange Controls

Corporate taxes in 2018 were 29.5%, which continue until today. Regarding the tax rate applicable to dividends, it is 5% and it has been in force since 2017.

There are currently no restrictions on the ability of a company operating in Peru to transfer dividends, interest, royalties or foreign currency in to, or out of Peru, or to convert Peruvian currency into foreign currency.

Congress has approved a Temporary Net Assets Tax, which applies to companies' subject to the General Income Tax Regime. Net assets are taxed at a rate of 0.4% on the value exceeding one million Peruvian soles. Taxpayers must file the tax return in the month of April (in accordance with the schedule of due dates for monthly tax returns for the March period) and the amounts paid can be used as a credit for Income Tax. Companies which have not started productive operations or those that are in their first year of operation are exempt from the tax.

The Tax Administration Superintendent is the entity empowered under the Peruvian Tax Code to collect federal government taxes. The Tax Administration Superintendent can enforce tax sanctions, which can result in fines, the confiscation of goods and vehicles, and the closing of a taxpayer's offices.



# 5. ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

The Property straddles the borders of the provinces of Lima, Junín and Huancavelica in the high Andes of central Peru. From Lima, it is possible to drive to the Property via the Carretera Central through the towns of Jauja and Huancayo in approximately 6 hours (Figure 5-1). Alternatively, it is possible to fly from Lima to Jauja and drive to the Property via Huancayo, this route also takes approximately 6 hours. Roads between Huancayo and the Property are of variable quality but are passable year-round with 4x4 vehicles.

Huancavelica, with a population of approximately 450k and Huancayo, with a population of approximately 340k, are the nearest significant population centres. These towns offer a range of goods and services as well as workers experienced in mining.

The Property is characterised by gently rolling topography between 4500 and 5100 m above sea level. Hillsides can be barren of vegetation or populated by short grasses and bushes, valley bottoms are typically more densely vegetated. Transient grazing of various animals is the only recognised farming activity in the Property.

Climate is seasonal with heavy rains typically falling between November and March but does not hinder operations.

MIRL operate a camp with capacity to house approximately 140 employees, other facilities include a core-shed, offices and warehouse.

Permitted installations include processing plant, waste dumps, fuel storage and explosives magazine.

Operations are connected to the national power grid via overhead cables. In the event that connection to the national power grid is lost, MIRL have the ability to generate sufficient power to maintain operations.



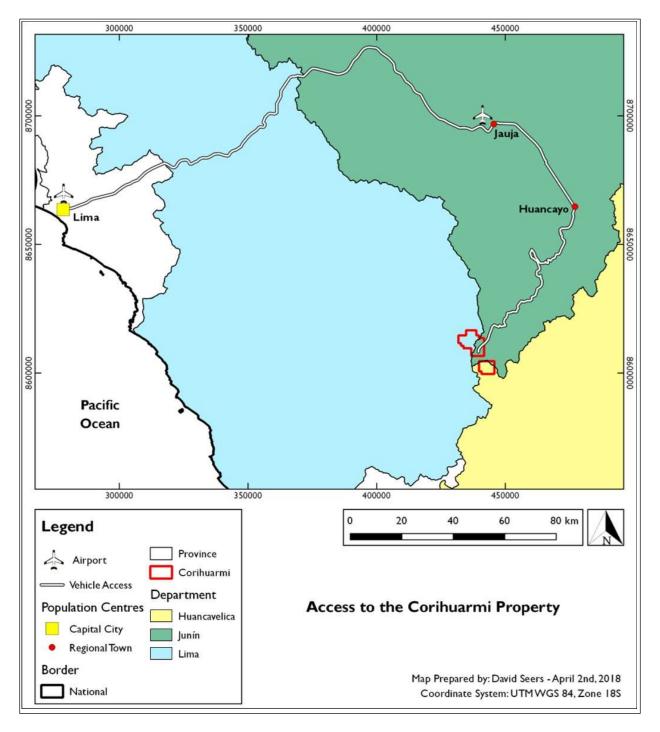


Figure 5-1 Property Location and Access

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# 6. HISTORY

Minandex first identified the Property as a colour anomaly on Landsat imagery in 1996. Ground truthing by geologists working for Minandex confirmed the presence of an extensive hydrothermal alteration system as well as identifying the Susan and Diana zones.

In 1998, Cardero entered into an agreement with Minandex to continue exploring the Property under joint venture arrangements with Barrick and Newmont. Portable infrared mineral analysis (PIMA) was used to refine alteration mapping and controlled source audio magnetotelluric's (CSAMT) was used to define drill targets which were tested by Newmont. In 2000 Cardero returned the Property to Minandex concluding that the environment was not favourable for the development of large zones of epithermal gold mineralization.

MIRL became involved in the Property in 2002, initially focusing efforts on better defining the Susan and Diana zones. By 2005, 3551.95 m of drilling (53 holes) had been completed along with metallurgical test work and geotechnical studies which culminated in a FeasibilityStudy authored by Kappes Cassiday and Associates (KCA 2006).

Coffey (2010) authored an NI 43-101 Technical Report containing a measured and indicated mineral resource in accordance with CIM definitions for the Diana and Susan pits.

Mining Plus (2018) updated the NI 43-101 Technical Report prepared by Coffey (2010) in accordance with CIM definitions, the resources and reserves estimated were extended to eight mine zones (open-pits) at the Property; Laura, Cayhua, Cayhua Norte, Diana, Diana Ampliación, Susan, Scree Slope, Ampliación Scree Slope.

The historic mineral resource and mineral reserve was prepared by qualified persons in 2010 and 2018; however, MIRL is not treating them as current as they have largely been depleted by mining and extended laterally by additional drilling.

First production by MIRL commenced in 2008 and since that time over 366k Oz Au have been produced through to February 2020.



# 7. GEOLOGICAL SETTING AND MINERALISATION

#### 7.1 Regional Geology

The geological, mining and metallurgical institute (INGEMMET) publish geological maps covering much of Peru at 1:100k and 1:50k scale. INGEMMET also publish descriptive Boletín's detailing regional geology, lithological units, structure and economic geology for much of Peru.

The Property is covered by 1:50k map sheet 26L-1 "Mapa Geológico del Cuadrangulo Tupe" and Boletín #44. Using these sources, the key regional geological features (Figure 7-1, Figure 7-2) are summarized as follows:

- An angular unconformity separates folded Paleozoic sediments and Cenozoic volcanics.
- Paleozoic sediments are folded along an NNW trend.
- Andean trending, NNW faulting in part controls exposure of Paleozoic sediments through Cenozoic volcanics.
- Andesitic intrusions related to Cenozoic volcanism are exposed in central and eastern parts of the map sheet.
- The coastal batholith is exposed in the southwestern corner of the map sheet.
- Varied quaternary deposit are concentrated along water courses and valley bottoms
- Corihuarmi is located on a major NNW fault.
- The Property lies at the northern extent of the Southern Peru Au-Ag Epithermal Belt.



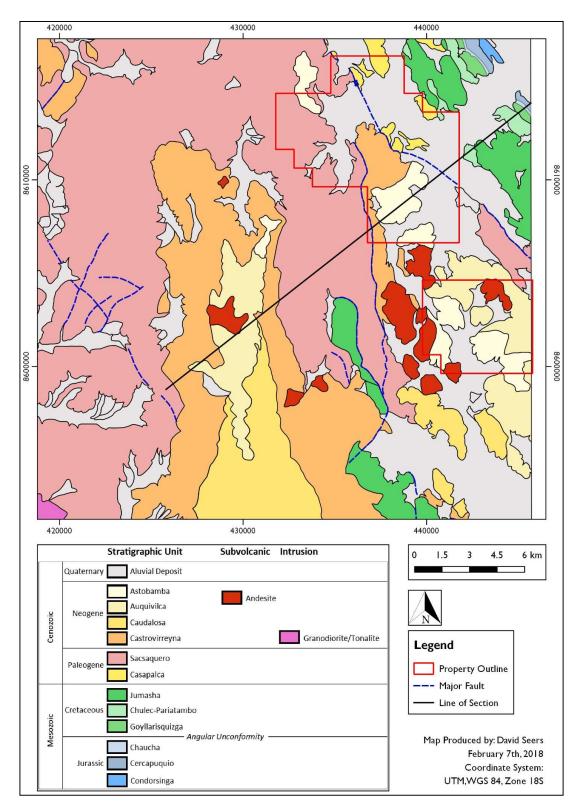


Figure 7-1 Regional Geology Map



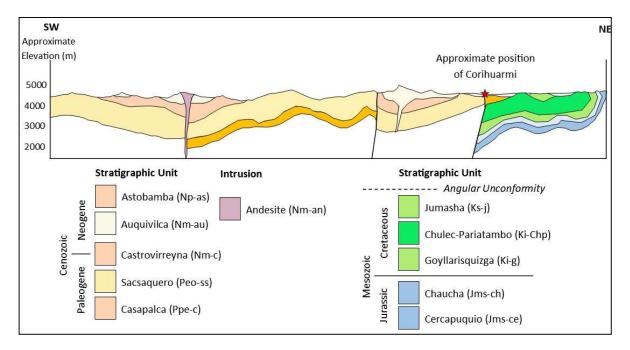


Figure 7-2 Cross-section through Regional Geology

#### 7.2 Local Geology

Outcrop is obscured by vegetation and quaternary deposits.

The north-northwest trending Chonta fault, obscured in part by quaternary deposits, separates folded Cretaceous and Jurassic sediments from Cenozoic volcanics and is the main conduit for extensive hydrothermal alteration.

Hydrothermal alteration related to inferred buried intrusions is recorded to the southwest of the Chonta fault in Cenozoic volcanics. Centres of alteration, observable on remote sensing imagery, are mapped along the Chonta fault. Alteration is particularly strong where secondary northeast faults intersect the Chonta fault.

#### 7.3 Property Geology

Detailed understanding of geology is centred around the Central Block of the Concessions (Figure 4-1).

Variably sub-cropping and outcropping dacite and rhyodacite domes and more recent volcanic deposits dominate geology and the Property. Domes broadly define the margins of a collapsed caldera structure measuring 4.5 by 3.5 km, elongate along a north-northwest trend (Coffey, 2010).



The NNW Andean trend is well developed and is the dominant orientation of faulting and fold hinges at the Property. The hydrothermal system which drove alteration and mineralisation at the Property is focused along the Chonta fault. Intense alteration, brecciation and mineralisation are intimately associated with the Chonta fault, specifically where it is crosscut by east-west and northeast tensional structures.

Zoned alteration, typical of a high-sulphidation (HS) epithermal system, is recognised at the property. Zones of vuggy silica occur within a more widely developed silica and alunite alteration assemblage. These zones of alteration grade into more expansive argillic alteration and localised but distal zones of propylitic alteration (Figure 7-3). Vuggy silica centres approximately align along the NNW Andean trend. Photographs shown Figure 7-4 demonstrate vuggy silica and lesser silica cay alteration.



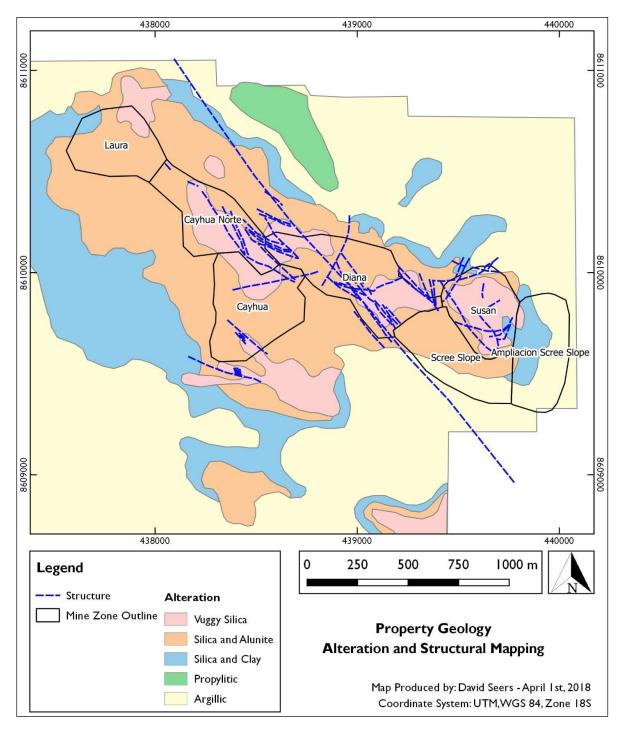


Figure 7-3 Property Geology



#### Susan Mine Zone



**Right:** Plagiophyric andesite at the margins of the Susan Mine Zone . At the margins of alteration centres, alteration is weaker. Plagioclase crystals are softened and clay altered but remain in place.

Clay altered zones are typically lower grade than zones of vuggy silica

**Left:** Vuggy silica from the Susan Mine Zone. Vuggy silica typically occurs at the centre of high-sulphidation epithermal system and represents high intensity acid alteration. Note the voids left by leached plagioclase crystals.

Higher-grade gold is typically associated with vuggy silica, late gold may be deposited in the voids left by leached plagioclase.



Figure 7-4 Alteration photographed at the Diana Pit

Zones of increased grade are typically associated with vuggy silica in the near surface oxidation zone. Interpretation of drilling data indicates that oxidation extends some 80 m below the surface.



# 8. DEPOSIT TYPES

The extensively developed hydrothermal system observed at the Property is related to a highsulphidation epithermal system.

High-sulphidation (HS) epithermal systems are the surface expression of an underlying intrusion and often occur in clusters of vents developed along a feeder structure. Alteration around individual vents is typically zoned with intense silicification and acid leaching at the centre, referred to as vuggy silica (Figure 8-1). Typically, with increasing distance from a vent alteration intensity diminishes grading to quartz-alunite, kaolinite and eventually fresh rock.

Precious metal mineralisation associated with HS systems is typically late and is often deposited in the voids of vuggy silica.

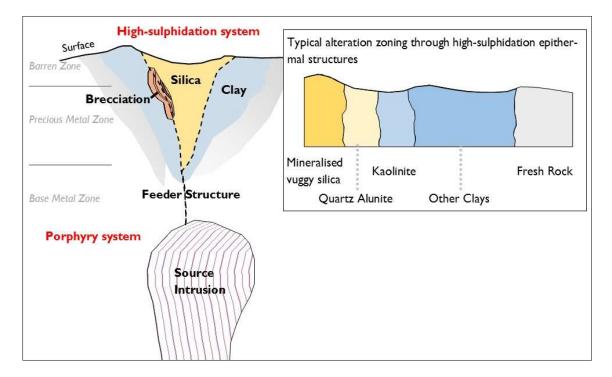


Figure 8-1 Typical cross section of a HS epithermal deposit



### 9. EXPLORATION

Documented exploration at Corihuarmi can be traced back a little over 20 years to 1996. Exploration at the property includes: Landsat imagery, surface mapping, surface sampling, and ground-based geophysics including magnetics, IP and CSAMT.

In 1996, Minera Andina de Exploraciones (Minandex) identified what would become the Corihuarmi Property as a colour anomaly on a Landsat image (Figure 9-1). Follow-up ground truthing including geological mapping and wide-spaced surface sampling (Figure 9-2) identified an extensively developed hydrothermal alteration system, encompassing what would become the Diana and Susan deposits among others.

In 1998, Minandex ceded control of the Property to Cardero Resources Corporation (Cardero), in a joint venture arrangement with Barrick Gold Corporation and Newmont Mining Corporation. Cardero continued exploring the Property over a two-year period.Systematic surface sampling focused around the north-northwest trending Chonta fault zone. Alteration was mapped using Portable Infrared mineral Analysis (PIMA) and a Controlled Source Audio Magnotelluric (CSAMT) survey was completed. Drill targets were identified and tested with 1971.15 m of diamond drilling over 9 holes. At the conclusion of this work Cardero took the decision to return the Property to Minandex as they considered it was unlikely to host significant zones of epithermal gold mineralisation.

In 2002, MIRL entered into an agreement with Minandex to earn in to the property. Extensive surface sampling and mapping confirmed the 3 km, northwest-southeast trending, zone of hydrothermal alteration around the Chonta fault zone.

In 2008, MIRL commissioned Fugro Ground Geophysics (Fugro) to undertake 2D Induced Polarisation (IP2D) and ground magnetics surveys. Based on the surveys four targets were identified, based on highly resistive zones surrounded by zones of low resistivity. The full characteristics of the survey are detailed in the Fugro report (Fugro 2007), summary findings are listed here:

- Negative ground magnetic anomalies identified during the survey correspond to zones that had suffered strong hydrothermal activity which was magnetite destructive
- Four highly chargeable (>32 mV/V) zones interpreted to be associated with disseminated sulphides (Figure 9-5)
- Four highly resistive anomalies (between 1100 and 1600 Ohms) were identified as part of the IP survey (Figure 9-5). These anomalies directly relate



to massive silica introduction and the developement of vuggy silica around high-sulphidation centres.

Three resistivity lows were recorded during the resistivity survey (<5 Ohms), 0 these lows were related to the development of hydrothermal breccias and increased sulphide content.

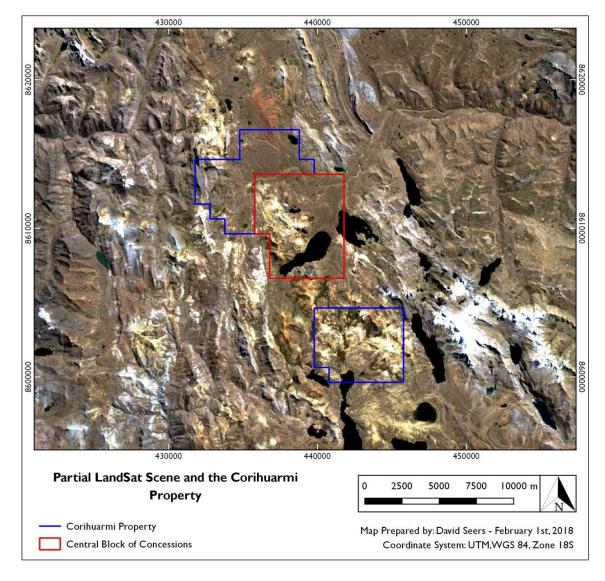


Figure 9-1 Partial Landsat Image and the Corihuarmi Property

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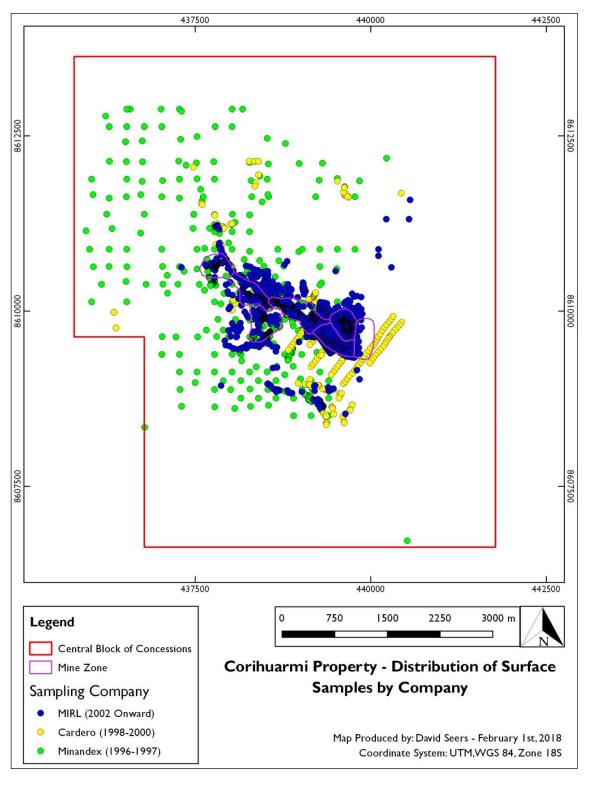


Figure 9-2 Corihuarmi Property - Distribution of Surface Samples by Company



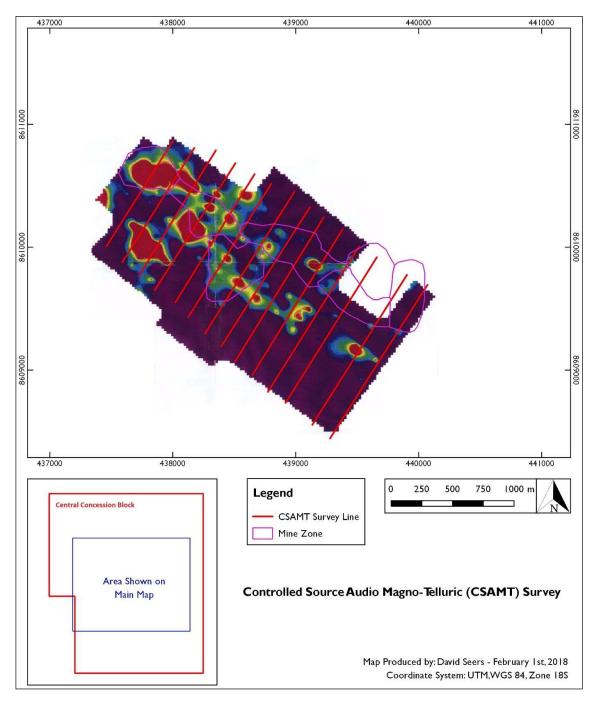


Figure 9-3 Controlled Source Audio Magno-Telluric (CSAMT) Survey

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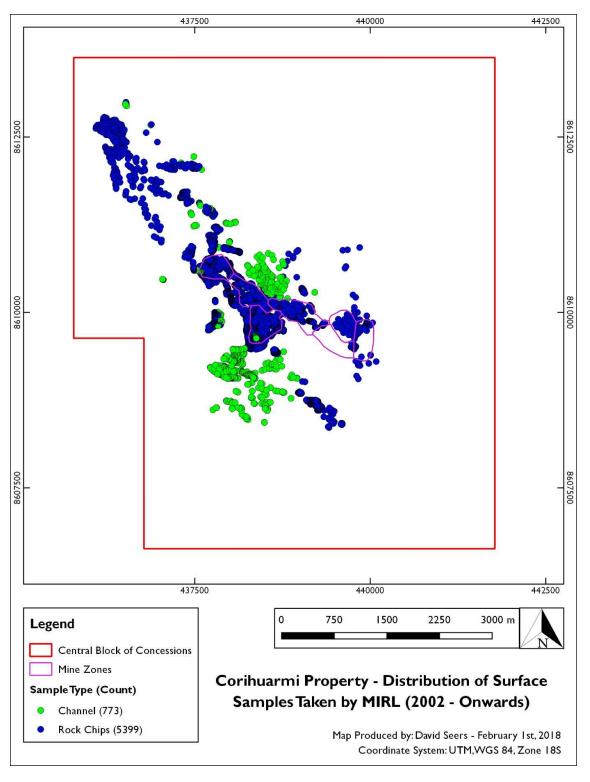
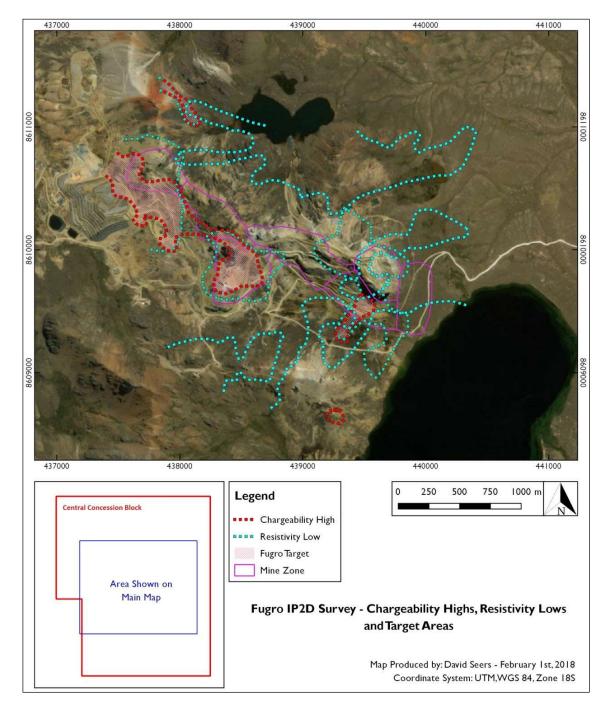


Figure 9-4 Corihuarmi Property – Distribution of Surface Samples Taken by MIRL



## NI 43-101 Technical Report Mineral Resource Estimate Corihuarmi Mine



#### Figure 9-5 Fugro IP2D Survey – Chargeability Highs, Resistivity Lows and Target Areas

Ms Muñoz (QP) is in agreement with the exploration carried out and appropriateness of the techniques employed by MIRL and they are suitable for the exploration of HS type mineralisation. These techniques have allowed to effectively delimit mineralized zones that have been in mining production in recent years, as well as noting that some of the Fugro and CSAMT anomalies have not yet been drill tested.



# **10. DRILLING**

MIRL maintain an extensive drilling database for the property, the database includes exploratory diamond (DDH) and reverse circulation (RCD) drilling completed by MIRL and their predecessors. The database also stores production drilling which includes long holes and blast holes.

The information of drilling and sample preparation described below were compiled from previous site visits made by other experts, documents reviewed, and from the site visit made by Ms Muñoz on February 23<sup>rd</sup>-24<sup>th</sup> and is included here for completeness.

There was no active DDH or RCD drilling program under way at the time of Ms Muñoz's visit to the Project site in February 2021.

# **10.1** Exploration and Resource Definition Drilling

Collar locations are surveyed by MIRL using a total station instrument with sub centimetre accuracy. Drill-mast orientations are surveyed by MIRL to give hole orientations, down-hole surveys are not routinely completed and under international industry standards it is considered a poor practice. However, the impact on the Mineral Resource is considered minimal as the average hole depth is less than 100m.

Diamond drilling has been used exclusively as an exploration tool. RC drilling is typically used for resource drilling and supported with rotary air drilling called long holes drilled in areas to supplement assay information. Table 10-1 provides a summary of drilling by type, year and operator:



Year	Compony		DDH		RCD	RCD Long Holes			Total
rear	Company	Holes	Total Depth	Holes	Total Depth	Holes	Total Depth	Holes	Total Depth
1997	Minandex	3	755					3	755
2000	Cardero			9	1975.15			9	1975.15
2003	MIRL	12	834.95					12	834.95
2004	MIRL	19	1599.25					19	1599.25
2005	MIRL	49	1911.25	83	2641			132	4552.25
2006	MIRL	6	256.45					6	256.45
2008	MIRL	32	3625.7	43	3460			75	7085.7
2009	MIRL	14	1815.4	53	2960			67	4775.4
2011	MIRL	31	3069.2			291	3679.1	322	6748.3
2012	MIRL	39	2919.8			33	299.3	72	3219.1
2014	MIRL	50	2962.4			490	6923.2	540	9885.6
2015	MIRL	8	231.4			186	1752.8	194	1984.2
2016	MIRL	65	6105.4	29	2199	630	11395.5	724	19699.9
2017	MIRL					74	1360.7	74	1360.7
2018	MIRL					952	20837.4	952	20837.4
2019	MIRL					736	14980.25	736	14980.25
2020	MIRL					560	13045	560	13045
2021	MIRL					542	13111	542	13111
	Total	328	26086.2	217	13235.15	4494	87384.25	5039	126705.6

#### Table 10-1 Summary of drilling

# **10.2** Diamond Drilling

Diamond drilling (DDH) at the Property was undertaken by MDH, a recognised Peruvian drill contractor. Core diameter was typically HQ although NQ diameter was used less frequently.

