Mantoverde Mine

NI 43-101 Technical Report and Feasibility Study

Atacama Region, Chile

Effective date: July 1, 2024

Prepared for:

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Qualified Person:

Peter Amelunxen, P. Eng., employed by Capstone Copper Corp.

CERTIFICATE OF QUALIFIED PERSON
Peter Amelunxen, P. Eng.

I, Peter Amelunxen, P.Eng., certify that, I am employed as a Senior Vice President, Technical Services with Capstone Copper Corp. (“Capstone”), with an office address of Suite 2100, 510 West Georgia Street, Vancouver, B.C., Canada, V6B 0M3.

1. This certificate applies to the technical report titled, “Mantoverde Project, NI 43-101 Technical Report on Feasibility Study, Atacama Region, Chile”, that has an effective date of July 1, 2024, and a report date of November 14, 2024 (the “Technical Report”).
2. I graduated from the University of Arizona, Tucson, Arizona, USA in 1998 with a Bachelor of Science Degree in Mining Engineering and from McGill University in Montreal, Quebec, Canada in 2004 with a Master of Engineering Degree.
3. I am a Registered Member of Engineers and Geoscientists British Columbia, P.Eng., EGBC# 59157.
4. I have practiced my profession for over 25 years. I have been directly involved in mine operations, including work as a metallurgist, senior process engineer and concentrator operations superintendent at base metals mining operations (2003-2008) in the USA and Peru, as a consulting metallurgist covering auditing, modeling, optimization and design of base metals and precious metals operations (2008-2018), and, since 2018, as an executive leading corporate technical teams in charge of geology, resource modeling, reserve estimation, mine planning, mineral processing, and tailings technical studies and strategic initiatives.
5. I have read the definition of “Qualified Person” set out in the National Instrument 43-101 Standards of Disclosure for Mineral Projects (“NI 43-101”) and certify that by virtue of my education, affiliation to a professional association and past relevant work experience, I fulfill the requirements to be a “Qualified Person” for those sections of the Technical Report that I am responsible for preparing.
6. I visited the Mantoverde Project Site on May 21 though 23, 2024.
7. I am responsible for all sections of the Technical Report.
8. I am not independent of Capstone Copper Corp. as independence is defined in Section 1.5 of NI 43-101.
9. I have been involved with the property as an employee of Capstone Copper Corp., since April 2022, overseeing continuous processing and metallurgical recovery improvements at Mantoverde Mine as part of my role as Senior Vice President, Technical Services.
10. I have read NI 43-101 and the sections of the Technical Report for which I am responsible have been prepared in compliance with that Instrument. As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the sections of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make those sections of the Technical Report not misleading.

Dated: November 14, 2024

“Signed and Sealed”

Peter Amelunxen, P.Eng.

Important Notice

This report was prepared as a National Instrument 43-101 Technical Report by Capstone Copper Corp. (Capstone) with assistance from Ausenco Engineering Canada ULC (Ausenco), collectively the Report Compilers. The quality of information, conclusions, and estimates contained herein is consistent with the level of effort involved in the Report Compilers' services, based on i) information available at the time of preparation, ii) data supplied by outside sources, and iii) the assumptions, conditions, and qualifications set forth in this report. This report is intended for use by Capstone subject to terms and conditions of its contracts with each of the Report Compilers. Except for the purposed legislated under Canadian provincial and territorial securities law, any other uses of this report by any third party are at that party's sole risk.

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1 SUMMARY

1.1 Introduction

This technical report (the Report) was compiled by Ausenco Engineering Canada ULC (Ausenco) for Capstone Copper Corp. (Capstone) to conform to the regulatory requirements of Canadian National Instrument (NI) 43-101 using the form 43-101 F1 Standards of Disclosure for Mineral Projects.

The Mantoverde Mine (Mantoverde) is a copper mine with active open-pit mining and facilities including a copper concentrator to process sulphide ore starting in June 2024 and heap and dump (Run-of-Mine, ROM) leaching with solvent extraction and electrowinning SX-EW to treat oxide ore for cathode production. Mantoverde is located in the province of Chañaral, Atacama Region, Republic of Chile. Tailings are stored on the property. Copper concentrate and cathode are trucked to a nearby Chilean port.

1.2 Terms of Reference

The term “Property” is used in reference to the overall mineral tenure holdings that encompass the Mantoverde property.

An internal feasibility study on processing of sulphide (hypogene) material was completed in December 2017.

A previous technical report with an effective date of November 29, 2021, that was filed on January 5, 2022, (referred to as the 2022 Technical Report) provided details of the Mantoverde Development Project (MVDP).

This report represents the Mantoverde Optimized Phase I (MV-O) and considers updates to the Mineral Resource and Mineral Reserve based on drilling since the previous technical report. It includes optimizations to the processing circuits and describes the cobalt opportunity with a test campaign underway at the time of the report.

Units used in the report are metric unless otherwise noted. All dollar figures used are United States of America (US) dollars ($), unless otherwise noted. The Chilean currency is the Chilean peso (CLP).

Mineral Resources and Mineral Reserves are reported in accordance with the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Definition Standards for Mineral Resources and Mineral Reserves (May 2014; the 2014 CIM Definition Standards).

1.3 Property Description and Ownership

The Mantoverde property (the Property) comprises the active mining areas, processing facilities and the exploitation and exploration concessions covering 39,254 hectares (ha). Capstone owns 69.99% of the Property through its fully owned subsidiary Mantoverde S.A. (held by Chilean companies Mantoverde Holding SpA and Mantos Copper Holding

SpA) and 30.0% is owned by Mitsubishi Materials Corporation. Capstone Copper Corp. was formed when Mantos Copper (Bermuda) Limited, a privately held company, combined with Capstone Mining Corp, on March 23, 2022.

The Property is located in the province of Chañaral, Atacama Region, 56 kilometers (km) southeast of the city of Chañaral and 100 km north of Copiapó (straight line distances), at an altitude of 900 masl. The site has two accesses from the town of Chañaral. Mantoverde is located 35 km southwest of Capstone's Santo Domingo development project.

The Mantoverde Mine currently operates heap and dump (ROM) leaching and conventional SX-EW to treat oxide ore to produce 45 kt/y to 50 kt/y of copper cathodes. The MVDP treats 12.3 Mt/a of sulphide material through a concentrator to produce copper concentrate.

Starting in 2026, Mantoverde will optimize its treatment process at the concentrator plant to reach an average capacity of 45,000 t per day. This optimized operation is referred to as Mantoverde Optimized (MV-O).

The mine will also continue to treat oxides as part of the MV-O plan.

1.4 Mineral Tenure, Surface Rights, Water Rights, Royalties and Agreements

Mantoverde S.A. controls 39,299 ha of land covered by 307 exploitation mining concessions and three exploration mining concessions, including 38,699 ha of exploitation licences and 600 ha of exploration licences. Exploration concessions in progress are included in the total. All Mineral Resources and Mineral Reserves are within granted exploitation concessions. All concessions are in good standing as of this report.

Mantoverde's 5,376 ha of surface rights (Figure 4-4) is sufficient to support the open pit operations, the desalination plant and associated pipelines and power transmission lines. In addition, grants of surface rights of 1,024 ha are in progress to further support sulphide operations in the areas proposed for the mine, plant and TSF. Provisional grants were received from the Antofagasta Regional Court over 2022 and 2023; final grants are expected by the end of 2024.

1.5 Accessibility, Climate, Local Resources, Infrastructure and Physiography

The mine is situated 176 km by paved road from the major city of Copiapó. A 45 km long secondary road which turns off Route 5 North at Bahía Flamenco between Chañaral and Caldera to the south.

The Mantoverde deposit is located in a desert area, with hot, dry summers and colder winters that have limited rainfall. If rainfall does occur, it is normally between May and August. The area is also subject to fog.

The closest settlement is El Salado, 15 km to the north of the mine. The communities of Chañaral, Diego de Almagro and Flamenco are located in the province of Chañaral, Atacama Region, and are within the mine area of influence. The closest major population centre is Copiapó which provides services for a number of large mining operations in the area.

Mantoverde is located in the Norte Grande macro-zone in the sub-zones of the Cordillera de la Costa (coastal range) and the Atacama Desert, in the Atacama Region. The general physiography is typical of the Atacama Region, consisting of high-altitude desert plains and strongly dissected mountain ranges. The current process plant is located at an altitude of 900 metres above mean sea level (masl).

1.6 History

Small scale mining activities in the Mantoverde district were first documented in the 18th century. No production records from these activities were located. Early exploration in the district was completed by the Anaconda Mining Company in 1950, Empresa Nacional de Minería (ENAMI) in 1972 and Sociedad Minera Pudahuel from 1978 to 1981.

At the end of 1988 Empresa Minera Mantos Blancos S.A. (EMMB) acquired an option to purchase the Mantoverde Mine. Exploration was undertaken by Anglo American Chile from 1989 to 1990. EMMB completed a feasibility study in 1991–1992, which evaluated the Mantoverde Norte and Mantoruso deposits and the Montecristo area.

In August 2001, the mine was renamed Mantoverde Division of Anglo-American Chile. The Kuroki, Punto 62, Celso and Quisco deposits were subsequently discovered.

In August 2015, Audley Mining Advisors Ltd. and Orion Mine Finance LLP acquired the Mantoverde operation from Anglo American Chile through the purchase of Mantos Copper from Anglo American Chile.

From 2016 until 2021 Mantos Copper continued operating Mantoverde Mine and resumed exploration activities at the mine site and to the north of the property. In 2021, Mantos Copper commenced construction of MVPD focused on a concentrator plant to process sulphide ore in addition to oxide ore. MVDP comprised a concentrate plant designed to process a nominal 32,000 ore tonnes per day (t/d), a TSF and expanded the site's existing desalination plant and other infrastructure.

On 23 March 2022, Mantos Copper merged with Capstone Mining Corp, acquiring all of their issued and outstanding common shares, forming Capstone Copper Corp.

1.7 Geology and Mineralization

The Mantoverde deposit is an iron oxide–copper–gold (IOCG) deposit from the Chilean Iron Belt located within the Atacama Fault System. Locally, it is located along the Mantoverde Fault (FMV), which is a 12 km long subsidiary structure between two north-south main branches of the Atacama Fault System.

Mineralization in Mantoverde is mostly hosted by cataclastic andesitic and dioritic porphyry rocks, with three breccia units paralleling the FMV. The copper oxide and sulphide mineralization is hosted in at least three geological environments: i) tabular bodies along the FMV with discontinuous copper mineralization and dominated by magnetite and specularite (Mantoverde Sur and Mantoverde Norte respectively); ii) Pipe breccias (Celso and Mantoruso) in the northwest of the area; and iii) irregular west dipping tectonic breccias (Montecristo).

The deposit is oxidized to 200 m depth. Breccias in the sloping fault block contain abundant hematite with brochantite, antlerite, chrysocolla, malachite and atacamite, which occur in veinlets, patches and disseminated in the specularite matrix.

Hypogene mineralization below the oxide zone is characterized by disseminated chalcopyrite and pyrite (chalcopyrite/pyrite = 5/1) within the specularite and lesser magnetite cemented hydrothermal breccias and associated stockworks.

Between the oxidized zone and the hypogene sulphide zone there is a thin sub-horizontal mixed zone. The mixed zone has a thickness ranging from 15 m to 45 m depending on its proximity to the Mantoverde fault. Mixed zone mineralization is characterized by chalcocite (±covellite), brochantite, chrysocolla and could contain native copper, cuprite and tenorite.

Hydrothermal alteration at Mantoverde is very similar across all the Cu-Au orebodies and characterized by variably intense potassic (k-feldspar) alteration, chloritization, sericitization, silicification, and/or carbonatization.

1.8 Deposit Types

The Mantoverde deposit is a typical example of a Chilean iron oxide–copper–gold (IOCG) deposit (e.g., Williams et al., 2005, Benavides et al., 2007, Rieger et al., 2010).

IOCG deposits display intense hydrothermal alteration characterized by sodic-calcic, potassic, sericitic, and skarn replacement when carbonate rocks are present. Mineralization content abundant hematite and magnetite as the main iron oxides, commonly associated with pyrite and chalcopyrite and to a lesser extend bornite, chalcocite, pyrrhotite and sphalerite. Structural and/or stratigraphic controls are pronounced, with deposits characteristically localized on fault bends and intersections, shear zones, rock contacts, or breccia bodies, or as lithology-controlled replacements.

Features of the Mantoverde deposit support classification as an IOCG deposit.

1.9 Status of Exploration and Development

Mantoverde is an operating mine. Ongoing exploration programs include infill drilling campaigns and exploration in other areas of geological interest located within its property. Mantoverde exploration potential can be subdivided into near-mine and district potential. The near-mine exploration potential includes Santa Clara Corridor and other areas with potential to expand the current mineral resource inside and in the vicinity of the Mantoverde mine. The district potential is mostly to the north of the Mantoverde deposit and extends 10 km along the Atacama Fault System and its subsidiary structures where Capstone has identified various prospects within its property.

Exploration activities have been carried out in the Mantoverde area since the 1970´s. Various geochemical surveys and geological and structural field mapping programs were carried out in the 70´s and 80´s by Empresa Minera Mantos Blancos and subsequently by Anglo American in the 90´s and 00´s. Various geophysical surveys were done in the 90´s and 00´s including electrical (induced polarization and resistivity), electromagnetic audio-magnetotellurics (AMT), gravity and magnetic surveys. During 2017-2018 Mantos Copper resumed exploration activities at the property completing new geological mapping, a geochemistry survey and a ZTEM airborne survey. Additionally, Mantos Copper completed substantial near-mine and infill drilling, delineating the sulphide orebody at Mantoverde Mine. More recently, in 2023 Capstone Copper completed detailed geological and structural mapping and rock chip geochemistry along an east west transect on the northern portion of the property. Additionally, a ground induced polarization geophysical survey totalling 33.7 line kilometers was completed in 10 lines over the northern part of the property.