Drilling extends 3km northwest-southeast around the Chonta Fault Zone (Figure 10-1). The majority of DDH holes were focused in the areas of the Laura, Cayhua, Ely, Diana and Susan pits.

Diamond drill hole orientations cover a wide range of azimuths, mast inclination ranges between vertical (-90) and -27 degrees. Once set, drill masts were surveyed by MIRL, downhole deviations were not measured. Between 2012 and 2016 drill core recovery averaged over 95%.

The most prominent diamond drilling procedures are summarized below:

- All core were logged for geotechnical, geological and structural information. Printed quick-logs, for core, are available at the core-shed, these logs are detailed and clear.
- Core Recovery was recorded as a matter of course and was generally good (i.e. >95%)



- Drill core was photographed.
- Core boxes were stacked on the concrete floor of a designated core-shed within the Property but away from mining operations. Shelving was not provided, and stacks of core were susceptible to falling. Core-sheds were at capacity and there was little room to store new core.
- Core was stored in wooden boxes marked with permanent marker. Wooden core tags were placed between core runs which detail hole name, azimuth, dip and the start and end depth of each run.
- Sample lengths were determined by MIRL geologists based on their observations and experience. As a rule, sample intervals were not less than 0.2 m or greater than 2.5 m.
- Marks on boxes identify the beginning and end of each sample and a sample ticket was stapled into the box close to the samples centre point
- Samples were halved using a core saw.
- Samples were submitted to MIRL's on-site laboratory for analysis for gold and silver in batches including QAQC insertions. Samples to be sent for external analysis were splitat MIRL's laboratory.
- Samples were prepared in batches of 20 samples which include 1 x blank, 1 x standard and 1 x duplicate (crush or pulp) QAQC insertions.
- A choice of two standards (certified for gold) were available.
- For the purposes of QAQC, MIRL review assay data on a by batch basis.

# **10.3 RC Drilling**

The majority of RC drilling is centred around the Diana and Susan pits. The most prominent RC drilling procedures are summarized below:

- RC samples varied in length between 1 and 5 m. Samples were split using a rifflesplitter, approximately 1 kg of sample were submitted for analysis.
- Riffle splitters were cleaned using paint brushes after every sample.
- Unsampled RC chips were stored, under a roof, in piles of "rice sacks" labelled with permanent marker pen and sealed using one-way plastic ties.



## NI 43-101 Technical Report Mineral Resource Estimate Corihuarmi Mine

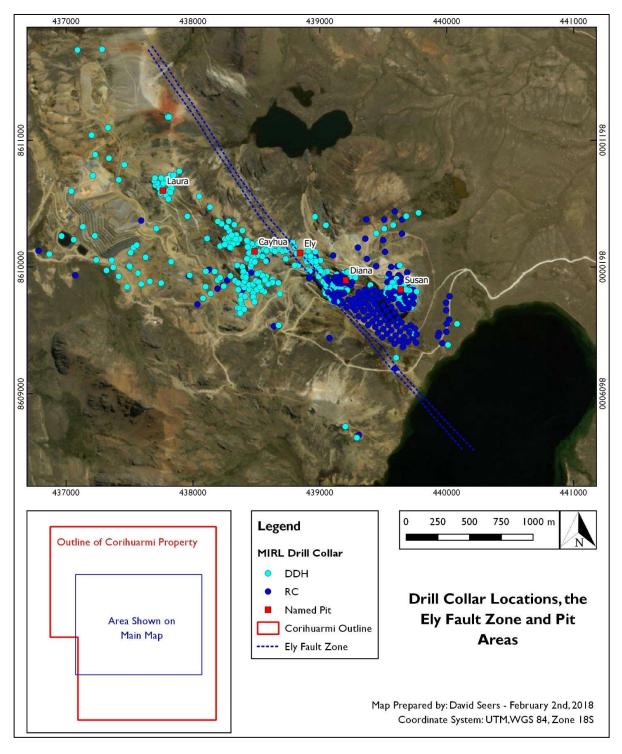


Figure 10-1 Drill Collar Locations, the Ely Fault Zone and Pit Areas

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# **10.4** Blast Drilling (Blast holes and Long holes)

Rotary air drilling is used for pattern drilling blasts holes. A single sample of drill chips is taken over the length of the hole, typically 5m. Blast holes are typically drilled on a 5 x 5 m grid.

Long holes are effectively blast holes extended up to 25 m to help with resource estimation in areas with limited assay information.

From the above description and from the site visit, Ms Muñoz (QP) concludes that the drilling has been carried out under acceptable industry standards; however, the following recommendations are made:

- 1. Downhole surveying of DDH and RC drill holes as a matter of course.
- 2. Shelving for core should be installed to increase the ease of access to core and to reduce the risk of stacks of core boxes falling.
- 3. The RC system of sample storage would prove inefficient if it was necessary to locate RC chips.
- 4. Core and RC storage could be improved.



# 11. SAMPLE PREPARATION, ANALYSES AND SECURITY

## **11.1 Sample preparation**

Diamond core a RC samples are sent to the ISO certified Certimin laboratory in Lima for analysis. Before samples are transported to Certimin, MIRL prepare and reduce sample weights at the mine laboratory.

#### 11.1.1 Diamond Drilling

The following is a summary of the procedure for diamond drill core sample preparation:

- 1. Drill core is described and photographed Geologists mark it for sampling to be cut in half lengthways using a core-saw. Logging and sampling methods follow standard industry practice.
- Typically, diamond drill holes are sampled from top to bottom with no gaps in the sampling. Minimum and maximum sampling intervals for diamond drill core are established at 0.2 and 2.5 m respectively. Sample intervals are based on geological observations including lithology and alteration.
- 3. Samples are crushed to <20mm at an on-site preparation laboratory then split with a riffle splitter to separate a coarse sub-sample weighing approximately 0.5 kg.
- 4. Coarse sub-samples are sent to the Certimin laboratory in batches of 30 including QAQC insertions of one certified blank, one Certified Reference Material (CRM) and one duplicate to be prepared by the laboratory from crushed material.

When reviewing the drill database, Mr Muñoz (QP) noted that significant numbers of samples measure over 2.5 m in length the longest sample measured 7.65 m. Ms Muñoz verified that there was no relationship between the sample length and the gold grade.

## 11.1.2 Reverse Circulation Drilling

The following is a summary of the procedure used for the collection and preparation of reverse circulation drill holes:

1. Prior to starting a hole, the cyclone is hit with a rubber hammer and the interior flushed with compressed air. The three-tier riffle splitter is inspected for fragments and cleaned with compressed air.



- Samples from the cyclone are guided into the riffle splitter, the sample tube is moved back and forth across the top of the splitter, and the sample is constantly levelled. After every fifth sample, the cyclone is hit with a rubber hammer to free up any lodged material. RC samples were collected over 1, 1.5, 2, 2.5, 4 or 5 m intervals.
- 3. The samples are riffle split down to two trays. The riffle splitters are levelled to ensure that a 50 / 50 split is achieved. The material in the first tray is sent to the waste bag. The second tray is re-split in a second riffle splitter to achieve 25% splits. One of the two 25% splits is then further split to achieve a 12.5% split of the original two metre sample, which is then sent to the on-site preparation laboratory, with the remaining 25% and 12.5% split samples being retained for reference purposes.
- Samples are dried and crushed to <20mm at an on-site preparation laboratory then split with a riffle splitter to separate a coarse sub-sample weighing approximately 0.5 kg.
- 5. Coarse sub-samples are sent to the Certimin laboratory in batches of 30 including QAQC insertions of one certified blank, one Certified Reference Material (CRM) and one duplicate to be prepared by the laboratory from crushed material.

Records for some RC samples submitted to Certimin were reviewed by Mr Seers in 2018 noted a significant variability in the weight of samples being sent to Certimin for analysis, of the records reviewed the weight of 2 m samples ranged between 0.3 kg and 1.23 kg. This variation likely reflects inconsistent sampling which could negatively impact confidence in the data.

## 11.1.3 Long holes Drilling

During Ms Muñoz´site visit (QP) was able to observe the long hole drilling procedure of recent drilling and internal laboratory noting the following:

- 1. Prior to the beginning of drilling and sampling, the cleaning and verification of the sampling tools is carried out.
- Once the drilling has started, the sampling process also begins, placing the collecting trays in the most appropriate place adjacent to the drill so that the sampler has the convenience of recovering the greatest amount of detritus without obstructing the operator.
- 3. The material recovered from the drill (40-50 kg. approx.) is accumulated in buckets. This material is homogenized with 3 passes through the Riffle Splitters with the goal of an approximate sample weight of 5 kg. The sample is bagged, coded and closed (with security seal) for shipment to the internal mine laboratory. The remaining



material is not retained because the area drilled with longhole will be extracted in the short to medium term.

- 4. All longhole samples are prepared and analysed in the on-site laboratory.
- 5. Due to the size of the sample fragments (<20mm), it is directly split with a riffle splitter to separate a coarse sub-sample weighing approximately 0.25 kg and is subsequently dried for pulverization.

Ms Muñoz points out that the use of long holes for the use of resource estimation is not a considered common industry practice. However, most of these have a depth of no more than 25 m. These long holes are focused on supplementing RC and DDH data in the production areas or defining extension limits in known areas. Use of this data is limited to a range of influence during the estimation process and does not exceed 15 m and in rare cases 25 m. On the other hand, Corihuarmi is a deposit with mining production since 2008 and is well known and understood, with a total production in the last 3 years (from 2018 until end of February 2021) of 95,000 gold ounces. In Ms Muñoz's opinion, the use of long holes in a supplementary way is considered acceptable for use in calculating the resource update.

Ms Muñoz has made a series of recommendations to improve the sampling and sample preparation process in the laboratory as indicated:

- During the collection of sample detritus adjacent to the longhole, it is recommended that a canvas, metal, or plastic material (preferably disposable) be placed to collect the sample detritus, thusly avoiding contact of the detritus with the ground or previously blasted material.
- Exclude collection of the first (top) 25 cm that material which is likely contaminated from blasting from the sample.
- All sampling equipment must be cleaned with compressed air.
- Provide feedback to sampling personnel for a non-biased sample collection, and to avoid inappropriate splitting of the sample.
- Due to the nature of the sample, long-hole drill holes should classify as no better than Indicated Resources for drilling spacing between 15 to 30m.
- Long hole drill holes in new zones, far from the known mining area, without RC or DDH drill data must not categorize any resources and can be used as a guide for follow-up exploration.
- The exploration samples must be sent to an external laboratory.



- Drying of the sample should be done prior to any sub-division or splitting during sample preparation in the laboratory.
- The exploration drilling must be carried out with reverse air or diamond drillings and use of long holes only as a data supplement in known areas.

# **11.2** Sample security

Reference material is retained and stored in Lima, including half-core and photographs generated by diamond drilling, duplicate pulps and residues of all submitted samples.All pulps are stored in Lima at the MIRL storage base. The Corihuarmi mine has 24-hour security. The mine site preparation laboratory is kept locked.

Samples are transported from site by road to the Certimin facility in Lima by private mine vehicles. Certimin takes custody of the sample on receipt, at which time they inspect the batch, cross-check with the submission form and attach bar codes to register the samples. The Certimin laboratory is security controlled.

# **11.3** Chemical analyses

All Diamond and RC samples are analysed by Certimin laboratory in Lima. Certimin has been servicing the Peruvian mining industry for 21 years. It participates in international proficiency testing programs such as CANMET and GEOSTATS, and develops its services with the support of the Integrated Management System for the compliance of regulatory requirements such as ISO 9001, ISO /IEC 17025, ISO 14001, and OHSAS 18001. Certimin prepares and assays samples with the following methodology:

- 1. 500g sample pulverised to 90% passing #200.
- 2. 50g sample split digested by aqua regia.
- 3. Analysed by 50g Fire Assay (FA) with an atomic absorption spectrometry (AAS) finish.

# **11.4 Quality Assurance / Quality Control**

## 11.4.1 RC and DDH

MIRL currently inserts Quality Assurance / Quality Control (QAQC) samples including blanks, Certified Reference Materials (CRMs) and pulp duplicates before submission to Certimin laboratory.

QAQC data prior to 2012 were not available, however, Coffey Mining (2010) analysed the QAQC data prior to 6th April 2010 and found that:



- Generally, standard results showed acceptable accuracy with some obvious outliers that could be attributed to sample mix-ups.
- Diamond core field duplicates showed poor precision, which was attributed to poor duplicate sample preparation methodology and not necessarily reflecting poor preparation of the main sample.
- Diamond core pulp duplicates showed very good precision.
- The results showed the data were suitable for use as inputs to Mineral Resource Estimation.

The QAQC data reviewed by Mr Seers in 2018 for samples drilled between 2012 and 2016 indicates that approximately 10% of samples analysed are a QAQC insertion. Mr Seers highlights the following:

- That CRM performance is satisfactory with only two batch failures for the reporting period.
- That duplicate performance reflects adequate sample preparation and homogenisation and that the sampled fraction reasonably reflects the sampled interval.
- That blank performance is satisfactory and that there are no indications of materially significant contamination during sample preparation or analysis.
- That the mine laboratory and Certimin have comparable precision, which provides confidence in the mine laboratory assays.

# 11.4.1.1 Certified Reference Materials (Standards) – 2012-2016

Certified Reference Material (CRM) is a standard sample that has been manufactured by a certified company and is itself certified. The manufacturing process creates a homogenized sample that has undergone an extensive and rigorous certification process. This process generates an expected value and acceptable limits for all elements in the sample.

Laboratories use CRMs to ensure that their analytical processes are accurate between calibrations of the machines. Where drift is observed, it is normal procedure for a machine to be re-calibrated. It is possible for internal laboratory CRM assay results to be altered and as such it is now industry standard for laboratory clients to submit their own CRM samplesto be able to monitor the accuracy of the laboratory.

Between 2012 and 2016, MIRL submitted four different CRM's certified for Au grade to Certimin Laboratory (Table 11-1). These CRM's reasonably reflect the range of grades



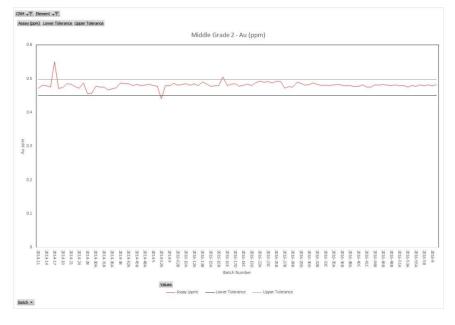
expected at the property (Figure 11-1 to Figure 11-4). Of the 233 CRM's were submitted for analysis, 96% assayed within certified ranges. Two CRM's that assayed significantly above expected ranges were submitted with samples from the Laura and Ely mine zones (Figure 11-1 and Figure 11-2). Mr Seers (2018) noted that these samples were not submitted by MIRL for reanalysis and that they (QP) could reflect a mislabelled CRM Ley Media (A). Furthermore, the Ely zone is not considered in the Mineral Resource estimate. Mr Seers (2018) concluded that one batch will not materially affect the Mineral Resource and Ms Muñoz (QP) is in agreement.

CRM	Certifying Laboratory
Low grade 1	Actlabs Skyline Peru SAC
Middle grade 1	Actlabs Skyline Peru SAC
Middle grade 2	Actlabs Skyline Peru SAC
Low grade 2	Actlabs Skyline Peru SAC

## Table 11-1 Au CRM's submitted Certimin

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## Figure 11-1 CRM Ley Media Au – 2012-2016

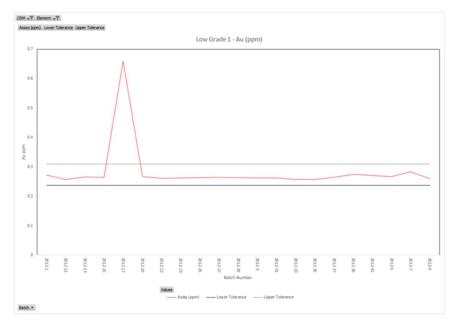
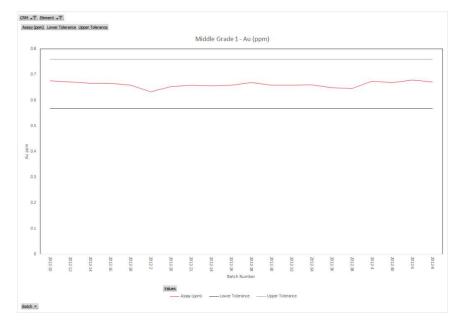


Figure 11-2 CRM Low Grade 1 – 2012-2016





## Figure 11-3 CRM Middle Grade 1 – 2012-2016

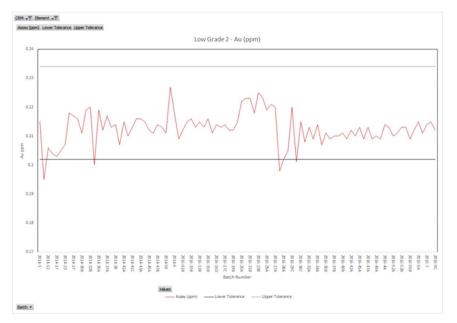


Figure 11-4 CRM Low Grade 2 – 2012-2016



## 11.4.1.2 Duplicates – 2012-2016

MIRL used coarse duplicates during the reporting period. Coarse duplicates are splits of samples that are resubmitted to the laboratory with a different sample number. The duplicates are blind to the laboratory and give a measure of the precision of the assays.

Mr Seers (2018) observed that the coarse duplicate performance is good with most duplicate samples assaying within 10% of the original assay value. Duplicate performance is particularly good for samples assaying above 0.25 g/t Au (Figure 11-5).

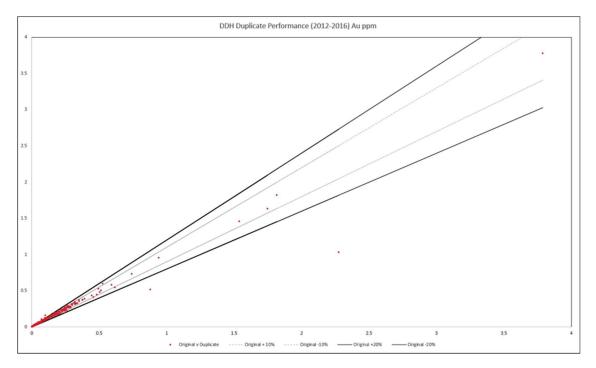


Figure 11-5 Coarse Duplicate Performance – 2012-2016

#### 11.4.1.3 Certified Blank - 2012-2016

Fine blanks prepared by ACTLABS, certified for Au and Ag, are submitted with each batch. 227 blanks were assayed between 2012 and 2016, most of these blanks assayed at orbelow the lower detection limit for Au (0.005 ppm for the analytical method used). All blank samples assayed within two times the lower detection limit for gold (Figure 11-6). The highest Au assay returned from a blank sample was 0.008 ppm.



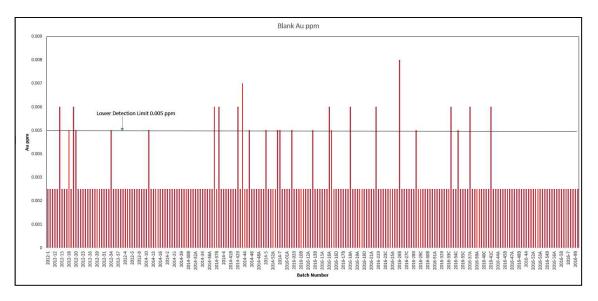


Figure 11-6 Certified Blanks – 2012-2016

## 11.4.1.4 Secondary comparison assays – 2012-2016

Independent re-assaying of selected pulps from the primary sample by a secondary laboratory provides a measure of both precision and accuracy by quantifying the repeatability of the assays. However, it is difficult to determine which result is better if the results are significantly different.

One in fifty pulp samples prepared at the mine laboratory are submitted to Certimin as a means of comparing analytical precision (Figure 11-7). Between 2014 and 2017, 228 pulps approximately 2% were sent to Certimin for analysis to compare assay values from the mine laboratory and the Certimin laboratory. Results demonstrate that on average Certimin assays within 10% of the mine laboratory. Comparative precision is worse at lower grades.

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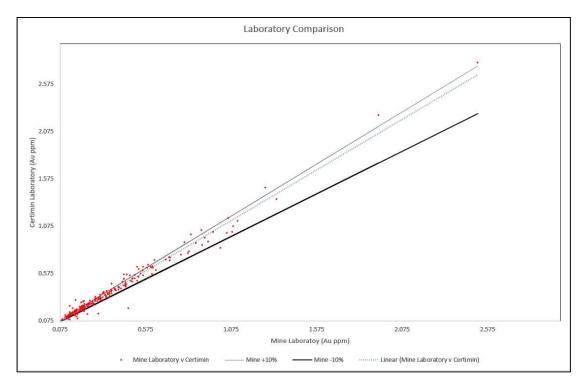


Figure 11-7 Secondary Laboratory Comparison – 2012-2016

## 11.4.2 Long hole - 2017-2021

Ms Muñoz (QP) verified that Corihuarmi implemented an internal QA / QC protocol during the drilling campaign carried out from 2017 to 2021 for long hole drilling; inserting reference materials (certified international standards - CMR), fine blanks, field duplicates. The total of quality controls represents 8% (1,306 control samples) of the total of primary samples (see Table 11-2). The primary laboratory during the 2018-2021 drilling campaign was the onsite laboratory.

Year	Primary Samples	Field Duplicates	Blank	CMR	Excluded	Total Control QA/QC	Proportion QA/QC
-	108					0	0%
2017		6				6	-
2018	5405	121			1	121	2%
2019	3978	57				57	1%
2020	3527	78	43	41	5	162	5%
2021	3940	508	227	230		965	24%
Total	16958	770	270	271	6	1311	8%
Proportion	100%	5%	2%	2%	0%	8%	

Table 11-2 Quality	Control Samp	le Insertion	Rates 2017-2021
Table II-2 Quant	y control Jamp		



Corihuarmi also performed a pulp check sample or Secondary comparison assays with an external laboratory (Certimin S.A. laboratory) as part of their QA / QC protocol of the lab. These samples mostly correspond to production samples.

Year	Check Samples
2017	415
2018	
2019	180
2020	220
2021	257
Total	1072

#### Table 11-3 Pulp check in external laboratory 2017-2021

11.4.2.1 Certified Reference Materials (Standards) – LH-2017–2021

The CMRs used during drilling 2017-2021 correspond to the Low grade 1 (STD A) and Middle grade 1 (STD B) describe in section 11.4.1.1. Table 11-4, Figure 11-8 and Figure 11-9 show the summary of the results of standard samples and evaluation of bias. Ms Muñoz highlights the following:

- The standards were included in the last stages of drilling mainly between 2020-2021.
- No significant bias has been detected between the gold assays performed by the primary laboratory and the CMRs.
- No failures of the CMRs analyzed have been detected.

Certified reference material	Element	Unit	Samples	Average	Best Expected Value	Sta. Dev. Best Expected Value	Bias %	Failures	% Failures
STD A	Au	g/t	134	0.23	0.23	0.01	2%	0	0.0%
STD B	Au	g/t	137	0.51	0.50	0.03	1%	0	0.0%

#### Table 11-4 Summary of the results of standard samples and evaluation of bias – LH-2017-2021



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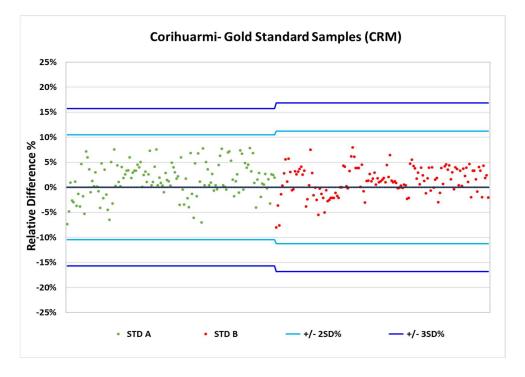


Figure 11-8 Gold Standard Samples for LH

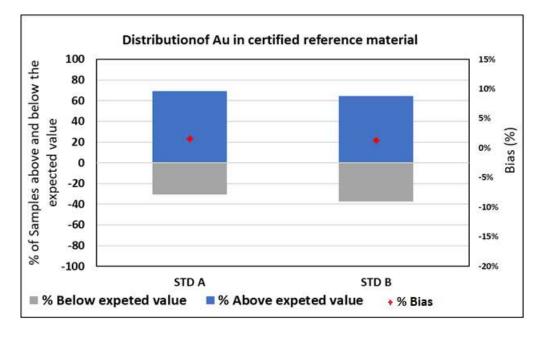


Figure 11-9 Distribution of gold in certified reference material -LH



11.4.2.2 Certified Blank - LH

The blank material used during the drilling campaigns 2017-2021 correspond to the fine blank described in section 11.4.1.3. Table 11-5 and Figure 11-10 show the summary of the results of the fine blanks. Ms Muñoz highlights the following:

- Like CMRs, fine blank has mainly been inserted in the last stages of drilling campaign between 2020-2021.
- The results have not shown failures of the blank samples considering an acceptance value of five times the detection limit.
- In the first stages of blank control insertion, a slight contamination was observed compared to the last controls inserted.

Dialik	Samples	DL	70 T allul C3
Pulp Blank	271	0	0.0%
DL: Detection Limit			

Table 11-5 Summary of Analysis of Fine blank Samples - LH

N. Samples > 5x

N.

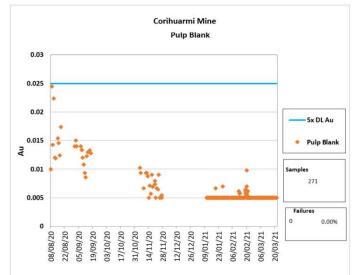


Figure 11-10 Certified Blank - LH

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11.4.2.3 Field duplicates - LH

The objective of the Field Duplicates is to estimate the variability in the sampling process taken in the field. For precision control in the drilling campaign from 2017 to 2021, a total of 770 pairs of field samples were sent to the Laboratory on-site. Table 11-6 and Figure 11-11 show the summary of the results of field duplicates. Ms Muñoz highlights the following:

- The field duplicates represent 5% (770 control samples), most of them are concentrated in the last stages of drilling.
- The precision during sampling for gold is considered acceptable with failure rate or error rate less than 1%.

Au Field Duplicates	Pairs		Origina	al Assay		Relative	Failures	%
		Average	Minimun	Maximun	CV	Difference		Failures
Original Assay	770	0.094	0.0050	7.934	3.78	00/	7	0.9%
Field duplicate Assay		0.094	0.00	9.100	4.22	0%	/	0.9%

#### Table 11-6 Summary of duplicate sample analyzes - LH

Relative acceptance error: 30%

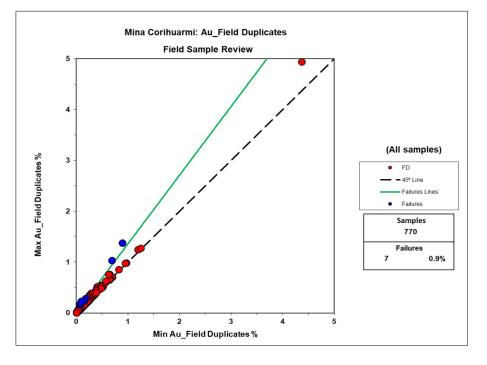


Figure 11-11 Field Duplicates - LH



#### 11.4.2.4 Secondary comparison assays- LH

Comparisons between the results obtained by the primary laboratory (on-site) and the external laboratory (Certimin) have shown that both present similar results with a slight bias of 1.8%, demonstrating that the precision and accuracy of the primary laboratory is acceptable. Table 11-7 and Figure 11-12 show the summary of the results of Secondary comparison assays.