Several targets identified to date are located 1 to 10 km north of the current northern extension of the Mantoverde resource pit.

Exploration activities are currently ongoing at the property and Capstone Copper recently embarked on a two-year ~$25M near mine and district exploration program focused on potentially adding mineral resources or upgrading confidence in existing mineral resources.

1.10 Drilling

Between 1989 and June 1, 2024, 926,570 m were drilled at Mantoverde, with the majority (674,881 m) completed using reverse circulation (RC) drilling and the remainder (251,689 m) consisting of diamond drill holes (DDH). Drilling was conducted by four companies prior to Capstone Copper: Mantos Blancos, Enami, Anglo American, and Mantos Copper.

Logging procedures have evolved over time. No records exist for Enami's 1999 drilling, but during Anglo American's campaigns, geological variables were initially logged on paper, transitioning to digital logging in 2007 using BDGEO software. Data recorded included lithology, structure, alteration, mineralization, and oxidation zones. Mantos Copper and later Capstone Copper maintained these logging standards, eventually upgrading to acQuire for data management. Core and RC drill holes were logged consistently, capturing geological and geomechanical variables.

While drill hole recovery data from Enami is unavailable, recovery rates for the Mantos Blancos-Anglo American and Mantos Copper periods typically ranged between 85% and 95%, based on core and sample footage. Capstone Copper followed similar methods, with recoveries exceeding 90%. Historical and current drill collar and downhole surveys were conducted using Trimble GPS and digital gyroscopes, with Mantoverde personnel validating the measurements as part of the QA/QC program.

1.11 Sampling Preparation and Security

Sampling methodologies, preparation and assay procedures remained consistent across different ownership phases, from Anglo American through Mantos Copper, and now under Capstone, ensuring comparability of results.

DDH: Contractors conduct DDH sampling under Capstone’s direction. Core samples are placed in wooden boxes, photographed, and geological data is logged. Samples are cut every 2 m, with half returned to the box and half sent for laboratory analysis. A 20 cm sample for density and geomechanical testing is taken every 20 m.

RC: Dry samples are collected, split, and labeled on-site, while wet samples use a rotary splitter. A 15-20 kg sample is prepared for the lab, with duplicates stored. Rock cuttings are logged. A small portion of reject material is stored in plastic chip trays, and the rest is centrally stored for at least two years.

Blast Hole Drilling: Personnel collect samples using a tray with a guillotine blade. The 16 kg samples are bagged, labeled, and tracked through a barcode system. These samples are not used for resource modeling.

Density Determinations: Conducted by a contractor, the water displacement method was used to expand the existing density database, with 4,345 density measurements taken as of 2019.

Sample Preparation and Analysis: An external lab, following Capstone's requirements, conducts sample preparation and assay. The t lab, an ISO 9001:2000 accredited facility, has been working with Capstone since 2018. Standard assays include total copper (TCu), soluble copper (SCu), gold (Au) and calcium carbonate ($CaCO_3$).

Quality Assurance/Quality Control (QA/QC): The QA/QC program includes control samples inserted at 5% intervals (duplicates, blanks, CRMs). Results are within acceptable limits, ensuring sample and assay integrity.

Sample Security and Storage: Chain of custody procedures are followed, and samples are securely stored in a warehouse.

1.12 Data Verification

Capstone conducts annual external audits of its Mantoverde Mineral Resources. Since 2016, these audits have been carried out primarily by Golder Associates, acquired by WSP Global Inc. (WSP) in 2021, with WSP conducting the latest in 2023. The audits have consistently confirmed that the Mineral Resource estimates are based on appropriate data, geological interpretations, and estimation methodologies that meet industry standards, including the 2019 CIM Best Practice Guidelines. The 2023 audit by WSP found no critical errors in the resource estimation process.

Additionally, Mantoverde maintains rigorous internal QA/QC protocols, including monthly production reviews, annual year-end reports, and Resource model updates. These reviews have identified no significant issues with data quality or resource model accuracy. The company's internal governance team also conducts annual audits of data collection and estimation procedures, with the latest review in July 2023 reporting no material issues.

Production monitoring for oxide material revealed no significant discrepancies between the production data and the Oxide Mineral Resource Estimate. However, significant reconciliation data for sulphide material is not yet available, as at the time of reporting, the concentrator recently completed the final stages of ramp-up.

1.13 Mineral Processing and Metallurgical Test Work

Mantoverde has been producing copper from its oxide processing facility for 28 years. It employs conventional acid leaching, solvent extraction and electrowinning to recover copper from run of mine dumps and a crushed dynamic heap to produce 35 kt/y to 40 kt/y copper cathode.

In 2023 construction of the MVDP sulphide concentrator was completed, with the first concentrate produced in June 2024. Subsequent to the effective date of this report and on September 21, 2024, MVDP achieved commercial production defined as the achievement of reaching a minimum of 30 consecutive days of operations during which the mill operated at an average of 75% of nameplate throughput of 32,000 ore tonnes per day.

Since publishing the MVDP technical report in 2022, Capstone recognized the potential to increase copper production from the Mantoverde facilities by upgrading both the oxide and sulfide processing facilities. This report focuses on the recent metallurgical testwork that justifies the facility upgrades as well as the modifications required to achieve the increased copper production. The two key initiatives to increase copper production are summarized below:

- Application of bioleaching to the existing dynamic heap with flowsheet configuration changes in the dumps, heap and SX/EW plant
- Ancillary equipment upgrades to the sulphide concentrator to increase annual mill throughput to 16.4 Mt/a.

In addition, further potential exists to produce a separate revenue stream from the cobaltiferous pyrite contained in the Mantoverde deposit. While the current study only considers the economic by-production of cobalt as a potential opportunity, testwork has demonstrated that viable cobalt by product can be economically produced with general processing route consisting of the following three stages:

1. Recovery of cobaltiferous pyrite from the Mantoverde tailings, via froth flotation.
2. Oxidation of the pyrite, via hydrometallurgical techniques, to release the cobalt.
3. Recovery and purification of the cobalt into a commercial product.

No significant deleterious elements have been reported during the oxide operations and are also not expected during sulphide production.

1.14 Mineral Resource Estimate

The Mineral Resource was estimated using drill data available as of October 17, 2022. The database included 5,109 drill holes, totaling 937,629 m of drilling, with data composited into 10-meter intervals. The estimation was based on a three-dimensional geological model that incorporated interpretations of lithology, mineralization, and spatial relationships relative to the Mantoverde Fault. The ore body was modeled using a probabilistic approach based on indicator models.

Grades of total copper (TCu), soluble copper (SCu), gold (Au), cobalt (Co) and calcium carbonate ($CaCO_3$) were estimated within a three-dimensional block model using Ordinary Kriging interpolation, applied in three progressively larger passes. Variograms were constructed for each of the sixteen estimation units, supporting the identification of ellipsoid anisotropy and linear trends in the data. High-grade outliers were managed through high-yield restriction (HYR).

Mineral Resources were classified using a geometrical variation of the indicator method (metal and tonnage), which models expected errors and provides a confidence level for production volume estimates. This approach helps quantify the estimation errors in production volumes with a defined level of confidence.

The Mineral Resource Estimate in Table 1-1 and Table 1-2 are reported inclusive of those Mineral Resources that have been converted to Mineral Reserves, and uses the definitions set out in the 2014 Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Definition Standards for Mineral Resources and Mineral Reserves (the 2014 CIM Definition Standards).

Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

Table 1-1: Mantoverde Mineral Resource as of June 1, 2024. Inclusive of Mineral Reserves

	Category	Tonnage (Mt)	Grade (%TCu)	Grade (g/t Au)	Grade (ppm Co)	Contained Cu (kt)	Contained Au (koz)	Contained Co (kt)
Mantoverde Sulphides (Flotation)	Measured	187.5	0.57	0.10	178	1,069	603	33
	Indicated	332.0	0.41	0.10	134	1,369	1,068	45
	Total Measured & Indicated	**519.5**	**0.47**	**0.10**	**150**	**2,438**	**1,671**	**78**
	Total Inferred	553.1	0.37	0.08	62	2,046	1,423	34
Mantoverde Mixed (Flotation)	Measured	38.9	0.47	0.09	85	183	113	3
	Indicated	36.3	0.36	0.09	101	132	106	4
	Total Measured & Indicated	**75.2**	**0.42**	**0.09**	**93**	**315**	**218**	**7**
	Total Inferred	17.8	0.29	0.06	30	52	34	1
Mantoverde Sulphides + Mixed (Flotation)	Measured	226.4	0.55	0.10	162	1,252	715	37
	Indicated	368.3	0.41	0.10	131	1,501	1,174	48
	Total Measured & Indicated	**594.7**	**0.46**	**0.10**	143	**2,753**	**1,889**	**85**
	Total Inferred	570.9	0.37	0.08	61	2,098	1,457	35

Table 1-2: Mantoverde Mineral Resource Heap and Dump Leach – Oxide+Mixed as of June 1, 2024. Inclusive of Mineral Reserves

	Category	Tonnage (Mt)	Grade (%TCu)	Grade (%SCu)	Contained Cu (kt)
Oxides+Mixed (Heap Leach)	Measured	101.8	0.46	0.35	356
	Indicated	63.3	0.40	0.30	190
	Total Measured & Indicated	**165.1**	**0.44**	**0.33**	**546**
	Total Inferred	11.5	0.37	0.28	32
Oxides+Mixed (Dump Leach)	Measured	153.9	0.22	0.15	231
	Indicated	153.3	0.21	0.14	215
	Total Measured & Indicated	**307.2**	**0.22**	**0.15**	**445**
	Total Inferred	59.5	0.22	0.14	83
Oxides+Mixed (Heap + Dump Leach)	Measured	255.7	0.32	0.23	587
	Indicated	216.6	0.27	0.19	405
	Total Measured & Indicated	**472.3**	0.29	**0.21**	**992**
	Total Inferred	71.0	0.24	0.16	116

Notes to accompany Mineral Resource tables:

1. Mineral Resources are reported with an effective date of June 1st, 2024, inclusive of Mineral Reserves.
2. Mineral Resources, including stockpiles and in situ material, are reported in accordance with the 2014 CIM Definition Standards.
3. Mineral Resources are reported on a 100% basis. The attributable percentage to Capstone is 69.993%.
4. Cut-off grade:
    4.1. Dump Leach: Oxide: 0.10% ≤ SCu < 0.20% and mineral zone=1, Mixed 0.10% ≤ SCu < 0.20% and SCu/TCu > 50% and mineral zone=2.
    4.2. Heap Leach: Oxide: SCu ≥ 0.20% and mineral zone=1, Mixed: SCu ≥ 0.20% and SCu/TCu > 50% and mineral zone=2.
    4.3. Flotation: Sulphide: TCu ≥ 0.20% and mineral zone=3, Mixed: TCu ≥ 0.20% and SCu/TCu ≤ 50% and mineral zone=2.
5. The Mineral Resource pit is based on US$4.00/lb Cu and US$1,700/oz Au based on long-term forecast pricing.
6. Tonnes are reported on a dry basis
7. Contained Metal (CM) is calculated using the following formulae:
    7.1. CM = Tonnage (Mt) * TCu (%) *10 for sulphides
    7.2. CM = Tonnage (Mt) * SCu (%) *10 for oxides
    7.3. CM = Tonnage (Mt) * g/t Au*1,000/31.1035 for sulphides and Mixed.
    7.4. CM = Tonnage (Mt) * Co (ppm)/1,000 for sulphides and Mixed.
8. Flotation recovery is based on a geometallurgical model, 90.44%TCu and 67.87% Au average for Sulphides and 72.77% TCu and 61.73% Au average for Mixed. Heap Leach recovery is based on operating data, expressed in algorithms per mineral model zone considering both SCu and $CaCO_3$ grades. The average heap leach recovery is 67.64% SCu, with an additional 50% recovery of ICu achieved through the bioleaching process (where ICu = TCu – SCu). For dump leaching, the recovery averages 38.9% SCu, based on operational data.
9. Tonnage and contained metal have been rounded to reflect the accuracy of the estimate and numbers may not add exactly.
10. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

1.15 Mineral Reserve Estimate

The Mineral Reserves detailed in this Report consider both oxide and sulphide mineralization as part of the MV-O study. Mantoverde is an open pit-mining complex where oxide ore is treated through both Heap and Dump (ROM) leaching processes and recovered via a conventional SX-EW process to produce copper cathodes. The sulphide ore is processed using a concentrator plant in operation since June 2024 and will achieve a nominal throughput of 16.4 Mt/a during 2026.

The Mineral Reserve was developed by Capstone and contains all Proven and Probable category material planned for processing in MV-O. The designed pit was based on a Lerchs-Grossman (LG) optimization process using the Whittle software and a detailed phased pit design using the oxide and sulphide-dominant pit shells. As a result of the optimization process, 6 mine phases for oxide material and 15 mine phases for sulphide-dominant material were designed to prioritize the higher-grade zones within the mineral extraction plan, while maintaining suitable working widths that would enable high productivity mining sequences using large-scale mining equipment. The pit designs for MV-O consider a larger ore supply than in the MVDP plan due in part to an increase in design tailings capacity. Mining assumes conventional open pit operations using truck-and-shovel technology.

The Mineral Resources were converted to Mineral Reserves based upon the following assumptions:

- Only Measured and Indicated Resources could be converted. Inferred Mineral Resources were set to waste.
- The Mineral Resource block model was considered as fully diluted. Pit optimization and mine planning processes were performed without introducing any additional factors to account for dilution.
- The mineralized material was economically and technically feasible to extract.
- Mineralization was within Capstone's mining concessions.