#### Table 11-7 Summary of Secondary comparison assays - LH

Element	Laboratory	R <sup>2</sup>	Pairs	м	Erro (m)	b	Erro (b)	RMA Ecuation	Bias
Au g/t	Total	0.98	1072	1.018	0.004	-0.014	0.005	RMA: y=1.018x-0.014	-1.8%

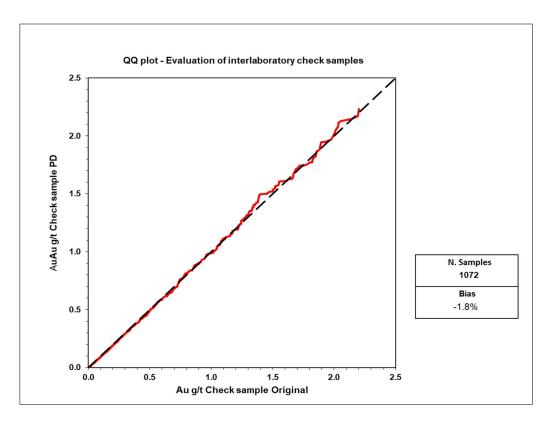


Figure 11-12 Secondary comparison assays - LH



### 11.4.3 Discussion

Ms Muñoz (QP) notes the following regarding the QAQC results of the drilling campaign 2017-2021

- Overall, the results of the QA / QC program carried out between 2017-2021 are acceptable, where no significant contamination is observed with acceptable precision and accuracy without evidence of bias and are suitable for use in estimating resources.
- QA / QC failures are not properly investigated and recorded, these failures are reanalyzed, and if the failure persists, the sampling batch is re-analyzed. However, the source of the error must be investigated for appropriate corrective action.
- The QA / QC of long hole drilling conducted between 2018 and 2020 is limited, while improving in recent months due to previous recommendations made by Mining Plus.
- The data entry of the assay database should preferably be done in Access format to avoid human errors during the updating of grades, and to improve its administration.
- Interlaboratory check samples of exploration samples must be increased by at least 5%.
- Continue with improvements to the implementation of QA / QC controls of the samples, including an appropriate investigation of the failures of the QA / QC controls for the identification of the causes of error and timely improvements.

Having reviewed QAQC performance for the reporting period, previous conclusions by Coffey Mining (2010) and Mr Seers (2018), Ms Muñoz is satisfied that industry standard procedures have been followed in the collection and preparation of samples and that the assay values in the drill hole database are suitable for use as input to a Mineral Resource Estimate.



# **12. DATA VERIFICATION**

Ms Muñoz (QP) made a technical visit between February 23<sup>rd</sup>-24<sup>th</sup> (2021), where she completed a review of the recent drilling (2017-2021) that included: review of the drilling procedure, sampling, QA / QC, analysis in the laboratory and independent check.

Data prior to 2017 has not been reviewed for this report, due to coverage in the previous report (NI 43-101, 2018). Mr Seers (2018) performed a verification that included: review of drilling procedures, sampling, QA / QC, independent sample checking and comparison of the analytical results of the database with the laboratory certificates, in which Ms Muñoz relies on.

From the review made to the data prior to 2017, Mr. Seers concluded:

- "As per standard industry practice a percentage of the database was reviewed with random spot checks. This review demonstrated that the mine has good database managementpractices with all checks coming back as accurate. Based on the information he reviewed, Mr Seers (2018) is satisfied that sample database is consistent, accurate and suitable for use inthe Mineral Resource estimate"
- The review of spreadsheet certificates for RC samples revealed inconstancy in the weight of samples submitted to Certimin, with 2 m samples ranging between 0.3 kg and 1.23 kg. Mr Seers (2018) recognises that density variation and recovery variations will affect sample weight, however it recommends that samples outside a specified weight tolerance are investigated.
- This is not considered material to the overall Mineral Resource Estimate.

# 12.1 Check Sampling

During Ms Muñoz's visit, she randomly took three duplicate samples from the drilling of the long holes that were being carried out in Susan's pit. Likewise, during the visit to the onsite laboratory she requested three random pulps and two QA/QC control samples (Blanks and CRM).

These samples were sent by Ms Muñoz (QP), to the Certimin laboratory, where the results of both laboratories show no biases, and the check assay values are consistent with grades in the database (Table 12-1).



Sample	Sample Type			Au (ppm)
#			Onsite Laboratory	Independent Laboratory
1012576	Long hole duplicated sample	1.1	0.041	0.04
1012580	Long hole duplicated sample	7.25	0.073	0.068
1012581	Long hole duplicated sample	6.15	0.056	0.045
1012582	Blank pulp control	0.05	<0.005	<0.005
1012583	CMR pulp control	0.06	0.239	0.236
1010308	Pulp duplicate sample	0.16	0.009	0.013
1010309	Pulp duplicate sample	0.16	0.023	0.029
1010226	Pulp duplicate sample	0.2	0.028	0.028

#### Table 12-1 Check sampling by Ms Muñoz

# **12.2** Drilling Database

Ms Muñoz (QP) reviewed MIRL's drill hole database (source in excel files) for consistency similarly to that completed in 2018, during this review the following checks were made, and no issues were identified:

- Search for duplicate collar ID
- Search for duplicate sample number
- Search for maximum Au grade
- Search for maximum samples length
- Review collar location against surface
- Comparison of assay result (55%) of recent drilling (2017-2021) of long hole with assay certificates (see APPENDIX A: Assay Verification – Drilling 2017-2021).

Minor inconsistencies were detected in the database associated with recent drilling and were excluded during the resource estimation.

The comparison between the results of the analytical assays of long hole samples 2017-2021 and their respective certificates highlighted minimal inconsistencies (less than 1%).

## **12.3** Data type comparison

Ms Muñoz (QP) made a comparison between RCD against DDH samples, no significant bias was detected between RCD and DDH, so these data were combined to make a comparison between RCD & DDH against long hole sample intervals.



The comparison between RCD&DDH against long hole samples was as follows: Five metre down-hole composite grades for LH (2018-2021) samples were compared to the nearest composite from a combined dataset of DDH and RCD sampling within a maximum of five metres east-west by five metres north-south by five metres vertical.

The summaries of nearest neighbour comparisons are presented in Table 12-2 and Figure 12-1. Most paired composites are in the remaining resources considered in this report.

Table 12-2 and Figure 12-1 demonstrate that the composite grades from nearby LH have reported higher grades compared to diamond and RC composites, this bias is mostly observed for samples greater than 0.2 g / t Au. At higher grades this bias appears to increase, however, there are too few pairs with such high grades for the results to be definitive to apply a relevant adjustment factor for the higher grades.

Comparison between LH (2018-2021) and RCD and DDH suggests that the grades from LH are biased positive due purely to the drilling technique, and that drilling and sampling are basically acceptable for use at very short ranges. The trend of bias of the LH vs RCD and DDH suggests that the LH bias can be compensated multiplied by 0.9 the LH grades to compensate for this apparent bias for grades greater than 0.2 g / t Au.

	Full Pairs (	composite 5m)	Excluding	Au <= 1.5 g/t
	LH	DDH & RCD	LH	DDH & RCD
Samples	469	469	468	468
Minimum	0	0	0	0
Maximum	1.02	1.81	1.02	0.72
Mean	0.11	0.1	0.11	0.1
Mean Difference		-10%		-10%
Standard deviation	0.14	0.13	0.14	0.1
CV	1.25	1.23	1.25	1.01
10%	0.01	0.01	0.01	0.01
20%	0.03	0.02	0.03	0.02
30%	0.04	0.04	0.04	0.04
40%	0.06	0.06	0.06	0.06
50%	0.07	0.08	0.07	0.08
60%	0.09	0.09	0.09	0.09
70%	0.12	0.12	0.12	0.12
80%	0.16	0.17	0.16	0.17
90%	0.23	0.22	0.23	0.21
95%	0.33	0.26	0.33	0.26
97.50%	0.51	0.41	0.51	0.35
99%	0.79	0.49	0.79	0.48

Table 12-2 LH (2018-2021) vs. RCD and DDH nearest neighbour comparisons



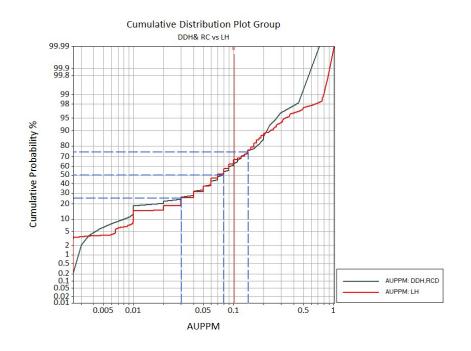


Figure 12-1 LH (2018-2021) vs. RCD and DDH nearest neighbour Probability Plot

Based on the reviews completed by Mr Seers (2018) of data prior 2017 and the current review of recent drilling (2017-2021), Ms Muñoz is satisfied that sufficient checks have been performed and that the drill hole database is suitable as input for the Mineral Resource estimate applying a factor adjustment to gold assays from long hole samples as is explained in this section.

With respect to the metallurgical recovery, for a leaching process of oxidized material in this type of deposit (high sulphidation), the average gold recovery of 70.6% is deemed reasonable for the purposes of the resource estimate based on Ms Muñoz's experience in similar deposits. Table 12-3 shows the gold recovery in between 2018 - 2020.

Year	Oz (Au) Production	Oz (Au) Recovered	(%) Rec
2018	29,862.0	23,052.8	77%
2019	33,544.2	22,974.0	68%
2020	35,425.5	22,592.8	64%
Total	98,831.7	68,619.7	69%

Table 12-3 Metallurgical gold recovery	y between 2018 - 2020
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# **13. MINERAL PROCESSING AND METALLURGICAL TESTING**

Since 2008, the Corihuarmi Mine has processed oxide minerals by heap leach methods producing more than 366,000 ounces of gold.

The processing of mineralized material is performed in two parts. Firstly, the transportation of mineralized material from the pit to the crusher, and subsequently from the crusher to the leach pad.

If the mineralized material does not require additional crushing, the material is transported directly to the leach pad. The waste is transported to the waste dump.

No mineral processing or metallurgical testing has been completed in the period since the previous Technical Report.

The average metallurgical recovery of the mine is 70.6% varying by mining zone as shown in the Table 13-1 below:

Mine Zone	Au - Recovery %		
Susan	78.90%		
Scree Slope	65.01%		
Cayhua	74.05%		
Amp. Diana	70.62%		
Laura	69.93%		
Cayhua Norte	70.95%		
Amp. Scree Slope	65.01%		
Ely Norte	70.62%		
Coyllor	70.62%		
Total	70.63%		

## Table 13-1 Metallurgical Recovery by mine zone

The material contained within this resource estimate is comparable in nature to that being processed currently in the operation. As such, the recoveries are representative of the various types and styles of mineralization and the mineral deposit as a whole.

Ms Munoz is not aware of any processing factors or deleterious elements that could have a significant effect on potential economic extraction.



# **14. MINERAL RESOURCE ESTIMATES**

## 14.1 Summary

The Mineral Resource Estimate (MRE) herein for the Corihuarmi Gold Mine was prepared by Ms. María Muñoz, MAIG, QP(Geo), Independent Qualified Person under NI 43-101, of Mining Plus Consultants who takes responsibility for it.

The 2021 MRE was estimated using all available information that include and covers the nine mineralized areas that are within the production zone of the open pit or at a distance no greater than 500 m.

The effective date of the Mineral Resource reported in this Technical Reported is February 28th, 2021. A general database was constructed with a cut-off date of 28<sup>th</sup> of 2021. The total number of exploration holes drilled used in the current MRE in Corihuarmi to date is 4,368, which includes 238 DDH, 186 RC and 3,944 LH, with a total drilled length of 113,207 m.

A statistical study of the gold grades was completed to analyze their distribution, behaviour and inform the grade interpolation in the block model. The drill hole intervals were composited to a length of 5m, which is the bench height in the mine. After compositing, a grade capping scheme was proposed on a case-by-case basis within each mineralised and mining dilution domain.

A single block model has been generated that combines all the Corihuarmi mine zones. Boundary polygons provided by the company have been used to delimit these mine zones (Figure 14-1).



## NI 43-101 Technical Report Mineral Resource Estimate Corihuarmi Mine

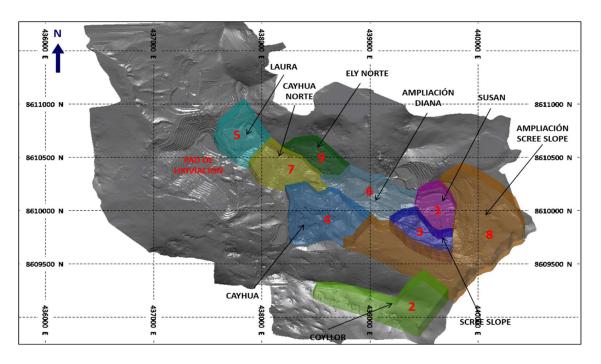


Figure 14-1 Perspective view north of the Corihuarmi mine zones

Three dimensional (3D) geological models of oxidation state and alteration have been interpreted by the Corihuarmi mine geologists. Estimation domains are based on the oxidation state models for each mine zone provided by the company. In addition, a gold grade shell has been generated for each mine zone at a nominal value of 0.06 and 0.5 g/t gold, to better control the estimation of high grades. The grade estimation in each zone used ordinary kriging in three passes and was informed by variographic analysis for each zone.

The Mineral Resource was classified into Measured, Indicated and Inferred categories by taking account the following information:

- Observations of grade continuity and predictability by the mine geology team
- Proven history of the mine production for the past 12 years
- Kriging variance of the gold estimate
- QA/QC results
- Drill hole spacing in comparison with similar deposits.

The Mineral Resource is sub-horizontal, outcropping or close to surface. Mining has proven it to be exploitable by open pit methods with a low strip ratio. The oxide material has reasonable prospects of economic extraction at a cut-off grade of 0.1 g/t gold. This cut-off grade was calculated using current costs and recoveries provided by the mine operation, and a forecasted gold price of US 1,500. To apply the reasonable prospects of economic extraction test, Ms Muñoz (QP) has reported the Mineral Resource inside a pit design 2021



and above the 0.1 g/t gold cut-off grade. The estimated resources are superficial with a low strip ratio, where the resource inside the pit is approximately in the first 20 to 30 meters below the surface in areas with LH drilling and becoming a little deeper in areas with RCD and DDH drilling.

Ms Muñoz (QP) is not aware of any deleterious elements, or any environmental, permitting, legal, title, taxation, socio-economic, marketing, political or other relevant factors that could materially affect the prospects of economic extraction for the Mineral Resource.

# 14.2 Database

The total number of exploration drill holes drilled in the mine area to 28<sup>th</sup> February 2021 and used in resource estimation was 4,368, which includes 238 Diamond Drill holes (DDH) with a total drilled length of 20,863 m, 186 Reverse Circulation Drill holes (RCD) with a total drilled length of 11,096 m, and 3,944 Long Hole (LH) drill holes with a total drilled length of 113,207 m (Table 14-1).

	Drill holes by year				Length drilled by year (m)			
Year		RCD	LH	Grand Total	DDH	RCD	LH	Grand Total
	DDH			(Drill holes)				(Drilled Length)
1997	3			3	755			755
2000		7		7		1,367		1,367
2003	3			3	187			187
2004	14			14	1,279			1,279
2005	16	63		79	887	1,885		2,772
2006	6			6	256			256
2008	30	38		68	3,363	2,970		6,333
2009	11	49		60	1,376	2,675		4,051
2011	27		95	122	2,461		1,519	3,980
2012	32		33	65	2,606		299	2,905
2014	34		360	394	2,398		5,361	7,759
2015	2		138	140	51		1,523	1,574
2016	60	29	579	668	5,245	2,199	10,527	17,970
2017			74	74			1,361	1,361
2018			933	933			20,505	20,505
2019			671	671			14,802	14,802
2020			527	527			12,415	12,415
2021			534	534			12,939	12,939
Grand Total	238	186	3,944	4,368	20,863	11,096	81,249	113,207

#### Table 14-1 Exploration drill holes by type used in the resources estimation and completed to 28th February 2021

Hole inside the mine zones and inside mineralized zones, and excluding anomalous holes



## NI 43-101 Technical Report Mineral Resource Estimate Corihuarmi Mine

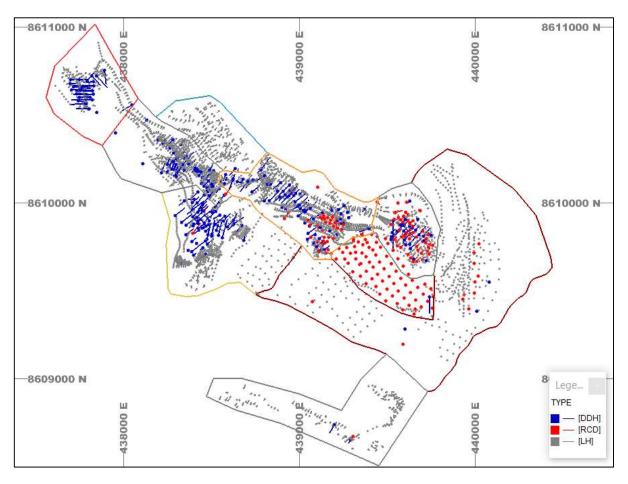


Figure 14-2 Plan view with the trace of the drill holes used in resource estimation coloured by hole type and inside the mine zones

### 14.2.1 Drill holes excluded

Mining Plus has carried out a high-level review of the data provided for the updating of resources, including the drill holes used in previous resource estimation. No material errors were identified by Mining Plus in the data; however, some minor discrepancies were identified. The high-level checks indicate that the drilling database provided appears suitable for use in the Mineral Resource estimate.

No errors such as drill length, survey, overlapping, among others, have been detected, except for the holes listed in the Table 14-2 and which have been excluded from the estimation process. The errors detected in these drillings correspond to:

- Overlapping intervals
- Intervals beyond hole depth
- From greater or equal than To
- Duplicated coded samples.



Hole id	Hole id
TLAD18-311	TLCN19-40
TLAD18-365	TLEN20-179
TLAD18-382	TLL19-33
TLAD18-435	TLL19-77
TLAD18-67	TLS20-07
TLAD19-22	TLS20-08
TLAD19-23	TLS21-09
TLAD20-16	TLS-41
TLAD20-43	TLSS19-40
TLASS19-38	TLSS19-42
TLASS20-36	TLSS19-43
TLASS20-40	TLSS19-45
TLC18-85	TLSS19-46
TLC21-14	TLSS20-15
TLC21-21	TLSS20-20
TLCN-130	TLTN15-51
TLCN16-23	

#### Table 14-2 Drill holes by type excluded from the estimation process

#### 14.2.2 Database adjustment

The adjustments to the database have been the following:

- Intervals with absent gold assays within the grade shell of 0.06 g / t Au and 0.5 g / t Au have been considered as absent as they are potential zones of mineralization.
- Intervals with gold assays absent outside the grade shell of 0.06 g / t Au and 0.5 g / t Au have been considered waste and a value of 0.0025 g/t Au has been assigned.
- Intervals in the LH from 0 m to 0.25 m were excluded to remove contaminated and mixed blasted material.
- LH samples greater than 0.2 g / t Au have been factored applying an adjustment factor of 0.9 to compensate for the apparent bias (see Section 12.3), henceforth all gold values will refer to factored gold (AUFACTO).



# **14.3 Geological Interpretation**

The Corihuarmi mine geology team reports that the dominant control on gold grade is the oxidation state. Discontinuous zones of high-grade mineralization are spatially associated with zones of strong brecciation and/or silicification, however, these zones are difficult to interpret between drill sections, and therefore, grade shells have been used to represent and constrain the high-grade zones. It should be noted that these zones have now been largely mined out and do not materially impact on the current Mineral Resource Estimate.

Other alteration assemblages are logged and have been modelled in three dimensions (3D); however, mining experience has shown that their influence on grade is too subtle to be seen through the oxidation overprint. Therefore, they have not been used to constrain the estimation of grades.

Oxidation state and alteration type was logged and interpreted in 2D sections; the strings interpreted were linked to form 3D solids by the mine geological staff. The 3D solids were used to code the drill holes and block model in preparation for gold grade estimation. Figure 14-3 and Figure 14-4 show 3D models of alteration types and oxidation state, examples of a typical section are shown in Figure 14-5 to Figure 14-8.

Based on conversations with Project geologists, Ms Muñoz (QP) considers that there is good control on the oxide and sulphide boundary and makes the following observations:

- The base of oxide is defined visually by the logging geologist.
- Visual sulphides are generally very low in abundance but increase in areas of brecciation.
- Non-visual (microcrystalline) sulphides are known to exist in dark grey quartz but are not logged as sulphide.
- Faults along the pit have shown that the oxidation zone is located along the faults and the product of the percolation of water, generating a sinuosity between the limit of oxides and sulphides.
- Corihuarmi geologists are convinced they have tight control on the base of oxidation with sections drawn every 20 m.
- The sections are digitised in 2D cross sections, and then imported into Minesight mining software for 3D solid generation.
- The 3D solids are then used to code the blocks as either sulphide or oxide. The blocks are 5 m high.
- The oxidation state is used as a constraint during the pit optimisation. Sulphide blocks were not reported as part of the mineral resources.



 The 3D solids updated by Minera IRL have been restricted to the current mined out topography, so the solids interpreted in 2018 were used for the mined areas and to allow an appropriate interpolation between the remaining drill holes and the mined ones.

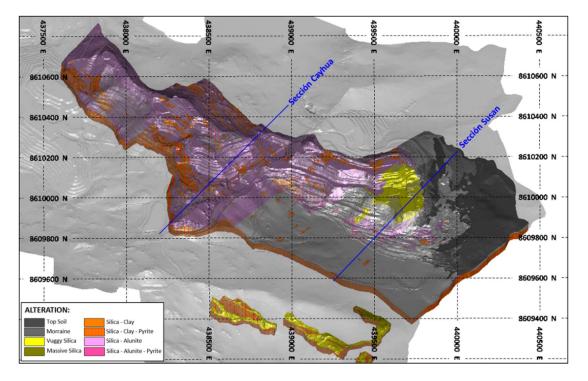


Figure 14-3 Geological model of the alteration types of the Corihuarmi mine



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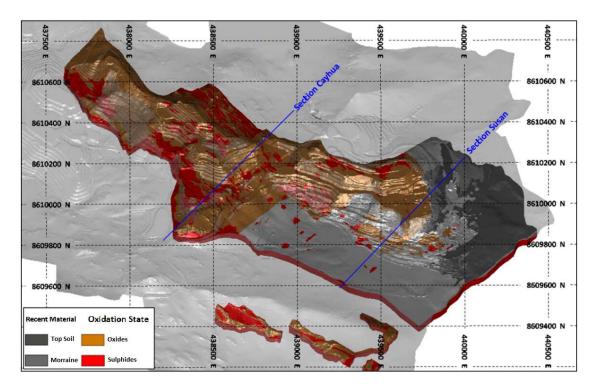


Figure 14-4 Geological model of the oxidation state of the Corihuarmi mine

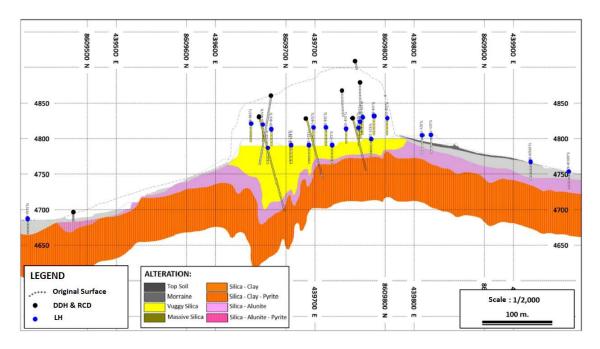


Figure 14-5 Cross section at Susan pit showing logged and interpreted alteration types

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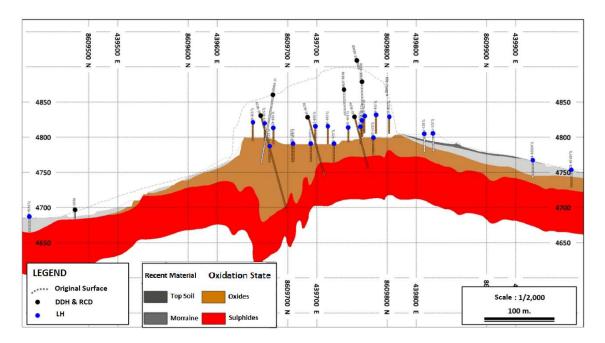


Figure 14-6 Cross section at Susan pit showing logged and interpreted oxidation state

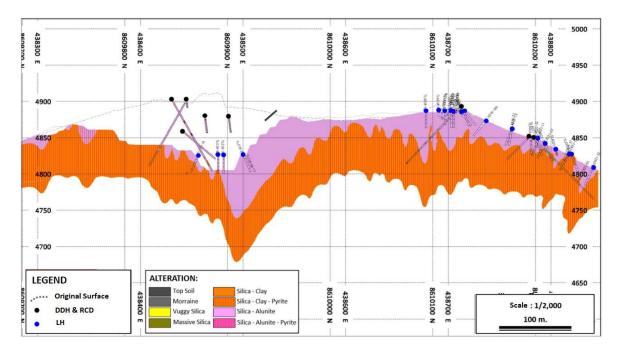


Figure 14-7 Cross section at Cayhua pit showing logged and interpreted alteration types

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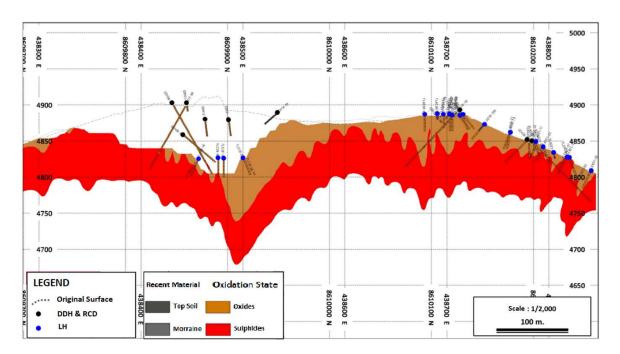


Figure 14-8 Cross section at Cayhua pit showing logged and interpreted oxidation state



Log histograms and probability plots were used to select the boundaries of the low-grade and high-grade mineralization (Figure 14-9, Figure 14-10). The outer limit of mineralization was modelled at 0.06 g/t Au and the high-grade zones were modelled at 0.5 g/t Au. Approximately 3.5% of the samples are above 0.5 g/t gold.