Table 1-3: Mineral Reserves Statement as of June 1, 2024

Mineral Reserves - Flotation	Category	Tonnage (Mt)	Grade (%TCu)	Grade (g/t Au)	Contained Cu (kt)	Contained Au (koz)
Flotation - Sulphide	Proven	181	0.58	0.10	1,044	602
	Probable	160	0.41	0.09	656	474
	Total Reserves	341	0.50	0.10	1,700	1,077
Flotation - Mixed	Proven	38	0.49	0.08	187	99
	Probable	19	0.35	0.08	68	47
	Total Reserves	58	0.44	0.08	255	146
Flotation - Sulphide + Mixed	**Proven**	219	0.56	0.10	1,231	702
	Probable	179	0.40	0.09	723	521
	Total Reserves	**398**	**0.49**	**0.10**	**1,954**	**1,223**
Mineral Reserves - Leach	**Category**	**Tonnage (Mt)**	**Grade (%TCu)**	**Grade (%SCu)**	**Contained Cu (kt)**	**Contained SCu (kt)**
Heap leach - Oxide	Proven	76	0.40	0.30	300	226
	Probable	37	0.36	0.27	132	101
	Total Reserves	113	0.38	0.29	432	327
Dump leach - Oxide + Mixed	Proven	72	0.18	0.14	131	99
	Probable	51	0.20	0.14	102	69
	Total Reserves	123	0.19	0.14	233	168
Heap + Dump Leach - Oxide + Mixed	**Proven**	148	0.29	0.07	432	325
	Probable	88	0.27	0.06	234	170
	Total Reserves	**236**	**0.28**	**0.21**	**665**	**495**

Notes to accompany Mineral Reserve tables:

1. Mineral Reserves are reported on a 100% basis as constrained within Measured and Indicated Resources and pit designs included within the mine schedule. The attributable percentage to Capstone Copper is 69.993%. Figures include stockpiles as of June 1, 2024, that are scheduled to be processed within the MVO plan. The block model is considered to be fully diluted, and no dilution or mining losses are applied.
2. The pit designs and mine plan were optimized using assumed metal prices of $3.50/lb Cu and $1,500/oz Au.
3. Mineral Reserves for flotation are estimated above a 0.20% Total Copper (TCu) cut-off.
4. Mineral Reserves for leach are estimated above a 0.10% Soluble Copper (SCu) cut-off for Dump leach, with a variable Heap cut-off between 0.16% and 0.21% SCu to reflect ore availability. Leach-grade material mined after 2037 was scheduled as waste.
5. LOM feed to flotation averaged 87.7% total copper recovery and 65.3% gold recovery.
6. Average heap leach recovery applied in Mine Planning was 71.5% of SCu and 50% of ICu, where ICu = TCu – SCu. Average dump leach recovery applied in Mine Planning was 38.0% of SCu.
7. Mineral Reserves considered the following average costs: mining cost of $1.87 per tonne moved; $10.11/t flotation processing+tails+G&A; $0.31/lb TC/RC+freight for flotation; $10.14/t heap+G&A; $1.78/t dump leach; $0.35/lb SX/EW costs; and $0.05/lb cathode selling cost. Heap leach Reserve figures include the costs and benefits of bioleaching.
8. Inter-ramp angles in rock vary from 52° to 59°. The LOM strip ratio is 2.7:1.
9. Rounding as required by reporting standards may result in apparent summation differences between tonnes, grade and contained metal content.
10. Grade TCu% refers to total copper grade in percent sent to the mill for metallurgical recovery by flotation. Grade SCu% refers to soluble copper grade in percent sent to the leaching processes. Tonnages are in metric units and contained ounces (oz) are troy ounces.

1.16 Mining Methods

The 2024 mine plan is focused on two main areas, Celso–Manto Ruso and Mantoverde. The MV-O flotation throughput considers expansion of the MVDP plant capacity, resulting in an average throughput of 16.4 Mt/a of sulphide ore (45 kt/d) from Q1 2026 to 2049, with a ramp-up period that assumes a production rate of 4.8 Mt in 2024 and 12.3 Mt in 2025. The mine plan considers the continuity of the oxides mineral processing as part of the sulphide pits until 2037. Ore treatment in the Heap process considers an average annual treatment of 10.9 Mt between 2025 and 2030, while the Dump process will process up to 15.0 Mt/a. The mining schedule requires an average mine extraction of 155 Mt moved per year from 2025 to 2037. This includes heap leach feed requiring rehandle. The mine movement decreases after 2037 until the mining operations are completed in 2043. The process plant continues to operate through to 2049, treating low-grade stockpile material. The plant feed schedule is summarized in Table 1-4.

MV-O considers fleet requirements beyond what had been planned for MVDP, including a peak requirement of 65 Komatsu 830E haul trucks. The mine is scheduled to work seven days per week with two 12-hour shifts for 365 days per year. The operation will include normal drilling, blasting, loading and hauling activities on a 15 m bench height (a double bench of 30 m) in the sulphide-dominant pits, and 10 m bench height (a double bench of 20 m) in oxide pits. The mine plan considers supporting functions such as dewatering, grade control and equipment maintenance.

Table 1-4: Plant Feed Schedule

Period	Heap						Dump					Concentrator						
	Tonnage	TCu	SCu	$CaCO_3$	Rec	Cont. Cu	Tonnage	SCu	$CaCO_3$	Rec	Cont. Cu	Tonnage	TCu	Rec	Cont. Cu	Au	Rec Au	Cont. Au
	(kt)	(%)	(%)	(%)	(% of TCu)	(kt)	(kt)	(%)	(%)	(% of SCu)	(kt)	(kt)	(%)	(% of TCu)	(kt)	(%)	(%)	(kOz)
*2024	5,406	0.43	0.35	2.04	64.36	14.96	7,088	0.15	2.12	46.58	4.91	4,498	0.78	82.1	28.8	-	-	-
2025	11,000	0.37	0.28	2.12	55.08	22.48	13,488	0.14	2.28	42.50	7.97	12,358	0.73	91.3	82.5	0.11	65.7	27.9
2026	11,000	0.38	0.28	3.53	73.60	30.36	15,065	0.13	3.11	42.50	8.52	16,066	0.71	88.0	100.0	0.10	62.8	31.8
2027	10,995	0.43	0.32	1.65	70.98	33.24	10,419	0.13	1.30	42.50	5.89	16,399	0.75	88.8	109.4	0.09	68.1	33.7
2028	11,000	0.48	0.33	4.20	61.11	32.47	11,582	0.13	2.80	42.50	6.50	16,469	0.66	88.8	97.0	0.11	67.2	37.7
2029	11,000	0.39	0.29	2.57	67.46	28.64	5,885	0.13	2.09	42.50	3.23	16,399	0.73	87.5	104.0	0.14	70.8	52.6
2030	11,000	0.42	0.32	6.56	75.95	34.84	15,089	0.13	3.36	42.50	8.59	16,425	0.59	87.8	85.4	0.11	63.1	35.3
2031	10,076	0.28	0.21	3.60	56.90	16.05	1,867	0.14	4.02	42.50	1.12	16,425	0.72	87.8	103.7	0.15	71.3	54.9
2032	1,386	0.37	0.28	3.61	72.63	3.72	961	0.12	1.19	42.50	0.48	16,470	0.51	88.5	74.4	0.09	66.0	31.4
2033	1,577	0.34	0.28	2.12	77.33	4.15	3,325	0.13	1.48	42.50	1.89	16,425	0.69	87.8	99.1	0.13	69.3	48.3
2034	11,000	0.33	0.27	1.98	77.27	27.62	10,853	0.14	1.45	42.50	6.41	16,425	0.62	87.5	89.0	0.12	67.9	43.7
2035	9,431	0.37	0.29	2.82	72.29	25.16	8,422	0.14	2.26	42.50	5.12	16,425	0.53	83.2	72.8	0.11	64.9	36.3
2036	7,782	0.38	0.29	2.20	71.34	21.21	8,866	0.14	2.47	42.50	5.28	16,470	0.56	89.0	82.4	0.11	67.2	38.4
2037	-	-	-	-	-	-	10,094	0.14	2.32	43	6	16,425	0.49	88.3	70.6	0.11	64.1	35.9
2038	-	-	-	-	-	-	-	-	-	-	-	16,425	0.37	88.0	52.7	0.08	64.2	26.4
2039	-	-	-	-	-	-	-	-	-	-	-	16,425	0.46	87.9	66.6	0.10	68.6	35.1
2040	-	-	-	-	-	-	-	-	-	-	-	16,470	0.39	90.3	58.0	0.08	62.2	26.4
2041	-	-	-	-	-	-	-	-	-	-	-	16,425	0.28	88.1	40.5	0.07	60.9	22.5
2042	-	-	-	-	-	-	-	-	-	-	-	16,425	0.28	88.0	40.2	0.07	60.9	22.8
2043	-	-	-	-	-	-	-	-	-	-	-	16,425	0.34	88.6	49.0	0.08	63.1	27.6
2044	-	-	-	-	-	-	-	-	-	-	-	16,470	0.32	90.5	47.7	0.09	63.2	28.5
2045	-	-	-	-	-	-	-	-	-	-	-	16,425	0.27	88.0	38.9	0.07	59.7	21.8
2046	-	-	-	-	-	-	-	-	-	-	-	16,425	0.27	88.0	38.9	0.07	59.7	21.8
2047	-	-	-	-	-	-	-	-	-	-	-	16,425	0.27	88.0	38.9	0.07	59.7	21.8
2048	-	-	-	-	-	-	-	-	-	-	-	16,470	0.28	75.6	34.5	0.07	58.6	20.8
2049	-	-	-	-	-	-	-	-	-	-	-	3,603	0.33	71.3	8.4	0.07	57.5	4.9
Total	**112,651**	**0.38**	**0.29**	**3.09**	**68.17**	**295**	**123,005**	**0.14**	**2.40**	**42.76**	**72**	**398,094**	**0.49**	**87.68**	**1,713**	**0.09**	**65.25**	**789**

Note: 2024 figures are from June 1, 2024.

1.17 Recovery Methods

Recovery methods for the existing operation and optimizations as part of MV-O, including the oxide leach process and the MVDP concentrator completed in 2023, are detailed in this section.

1.17.1 Mantoverde Oxide Leach Operation

Mantoverde currently has four active leach systems, two at capacity and two receiving ore. The dynamic leach pad (DLP) is an on/off pad measuring 700 m x 900 m and capable of treating 11 million tonnes per year of crushed ore under the current leach conditions. The South Dump II (SDII) leach pad is a run-of-mine leach system with the capability of expansion as needed.

Ore is delivered to one of the two leaching operations based on copper and carbonate grades. Typically, higher copper and lower carbonate grade ores are sent to the dynamic leach pad and the balance to South Dump II.

DLP ore is delivered from the pit to a primary crusher and then conveyed to a coarse ore stockpile. The ore is then fed by conveyor to a vibrating screen, with the oversize reporting to a secondary standard cone crusher. The crusher product is then conveyed to five surge bins, which feed five tertiary screens. The screen oversize feeds the five tertiary crushers. The final crushed ore product is stored in two bins that feed the two parallel agglomeration drums. Agglomerated ore is transported by a system of overland conveyors, grasshopper and tripper conveyors to a stacker which places the ore on the dynamic leach pads in a 7 m high lift. Sulphuric acid and raffinate are added at the agglomeration drum. The spent leach residue is unloaded and placed in a dedicated leached waste dump via bucket wheel and overland conveyor. The unloading is augmented by shovel and truck as required.

Leaching is accomplished by irrigating the ore with a dilute sulphuric acid solution using either intermediate leach solution (ILS) or raffinate. The use of intermediate leach solutions allows for the pregnant leach solution grade to be maximized. Solution leaving the DLP flows into a PLS or ILS pond based on the copper grade. The PLS pond feeds the SX circuit, and the ILS pond is used for irrigation.

The dynamic heap leach pad operation is complemented by a run-of-mine dump leaching process. Material for dump leaching is deposited directly on the pad via truck dumping without crushing. Lift heights of 20 m are employed. The ore is initially exposed to a high acid cure followed by a leach cycle consisting of intermediate leach solution (ILS) and raffinate. Like the DLP, the SDII uses an ILS solution to maximize the PLS grade. The PLS from SDII PLS pond reports to a common PLS pond close to the solvent extraction (SX) plant.

The common PLS solution flows to the solvent extraction circuit where it is contacted with an organic reagent and diluent to adsorb the copper. Mantoverde utilizes a split SX circuit with two parallel lines: one with two mixers/settlers in series (E1/E2) and one with only one mixer/settler (E3). The solution flows are split with 1,000 m^3/h going to E1/E2 and 550 m^3/hr flowing to E3. The organic flows counter current to the incoming PLS starting from E3 to E1. The barren copper solution, raffinate, flows to the common raffinate pond. The loaded organic is then subjected to a wash stage to remove entrained PLS solution prior to proceeding to the stripping phase. MV employs a single strip mixer/settler.

The organic is stripped into the strong electrolyte solution using a high acid solution. The copper-rich solution is sent to the electrowinning process (EW) which consists of 168 cells containing 1 m^2 stainless steel plate cathodes. Cathodes are harvested daily and are 95% LME Grade A quality. The resulting weak electrolyte is recycled back to the organic stripping stage.

In addition to the above, the MV-O project considers the upgrade of the existing leach system infrastructure to include an inoculum production facility, a bacterial augmentation system to add inoculum to the agglomeration drums, and the installation of an active aeration system to the DLP to increase the recovery of sulphide copper minerals.

1.17.2 Mantoverde Sulphide Concentrator Operation

Run of mine material is delivered to the primary crusher (1400 x 2100 TS) by 240t dump trucks which discharge ore into the feed hopper (capacity of 330 t). Crushed product discharges into a 330-t capacity intermediate hopper. An apron feeder is located under this hopper to transfer the material to a conveyor and then to the coarse ore stockpile.

The coarse ore stockpile has a live capacity of 16,150 t (dry) and two apron feeders, located under the coarse ore stockpile, to reclaim ore. The apron feeders discharge ore to a transfer conveyor which feeds a single 34' x 20' (nominal) 14 MW semi-autogenous-grinding mill (SAG) fitted with a variable frequency drive (VFD). The SAG product is screened via a trommel, and the oversize (pebbles) is recycled to the SAG mill feed belt via two conveyors. The undersize from the trommel discharges into the primary cyclone feed box, which is connected to two variable speed horizontal centrifugal pumps, one operating and one stand-by. The pumps send the slurry to a hydrocyclone cluster (with 7 operating and 2 stand-by) which classifies the mill discharge by size.