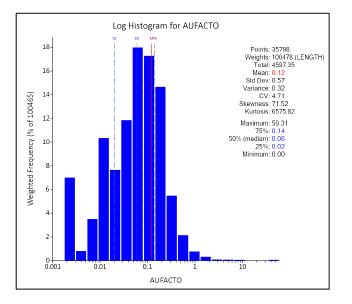


Figure 14-9 Length-weighted log histogram of gold grades in drill holes: all mine zones

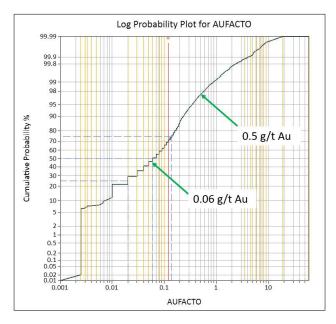


Figure 14-10 Length-weighted log probability plot of gold grades in drill holes: all mine zones

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A statistical analysis was carried out by mine zone where a similar statistical distribution of gold was detected for some zones, therefore these zones with similar distribution were combined. The moraines will not be included within the oxide zone due to its geological origin, so it will be treated as an additional zone in oxidation states.

The drill hole intervals are selected outside the grade shell (background), inside the 0.06 g/t Au and 0.5 g/t Au grade shell and divided by mine zone and moraines, oxides, and sulphides (BOX), for the purposes of exploratory data analysis, variography and grade estimation. The resulting estimation domains (ESTDOM) are described in Table 14-3. The length-weighted domain statistics are presented visually in box-and-whisker plots and an example of log histograms in Figure 14-11 and Figure 14-12.

	STAZONE	Descri	ption	
ESTDOM	Pit & BOX & Grade shell	Mine zone	вох	Grade Shell
111	111	Susan, Coyllor, Laura y Amp. Scree Slope	Oxides and Coluvial	background
112	112	Susan, Coyllor, Laura y Amp. Scree Slope	Oxides and Coluvial	Low grade
113	113	Susan, Coyllor, Laura y Amp. Scree Slope	Oxides and Coluvial	High grade
131	131	Susan, Coyllor, Laura y Amp. Scree Slope	Moraines	background
132	132	Susan, Coyllor, Laura y Amp. Scree Slope	Moraines	Low grade
133	133	Susan, Coyllor, Laura y Amp. Scree Slope	Moraines	High grade
141	141	Susan, Coyllor, Laura y Amp. Scree Slope	Sulphides	background
142	142	Susan, Coyllor, Laura y Amp. Scree Slope	Sulphides	Low grade
143	143	Susan, Coyllor, Laura y Amp. Scree Slope	Sulphides	High grade
311	311	Scree Slope	Oxides and Coluvial	background
312	312	Scree Slope	Oxides and Coluvial	Low grade
512	313	Scree Slope	Oxides and Coluvial	High grade
331	331	Scree Slope	Moraines	background
332	332	Scree Slope	Moraines	Low grade
333	333	Scree Slope	Moraines	High grade
341	341	Scree Slope	Sulphides	background
342	342	Scree Slope	Sulphides	Low grade
512	343	Scree Slope	Sulphides	High grade
411	411	Cayhua	Oxides and Coluvial	background
412	412	Cayhua	Oxides and Coluvial	Low grade
413	413	Cayhua	Oxides and Coluvial	High grade
431	431	Cayhua	Moraines	background
431	432	Cayhua	Moraines	Low grade
441	441	Cayhua	Sulphides	background
442	442	Cayhua	Sulphides	Low grade
443	443	Cayhua	Sulphides	High grade
611	611	Amp. Diana	Oxides and Coluvial	background
612	612	Amp. Diana	Oxides and Coluvial	Low grade

### Table 14-3 Estimation domains and codes



	STAZONE	Descri	ption	
ESTDOM	Pit & BOX & Grade shell	Mine zone	BOX	Grade Shell
613	613	Amp. Diana	Oxides and Coluvial	High grade
632	631	Amp. Diana	Moraines	background
032	632	Amp. Diana	Moraines	Low grade
641	641	Amp. Diana	Sulphides	background
642	642	Amp. Diana	Sulphides	Low grade
643	643	Amp. Diana	Sulphides	High grade
711	711	Cayhua Norte	Oxides and Coluvial	background
712	712	Cayhua Norte	Oxides and Coluvial	Low grade
713	713	Cayhua Norte	Oxides and Coluvial	High grade
741	741	Cayhua Norte	Sulphides	background
742	742	Cayhua Norte	Sulphides	Low grade
743	743	Cayhua Norte	Sulphides	High grade
911	911	Ely Norte	Oxides and Coluvial	background
912	912	Ely Norte	Oxides and Coluvial	Low grade
913	913	Ely Norte	Oxides and Coluvial	High grade
941	941	Ely Norte	Sulphides	background
942	942	Ely Norte	Sulphides	Low grade
542	943	Ely Norte	Sulphides	High grade

Box-and-whisker plots have been used to present summary statistics for gold grades by domain (Figure 14-11). The mean and median are displayed as red and blue lines respectively. The dark grey box represents the 50% - 75% quartile, while the light grey box represents the 25% - 50% quartile. The upper and lower ticks represent the maximum and minimum data values respectively. The group label is above the upper tick with the number of samples in brackets. The box-and-whisker on the right-hand side of the plot represents the total dataset.

The log-histograms display the grade distribution for each domain after a log-transform of the data. Summary statistics for each domain are also displayed on Table 14-4.

The following observations are made from the plots, histograms and from visual inspection of the grade distribution in 3D:

- The mine zones, oxidation state and grade shell effectively discriminate grade subpopulations as can be seen in thebox-and-whisker plots.
- The oxidation state is also a good discriminator of grade sub-populations within each mine zone.
- The base of oxide boundary is commonly observed to coincide with a distinct change in gold grade in the drill holes.
- Most of the domains display characteristics that are consistent with a log-normal distribution with few outliers.



In summary, the analysis shows that mine zone polygons in combination with the base of oxide boundary and grade shell usefully separate distinct sub-populations within the Corihuarmi mine. Mining experience has shown that high-grade zones are poddy, discontinuous and associated with highly-brecciated and/or silicified alteration styles. However, the known occurrences of this style of mineralization have now largely been mined out. There may be additional high-grade zones at depth that have not been modelled, however, with the current drill spacing, their location and geometry is uncertain.



ESTDOM	Number of Samples	Mean Grade	Std Dev	Coeff Variation
111	2810	0.02	0.04	1.52
112	4564	0.16	0.15	0.92
113	13	4.92	10	2.04
131	236	0.04	0.06	1.49
132	512	0.21	0.14	0.67
133	10	0.77	0.3	0.38
141	1365	0.02	0.02	1.18
142	1298	0.16	0.12	0.73
143	21	0.64	0.15	0.23
311	60	0.03	0.02	0.67
312	340	0.22	0.35	1.59
331	24	0.03	0.11	3.45
332	182	0.3	0.18	0.6
333	23	0.83	0.52	0.63
341	206	0.03	0.02	0.72
342	451	0.17	0.14	0.81
411	983	0.04	0.04	1.03
412	3990	0.17	0.29	1.73
413	51	1.34	1.53	1.14
431	15	0.06	0.05	0.75
441	487	0.03	0.02	0.79
442	1990	0.16	0.11	0.69
443	14	0.87	0.78	0.9
611	2322	0.03	0.08	2.95
612	3061	0.18	0.28	1.56
613	81	1.38	1.64	1.19
632	13	0.13	0.06	0.47
641	1509	0.02	0.02	1.16
642	1737	0.15	0.18	1.19
643	35	1.11	1.02	0.92
711	2543	0.02	0.02	0.99
712	2084	0.17	0.26	1.49
713	115	2.72	7.31	2.69
741	992	0.02	0.02	1.06
742	473	0.14	0.23	1.57
743	7	1.03	0.39	0.37
911	491	0.03	0.05	1.84
912	125	0.19	0.26	1.33
913	7	1.02	0.28	0.27
941	525	0.02	0.04	2.32
942	33	0.12	0.11	0.95

### Table 14-4 Summary statistics for each estimation domain of raw data weighted by length – Au g/t

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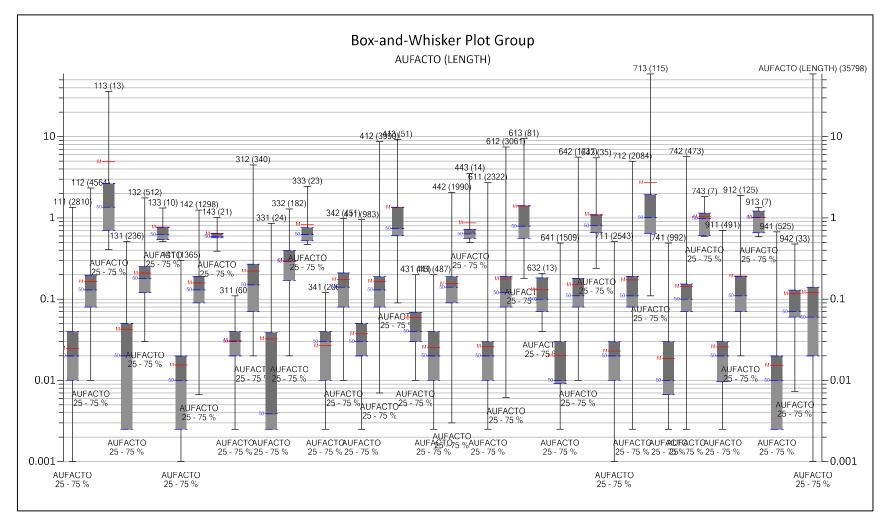


Figure 14-11 Drill hole gold box-and-whisker plot by estimation domain (ESTDOM)



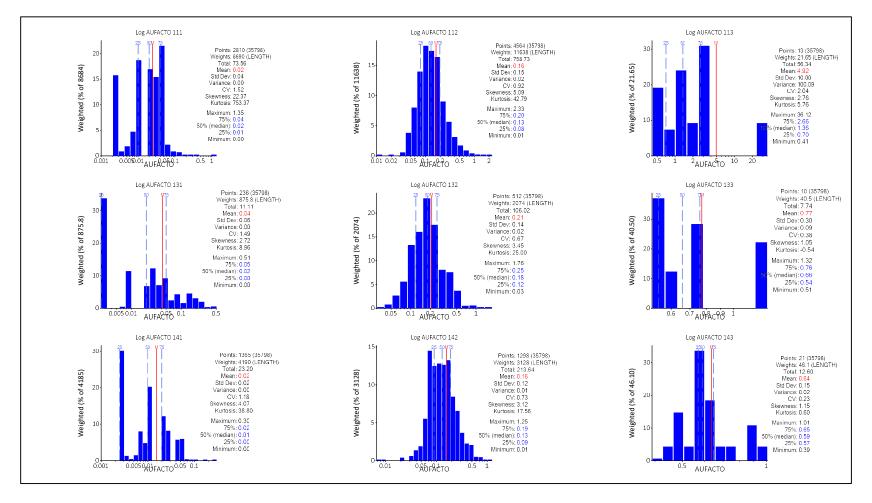


Figure 14-12 Example of drill hole gold log histograms by ESTDOM for Susan, Coyllor, Laura and Amp. Scree Slope combined mine zone

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# 14.4 Compositing

Drill hole intervals were composed to a target length of 5m while honouring the base of oxide boundary. The 5m composite was chosen to match the bench height used at the mine. Summary statistics by estimation domain are presented in Table 14-5 and example of composite log-histograms are presented in Figure 14-13.

A residual retention routine was used, where residuals are added back to the adjacent interval, the majority of composite lengths are 5 m, with a small number of composite lengths ranging from 2.5 m to 7.5 m.

	Num	ber of Samples		Mean Grade	Mean Grade		Std Dev	Coeff Variation		
ESTDOM	Raw	Composite	Raw	Composite	% Diff	Raw	Composite	Raw	Composite	
111	2810	1764	0.02	0.02	0%	0.04	0.03	1.52	1.18	
112	4564	2369	0.16	0.16	0%	0.15	0.14	0.92	0.86	
113	13	5	4.92	4.68	-5%	10	4.31	2.04	0.92	
131	236	177	0.04	0.04	0%	0.06	0.06	1.49	1.4	
132	512	417	0.21	0.21	0%	0.14	0.15	0.67	0.7	
133	10	8	0.77	0.77	0%	0.3	0.28	0.38	0.37	
141	1365	850	0.02	0.02	0%	0.02	0.02	1.18	1.08	
142	1298	637	0.16	0.16	0%	0.12	0.11	0.73	0.69	
143	21	9	0.64	0.64	0%	0.15	0.11	0.23	0.18	
311	60	21	0.03	0.03	0%	0.02	0.02	0.67	0.53	
312	340	89	0.22	0.23	5%	0.35	0.29	1.59	1.28	
331	24	8	0.03	0.02	-33%	0.11	0.02	3.45	0.96	
332	182	68	0.3	0.3	0%	0.18	0.15	0.6	0.52	
333	23	11	0.83	0.76	-8%	0.52	0.39	0.63	0.52	
341	206	70	0.03	0.03	0%	0.02	0.02	0.72	0.63	
342	451	158	0.17	0.18	6%	0.14	0.14	0.81	0.78	
411	983	494	0.04	0.04	0%	0.04	0.03	1.03	0.76	
412	3990	1598	0.17	0.17	0%	0.29	0.27	1.73	1.66	
413	51	18	1.34	1.28	-4%	1.53	0.91	1.14	0.71	
431	15	14	0.06	0.06	0%	0.05	0.05	0.75	0.75	
441	487	324	0.03	0.03	0%	0.02	0.02	0.79	0.75	
442	1990	967	0.16	0.16	0%	0.11	0.1	0.69	0.61	
443	14	14	0.87	0.86	-1%	0.78	0.75	0.9	0.88	
611	2322	1365	0.03	0.03	0%	0.08	0.07	2.95	2.89	
612	3061	1851	0.18	0.18	0%	0.28	0.26	1.56	1.44	
613	81	42	1.38	1.39	1%	1.64	1.45	1.19	1.04	
632	13	6	0.13	0.13	0%	0.06	0.06	0.47	0.44	
641	1509	1009	0.02	0.02	0%	0.02	0.02	1.16	0.98	
642	1737	994	0.15	0.15	0%	0.18	0.19	1.19	1.23	

#### Table 14-5 Summary statistics for each estimation domain of composite - Au g/t



FETDOM	Number of Samples			Mean Grade			Std Dev	Coeff Variation		
ESTDOM	Raw	Composite	Raw	Composite	% Diff	Raw	Composite	Raw	Composite	
643	35	22	1.11	1.11	0%	1.02	1	0.92	0.9	
711	2543	1731	0.02	0.02	0%	0.02	0.02	0.99	0.88	
712	2084	1272	0.17	0.17	0%	0.26	0.24	1.49	1.37	
713	115	84	2.72	2.75	1%	7.31	7.29	2.69	2.65	
741	992	642	0.02	0.02	0%	0.02	0.02	1.06	0.9	
742	473	308	0.14	0.15	7%	0.23	0.17	1.57	1.15	
743	7	7	1.03	1.04	1%	0.39	0.38	0.37	0.37	
911	491	316	0.03	0.03	0%	0.05	0.04	1.84	1.58	
912	125	101	0.19	0.19	0%	0.26	0.23	1.33	1.25	
913	7	6	1.02	0.99	-3%	0.28	0.24	0.27	0.24	
941	525	429	0.02	0.02	0%	0.04	0.03	2.32	2.15	
942	33	25	0.12	0.12	0%	0.11	0.11	0.95	0.95	

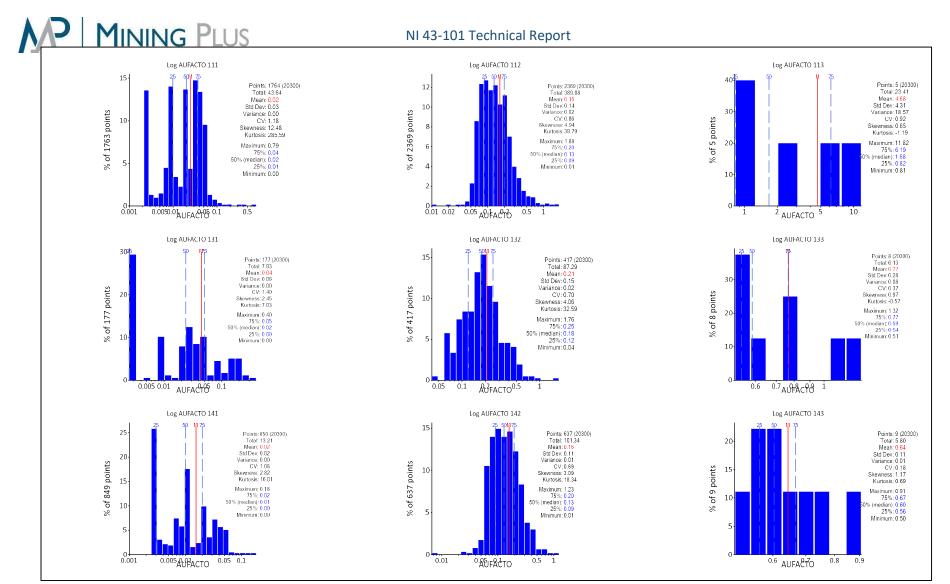


Figure 14-13 Example of Composite gold log-histograms by ESTDOM for Susan, Coyllor, Laura and Amp. Scree Slope combined mine zone

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### 14.4.1 Outlier treatment

High grade cutting was determined on a case by case basis within each estimation domain. Table 14-6 below summarises the uncut and cut Au statistics on a domain by domain basis; and top-cuts used on top of estimation domain top-cuts have been documented in Table 14-6.

The requirement for high-grade caps was assessed via a number of steps to ascertain the reliability and spatial clustering of the high-grade composites. The steps completed as part of the high-grade cap assessment included.

- A review of the composite data to identify any data that deviates from the general data distribution. This was completed by examining the cumulative distribution function.
- A review of data comparing the percentage of metal and the data CV affected by highgrade cuts.
- A visual 3D review to allow assessment of the clustering of the higher-grade composite data.
- A cap of 0.05- to 0.07 g/t Au was applied to background domain, due to the presence of highly variable, higher grades within the dominantly lower-grade zones. The cutting was required to reduce the amount of metal which would be artificially added during the estimation process in these zones.

Based on the review, appropriate high-grade caps were selected for each estimation domain (ESTDOM). The application of high-grade caps resulted in relatively few data being capped. The capping has resulted in minor reduction in mean grade except for background domain or high grade shell with limited data.



#### Table 14-6 Outlier statistics by ESTDOM- Au g/t composite data

ECTRONA	Number o	f Samples		Mean Grade		Top-Cut	Standard De	Standard Deviation Coeff of Variat		Variation	Max Un-	Top-Cut
ESTDOM	Un-Cut	Top-Cut	Un-Cut	Top-Cut	% Diff	Value	Un-Cut	Top-Cut	Un-Cut	Top-Cut	Cut Grade	%ile
111	1764	86	0.02	0.02	0%	0.05	0.03	0.02	1.18	0.7	0.79	5%
112	2369	18	0.16	0.16	0%	0.75	0.14	0.11	0.86	0.71	1.88	1%
113	5	-	4.68	4.68	0%	-	4.31	4.31	0.92	0.92	11.82	0%
131	177	14	0.04	0.04	0%	0.15	0.06	0.05	1.4	1.16	0.4	8%
132	417	4	0.21	0.21	0%	0.7	0.15	0.12	0.7	0.59	1.76	1%
133	8	-	0.77	0.77	0%	-	0.28	0.28	0.37	0.37	1.32	0%
141	850	6	0.02	0.02	0%	0.07	0.02	0.01	1.08	0.98	0.18	1%
142	637	13	0.16	0.16	0%	0.45	0.11	0.09	0.69	0.59	1.23	2%
143	9	-	0.64	0.64	0%	-	0.11	0.11	0.18	0.18	0.91	0%
311	21	-	0.03	0.03	0%	-	0.02	0.02	0.53	0.53	0.07	0%
312	89	1	0.23	0.21	-9%	0.8	0.29	0.16	1.28	0.78	2.59	1%
331	8	-	0.02	0.02	0%	-	0.02	0.02	0.96	0.96	0.05	0%
332	68	4	0.3	0.29	-3%	0.5	0.15	0.12	0.52	0.43	0.9	6%
333	11	-	0.76	0.76	0%	-	0.39	0.39	0.52	0.52	1.88	0%
341	70	-	0.03	0.03	0%	-	0.02	0.02	0.63	0.63	0.07	0%
342	158	4	0.18	0.17	-6%	0.5	0.14	0.11	0.78	0.66	0.97	3%
411	494	26	0.04	0.03	-25%	0.07	0.03	0.02	0.76	0.49	0.29	5%
412	1598	5	0.17	0.16	-6%	1.3	0.27	0.13	1.66	0.82	8.61	0%
413	18	-	1.28	1.28	0%	-	0.91	0.91	0.71	0.71	3.83	0%
431	14	2	0.06	0.06	0%	0.1	0.05	0.03	0.75	0.55	0.2	14%
441	324	5	0.03	0.03	0%	0.07	0.02	0.02	0.75	0.69	0.13	2%
442	967	9	0.16	0.15	-6%	0.6	0.1	0.09	0.61	0.58	1.01	1%
443	14	1	0.86	0.68	-21%	1	0.75	0.14	0.88	0.21	3.55	7%
611	1365	27	0.03	0.02	-33%	0.07	0.07	0.02	2.89	0.71	2.66	2%
612	1851	24	0.18	0.17	-6%	1	0.26	0.15	1.44	0.88	7.46	1%

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	NI 43-101 Technical Report											
ESTDOM	Number of	f Samples		Mean Grade		Top-Cut	Standard Do	eviation	Coeff of	Variation	Max Un-	Top-Cut
LJIDOW	Un-Cut	Top-Cut	Un-Cut	Top-Cut	% Diff	Value	Un-Cut	Top-Cut	Un-Cut	Top-Cut	Cut Grade	%ile
613	42	2	1.39	1.29	-7%	4	1.45	1.03	1.04	0.8	8.42	5%
632	6	-	0.13	0.13	0%	-	0.06	0.06	0.44	0.44	0.21	0%
641	1009	13	0.02	0.02	0%	0.06	0.02	0.01	0.98	0.75	0.3	1%
642	994	14	0.15	0.14	-7%	0.5	0.19	0.09	1.23	0.64	4.82	1%
643	22	1	1.11	0.95	-14%	2	1	0.39	0.9	0.4	5.49	5%
711	1731	70	0.02	0.02	0%	0.05	0.02	0.02	0.88	0.71	0.21	4%
712	1272	7	0.17	0.17	0%	1.5	0.24	0.18	1.37	1.05	4.81	1%
713	84	4	2.75	1.8	-35%	8	7.29	1.86	2.65	1.03	58.14	5%
741	642	5	0.02	0.02	0%	0.07	0.02	0.02	0.9	0.86	0.13	1%
742	308	11	0.15	0.13	-13%	0.5	0.17	0.1	1.15	0.74	1.31	4%
743	7	-	1.04	1.04	0%	-	0.38	0.38	0.37	0.37	1.83	0%
911	316	7	0.03	0.02	-33%	0.1	0.04	0.02	1.58	0.9	0.53	2%
912	101	2	0.19	0.17	-11%	0.8	0.23	0.17	1.25	0.96	1.85	2%
913	6	-	0.99	0.99	0%	-	0.24	0.24	0.24	0.24	1.23	0%
941	429	4	0.02	0.01	-50%	0.07	0.03	0.01	2.15	0.99	0.63	1%
942	25	-	0.12	0.12	0%	-	0.11	0.11	0.95	0.95	0.48	0%



# 14.5 Variography

Variography reflects the mean spatial continuity for a located variable. A variogram or correlogram is used to assign the appropriate kriging weights in the estimation process, considering the mean spatial characteristics of the underlying grade distribution. Normal scores variograms were chosen to model the 3D gold grade continuity as they were found to give better structures. A normal score variograms is often stable and less noisy due to log normal distribution with extreme values and preferential sampling in high valued areas (Wilde, B. J., & Deutsch, C. V. - 2007).

The Snowden Supervisor software was employed to generate normal scores variograms with a 2 structured spherical model and nugget effect; to recreate the spatial continuity.

The normal variogram scores for the gold variable were modelled for those domains with sufficient data to be modelled, which were used for other domains without variograms with similar geological characteristics (similar oxides, sulfides, moraines) and / or similar statistical distribution. An example from the ESTDOM 111 is presented in Figure 14-14. Table 14-7 shows the variograms modelled and Table 14-8 shows the variogram applied for each estimation domain. All variograms modelled are detailed in the APPENDIX B: Modeled variograms.

The ranges obtained from the variographic analysis were used to inform the search distances in the first pass. The second pass was based on the average drill spacing of the deposit and the third pass was intended to fill blocks that were later classified as Inferred.



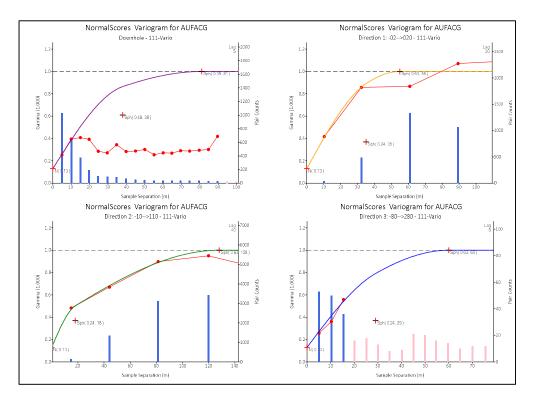


Figure 14-14 ESTDOM 111 – Normal Scores Variogram Model

Datami	ne Rotatio Rotation)				Variographic parameters - back transformed							
Dir 1	Dir 2	Dir 3	C0	C1	l	Ranges C 1	1	C2	ĺ	Ranges C 2		
		DIFS	CU	CI	Dir 1	Dir 2	Dir 3	12	Dir 1	Dir 2	Dir 3	
-80	170	-10	0.15	0.272	35.00	18	29	0.58	55	128	60.00	
40	170	-170	0.25	0.404	15.00	30	15	0.35	83	100	44.00	
-60	170	-10	0.18	0.216	51.00	114	35	0.60	117	154	78.00	
-60	170	-10	0.32	0.297	14.00	26	14	0.39	26	96	38.00	
-60	170	-20	0.22	0.239	9.00	21	26	0.54	47	46	43.00	
-150	170	-10	0.17	0.285	18.00	22	20	0.54	87	59	49.00	
-150	20	20	0.37	0.356	8.00	16	26	0.27	60	29	27.00	
-60	170	-20	0.11	0.336	14.00	26	21	0.55	52	67	42.00	
-60	170	-20	0.24	0.340	11.00	8	16	0.42	34	64	31.00	
40	170	-170	0.19	0.401	24.00	15	12	0.41	142	36	26.00	
40	170	-170	0.29	0.389	12.00	12	15	0.32	51	40	30.00	
40	160	-170	0.18	0.283	14.00	40	27	0.53	46	42	42.00	

#### **Table 14-7 Variographic parameters**



ESTDOM	Variogram applied			
111	Modeled Variogram			
112	Modeled Variogram			
113	112			
131	132			
132	Modeled Variogram			
133	132			
141	641			
142	641			
143	641			
311	111			
312	112			
331	132			
332	132			
333	132			
341	641			
342	641			
411	412			
412	Modeled Variogram			
413	412			
431	132			
441	442			

#### Table 14-8 Variograms used in the estimation

ESTDOM	Variogram applied			
442	Modeled Variogram			
443	442			
611	Modeled Variogram			
612	Modeled Variogram			
613	612			
632	132			
641	Modeled Variogram			
642	Modeled Variogram			
643	643			
711	Modeled Variogram			
712	Modeled Variogram			
713	712			
741	Modeled Variogram			
742	741			
743	741			
911	711			
912	712			
913	712			
941	741			
942	741			

### 14.6 Contact plots

Contact plots were prepared at the boundary between each estimation domain to determine the nature of the contacts and how they should be treated during gold grade estimation (An example of the contact plot is shows in Figure 14-15).

Ms. M, Muñoz made the following observations:

- Most of the soft contact has been determined primarily between moraines, oxides, and sulphides, depending on whether they were in high-grade or low-grade domains within the same mine zones.
- Fewer soft contacts have been found between different mine zones.

Table 14-9 shows the estimated domains with soft contact where a composition of the other domain has been applied during the estimation. During the estimation validations, Mining



Plus noticed that the contact between 612 and 642 domains presented estimation problems due to high erratic grade in the contact, so a hard contact was applied for both domains.

All Contact plot analyses are detailed in the APPENDIX C: Contact Plots



### Table 14-9 Soft boundary applied

Domain A	Domain B	Result
Susan, oxides with background grade (111)	Susan, sulfides with background grade (141)	Soft boundary
Susan, oxides with low grade (112)	Susan, Moraines with background grade (131)	Soft boundary
Susan, oxides with low grade (112)	Susan, Moraines with low grade (132)	Soft boundary
Susan, oxides with low grade (112)	Susan, sulfides with low grade (142)	Soft boundary
Susan, Moraines with low grade (132)	Susan, sulfides with low grade (142)	Soft boundary
Scree Slope, oxides with background grade (311)	Scree Slope, sulfides with background grade (341)	Soft boundary
Scree Slope, oxides with low grade (312)	Scree Slope, Moraines with low grade (332)	Soft boundary
Scree Slope, oxides with low grade (312)	Scree Slope, sulfides with low grade (342)	Soft boundary
Scree Slope, Moraines with low grade (332)	Scree Slope, Moraines with high grade (333)	Soft boundary
Scree Slope, sulfides with low grade (342)	Scree Slope, sulfides with low grade (342)	Soft boundary
Cayhua, oxides with background grade (411)	Cayhua, sulfides with background grade (441)	Soft boundary
Cayhua, oxides with low grade (412)	Cayhua, sulfides with low grade (442)	Soft boundary
Cayhua, Moraines with background grade (431)	Cayhua, sulfides with background grade (441)	Soft boundary
Ampliacion Diana, oxides with background grade (611)	Ampliacion Diana, sulfides with background grade (641)	Soft boundary
Ampliacion Diana, oxides with low grade (612)	Ampliacion Diana, Moraines with low grade (632)	Soft boundary
Ampliacion Diana, oxides with low grade (612)	Ampliacion Diana, sulfides with low grade (642)	*
Ampliacion Diana, sulfides with background grade (641)	Cayhua Norte, sulfides with background grade (741)	Soft boundary
Ampliacion Diana, sulfides with background grade (641)	Ely Norte, sulfides with low grade (941)	Soft boundary
Cayhua Norte, oxides with background grade (711)	Cayhua Norte, sulfides with background grade (741)	Soft boundary
Cayhua Norte, oxides with background grade (711)	Ely Norte, oxides with background grade (911)	Soft boundary
Cayhua Norte, oxides with low grade (712)	Cayhua Norte, sulfides with low grade (742)	Soft boundary
Ely Norte, oxides with background grade (911)	Ely Norte, sulfides with background grade (941)	Soft boundary
Ely Norte, oxides with low grade (912)	Ely Norte, sulfides with low grade (942)	Soft boundary

Note: \*It is observed that some samples with an erratic high grade affects the estimation, so the domain is not used as soft boundary



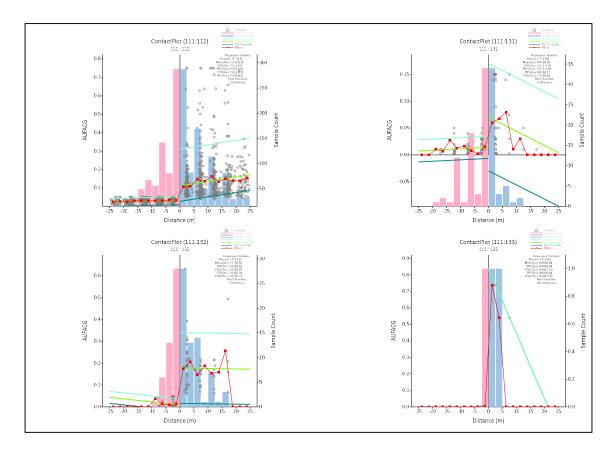


Figure 14-15 An example of contact analysis between ESTDOM 111:112, 111:131, 111:132 and 111: 133

# 14.7 Block Model

A three-dimensional block model was constructed for the project, covering all the interpreted mineralisation zones and including waste material to aid any future optimisation studies.

### 14.7.1 Model Construction and Parameters

Datamine mining software package was used, and the selected block size was based on the geometry of the domain interpretation, data configuration and expected mining method. A parent block size of 5 mE x 5 mN x 5 mRL was selected with sub-blocking to a 1 mE x 1 mN x 1 mRL cell size to improve volume representation of the interpreted wireframe models. Sufficient variables were included in the block model <u>(CORI21COMBFULL.dm)</u> construction to enable grade estimation. No block rotation was used. The final block model was re-blocked to a parent block 5 mE x 5 mN x 5 mRL <u>(CORI21COMCL.dm)</u> and the unnecessary fields were eliminated, which is considered a mine planning version, and it was used for purposes of



reporting estimated resources. The topographic surface at the end of February was used to constrain the upper extent of the block model. The block model construction parameters are displayed in Table 14-10.

	East	North	Elevation
Origin	437,400	8´608,400	4,400
Extent (m)	3,200	3,000	550
Parent Block Size (m)	5	5	5
Sub-Block Size (m)	1	1	1
Number of Blocks	640	600	110

#### Table 14-10 Block model parameters

The listed model fields present in the final model (CORI21COMBFULL.dm - 12'273,253 records) are presented in Table 14-11.

Variable	Description
IJK	Index value for datamine
ХС	X coordinate
YC	Y coordinate
ZC	Z coordinate
XINC	Cell X dimension
YINC	Cell Y dimension
ZINC	Cell Z dimension
XMORIG	X coordinate of model origin.
YMORIG	Y coordinate of model origin.
ZMORIG	Z coordinate of model origin.
NX	Number of parent cells in the X direction.
NY	Number of parent cells in the Y direction.
NZ	Number of parent cells in the Z direction.
PIT	Mine zone (1=Susan, 2=Coyllor, 3=Scree slope, 4=Cayhua, 5=Laura, 6=Ampliacion Diana, 7=Cayhua Norte, 8=Ampliacion Scree Slope, 9=Ely Norte
ESTDOM	Estimation Domain
MZONE	BOX zone (1: Oxides and Coluvial, 3: Moraines and 4: Sulphides)
AUOKCG	Au estimated with OK with gold topcutting
AUOK	Au estimated with OK with gold no topcutting
AUIDCG	Au estimated with ID2 with gold topcutting
NSAMP	Number of composites
PASS	Estimation pass in which the block estimate was generated for Au.
MINDIS	Average Sample distance (transformed)
KV	Kriging variance
MODEL	Estimation model

#### Table 14-11 Block model fields



Variable	Description
AUNNCG	Au estimated with NN with gold topcutting
AU	Final Au for use in report (based on AUOKCG)
YEARMINE	2017= Mined during 2017, 2018= Mined during 2018,2019= Mined during 2019,2020= Mined during 2020-202102 and 202102= below surface 202102 (not mined)
MINED	Numeric depletion flag. 1=material has been mined / removed, 2=Backfill material and 3=material is insitu.
RESCAT	0= Mined, 1 = Measured, 2 = Indicated, 3 = Inferred, 4 = Unclassified
DENSITY	Bulk density

#### 14.7.2 Gold grade estimation

The gold grade was estimated with ordinary kriging (AUOKCG) like in previous estimates, the estimation process included 3 independent models depending on the type of data to be used in the estimation and later combined in a single model. The estimation parameters of each model are detailed in Table 14-12, Table 14-13 and Table 14-14 as follow:

- Model 1, the estimation was carried out with RCD, DDH and LH drillings with a search range not greater than 15 m, a maximum of 3 samples and 1 sample as a minimum were considered due drill pattern spacing of RCD and DDH was greater than 25m, and the LHs have variable depth lengths. LH drill holes will be mined in the short term due to their length and the type of sampling.
- Model 2, the estimation was carried out with RCD and DDH drillings, LH drillings were
  not included to avoid influence of these block drillings that can be mined in the
  medium to long term.
- Model 3, the estimation was carried out with RCD, DDH and LH drillings with a search range no greater than 30 m for those areas that were not estimated with model 1 and model 2.
- A parent cell discretisation of 5 (X) x 5 (Y) x 5 (Z) was used.
- For those blocks that have not been estimated in any of the previous models indicated, the 20th percentile of each estimated domain has been assigned.
- The search ellipsoid ranges are a function of the average range observed in the variograms for the oxidation state (BOX), mainly for model 3, which corresponds to the model to be extracted in a medium and long term, the selected ranges are acceptable for the mineralization style.

The inverse distance to the power of three (AUIDCG), the nearest neighbor method (AUNNCG) and ordinary kriging with uncapped gold (AUOK) were estimated simultaneously for



comparison purposes, with similar search and estimation parameters. The example cross sections (Figure 14-17, Figure 14-18) below show blocks and drill holes coloured by gold grade (legend displayed). Blocks that were outside of estimation domain were assigned 0.0 g/t Au (AU variable in the block model).

				Model 1						
		Short run for LH , RC and DDH								
	Grade Shell		Search				DH			
BOX (Code)	Zone (Code)	Major	Semi- Major	Minor	Min	Max	Limit			
Oxides (1)	Background (1)	15	15	15	1	3	-			
Oxides (1)	Low and high grade (2 y 3)	15	15	15	1	3	-			
Moraines (3)	All (2 y 3)	15	15	15	1	3	-			
Sulphides (4)	Background (1)	15	15	15	1	3	-			
Sulphides (4)	Low and high grade (2 y 3)	15	15	15	1	3	-			

#### Table 14-12 Search and Estimation parameters Model 1



#### Table 14-13 Search and Estimation parameters Model 2

			Model 2																
			First Pass RC y DDH						Second Pass RC y DDH					Third Pass RC y DDH					
	Grade Shell Search		# Sa	mples	DH	Second Pass			# Samples		DH	Third Pass		s	# Sai	nples	DH		
BOX (Code)	Zone (Code)		Semi-		<b>D G</b> <sup>1</sup>	<b>D</b> .0	1.1		Semi-				1.1		Semi-				1 inst
		Major	Major	Minor	Min	Max	Limit	Major	Major	Minor	Min	Max	Limit	Major	Major	Minor	Min	Max	Limit
Oxides (1)	Background (1)	30	30	30	6	12	4	60	60	60	4	10	4	120	120	120	3	8	4
Oxides (1)	Low and high grade (2 y 3)	25	25	25	6	12	4	50	50	50	4	10	4	100	100	100	3	8	4
Moraines (3)	All (2 y 3)	30	30	30	6	12	4	60	60	60	4	10	4	120	120	120	3	8	4
Sulphides (4)	Background (1)	30	30	30	6	12	4	60	60	60	4	10	4	120	120	120	3	8	4
Sulphides (4)	Low and high grade (2 y 3)	20	20	20	6	12	4	40	40	40	4	10	4	80	80	80	3	8	4

### Table 14-14 Search and Estimation parameters Model 3

_	-	Model 3									
		LH , RC and DDH for un estimated block									
	Grade Shell		Search	# Sai	DH						
BOX (Code)	Zone (Code)	Major	Semi- Major	Minor	Min	Max	Limit				
Oxides (1)	Background (1)	30	30	30	1	3	-				
Oxides (1)	Low and high grade (2 y 3)	30	30	30	1	3	-				
Moraines (3)	All (2 y 3)	30	30	30	1	3	-				
Sulphides (4)	Background (1)	30	30	30	1	3	-				
Sulphides (4)	Low and high grade (2 y 3)	30	30	30	1	3	-				



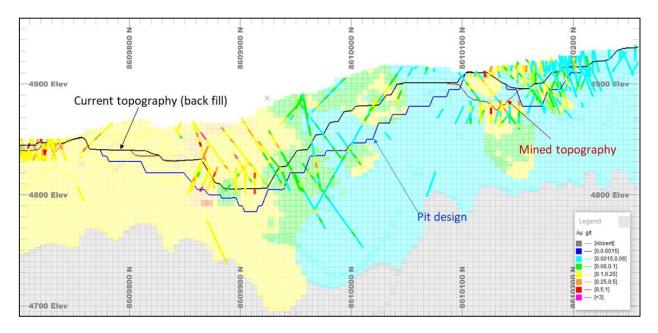


Figure 14-16 Cross section at 438450 mE (+/-25m clipping) showing block model with ordinary kriged estimate

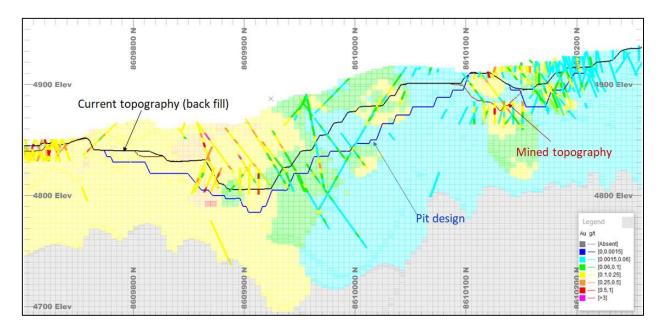


Figure 14-17 Cross section at 438450 mE (+/-25m clipping) showing block model with inverse distance cubed estimate

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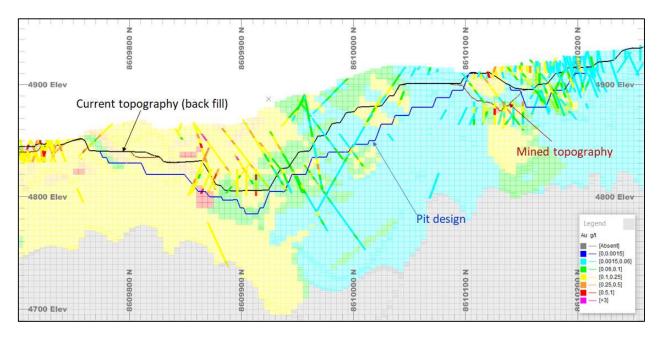


Figure 14-18 Cross section at 438450 mE (+/-25m clipping) showing block model with nearest neighbour estimate

### 14.7.3 Metal Risk Review

Ms Muñoz (QP) made a comparison of the results of the AUOKCG (capped gold) estimation and the estimation AUOK (uncapped gold) to evaluate the impact of the metal loss due to the capping of extreme gold grades.

Table 14-15 shows the results of this comparison for unmined or remaining (insitu) material. Ms Muñoz (QP) makes the following observations:

- Overall, there is no significant impact of metal loss due to the capping of extreme values. This is reasonable due to the density of the existing drill holes that generate a balance of the estimated gold grades, and do not allow any of the composites to extrapolate too far.
- The 443, 613, 643 and 713 domains show a significant loss that exceeds 10% of metal loss in these domains, however the volume of these domains is insignificant. These domains correspond to moraine zones.

Estdom	Volume	%Volume	AUOKCG	AUOK	% Dif.
111	7404340	6%	0.02	0.02	4.2%
112	4670225	4%	0.15	0.15	2.9%
113	2150	0%	3.84	3.84	0.0%

#### Table 14-15 Metal loss analysis for material in situ



Estdom	Volume	%Volume	AUOKCG	AUOK	% Dif.
131	1367735	1%	0.04	0.04	9.7%
132	2317275	2%	0.19	0.19	0.8%
133	14040	0%	0.78	0.78	0.0%
141	23365025	20%	0.01	0.01	2.5%
142	6392405	6%	0.16	0.16	1.7%
143	88360	0%	0.62	0.62	0.0%
311	95280	0%	0.04	0.04	0.0%
312	837510	1%	0.21	0.20	9.3%
331	42750	0%	0.02	0.02	0.0%
332	343080	0%	0.28	0.26	5.6%
333	12145	0%	0.84	0.84	0.0%
341	2916990	3%	0.03	0.03	0.0%
342	6100130	5%	0.19	0.19	1.4%
411	1868785	2%	0.04	0.04	4.5%
412	1913440	2%	0.13	0.12	1.6%
413	1475	0%	0.57	0.57	0.0%
431	67170	0%	0.05	0.05	11.7%
441	5377660	5%	0.03	0.03	2.7%
442	8244220	7%	0.16	0.16	0.4%
443	30450	0%	0.75	0.66	13.4%
611	3001955	3%	0.02	0.02	6.5%
612	1897255	2%	0.17	0.16	5.3%
613	27380	0%	1.83	1.71	7.3%
632	13885	0%	0.14	0.14	0.0%
641	9229810	8%	0.02	0.02	8.3%
642	7190860	6%	0.15	0.14	5.9%
643	25810	0%	1.54	1.03	48.8%
711	3267350	3%	0.02	0.02	6.1%
712	909910	1%	0.14	0.14	1.7%
713	4305	0%	3.44	1.57	119.6%
741	7533215	7%	0.02	0.02	3.7%
742	2474875	2%	0.14	0.12	8.6%
743	110	0%	0.96	0.96	0.0%
911	1025550	1%	0.02	0.02	11.5%
912	155300	0%	0.18	0.18	2.5%
913	4890	0%	0.87	0.87	0.0%
941	3964165	3%	0.02	0.01	22.8%
942	166235	0%	0.13	0.13	0.0%



# 14.8 Bulk Density

Bulk density has been measured in campaigns by mine zone using an external laboratory Actlabs Skyline Peru. The measurements were collected on intact pieces of core that were coated in paraffin wax then weighed in air and weighed in water. Results are presented in Table 14-16. No additional density sampling has been performed since 2017.

Density values were assigned in the model based on the dominant mine zone and oxidation state per block as indicated in the Table 14-17. The new areas that do not have densities have been assigned based on similarity with other materials within the Corihuarmi deposit.

Pit/Zone	No. of Samples	Minimum	Maximum	Mean	Median	Std.Dev	Source
Susan-Oxides	50	1.84	2.56	2.22	-	-	AMEC 2004
Diana-Oxides	50	1.84	2.56	2.35	-	-	AMEC 2004
Scree Slope-Oxides	50	1.84	2.56	2.22	-	-	AMEC 2004
Scree-Slope	6	2.04	2.14	2.08	2.11	0.04	Internal MIRL
Ampl. Diana-Oxides	50	1.84	2.56	2.23	-	-	AMEC 2004
Ampl. Diana-Sulfides	2	2.18	2.47	2.3	2.33	0.21	Internal MIRL
Cayhua-Oxides	44	1.56	2.61	2.04	2.1	0.25	Internal MIRL
Cayhua-Sulfides	2	2.18	2.47	2.3	2.33	0.21	Internal MIRL
Cayhua Norte-Oxides	42	1.94	2.57	2.3	2.35	0.14	Internal MIRL
Cayhua Norte- Sulfides	7	2.29	2.68	2.48	2.37	0.16	Internal MIRL
Laura-Oxides	22	2.01	2.57	2.35	2.44	0.17	Internal MIRL
Laura-Sulfides	25	2.00	2.69	2.44	2.46	0.15	Internal MIRL

#### Table 14-16 Bulk density statistics

#### Table 14-17 Bulk density applied in the block model

	Mine Zone	Density					
Code	Description	Oxides	Sulphides	Moraines			
1	Susan	2.22	2.30*				
2	Coyllor	2.23*	2.30*				
3	Scree Slope	2.22	2.30*	2.08			
4	Cayhua	2.04	2.30				
5	Laura	2.35	2.44				
6	Amp. Diana	2.23	2.30				
7	Cayhua Norte	2.30	2.48				
8	Amp. Scree Slope	2.22*	2.30*	2.08*			
9	Ely Norte	2.23*	2.30*				
	Backfill	1.6**	1.6**	1.6**			

Note: \*Densities in bold are assumed by similarity with the material of other mine zone, \*\* Densities for backfill was assumed based on the knowledge acquired during mining production for broken material

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## 14.9 Resource Classification

The Mineral Resource was classified by taking account the following information:

- Observations of grade continuity and predictability by the mine geology team
- Proven history of the profitability of the mine for the past 10 years
- Kriging variance of the gold estimate
- QA/QC results
- Drill hole spacing in comparison with other similar deposits.

Similar to the previous resource estimate, Ms Muñoz considers that classifying blocks based on the mean distance to the three nearest drill holes is a robust method that can incorporate all of the above information. The classification was accomplished in the block model by first estimating mean distance to the three nearest drill holes and Kriging variance (KV) greater than 0.85, followed by a smoothing step to make the resource categories more contiguous.

The Measured Mineral Resource was based on a nominal drill hole spacing of <=28m, While the Indicated Mineral Resource was based on a nominal drill hole spacing of >28m <=40m. The Inferred Mineral Resource was based on a nominal drill hole spacing of >40m up to approximately 100m.

Blocks estimated with long holes and shallow drillholes were reclassified (based on string Limit\_ind\_inf\_st) as Inferred or Indicated according to their preliminary category (Measured to Indicated, Indicated to Inferred).

Blocks estimated with isolated holes, well-spaced holes at depth, as well as blocks estimated beyond the end of the hole were classified as geological exploration potential (applying a solid- Limit\_potentialtr/pt) and are not included in the reported Mineral Resources. The Classification criteria are detailed in the Table 14-6.

Category	Model	Drill Holes	Drill Spacing	KV	WF or String
Measured	1 and 2	3	28 m	0.85	
Indicated	1, 2 and 3	-	40 m	-	Limit_ind_inf_st
Inferred	2	-	> 40 m	-	Limit_ind_inf_st
Unclassified	1, 2 and 3		-	-	Limit_potentialtr/pt

#### Table 14-18 Classification criteria

A plan view provides examples of the Mineral Resource categories coded into the block model (Figure 14-19 and Figure 14-20). The blocks are coloured by Resource category (legend displayed) and the drill holes are displayed as black lines.



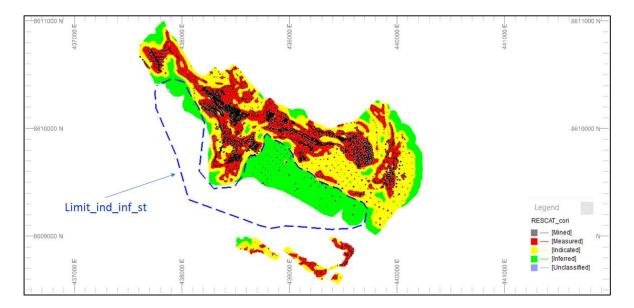


Figure 14-19 Plan view from top showing the Resource category of the remaining resources in the block model and Indicated-Inferred reclassification limit

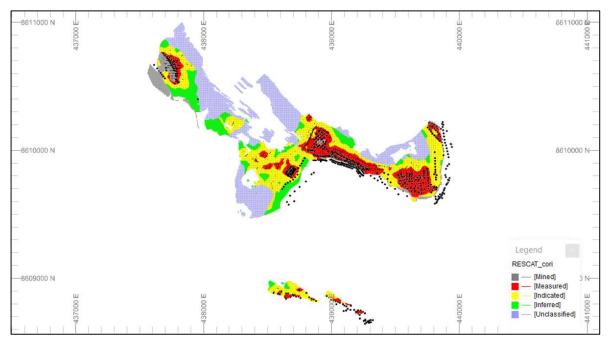


Figure 14-20 Plan view at 4780m elevation (+/-25m clipping) showing Resource category in the block model



# 14.10 Block model validation

Block model validation was undertaken by comparing the drill hole composite grades with the estimated block grades using the following methods:

- Visual validation in vertical sections and in plan views.
- Global bias.
- Trend plots comparing the mean grades by easting, northing and elevation increments through the deposit (also called swath plots).
- Log-histograms, log-probability and Q-Q plots by resource category comparing the global grade distributions.

The Nearest Neighbor (AUNNCG) estimate in the block model was used as a proxy for the composite grade as it effectively declusters the composite grades in 3D. The Ordinary Kriged (AUOKCG) estimates were used in the final Mineral Resource tabulation. Inverse Distance Weighted to the power of three (AUIDCG) was also estimated for validation purposes only.

AUOKCG and AUIDCG estimates are compared with the composites (AUNNCG estimate) for the Measured and Indicated Mineral Resource categories separately. Inferred Mineral Resources are expected to validate poorly and are not included in this analysis. Results are provided in Table 14-19, Figure 14-21 to Figure 14-24. Line colors are described in the legends in each plot. The grey bars in the trend plots indicate the number of blocks in each increment.

Ms Muñoz (QP) makes the following observations from the block model validation:

- The AUOKCG and AUIDCG estimates generally show closer agreement with the composites.
- The AUOKCG estimates in the Measured Mineral Resource show less variability and closer alignment with the composites than the Indicated Mineral Resource.
- Domain 113 shows gold grade overestimated; this is due to the small number of composites used in the estimation process.
- Domains 131 and 331 correspond to the background domain and indicate a gold grade overestimated, this difference is not relevant due that the relative difference is greater in lower grade ranges.
- It appears from the log-probability plots that the Measured Mineral Resource might be slightly under-estimated by grades less than 0.03 g/t gold. However, this could also be due to a few high-grade composites having undue influence on the local mean grade.



Overall, Ms Muñoz (QP) considers that both AUOKCG and AUIDCG estimates show a good agreement with composites; and due to the drilling density, there is no relevant difference between the applied estimation methods. The ordinary kriging estimation method was used to report the estimated resources as in the previous estimate.