Hydrocyclone underflow (coarse) reports to a single 24' x 42' (nominal) 14 MW Ball Mill with a VFD. Ball Mill product is screened via a trommel with oversize ore and ball scats discharging to a reclaim bunker at grade. Trommel undersize reports back to the primary cyclone feed box. The hydrocyclone overflow (fine) flows by gravity through a pipe to the flotation process. The grinding circuit targeted feed size is a P_{80} of 180 µm.

The rougher flotation circuit comprises seven conventional tank cells (300 m^3 each). Rougher concentrate is pumped to the regrind stage which has a vertical mill, 14.9' x 45' with a 932-kW motor, in closed circuit with a hydrocyclone cluster. The overflow from the regrind hydrocyclone cluster, target P_{80} of 38 µm, discharges by gravity to the feed box of the first cleaning stage.

The first stage of cleaning consists of two conventional tank cells (130 m^3 each). Tailings from the first cleaner stage feeds directly to the scavenger circuit, consisting of three conventional cells (130 m^3 each). Concentrate from the scavengers joins the rougher concentrate in the regrind circuit. The rougher and scavenger tailings are sent to the tailings thickener. Concentrate produced in the first cleaning stage is discharged to a transfer hopper and pumped to the second cleaning stage (two 4.75 m diameter flotation column cells).

Concentrate from the second cleaners flows by gravity to a transfer hopper and is pumped to the third and final cleaning stage (one 4.75 m diameter column flotation cell). The tailings from the third cleaning stage discharges by gravity to the second cleaning stage feed hopper. The tailings from the second cleaning stage discharges to a transfer box and is pumped back to the first cleaning stage.

The copper concentrate from the final cleaner flows by gravity to a 20 m diameter high rate concentrate thickener. From the thickener, two peristaltic pumps, one operating and one stand-by, transfer the thickened concentrate to an agitated tank. This tank has one centrifugal pump with variable speed and feeds the 108 m^2 filter press. Dewatered filter cake (target 9% moisture) discharges to grade and is loaded by a front-end loader into trucks which transports the concentrate from the plant to a port for shipment. The filtrate from the filter discharges into a transfer box, from where it is pumped back to the concentrate thickener. Process water recovered from the concentrate thickener overflow is sent to a dedicated process water tank and distributed back to the plant by three pumps, two operating in parallel and one stand-by.

The combined final tailings, formed by the rougher tailings and the scavenger tailings, flows by gravity to a transfer box which feeds a 55 m diameter high-rate tailings thickener. Water recovered from the tailing thickener is sent to the process water tank. Thickened tailings (underflow) are pumped 3.3 km to a Sand Plant consisting of a hydrocyclone cluster and a slimes thickener. The hydrocyclone classifies the tailings to produce a coarse sand (underflow) which is pumped to the tailings storage facility (TSF) and used to build the dam wall. The hydrocyclone fines (overflow) is sent to the 55 m diameter high-rate slimes thickener for water recovery. The thickened underflow is pumped and deposited in the TSF and the thickener overflow water recovered returned to the main process water tank for distribution to the sulphide concentrator.

This report considers, as part of the MV-O project, the upgrade of the existing sulphide concentrator infrastructure to treat 45 kt/d of mill feed. No major flowsheet or primary equipment changes are anticipated for the existing circuit to accommodate the increase in throughput capacity compared to the MVDP base case design. It is expected that some ancillary equipment will need to be upgraded and some modifications to the existing infrastructure will be made to handle the additional throughput. However, the processing method to concentrate the copper and the major equipment components associated with the processing method, such the SAG mill, Ball mill and thickener sizes, are not anticipated to change.

1.18 Project Infrastructure

1.18.1 Tailings Storage Facility (TSF)

The TSF, considered as part of the MVDP is currently in its first stage of operation. Tailings are thickened to 55% prior to transportation 3.5 km from the plant to the TSF on the south side of Quebrada Guamanga.

The MVDP TSF design is conventional, consisting of a starter dam followed by construction of the main dam using the center-line method. The main dam wall at the end of operations will be 4 km long, with a maximum top elevation of 794.5 masl, a maximum height of 77 m at the dam axis and an overall area of 320 ha. The MVDP TSF dam will be constructed using the center-line method with a 2:1 upstream slope and 4:1 downstream slope. The upstream wall will be protected by impermeable liner to prevent seepage through the wall. The dam design has provision for drainage (collectors, foot and blanket drains) and drainage collection ponds.

The MVDP tailings are transported at a nominal rate of 31,000 t/d (11.3 Mt/a) for a storage capacity of 235 Mt over a period of 20 years.

The MV-O project will extend copper concentrate production capacity by processing to 16.4 Mt/a, which in turn will increase the tailings to be managed by the same proportion. To allow for additional economic Reserves it is required to increase TSF storage capacity, and it is planned to raise the sand dam while maintaining the main geometrical parameters and design criteria used for the MVDP TSF (currently in operation), Ausenco 2024. The preferred alternative increases the height of the sand dam by 33 m by raising the crest of the wall to 828 masl, allowing for a total capacity of 496.5 Mt of tailings. This is sufficient for the MVO scheduled usage, plus a buffer for considerations such as possible conversion of Inferred Resources within the designed pits.

During the recently completed feasibility engineering, the size of the facility was evaluated, opting for an option that would maximize the capacity of the facility, meeting the tailings storage demand of the MV-O project and providing additional capacity to absorb future increases in processing capacity. The design criteria for the extension of the wall to 828 masl follow the same guidelines as for the current facility. However, due to the increased capacity of the TSF, some adjustments must be made to account for the effect of climate change, the increased deposition rates, and the knowledge gained during the construction of the MVPD TSF.

1.18.2 Waste Dump

The existing disposal sites for MVDP have a total capacity of 1,000 Mt. With the inclusion of new phases for the MVO plan, the capacity needs to be expanded to 1,600 Mt, which will not impact the permits in place nor require additional geotechnical studies.

1.18.3 Water Management

The fresh water supply for the Mantoverde mining complex (Oxide Plant and new Sulphide Plant) is obtained from a desalination plant with a capacity of 380 L/s, connected via a 41 km pipeline with two pumping stations along the route. The desalination plant is located north of Flamenco Bay and 30 km south of Chañaral. For the 45 kt/d (MV-O) operation, a new water balance has been developed, indicating that the water demand is close to 380 L/s, with a 60% solid density in the plant thickener underflow as the process design criteria.

1.19 Market Studies and Contracts

Mantoverde produces copper concentrate from sulphide and mixed ore with achievement of commercial production declared on October 1, 2024, and copper cathode from oxide and mixed ore. Concentrate and cathodes are transported 400 km to the Antofagasta International Terminal Port (ATI) in the city of Antofagasta or to the Angamos Port located 75 km north of Antofagasta.