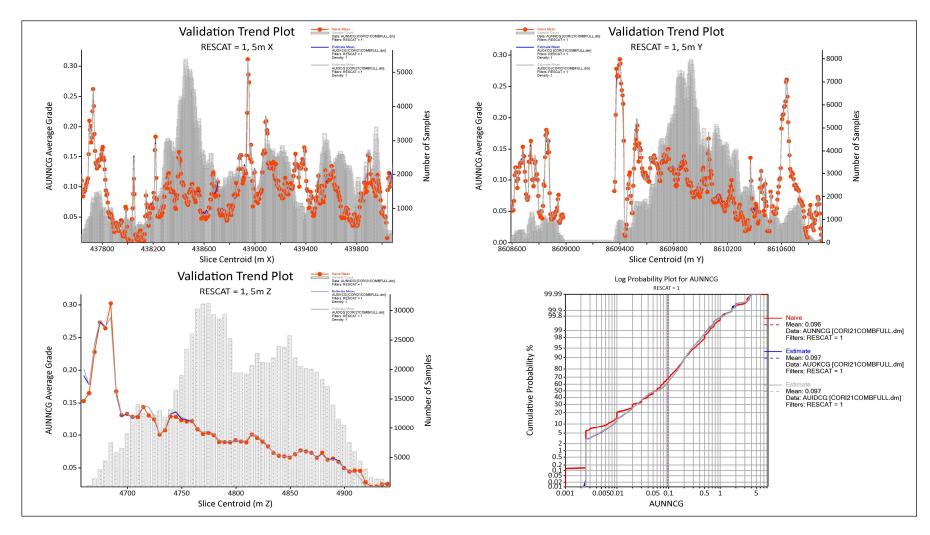
ESTDOM	VOLUME	AUOKCG	AUIDCG	AUNNCG	% Volume Low grade and High grade	% Dif. OK vs NN	% Dif. ID vs NN	N. Composites
111	8418245	0.02	0.02	0.02		6%	6%	1773
112	6699755	0.16	0.16	0.15	13%	3%	4%	2371
113	8965	4.78	5.16	3.90	0%	23%	32%	5
131	1448040	0.04	0.04	0.05		-22%	-22%	179
132	2539355	0.20	0.20	0.19	5%	3%	5%	421
133	16180	0.77	0.79	0.78	0%	-1%	1%	8
141	23444625	0.01	0.01	0.01		2%	-1%	855
142	6643725	0.16	0.16	0.15	13%	3%	2%	644
143	88360	0.62	0.64	0.64	0%	-2%	0%	9
311	95805	0.04	0.04	0.03		4%	1%	21
312	852720	0.20	0.20	0.20	2%	0%	0%	89
331	44155	0.02	0.02	0.01		16%	9%	8
332	376325	0.26	0.26	0.27	1%	-6%	-5%	68
333	13595	0.90	0.90	0.95	0%	-6%	-6%	11
341	2917060	0.03	0.03	0.03		-3%	-4%	70
342	6102745	0.19	0.19	0.19	12%	3%	4%	158
411	2310835	0.04	0.04	0.04		2%	2%	498
412	3757315	0.15	0.15	0.15	7%	2%	2%	1605
413	28005	1.25	1.22	1.19	0%	4%	2%	18
431	67170	0.05	0.04	0.05		-10%	-11%	14
441	5413140	0.03	0.03	0.03		2%	0%	328
442	8684730	0.16	0.16	0.15	17%	2%	2%	967
443	35120	0.65	0.65	0.63	0%	4%	3%	14
611	3803870	0.02	0.02	0.02		0%	0%	1367
612	2353760	0.16	0.16	0.16	4%	0%	1%	1854
613	42995	1.50	1.51	1.42	0%	5%	6%	42
632	16295	0.13	0.13	0.13	0%	1%	1%	6
641	9515670	0.02	0.02	0.02		4%	0%	1009
642	7265205	0.14	0.15	0.14	14%	2%	2%	1006
643	30425	1.03	1.04	1.04	0%	-1%	0%	22
711	4241250	0.02	0.02	0.02		6%	8%	1731
712	1564025	0.16	0.16	0.15	3%	3%	3%	1272
713	47170	1.80	1.80	1.81	0%	0%	-1%	87

### Table 14-19 Global Bias per domain



ESTDOM	VOLUME	AUOKCG	AUIDCG	AUNNCG	% Volume Low grade and High grade	% Dif. OK vs NN	% Dif. ID vs NN	N. Composites
741	7745180	0.02	0.02	0.02		7%	9%	642
742	2592930	0.13	0.13	0.13	5%	-5%	-4%	308
743	4870	0.98	1.00	1.02	0%	-3%	-2%	7
911	1025750	0.02	0.02	0.02		2%	3%	316
912	155315	0.18	0.18	0.19	0%	-3%	-3%	101
913	4890	0.87	0.87	0.87	0%	0%	0%	6
941	3964170	0.01	0.01	0.01		7%	5%	429
942	166235	0.13	0.13	0.13	0%	-2%	-3%	25





#### Figure 14-21 Trend Plot by Easting: Measured category



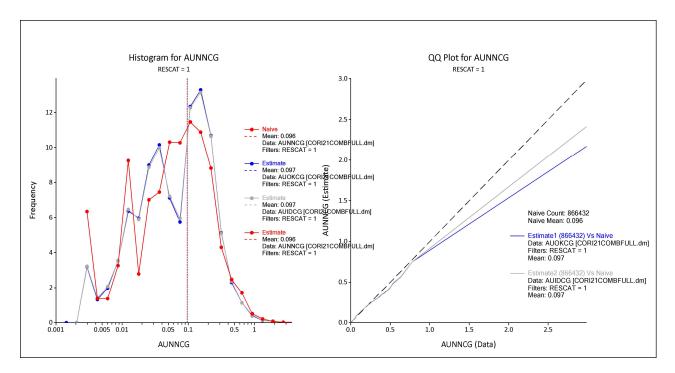
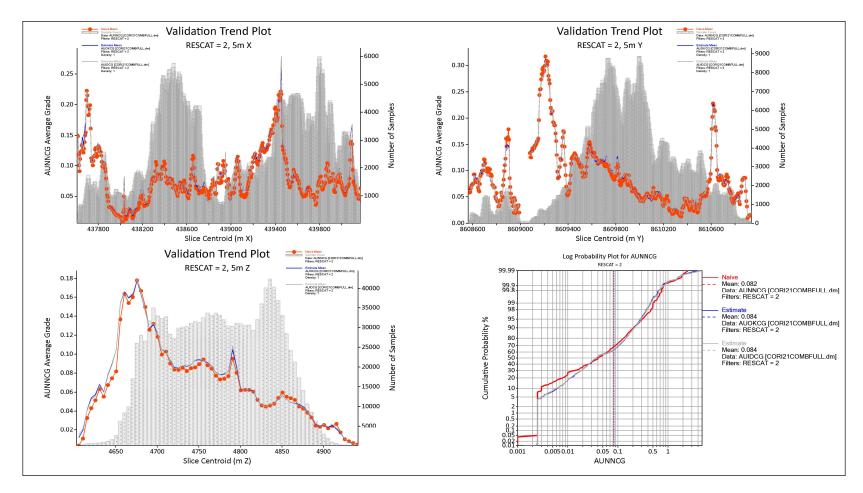


Figure 14-22 Log Histogram and Q-Q plot: Measured category





#### Figure 14-23 Trend Plot by Easting: Indicated category



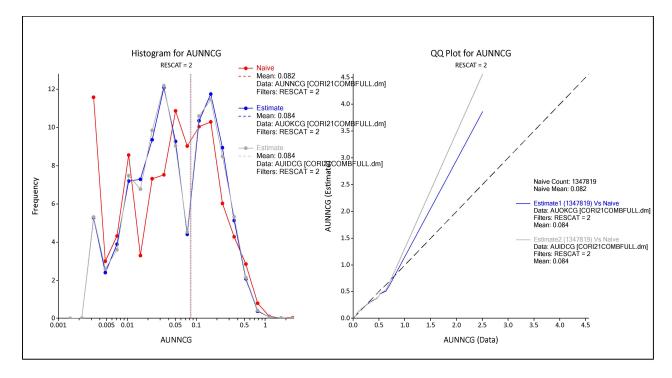


Figure 14-24 Trend Plot by Easting: Indicated category

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## 14.11 Reasonable prospects of economic extraction

The Mineral Resource is sub-horizontal, outcropping or close to surface, and mining has proven it to be mineable by open pit methods with a low strip ratio. The oxide material has reasonable prospects of economic extraction at a cut-off grade of 0.1 g/t gold. This cut-off grade was estimated using current costs and recoveries provided by the mine operation a gold price of US 1,500/oz, which is the current price at which Corihuarmi Gold Mine is operating and an approximate average value of the long term historical averages (five years). The sulphide material is considered to low grade to have reasonable prospects of economic extraction and has been excluded from the Mineral Resource.

Ms Muñoz (QP) considered that the use of the latest MIRL pit design for 2021 is reasonable to report resources in the short and medium term, considering the type of drilling used in the resource estimation. The pit design 2021 constrains the material close to the surface and that can be easily extractable in the areas of current mining operation. Assumptions used in the cut-off grade calculation and in the pit design 2021 are provided in Table 14-20.

Ms Muñoz (QP) is not aware of any deleterious elements, or any environmental, permitting, legal, title, taxation, socio-economic, marketing, political or other relevant factors that could materially affect the economics of the mine.

Parametres	Units	Susan	Scree Slope	Cayhua	Amp. Diana	Laura	Cayhua Norte	Amp. Scree Slope	Ely Norte	Coyllor	Total
Geotechnical parametres											
Pit design angle	(º)	48	42	48	48	45	48	42	48	48	
Metallurgical recovery											
Au	%	78.90%	65.01%	74.05%	70.62%	69.93%	70.95%	65.01%	70.62%	70.62%	70.63%
Operating Cost	\$/TM										
Mineralized Material Mining Cost	\$/TM	1.93	0.69	1.12	1.18	1.11	0.82	1.30	1.18	1.18	1.17
Waste Mining Cost	\$/TM	1.23	0.77	1.08	1.07	1.18	1.08	0.77	1.07	1.07	1.04
Increase in											
Transportation	\$/TM	0.15	0.24	0.05	0.04	0.00	0.05	0.24	0.04	0.04	0.09
Processing Cost	\$/TM	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21
CAPEX	\$/TM	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
G&A	\$/TM	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Stripping		1	1	1	1	1	1	1	1	1	1
Total Mining Cost		3.16	1.47	2.20	2.25	2.28	1.90	2.08	2.25	2.25	2.21
Royalties											
Minandex Royalties	\$/Oz	36.08	36.08	36.08	36.08	36.08	36.08	36.08	36.08	36.08	36.08
Government Royalties	\$/Oz	12.03	12.03	12.03	12.03	12.03	12.03	12.03	12.03	12.03	12.03
Sales Cost											
Dore Selling and											
Transportation Costs	\$/Oz	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6

#### Table 14-20 MIRL Pit design 2021 parametres and Cut-off grade calculation



Parametres	Units	Susan	Scree Slope	Cayhua	Amp. Diana	Laura	Cayhua Norte	Amp. Scree Slope	Ely Norte	Coyllor	Total
Metal Price											
Gold Price	\$/Oz	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Net Gold Price	\$/Oz	1445.29	1445.29	1445.29	1445.29	1445.29	1445.3	1445.29	1445.29	1445.29	1445.3
Cut of grade											
Marginal cutoff grade	g/TM	0.064	0.081	0.066	0.068	0.068	0.068	0.081	0.068	0.068	0.070
Economic Cutoff grade	g/TM	0.151	0.130	0.129	0.137	0.138	0.126	0.150	0.137	0.137	0.137

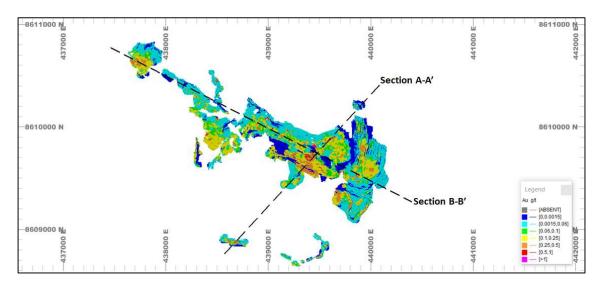


Figure 14-25 Perspective view north of the block model selected inside the MIRL pit design 2021

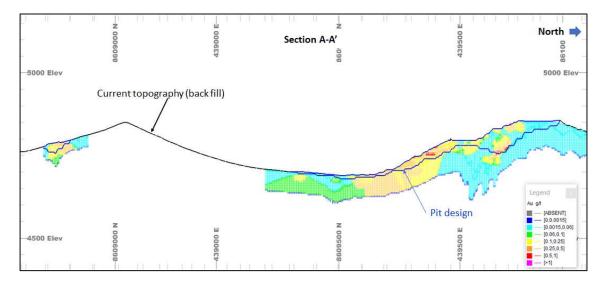


Figure 14-26 Vertical section A-A' through the block model and MIRL pit design 2021



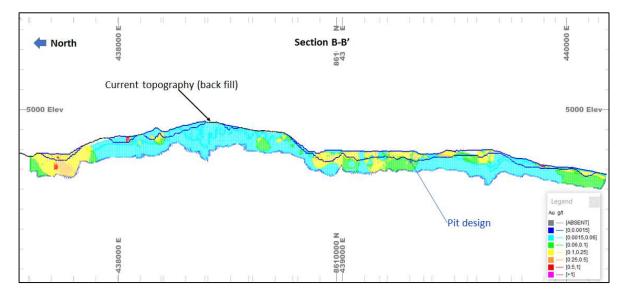


Figure 14-27 Vertical section B-B' through the block model and MIRL pit design 2021



## 14.12 Mineral Resource Statements

The update of the resources has been carried out using the support data generated by the site technical team. Gold grade was estimated into the block model using Reverse Circulation Drill holes (RC), Diamond Drill holes (DDH) and supported with rotary air drilling called long holes drilled in areas with limited assay information. The estimate applies industry-standard estimation methodology. Mineral resources are reported above a reasonable cut-off grade based on production costs and metallurgical recovery from the onging Corihuarmi Gold Mine.

In calculating the mineral resources, Mining Plus used a cut-off grade of 0.1 g/t Au inside the latest pit design for 2021, along with a low strip ratio. Both the pit design and cut-off grade were calculated using a gold price of US \$1,500.

The mineral resources have been estimated in accordance with widely accepted CIM Estimation of Mineral Resource and Mineral Reserves Best Practices Guidelines (November 2019) and are reported in accordance with NI 43-101. The mineral resources are summarized in Table 14-21 with an effective date of February 28, 2021. The Mineral Resource is reported by Mine Zone in Table 14-22.

Resource Category	Tonnes (Mt)	Au (g/t)	Au Ounces (kt)
Measured	8.00	0.20	51.1
Indicated	5.83	0.22	41.2
Measured & Indicated	13.83	0.21	92.3
Inferred	0.2	0.2	1.50

11. Mineral resources are not mineral reserves and have not demonstrated economic viability.

12. All figures are rounded to reflect the relative accuracy of the estimates. Minor discrepancies may occur due to rounding to appropriate significant figures.

- 13. All tonnages reported are dry metric tonnes and ounces of contained gold are troy ounces.
- 14. The Mineral Resource was estimated by Ms. Maria Muñoz, MAIG, QP, Independent Qualified Person under NI 43-101, of Mining Plus Consultants who takes responsibility for it.

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20. Mining Plus is not aware of any environmental, permitting, legal, title, taxation, sociopolitical, marketing, or other relevant issues that could materially affect the potential development of the Mineral Resource Estimate.

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<sup>15.</sup> The Mineral Resource is sub-horizontal, outcropping or close to surface, and has been proven to be mineable by open pit methods with a low strip ratio.

<sup>16.</sup> The Mineral Resource is reported inside a pit designed with a cut-off grade of 0.1 g/t gold, estimated using a gold price of US \$1500; the cut-off assumed is slightly higher than the marginal cut-off.

<sup>17.</sup> The metal recovery assumed was 70.6% for gold, and total operating costs of US\$ 4.51 /t.

<sup>18.</sup> The resources have been estimated with RC and DDH drillings and supported with rotary air drilling called long holes drilled in areas with limited assay information.

<sup>19.</sup> Drilling results as of end of February 2021 are included.



#### Table 14-22 Mineral Resource by Mine Zone

	Mineral Resource Estimate for the Corihuarmi Deposit - end of February, 2021												
	5.1	Measured				Indicated		Measured & Indicated			Inferred		
Mzone	Pit	Tonnes	Au g/t	Au Ounces	Tonnes	Au g/t	Au Ounces	Tonnes	Au g/t	Au Ounces	Tonnes	Au g/t	Au Ounces
	Susan	2,069,554	0.17	11,206	304,320	0.26	2,497	2,373,875	0.18	13,702	-	-	-
	Coyllor	311,101	0.23	2,346	117,801	0.19	725	428,902	0.22	3,070	-	-	-
	Scree Slope	60,306	0.19	359	1,105,407	0.23	8,337	1,165,713	0.23	8,696	2,406	0.1	8
	Cayhua	671,902	0.18	3,839	230,413	0.15	1,093	902,315	0.17	4,932	10,576	0.1	43
Oxides	Laura	811,693	0.17	4,381	232,504	0.14	1,010	1,044,197	0.16	5,391	7,049	0.1	28
	Amp. Diana	2,364,899	0.22	16,849	125,157	0.19	754	2,490,057	0.22	17,603	2,574	0.2	13
	Cayhua Norte	469,936	0.22	3,365	51,747	0.36	605	521,683	0.24	3,970	-	-	-
	Amp. Scree Slope	117,733	0.25	953	734,361	0.26	6,124	852,094	0.26	7,078	1,375	0.1	6
	Ely Norte	57,384	0.33	601	19,760	0.37	238	77,144	0.34	838	-	-	-
	Susan	1,799	0.11	6	5,610	0.30	54	7,409	0.25	60	-	-	-
Marainaa	Scree Slope	58,793	0.23	435	422,595	0.27	3,691	481,389	0.27	4,125	1,056	0.3	11
Moraines	Amp. Diana	9,500	0.17	51	10,271	0.16	54	19,771	0.16	104	764	0.2	4
	Amp. Scree Slope	1,000,003	0.21	6,743	2,474,969	0.20	16,053	3,474,973	0.20	22,796	213,833	0.2	1,414
Sub	ototal Oxides	6,934,508	0.20	43,898	2,921,470	0.23	21,382	9,855,978	0.21	65,280	23,981	0.1	98
Subt	otal Moraines	1,070,095	0.21	7,234	2,913,446	0.21	19,851	3,983,541	0.21	27,086	215,653	0.2	1,429
	Total	8,004,603	0.20	51,132	5,834,916	0.22	41,233	13,839,519	0.21	92,365	239,634	0.2	1,527



## 14.13 Mineral Resource Risk Assessment

Ms Munoz (QP) considers that the risks in the estimated resources are minimal due to the following considerations:

- Corihuarmi Mine continues operating since 2008, with more than 366,000 ounces of gold produced until the end of 2020.
- The estimated and reported resources are near to the surface with an approximate depth of 30 m in areas drilled only with LH and restricted to the design of pit 2021 which may have the potential to be easily mined as extensions to the current mine operation area.
- The resource estimation has been carried out from a conservative view considering restriction to extreme values and application of an adjustment factor to the long hole samples due to a bias detected between the RCD and DDH drillings.
- Some areas do not have densities samples so it could be considered a risk; however, the resource estimate has considered densities with similar geological characteristics for these areas and the associated risk is considered low.
- No major investments should be made other than that corresponding to mining production.
- The price of metals and variations in production costs are considered a risk inherent in any mining project due to their nature.



# 23. ADJACENT PROPERTIES

There are no operating properties of significance adjacent to Corihuarmi.

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## 24. OTHER RELEVANT DATA AND INFORMATION

There is no other relevant data or information pertaining to the estimation of the mineral resources at Corihuarmi mine.



## 25. INTERPRETATION AND CONCLUSIONS

- 25.1 Geology setting and mineralization
  - The geology of Corihuarmi and mineralizing controls are well understood.
- 25.2 Exploration
  - The exploration methods used throughout the history of the Property have been effective in identifying high-sulphidation style mineralization.
- **25.3 Mineral Resource estimates** 
  - The Mineral Resources conform to CIM definitions and comply with all disclosure requirements for Mineral Resources set out in NI 43-101.
  - The Mineral Resources have been estimated by Ms Muñoz (independent consultant QP).
  - The input data was suitable for use in a Mineral Resource Estimate and the gold grade estimation process was consistent with CIM mineral resource, mineral reserve estimation best practice guidelines.
  - The Mineral Resources are 8,000,000 t grading 0.20 g/t Au of Measured Resources, 5,830,000 t grading 0.22 g/t Au of Indicated Resources and 200,000 t grading 0.20 g/t Au of Inferred Resources. The tonnages are reported at 0.1 g/t Au cut-off grade.
  - The resource estimation has been carried out from a conservative view considering restriction to extreme values and application of an adjustment factor to the long hole samples due to a bias detected between the RCD and DDH drilling.
  - The estimated remaining resources are located mostly in production areas, with some neighboring areas not distant more than 300 m from the current pit.
  - The estimated remaining resources are superficial with a low strip ratio, these are approximately in the first 20 to 30 meters below the surface in previously mined areas with LH drilling, becoming deeper in areas with RCD and DDH drilling.
  - Corihuarmi is a mine that has been in production since 2008, with more than 366,000 ounces of gold produced through the end of 2020, therefore, the estimated remaining resources are considered low risk, likewise any new investment has to be made to extract these resources is considered minimal.



• The QP considers that there are no significant risks associated with the project except those associated with metal prices and production costs.



## 26. **RECOMMENDATIONS**

## 26.1 Geology setting and mineralization

• Geology and mineralizing controls are well understood my MIRL and Ms Muñoz (QP) offers no recommendations for improvement in this regard.

## 26.2 Exploration

- Ms Muñoz (QP) recognises that the exploration techniques employed at the Property have been effective in identifying oxide gold deposits associated with high-sulphidation epithermal centres.
- Deep exploration opportunities for sulphide mineralization are still open.
- Future drilling should be done with RCD or DDH for expand resource in nearby areas to the mine.
- Improve QA / QC controls to all future drilling that will be included in the resource estimate.
- The exploration samples should preferably be carried out with external and certified laboratories.

## **26.3** Resource Estimation

• Increase density samples in areas with limited information.



## **27. REFERENCES**

Referenced material is listed: Document - Author - Date

- Estimación de Reservas Prepared by Minera IRL (2017) ["MIRL 2017"]
- Estimación de Recursos y Reservas Prepared by Minera IRL (2021) ["MIRL 2021"]
- National Instrument 43-101 Technical Report Prepared by Coffey Mining (2010)["Coffey 2010"]
- Geology and Exploration Summary of Corihuarmi Property Central Peru Prepared by AMEC (2006) ["Amec 2006"]
- Corihuarmi Feasibility Study 1,000,000 Tonne per Year Heap Leach Project, Junin,Peru – Prepared by Kappes, Cassiday and Associates (2006) ["KCA 2006"]
- 1:50k mapsheet 26L-1 "Mapa Geologico del Cuadrangulo Tupe" Prepared by INGEMMET (2009) ["INGEMMET 2009"]
- Boletin #44 "Boletin de Mala (26-J), Lunahuana (26-K), Tupe (26-L), Conaica (26-M)"– Prepared by INGEMMET (1993) ["INGEMMET 1993"]



## APPENDIX A: ASSAY VERIFICATION – DRILLING 2017-2021

MP has compiled 201 certificates in ".xls" format from the Minera IRL laboratory (see ) and reviewed 7557 samples. These samples account for roughly 55% of the samples contained in the "CLHassy" database.

The "CLHassy" database contains a total of 16958 entries in the AUPPM field, of which 3135 were identified with the "ns" and "nr" values. Thus, the total number of valid source data analyzed is of 13823 samples; see .

shows the number of samples compared by drilling campaign (year) and presents the results of the verification of the assays against the original certificates from Minera IRL's laboratory. From this validation, the following is highlighted:

- Out of the 7557 samples that were reviewed, only 40 present inconsistencies. This proportion is about 0.53 percent of the data reviewed. Mining Plus considers the amount of inconsistencies as minor and that it will not materially affect the resource estimation process.
- The inconsistencies were grouped into three categories (1, 2 and 3); see .
- All type 1 inconsistencies entries have Au ppm values of 0.0025 in the "CLHassy" database and, in the original certificates, all these samples have Au contents near the detection limit value. It appears as if the Au values of these samples were treated as if these presented values below the detection limit. presents some examples of these types of inconsistencies.
- Type 2 inconsistencies belong to two samples that have the same value in the "SAMPLE" field (from the "CLHassy" database) and the "CODE" field (from the original certificates); see . Moreover, the Au values seems to be swapped between these two samples.
- Type 3 inconsistencies are those six samples whose source of inconsistency could not be determined; see .
- The detection limit values were replaced by half of the detection limit values.

Certificate	Number of samples reviewed	Certificate	Number of samples reviewed
EXPLORACIONES - 01-02-2021.xls	42	EXPLORACIONES - 10-12-18.xls	36
EXPLORACIONES - 01-03-2019.xls	35	EXPLORACIONES - 10-12-2019.xls	17
EXPLORACIONES - 01-03-2021.xls	42	EXPLORACIONES - 11-01-2020.xls	9
EXPLORACIONES - 01-07-18.xls	36	EXPLORACIONES - 11-01-2021.xls	13
EXPLORACIONES - 01-09-2020.xls	6	EXPLORACIONES - 11-02-18.xls	63
EXPLORACIONES - 01-11-2019.xls	41	EXPLORACIONES - 11-02-2021.xls	40

#### Table A 1 Minera IRL laboratory certificates compiled by Mining Plus and number of samples analyzed per cortificato



Certificate	Number of samples reviewed
EXPLORACIONES - 01-12-18.xls	65
EXPLORACIONES - 02-02-2021.xls	54
EXPLORACIONES - 02-03-18.xls	36
EXPLORACIONES - 02-03-2019.xls	38
EXPLORACIONES - 02-03-2019.xis	28
EXPLORACIONES - 02-03-2021.xis EXPLORACIONES - 02-04-18.xis	
	51
EXPLORACIONES - 02-05-19.xls	38
EXPLORACIONES - 02-07-18.xls	40
EXPLORACIONES - 02-09-2020.xls	16
EXPLORACIONES - 02-11-2019.xls	50
EXPLORACIONES - 02-12-18.xls	69
EXPLORACIONES - 03-02-2021.xls	13
EXPLORACIONES - 03-03-18.xls	41
EXPLORACIONES - 03-03-2019.xls	43
EXPLORACIONES - 03-03-2021.xls	36
EXPLORACIONES - 03-04-18.xls	20
EXPLORACIONES - 03-04-2019.xls	5
EXPLORACIONES - 03-06-18.xls	25
EXPLORACIONES - 03-07-2020.xls	15
EXPLORACIONES - 03-09-2020.xls	8
EXPLORACIONES - 03-10-2019.xls	43
EXPLORACIONES - 03-11-2019.xls	10
EXPLORACIONES - 03-12-18.xls	5
EXPLORACIONES - 04-02-2021.xls	71
EXPLORACIONES - 04-03-18.xls	17
EXPLORACIONES - 04-03-2019.xls	37
EXPLORACIONES - 04-03-2021.xls	59
EXPLORACIONES - 04-04-18.xls	12
EXPLORACIONES - 04-04-2019.xls	54
EXPLORACIONES - 04-05-2020.xls	48
EXPLORACIONES - 04-06-18.xls	25
EXPLORACIONES - 04-07-2020.xls	23
EXPLORACIONES - 04-10-2019.xls	18
EXPLORACIONES - 04-11-2019.xls	30
EXPLORACIONES - 04-12-18.xls	45
EXPLORACIONES - 05-02-2021.xls	39
EXPLORACIONES - 05-03-18.xls	37
EXPLORACIONES - 05-03-2019.xls	56
EXPLORACIONES - 05-03-2021.xls	43
EXPLORACIONES - 05-05-19.xls	11
EXPLORACIONES - 05-05-2020.xls	40
EXPLORACIONES - 05-06-18.xls	8
EXPLORACIONES - 05-07-2020.xls	0 14
EXPLORACIONES - 05-07-2020.xis EXPLORACIONES - 05-11-18.xls	25
	25

Certificate         reviewed           EXPLORACIONES - 11-03-18.xls         33           EXPLORACIONES - 11-03-2021.xls         45           EXPLORACIONES - 11-04-2020.xls         25           EXPLORACIONES - 11-09-18.xls         26           EXPLORACIONES - 11-09-18.xls         26           EXPLORACIONES - 11-09-2020.xls         53           EXPLORACIONES - 11-109-2020.xls         62           EXPLORACIONES - 11-12-18.xls         65           EXPLORACIONES - 11-12-2019.xls         38           EXPLORACIONES - 12-01-2020.xls         39           EXPLORACIONES - 12-01-2021.xls         7           EXPLORACIONES - 12-01-2021.xls         7           EXPLORACIONES - 12-02-2021.xls         59           EXPLORACIONES - 12-03-2021.xls         50           EXPLORACIONES - 12-03-2021.xls         50           EXPLORACIONES - 12-04-2020.xls         50           EXPLORACIONES - 12-03-18.xls         54           EXPLORACIONES - 12-09-19.xls         13           EXPLORACIONES - 12-12-18.xls         43           EXPLORACIONES - 12-12-18.xls         43           EXPLORACIONES - 13-01-2021.xls         37           EXPLORACIONES - 13-02-18.xls         58           EXPLORACIONES - 13-02-18.xls         58
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EXPLORACIONES - 12-02-18.xls       71         EXPLORACIONES - 12-02-2021.xls       59         EXPLORACIONES - 12-03-2021.xls       54         EXPLORACIONES - 12-03-2021.xls       56         EXPLORACIONES - 12-04-2020.xls       50         EXPLORACIONES - 12-04-2020.xls       41         EXPLORACIONES - 12-09-19.xls       13         EXPLORACIONES - 12-09-19.xls       13         EXPLORACIONES - 12-10-2020.xls       14         EXPLORACIONES - 12-12-2019.xls       14         EXPLORACIONES - 12-12-2019.xls       41         EXPLORACIONES - 12-12-2019.xls       41         EXPLORACIONES - 13-01-2020.xls       32         EXPLORACIONES - 13-01-2021.xls       37         EXPLORACIONES - 13-02-18.xls       58         EXPLORACIONES - 13-02-2021.xls       54         EXPLORACIONES - 13-03-18.xls       53         EXPLORACIONES - 13-03-18.xls       53         EXPLORACIONES - 13-04-2020.xls       45         EXPLORACIONES - 13-09-19.xls       20         EXPLORACIONES - 13-09-19.xls       20         EXPLORACIONES - 13-09-19.xls       20         EXPLORACIONES - 13-09-19.xls       35
EXPLORACIONES - 12-02-2021.xls       59         EXPLORACIONES - 12-03-18.xls       54         EXPLORACIONES - 12-03-2021.xls       56         EXPLORACIONES - 12-04-2020.xls       50         EXPLORACIONES - 12-04-2020.xls       41         EXPLORACIONES - 12-08-2020.xls       41         EXPLORACIONES - 12-09-19.xls       13         EXPLORACIONES - 12-10-2020.xls       18         EXPLORACIONES - 12-11-2020.xls       18         EXPLORACIONES - 12-12-18.xls       43         EXPLORACIONES - 12-12-2019.xls       41         EXPLORACIONES - 13-01-2020.xls       32         EXPLORACIONES - 13-01-2021.xls       37         EXPLORACIONES - 13-02-2021.xls       58         EXPLORACIONES - 13-02-2021.xls       54         EXPLORACIONES - 13-03-18.xls       53         EXPLORACIONES - 13-03-18.xls       53         EXPLORACIONES - 13-04-2020.xls       45         EXPLORACIONES - 13-04-2020.xls       36         EXPLORACIONES - 13-09-19.xls       20         EXPLORACIONES - 13-09-19.xls       20         EXPLORACIONES - 13-09-2020.xls       48         EXPLORACIONES - 13-09-19.xls       35
EXPLORACIONES - 12-03-18.xls       54         EXPLORACIONES - 12-03-2021.xls       56         EXPLORACIONES - 12-04-2020.xls       50         EXPLORACIONES - 12-08-2020.xls       41         EXPLORACIONES - 12-09-19.xls       13         EXPLORACIONES - 12-09-19.xls       13         EXPLORACIONES - 12-11-2020.xls       18         EXPLORACIONES - 12-12-2019.xls       41         EXPLORACIONES - 12-12-2019.xls       41         EXPLORACIONES - 12-12-2019.xls       41         EXPLORACIONES - 13-01-2020.xls       32         EXPLORACIONES - 13-01-2021.xls       37         EXPLORACIONES - 13-02-18.xls       58         EXPLORACIONES - 13-02-18.xls       54         EXPLORACIONES - 13-02-18.xls       54         EXPLORACIONES - 13-02-2021.xls       54         EXPLORACIONES - 13-02-2021.xls       54         EXPLORACIONES - 13-03-18.xls       53         EXPLORACIONES - 13-04-2020.xls       45         EXPLORACIONES - 13-04-2020.xls       36         EXPLORACIONES - 13-09-19.xls       20         EXPLORACIONES - 13-09-19.xls       20         EXPLORACIONES - 13-09-19.xls       35
EXPLORACIONES - 12-03-2021.xls       56         EXPLORACIONES - 12-04-2020.xls       50         EXPLORACIONES - 12-08-2020.xls       41         EXPLORACIONES - 12-09-19.xls       13         EXPLORACIONES - 12-1020.xls       18         EXPLORACIONES - 12-11-2020.xls       18         EXPLORACIONES - 12-11-2020.xls       14         EXPLORACIONES - 12-12-2019.xls       41         EXPLORACIONES - 12-12-2019.xls       41         EXPLORACIONES - 13-01-2020.xls       32         EXPLORACIONES - 13-01-2021.xls       37         EXPLORACIONES - 13-02-18.xls       58         EXPLORACIONES - 13-02-2021.xls       54         EXPLORACIONES - 13-03-18.xls       53         EXPLORACIONES - 13-03-2021.xls       60         EXPLORACIONES - 13-04-2020.xls       45         EXPLORACIONES - 13-04-2020.xls       36         EXPLORACIONES - 13-09-19.xls       20         EXPLORACIONES - 13-09-19.xls       20         EXPLORACIONES - 13-09-2020.xls       48         EXPLORACIONES - 13-09-2020.xls       35
EXPLORACIONES - 12-04-2020.xls       50         EXPLORACIONES - 12-08-2020.xls       41         EXPLORACIONES - 12-09-19.xls       13         EXPLORACIONES - 12-10-19.xls       13         EXPLORACIONES - 12-11-2020.xls       18         EXPLORACIONES - 12-12-18.xls       43         EXPLORACIONES - 12-12-2019.xls       41         EXPLORACIONES - 13-01-2020.xls       32         EXPLORACIONES - 13-01-2020.xls       37         EXPLORACIONES - 13-01-2021.xls       37         EXPLORACIONES - 13-02-2021.xls       54         EXPLORACIONES - 13-02-2021.xls       54         EXPLORACIONES - 13-03-18.xls       53         EXPLORACIONES - 13-03-2021.xls       60         EXPLORACIONES - 13-04-2020.xls       45         EXPLORACIONES - 13-04-2020.xls       36         EXPLORACIONES - 13-09-19.xls       20         EXPLORACIONES - 13-09-19.xls       20         EXPLORACIONES - 13-09-19.xls       48         EXPLORACIONES - 13-09-19.xls       35
EXPLORACIONES - 12-08-2020.xls       41         EXPLORACIONES - 12-09-19.xls       13         EXPLORACIONES - 12-11-2020.xls       18         EXPLORACIONES - 12-11-2020.xls       18         EXPLORACIONES - 12-12-18.xls       43         EXPLORACIONES - 12-12-2019.xls       41         EXPLORACIONES - 12-12-2019.xls       41         EXPLORACIONES - 13-01-2020.xls       32         EXPLORACIONES - 13-01-2021.xls       37         EXPLORACIONES - 13-02-18.xls       58         EXPLORACIONES - 13-02-2021.xls       54         EXPLORACIONES - 13-02-2021.xls       54         EXPLORACIONES - 13-02-2021.xls       60         EXPLORACIONES - 13-03-18.xls       33         EXPLORACIONES - 13-04-2020.xls       45         EXPLORACIONES - 13-09-19.xls       20         EXPLORACIONES - 13-09-19.xls       20         EXPLORACIONES - 13-09-2020.xls       48         EXPLORACIONES - 13-09-19.xls       35
EXPLORACIONES - 12-09-19.xls       13         EXPLORACIONES - 12-11-2020.xls       18         EXPLORACIONES - 12-12-18.xls       43         EXPLORACIONES - 12-12-2019.xls       41         EXPLORACIONES - 12-12-2019.xls       41         EXPLORACIONES - 13-01-2020.xls       32         EXPLORACIONES - 13-01-2021.xls       37         EXPLORACIONES - 13-01-2021.xls       54         EXPLORACIONES - 13-02-18.xls       58         EXPLORACIONES - 13-02-2021.xls       54         EXPLORACIONES - 13-03-18.xls       33         EXPLORACIONES - 13-03-2021.xls       60         EXPLORACIONES - 13-03-2021.xls       60         EXPLORACIONES - 13-03-2021.xls       60         EXPLORACIONES - 13-04-2020.xls       45         EXPLORACIONES - 13-09-19.xls       20         EXPLORACIONES - 13-09-19.xls       20         EXPLORACIONES - 13-09-19.xls       48         EXPLORACIONES - 13-09-19.xls       35
EXPLORACIONES - 12-11-2020.xls       18         EXPLORACIONES - 12-12-18.xls       43         EXPLORACIONES - 12-12-2019.xls       41         EXPLORACIONES - 13-01-2020.xls       32         EXPLORACIONES - 13-01-2021.xls       37         EXPLORACIONES - 13-02-18.xls       58         EXPLORACIONES - 13-02-2021.xls       54         EXPLORACIONES - 13-02-2021.xls       54         EXPLORACIONES - 13-02-2021.xls       60         EXPLORACIONES - 13-03-18.xls       33         EXPLORACIONES - 13-03-2021.xls       60         EXPLORACIONES - 13-04-2020.xls       45         EXPLORACIONES - 13-04-2020.xls       36         EXPLORACIONES - 13-09-19.xls       20         EXPLORACIONES - 13-09-2020.xls       48         EXPLORACIONES - 13-09-2020.xls       35
EXPLORACIONES - 12-12-18.xls       43         EXPLORACIONES - 12-12-2019.xls       41         EXPLORACIONES - 13-01-2020.xls       32         EXPLORACIONES - 13-01-2021.xls       37         EXPLORACIONES - 13-02-18.xls       58         EXPLORACIONES - 13-02-18.xls       54         EXPLORACIONES - 13-02-2021.xls       54         EXPLORACIONES - 13-02-2021.xls       54         EXPLORACIONES - 13-02-2021.xls       60         EXPLORACIONES - 13-03-18.xls       60         EXPLORACIONES - 13-03-2021.xls       60         EXPLORACIONES - 13-04-2020.xls       45         EXPLORACIONES - 13-04-2020.xls       36         EXPLORACIONES - 13-09-19.xls       20         EXPLORACIONES - 13-09-2020.xls       48         EXPLORACIONES - 13-09-2020.xls       35
EXPLORACIONES - 12-12-2019.xls       41         EXPLORACIONES - 13-01-2020.xls       32         EXPLORACIONES - 13-01-2021.xls       37         EXPLORACIONES - 13-02-18.xls       58         EXPLORACIONES - 13-02-18.xls       54         EXPLORACIONES - 13-02-2021.xls       54         EXPLORACIONES - 13-03-18.xls       33         EXPLORACIONES - 13-03-2021.xls       60         EXPLORACIONES - 13-03-2021.xls       60         EXPLORACIONES - 13-04-2020.xls       45         EXPLORACIONES - 13-04-2020.xls       36         EXPLORACIONES - 13-09-19.xls       20         EXPLORACIONES - 13-09-2020.xls       48         EXPLORACIONES - 13-09-2020.xls       35
EXPLORACIONES - 13-01-2020.xls       32         EXPLORACIONES - 13-01-2021.xls       37         EXPLORACIONES - 13-02-18.xls       58         EXPLORACIONES - 13-02-2021.xls       54         EXPLORACIONES - 13-02-2021.xls       54         EXPLORACIONES - 13-03-18.xls       33         EXPLORACIONES - 13-03-2021.xls       60         EXPLORACIONES - 13-04-2020.xls       45         EXPLORACIONES - 13-04-2020.xls       36         EXPLORACIONES - 13-09-19.xls       20         EXPLORACIONES - 13-09-2020.xls       48         EXPLORACIONES - 13-11-2020.xls       35
EXPLORACIONES - 13-01-2021.xls       37         EXPLORACIONES - 13-02-18.xls       58         EXPLORACIONES - 13-02-2021.xls       54         EXPLORACIONES - 13-03-18.xls       33         EXPLORACIONES - 13-03-2021.xls       60         EXPLORACIONES - 13-03-2021.xls       60         EXPLORACIONES - 13-04-2020.xls       45         EXPLORACIONES - 13-08-2020.xls       36         EXPLORACIONES - 13-09-19.xls       20         EXPLORACIONES - 13-09-2020.xls       48         EXPLORACIONES - 13-11-2020.xls       35
EXPLORACIONES - 13-02-18.xls       58         EXPLORACIONES - 13-02-2021.xls       54         EXPLORACIONES - 13-03-18.xls       33         EXPLORACIONES - 13-03-2021.xls       60         EXPLORACIONES - 13-03-2021.xls       60         EXPLORACIONES - 13-04-2020.xls       45         EXPLORACIONES - 13-04-2020.xls       36         EXPLORACIONES - 13-09-19.xls       20         EXPLORACIONES - 13-09-2020.xls       48         EXPLORACIONES - 13-09-2020.xls       35
EXPLORACIONES - 13-02-2021.xls       54         EXPLORACIONES - 13-03-18.xls       33         EXPLORACIONES - 13-03-2021.xls       60         EXPLORACIONES - 13-04-2020.xls       45         EXPLORACIONES - 13-04-2020.xls       36         EXPLORACIONES - 13-09-19.xls       20         EXPLORACIONES - 13-09-2020.xls       48         EXPLORACIONES - 13-11-2020.xls       35
EXPLORACIONES - 13-03-18.xls       33         EXPLORACIONES - 13-03-2021.xls       60         EXPLORACIONES - 13-04-2020.xls       45         EXPLORACIONES - 13-08-2020.xls       36         EXPLORACIONES - 13-09-19.xls       20         EXPLORACIONES - 13-09-2020.xls       48         EXPLORACIONES - 13-11-2020.xls       35
EXPLORACIONES - 13-03-2021.xls       60         EXPLORACIONES - 13-04-2020.xls       45         EXPLORACIONES - 13-08-2020.xls       36         EXPLORACIONES - 13-09-19.xls       20         EXPLORACIONES - 13-09-2020.xls       48         EXPLORACIONES - 13-11-2020.xls       35
EXPLORACIONES - 13-04-2020.xls       45         EXPLORACIONES - 13-08-2020.xls       36         EXPLORACIONES - 13-09-19.xls       20         EXPLORACIONES - 13-09-2020.xls       48         EXPLORACIONES - 13-11-2020.xls       35
EXPLORACIONES - 13-08-2020.xls         36           EXPLORACIONES - 13-09-19.xls         20           EXPLORACIONES - 13-09-2020.xls         48           EXPLORACIONES - 13-11-2020.xls         35
EXPLORACIONES - 13-09-19.xls         20           EXPLORACIONES - 13-09-2020.xls         48           EXPLORACIONES - 13-11-2020.xls         35
EXPLORACIONES - 13-09-2020.xls         48           EXPLORACIONES - 13-11-2020.xls         35
EXPLORACIONES - 13-11-2020.xls 35
EXPLORACIONES - 13-12-18.xls 56
EXPLORACIONES - 13-12-2019.xls 41
EXPLORACIONES - 14-01-2020.xls 3
EXPLORACIONES - 14-01-2021.xls 54
EXPLORACIONES - 14-02-18.xls 47
EXPLORACIONES - 14-02-2021.xls 58
EXPLORACIONES - 14-03-2021.xls 42
EXPLORACIONES - 14-04-2020.xls 47
EXPLORACIONES - 14-07-2020.xls 43
EXPLORACIONES - 14-08-19.xls 25
EXPLORACIONES - 14-09-19.xls 34
EXPLORACIONES - 14-09-2020.xls 3



Certificate	Number of samples reviewed
EXPLORACIONES - 05-11-2019.xls	25
EXPLORACIONES - 05-11-2020.xls	10
EXPLORACIONES - 06-02-2021.xls	39
EXPLORACIONES - 06-03-18.xls	31
EXPLORACIONES - 06-03-2019.xls	50
EXPLORACIONES - 06-03-2021.xls	62
EXPLORACIONES - 06-04-18.xls	5
EXPLORACIONES - 06-04-2019.xls	5
EXPLORACIONES - 06-05-19.xls	55
EXPLORACIONES - 06-11-18.xls	26
EXPLORACIONES - 06-11-2020.xls	18
EXPLORACIONES - 06-12-18.xls	53
EXPLORACIONES - 07-02-2021.xls	59
EXPLORACIONES - 07-03-18.xls	49
EXPLORACIONES - 07-03-2019.xls	44
EXPLORACIONES - 07-03-2021.xls	67
EXPLORACIONES - 07-04-18.xls	38
EXPLORACIONES - 07-04-2019.xls	12
EXPLORACIONES - 07-05-19.xls	36
EXPLORACIONES - 07-09-2020.xls	16
EXPLORACIONES - 07-12-18.xls	50
EXPLORACIONES - 07-12-2019.xls	6
EXPLORACIONES - 08-02-2021.xls	89
EXPLORACIONES - 08-03-18.xls	40
EXPLORACIONES - 08-03-2021.xls	27
EXPLORACIONES - 08-04-18.xls	40
EXPLORACIONES - 08-04-2020.xls	28
EXPLORACIONES - 08-08-2020.xls	47
EXPLORACIONES - 08-09-2020.xls	38
EXPLORACIONES - 08-12-18.xls	42
EXPLORACIONES - 08-12-2019.xls	42
EXPLORACIONES - 09-01-2020.xls	7
EXPLORACIONES - 09-02-2021.xls	96
EXPLORACIONES - 09-03-18.xls	44
EXPLORACIONES - 09-03-2021.xls	62
EXPLORACIONES - 09-04-18.xls	50
EXPLORACIONES - 09-04-2019.xls	36
EXPLORACIONES - 09-04-2020.xls	18
EXPLORACIONES - 09-08-2020.xls	53
EXPLORACIONES - 09-09-18.xls	40
EXPLORACIONES - 09-09-2020.xls	46
EXPLORACIONES - 09-11-2020.xls	36
EXPLORACIONES - 09-12-2019.xls	35
EXPLORACIONES - 10-01-2020.xls	5

	Number of
Contificatio	samples
Certificate EXPLORACIONES - 14-11-18.xls	reviewed
EXPLORACIONES - 14-11-18.xis EXPLORACIONES - 14-11-2019.xls	24 27
EXPLORACIONES - 14-11-2019.xis	52
EXPLORACIONES - 14-11-2020.xis EXPLORACIONES - 14-12-18.xis	33
EXPLORACIONES - 14-12-18.xis EXPLORACIONES - 14-12-2019.xis	33 34
EXPLORACIONES - 14-12-2019.xis	34 40
EXPLORACIONES - 15-01-2021.xis	40
EXPLORACIONES - 15-02-18.XIS	78
EXPLORACIONES - 15-02-2021.xis EXPLORACIONES - 15-03-18.xis	22
EXPLORACIONES - 15-03-2021.xls	32
EXPLORACIONES - 15-03-2021.xis	52 42
EXPLORACIONES - 15-04-2020.xis	42 31
EXPLORACIONES - 15-07-2020.xls	43
EXPLORACIONES - 15-08-2020.xis EXPLORACIONES - 15-09-19.xis	45 23
EXPLORACIONES - 13-09-19.XIS EXPLORACIONES - 15-11-18.XIs	67
EXPLORACIONES - 15-11-18.xis EXPLORACIONES - 15-11-2020.xls	47
EXPLORACIONES - 15-11-2020.xis	31
EXPLORACIONES - 15-12-18.XIS EXPLORACIONES - 15-12-2019.XIS	18
EXPLORACIONES - 16-01-2021.xls	46
EXPLORACIONES - 16-01-2021.xls	40 21
EXPLORACIONES - 16-02-2021.xls	59
EXPLORACIONES - 16-02-2021.XIS EXPLORACIONES - 16-03-18.XIS	26
EXPLORACIONES - 16-03-2021.xls	42
EXPLORACIONES - 16-03-2021.XIS	36
EXPLORACIONES - 16-05-2020.xls	10
EXPLORACIONES - 16-07-19.xls	10
EXPLORACIONES - 16-07-2020.xls	29
EXPLORACIONES - 16-07-2020.AIS	30
EXPLORACIONES - 16-08-2020.xls	39
EXPLORACIONES - 16-08-2020.AS	19
EXPLORACIONES - 16-09-2020.xls	22
EXPLORACIONES - 16-09-2020.3IS	36
EXPLORACIONES - 16-11-18.xls	66
EXPLORACIONES - 16-11-2019.xls	55
EXPLORACIONES - 16-11-2019.xis	51
EXPLORACIONES - 16-11-2020.AS	22
EXPLORACIONES - 16-12-2019.xls	36
EXPLORACIONES - 17-01-2021.xls	51
EXPLORACIONES - 17-01-2021.XIS	63
EXPLORACIONES - 17-02-2021.xls	36
EXPLORACIONES - 17-02-2021.XIS EXPLORACIONES - 17-03-18.XIS	41
EXPLORACIONES - 17-03-2021.xls	60
EXPLORACIONES - 17-03-2021.XIS	18
EXPLORACIONES - 17-07-2020.xls	16
	10



Certificate	Number of samples reviewed	Certificate
EXPLORACIONES - 10-02-18.xls	40	EXPLORACIONES - 17-08-19.xls
EXPLORACIONES - 10-02-2021.xls	35	EXPLORACIONES - 17-08-2020.xls
EXPLORACIONES - 10-03-18.xls	61	EXPLORACIONES - 17-09-19.xls
EXPLORACIONES - 10-03-2021.xls	41	EXPLORACIONES - 17-09-2020.xls
EXPLORACIONES - 10-08-2020.xls	60	EXPLORACIONES - 17-10-2019.xls
EXPLORACIONES - 10-09-18.xls	36	EXPLORACIONES - 17-11-18.xls
EXPLORACIONES - 10-09-2020.xls	53	Total

#### Table A 2 Number of total, "nr and ns" and valid entries

Total	nr and ns	Valid entries	Samples reviewed	% reviewed
16958	3135	13823	7557	55%

#### Table A 3 Summary table of chemical assay from the "CLHassy database" cross-checked against the entries from the original laboratory certificates

Year	Number of samples (source)	Number of reviewed samples	% Backsource	
2017	274		0%	
2018	4102	2307	56%	
2019	3096	1473	48%	
2020	3070	1804	59%	
2021	3281	1973	60%	
Total	13823	7557	55%	

#### Table A 4 Summary of the verification findings

Description	AUPPM
Coinciding	7062
Detection Limit	455
Inconsistencies	40
Total	7557
% inconsistences of total	0.53%

DEFINE | PLAN | OPERATE

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## Table A 5 Number of samples within each inconsistency type

Inconsistency type	No of samples				
1	32				
2	2				
3	6				
Total	40				



#### Table A 6 Some examples of samples that present type 1 inconsistencies

Collar and assay files					Minera IRL laboratory certificates				Inconsistency	
HOLE-ID	OLE-ID FROM TO		SAMPLE	AUPPM	File source	CODE UBICACION		Au gr/TM	type	
TLAD18-216	10	15	537786	0.0025	EXPLORACIONES - 01-07-18.xls	537786	Ampliación Diana	0.00533328	1	
TLAD18-228	5	10	538044	0.0025	EXPLORACIONES - 02-07-18.xls	538044	Ampliación Diana	0.00533328	1	
TLAD18-228	22.5	24.5	538048	0.0025	EXPLORACIONES - 02-07-18.xls	538048	Ampliación Diana	0.00533328	1	
TLAD18-85	10	15	967279	0.0025	EXPLORACIONES - 03-04-18.xls	967279	Ampliación Diana	0.00533328	1	
TLAD19-43	15	18.5	979870	0.0025	EXPLORACIONES - 07-05-19.xls	979870	Ampliación Diana	0.00533328	1	
TLAD20-28	18	20	993500	0.0025	EXPLORACIONES - 14-04-2020.xls	993500	Ampliación Diana	0.00516666646	1	
TLAD20-37	5	10	993541	0.0025	EXPLORACIONES - 15-04-2020.xls	993541	Ampliación Diana	0.00533333312	1	
TLAD20-37	10	13	993542	0.0025	EXPLORACIONES - 15-04-2020.xls	993542	Ampliación Diana	0.00526666652	1	
TLAD21-18	13	15	1009558	0.0025	EXPLORACIONES - 13-02-2021.xls	1009558	Ampliación Diana	0.00533333333333	1	
TLAD21-22	5	8	1009588	0.0025	EXPLORACIONES - 13-02-2021.xls	1009588	Ampliación Diana	0.00533333333333	1	

#### Table A 7 Samples that present type 2 inconsistencies

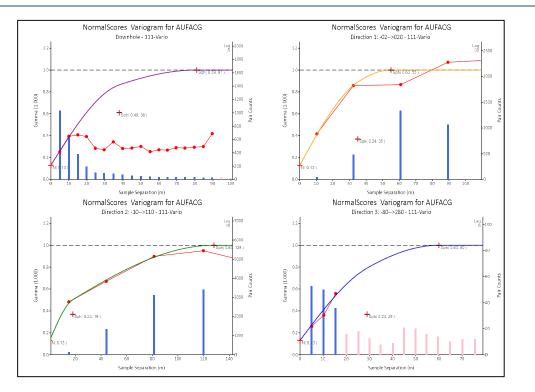
Collar and assay files					Minera IRL laboratory certificates				Inconsistency
HOLE-ID	FROM	то	SAMPLE	AUPPM	File source	CODE	UBICACION	Au gr/TM	type
TLC21-14	20	24.5	1005272	0.044753333333	EXPLORACIONES - 16-01-2021.xls	1005272	Cayhua	0.11116666667	2
TLC21-21	5	10	1005272	0.111166666667	EXPLORACIONES - 14-01-2021.xls	1005272	Cayhua	0.044753333333	2



## Table A 8 Samples that exhibit type 3 inconsistencies

Collar and assay files			Minera IRL laboratory certificates				Inconsistency		
HOLE-ID	FROM	то	SAMPLE	AUPPM	File source	CODE	Mine Zone	Au gr/TM	type
TLS18-28	15	21	966591	0.0099999	EXPLORACIONES - 13-03-18.xls	966591	Susan	0.0133332	3
TLS18-29	5	10	966593	0.0133332	EXPLORACIONES - 13-03-18.xls	966593	Susan	0.0166665	3
TLS18-29	10	15	966594	0.0166665	EXPLORACIONES - 13-03-18.xls	966594	Susan	0.0133332	3
TLS18-30	0.25	5	966596	0.0166665	EXPLORACIONES - 13-03-18.xls	966596	Susan	0.0133332	3
TLSS20-15	15	20	995586	0.12116666667	EXPLORACIONES - 14-07-2020.xls	995586	Susan	0.0188333333333	3
TLSS20-15	20	24.5	995587	0.1685	EXPLORACIONES - 14-07-2020.xls	995587	Susan	0.015	3





# **APPENDIX B: MODELED VARIOGRAMS**

Figure B 1 ESTDOM 111 – Normal Scores Variogram Model

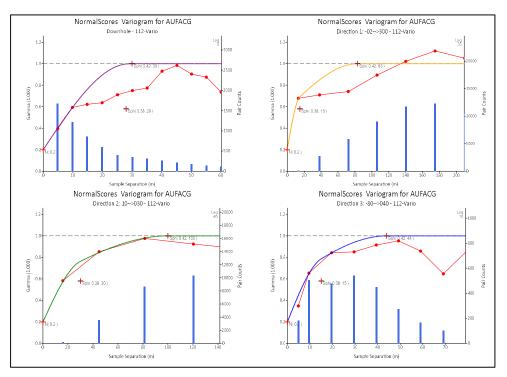


Figure B 2 ESTDOM 112 – Normal Scores Variogram Model



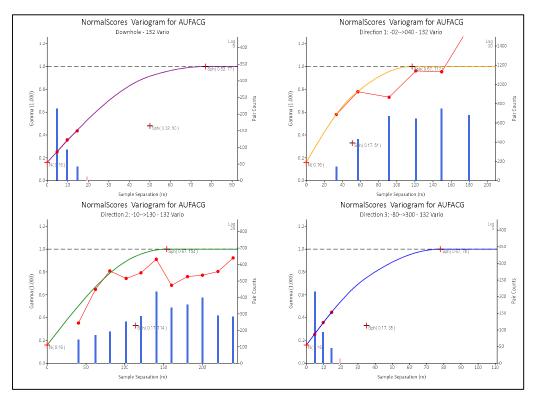


Figure B 3 ESTDOM 132 – Normal Scores Variogram Model

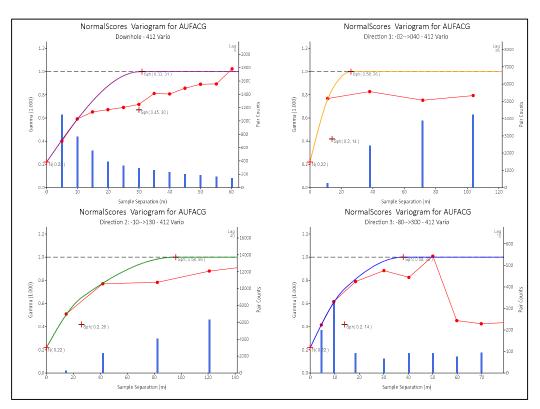


Figure B 4 ESTDOM 412 – Normal Scores Variogram Model



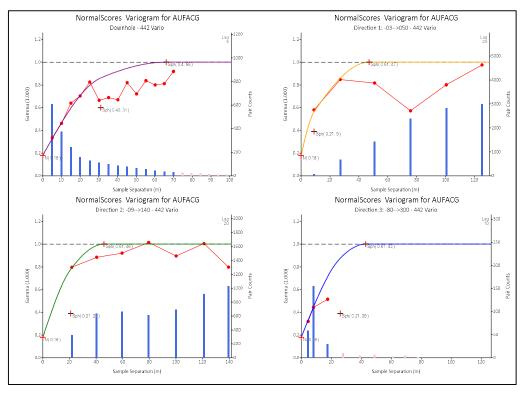


Figure B 5 ESTDOM 442 – Normal Scores Variogram Model

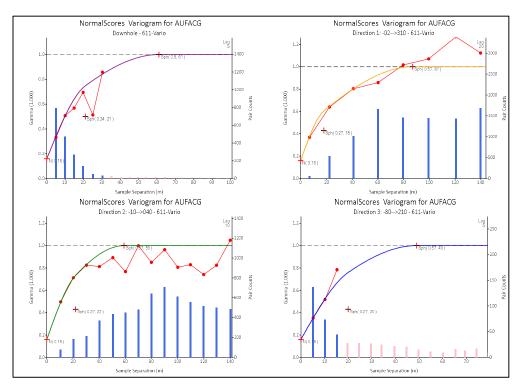


Figure B 6 ESTDOM 611 – Normal Scores Variogram Model



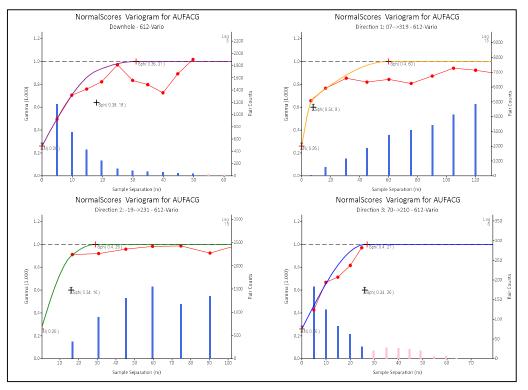


Figure B 7 ESTDOM 612 – Normal Scores Variogram Model

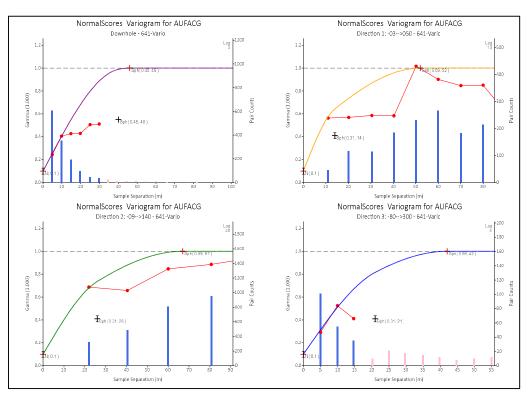


Figure B 8 ESTDOM 641 – Normal Scores Variogram Model

133



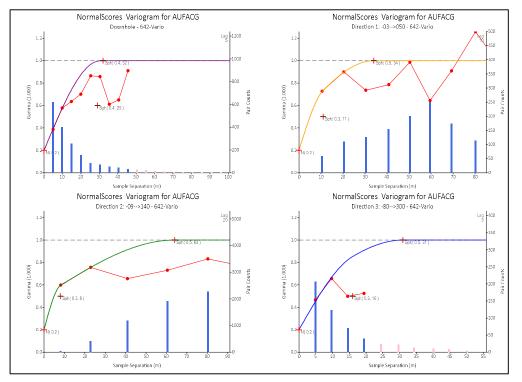


Figure B 9 ESTDOM 642 – Normal Scores Variogram Model

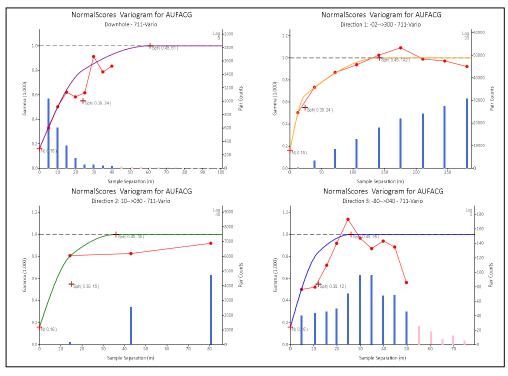


Figure B 10 ESTDOM 711 – Normal Scores Variogram Model

134



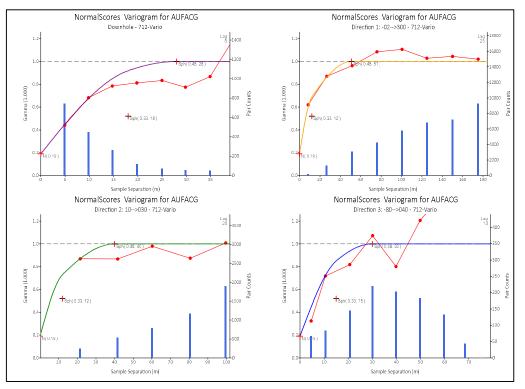


Figure B 11 ESTDOM 712 – Normal Scores Variogram Model

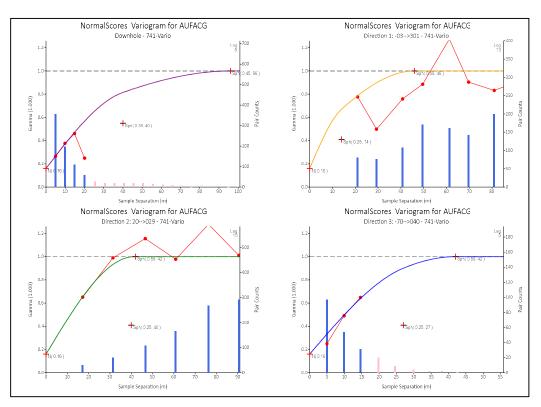


Figure B 12 ESTDOM 741 – Normal Scores Variogram Model





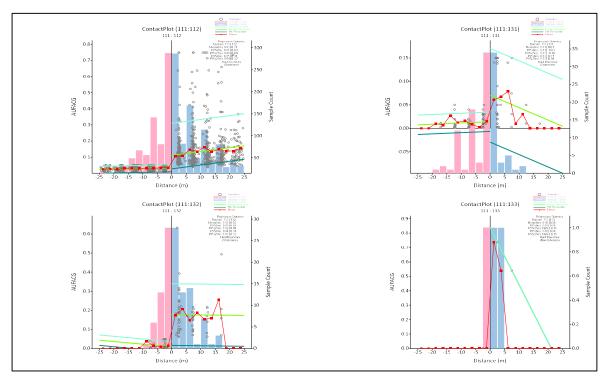
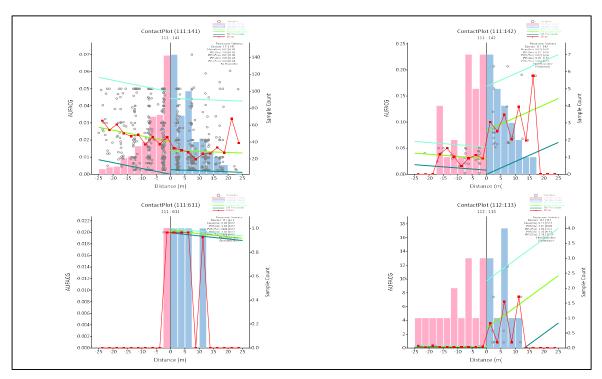
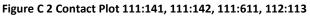


Figure C 1 Contact Plot 111:112, 111:131, 111:132, 111:133







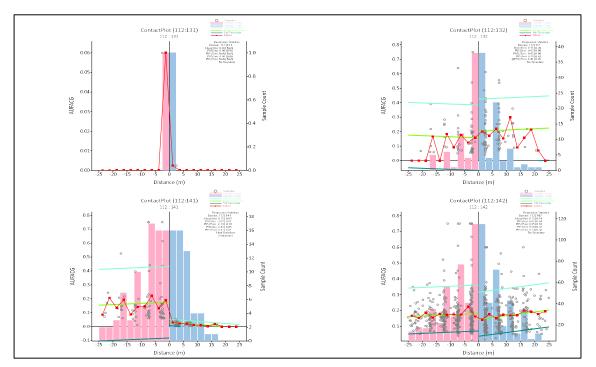


Figure C 3 Contact Plot 112:131, 112:132, 112:141, 112:142

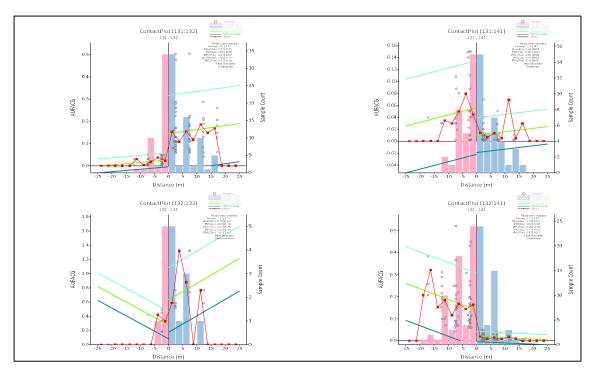


Figure C 4Contact Plot 131:132, 131:141, 132:133, 132:141



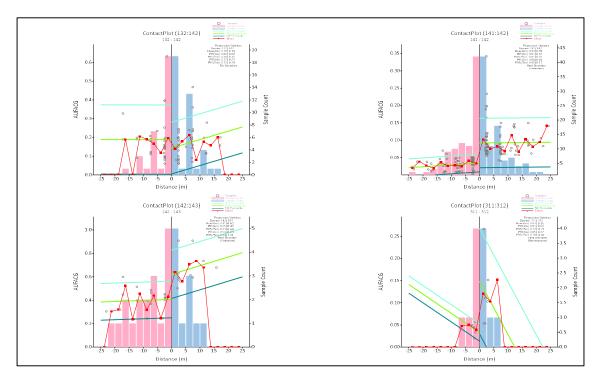


Figure C 5Contact Plot 132:142, 141:142, 142:143, 311:312

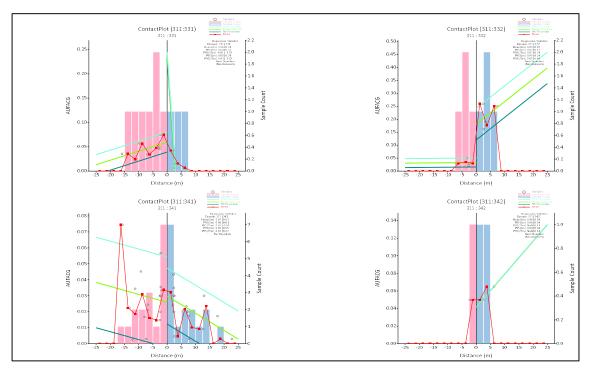


Figure C 6Contact Plot 311:331, 311:332, 311:341, 311:342



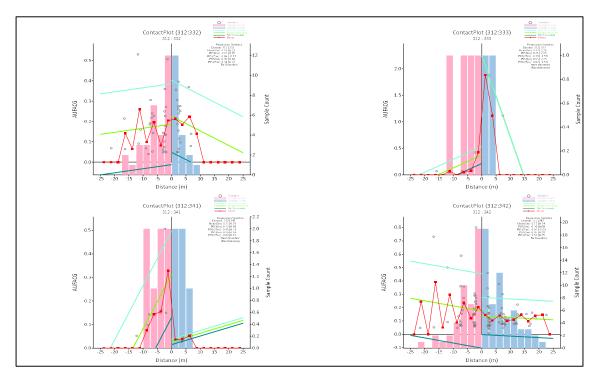


Figure C 7Contact Plot 312:332, 312:333, 312:341, 312:342

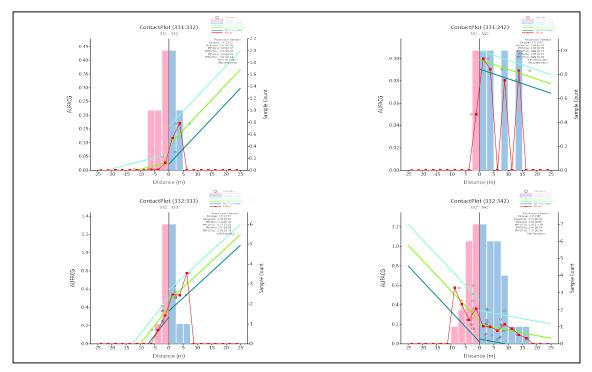


Figure C 8 Contact Plot 331:332, 331:342, 332:333, 332:342



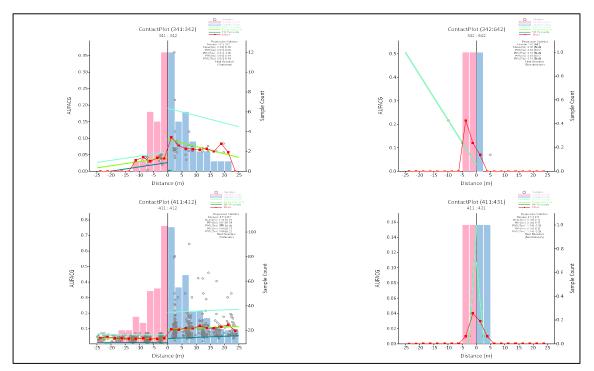


Figure C 9 Contact Plot 341:342, 342:642, 411:412, 411:431

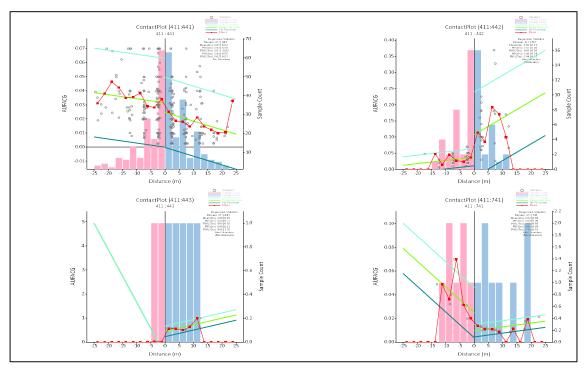


Figure C 10 Contact Plot 411:441, 411:442, 411:443, 411:741



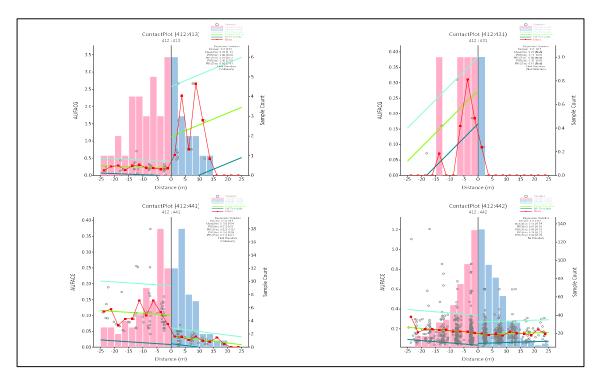


Figure C 11 Contact Plot 412:413, 412:431, 412:441, 412:442

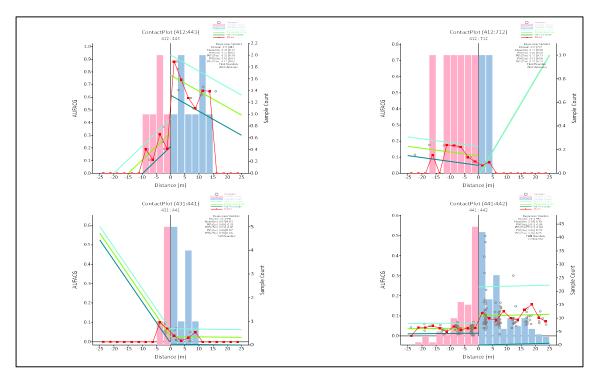


Figure C 12 Contact Plot 412:443, 412:712, 431:441, 441:442



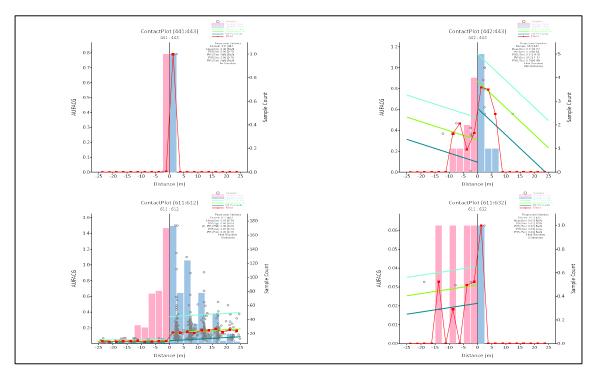


Figure C 13 Contact Plot 441:443, 442:443, 611:612, 611:632

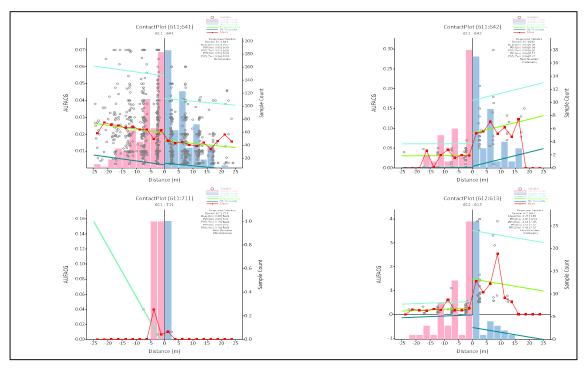


Figure C 14 Contact Plot 611:641, 611:642, 611:711, 612:613



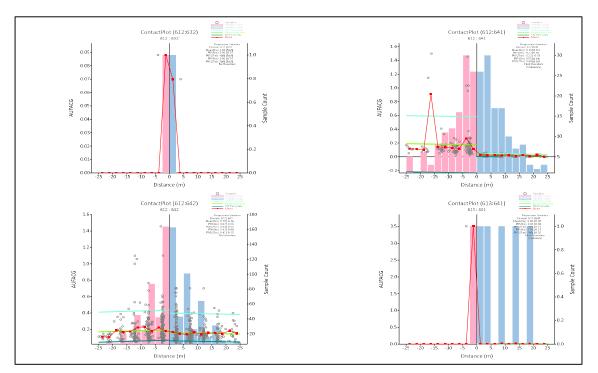


Figure C 15 Contact Plot 612:632, 612:641, 612:642, 613:641

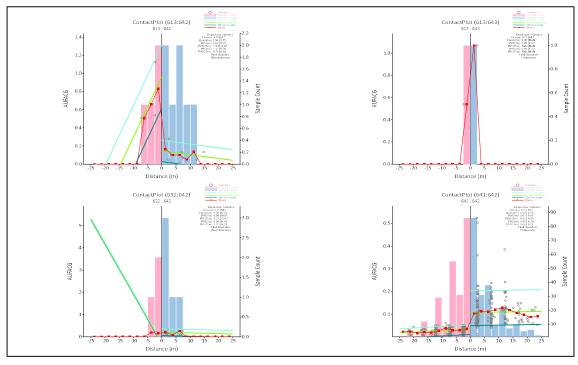


Figure C 16 Contact Plot 613:642, 613:643, 632:642, 641:642



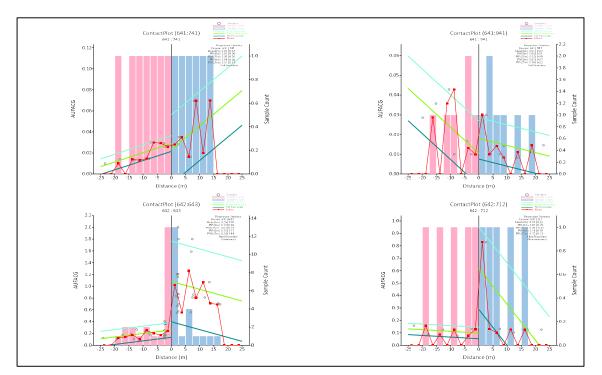


Figure C 17 Contact Plot 641:741, 641:941, 642:643, 642:712

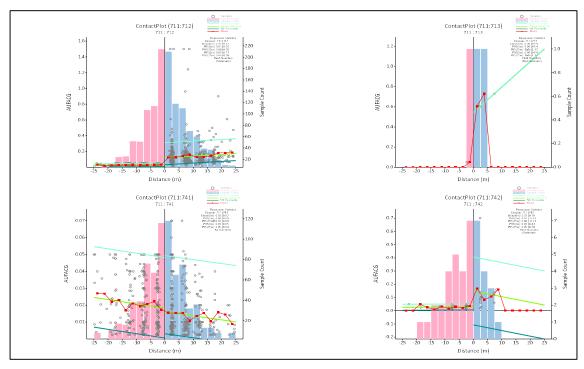


Figure C 18 Contact Plot 711:712, 711:713, 711:741, 711:742



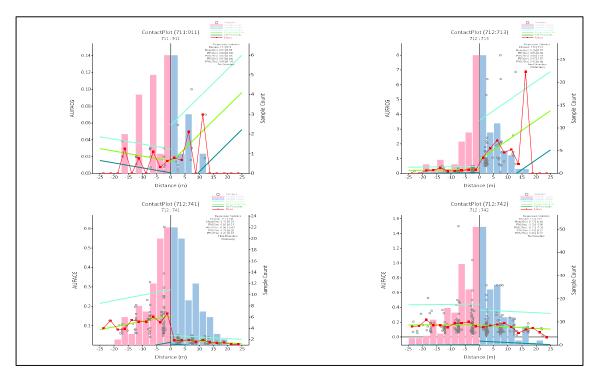


Figure C 19 Contact Plot 711:911, 712:713, 712:741, 712:742

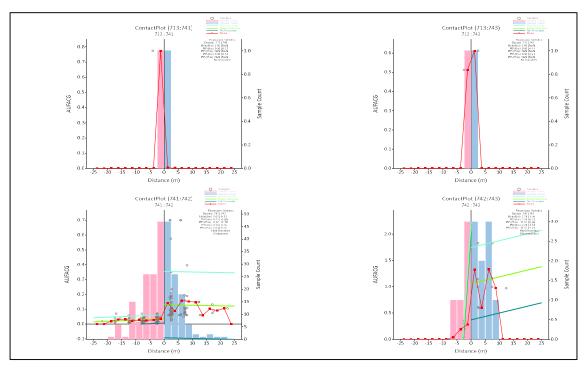


Figure C 20 Contact Plot 713:741, 713:743, 741:742, 742:743



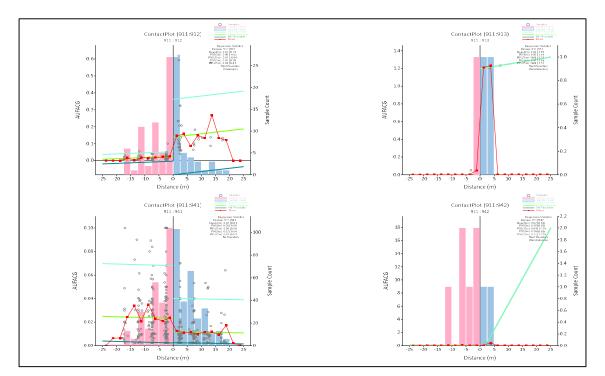


Figure C 21 Contact Plot 911:912, 911:913, 911:941, 911:942

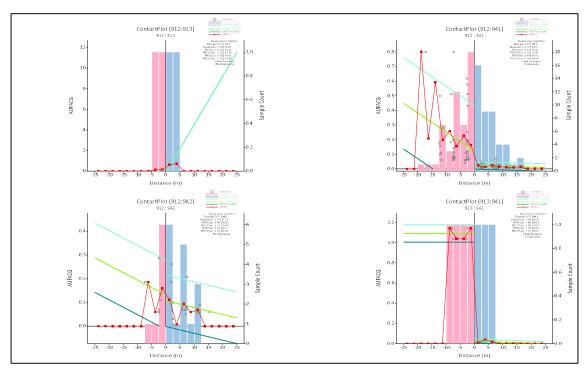


Figure C 22 Contact Plot 912:913, 912:941, 912:942, 913:941



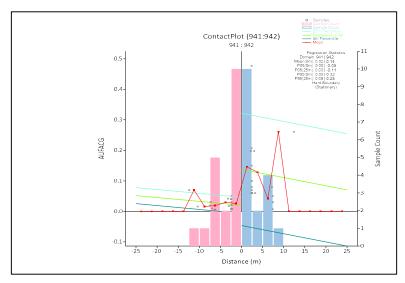


Figure C 23 Contact Plot 941:942