Mantoverde entered into an offtake agreement with Boliden Commercial AB dated February 4, 2021, for 75 kt of copper concentrates in each contract year. The agreement expires 10 years after the commencement of commercial production of the MVDP at a threshold defined in the agreement, subject to potential extension if less than 750 kt of copper concentrate are delivered at the contract terms, and subject to termination if production does not commence by December 31, 2024. Price of the full copper content of the concentrate is based on average London Metal Exchange (LME) prices and subject to adjustments based on the percentage of copper content while the amount payable for the gold by-product is determined by London Bullion Market Association (LMBA) prices, subject to terms stated in the agreement.

Mantoverde also entered into a copper concentrate offtake agreement with Mitsubishi Materials on February 11, 2021. Mantoverde agreed to sell 30% of its annual copper production, as the equivalent in copper concentrate, plus an additional amount per annum of 20,000–30,000 tonnes of copper concentrate depending on Mantoverde's draw of the cost over-run facility provided by Mitsubishi Materials in connection with the MVDP. The proportion of annual copper production may be increased if Mitsubishi Material's equity interest in Mantoverde increases. The agreement is for the duration of Mantoverde's commercial mine life. The amount payable for copper is based on average LME prices, subject to terms stated in the agreement. The amount payable for gold by-product is determined by LBMA prices, subject to terms stated in the agreement

Cathodes are shipped at a cost of US$28.73/t plus VAT (IVA in Chile). The cathodes are 99.99%Cu, they are certified under ISO 9001 and are London Metal Exchange Grade A (with the symbol MV). The cathodes are exported to China, Korea, Taiwan, USA and Europe.

Mantoverde's offtake agreement for cathode production with Anglo American was amended and re-stated on August 31, 2019. Under the agreement, Mantoverde is required to sell, and Anglo American is required to buy, the production of copper cathodes, until the aggregate sum of cathodes delivered from Mantoverde plus Capstone's Mantos Blancos mine reaches 275 kt, achieved in September 2024. The price for cathodes is determined based on the monthly average copper price plus a premium.

The 2024 benchmark for treatment and refining charges (TC/RC) for copper concentrates settled at 8.00 cents per pound, with longer-term forecast TC/RCs anticipated at around 7.5 cents per pound; Capstone's modelled costs at 16.5 cents per pound are considered appropriately conservative by the QP.

Mantoverde bases contracts on bids where three or more bidders were invited, then uses an evaluation matrix considering price, technical quality, health and safety requirements and reliability. Contracts with key suppliers, such as acid and fuel, are renegotiated periodically in response to broad market changes, such as significant decreases in fuel costs or currency exchange.

Electrical power is provided under contract by Guacolda Energia S.A., valid until 2039. From 2028 onwards, one-third of MV-O's planned annual power use, around 200 gwh, will be contracted from the market. The financial analysis in this Report uses a power price projection of US$0.11/kwh, as recommended by electric power consultant Electroconsultores in July 2024.

1.20 Environmental, Permitting and Social Considerations

An environmental impact assessment study (EIA) for MVDP was approved by the Chilean environmental authority by Exempt Resolution N° 16/2018 issued by the Atacama Region Evaluation Commission (environmental qualification resolution, Resolución de Calificación Ambiental, RCA). The RCA covers the combined sulphide and oxide mining and processing plan up to 2034 and the sulphide mining and processing up to 2042. The general objective of the MDVP is to provide operational continuity for Mantoverde, diversifying the operations through the exploitation and processing of sulphide minerals and continued processing of hypogene minerals associated with the oxide mineral currently in exploitation.

After the MVDP EIA, Mantoverde submitted an Environmental Impact Declaration (DIA) for the Optimization Supply Autonomy of the Oxides Line (approved by RCA N° 119/2018) and the DIA for the Mantoverde Oxides Optimization Project (approved by RCA 132/2021). In July 2024, a new DIA was submitted regarding the MV-O scenario described in this report, with approval anticipated mid-2025.

1.20.1 Closure and Reclamation Plan

Mantoverde's Mine Closure Plan was approved by Chile's Servicio Nacional de Geología y Minería (SERNAGEOMIN) on August 9, 2022, as Exempt Resolution N° 1384/2022. The closure plan follows the provisions of the different Environmental Qualification Resolutions for the Mantoverde operation and describes measures that must be undertaken for closure and reclamation. A revision of the closure plan by SERNAGEOMIN remains underway to incorporate RCA N°132 for the Mantoverde Oxide Optimization Project, submitted on March 7, 2023.

The existing closure plan for Mantoverde has an estimated closure and post-closure cost of 1,460,102 Chilean units of account (UF), $61M, for the existing installations, following the measures described in RCA 16/2018 for the Mantos Copper Mantoverde Development Project. This covers the oxide and sulphide processing operation in production.

1.21 Capital and Operating Cost

Capital and operating costs presented are for the MV-O project and cover the conversion of the DLP to bioleaching and the expansion of the nominal capacity of the sulphide plant from 11.6 Mt/a to an expanded nominal capacity of 16.4 Mt/a.

1.21.1 Capital Cost Estimate

The expansion capital cost was estimated to be US$146 M between 2025 and 2026 (US$84 M for the sulphide plant expansion, US$17 M for DLP bioleach conversion, US$7 M for desalination plant improvements, and US$38 M for mine fleet equipment additions). MV-O extends the oxide operation to 2037 and treatment of sulphides to 2049. All capital and operating costs were determined by Capstone Copper and Ausenco. The estimate conforms to Class 3 guidelines of the Association for the Advancement of Cost Engineering International (AACE International) under the cost estimate recommended practice "47r-11: Cost Estimate Classification system – AS applied in engineering, procurement, and construction for the mining and mineral processing industries", with an accuracy of 10% to 15% at the 85% confidence level. The estimate for the sulphide plant expansion was developed on Q1 2024 US dollars, run on a constant dollar basis with no inflation. The heap bioleach optimization is based on costs quoted in Q3 2023 US dollars and the mine fleet capital cost was based on quotations received by Q2 2024.

Over the life of mine (LOM), the sustaining capital cost is estimated to be US$2,307M (US$214M for Mine Equipment and US$2,093M for Other Fixed Assets).

1.21.2 Operating Cost Estimate

The operating costs are summarized in Table 1-5. The total operating cost over the projected life-of-mine is US$8,916M.

Table 1-5: Operating Cost Estimates

Operating Costs	Unit	LOM Total Value	Unit	LOM Avg. Value
Mining Cost	US$M	(3,087)	US$/t Mined	1.57
Oxide Plant	US$M	(3,778)	US$/lb Cu	2.02
Processing Cost	US$M	(1,547)	US$/t Milled	9.60
G&A Cost	US$M	(503)	US$/lb Cu	0.11

1.22 Economic Analysis

The results of the economic analysis to support Mineral Reserves represent forward-looking information that is subject to a number of known and unknown risks, uncertainties and other factors that may cause actual results to differ materially from those presented here.

The Property was evaluated using an 8% discounted cash flow (DCF) analysis on a non-inflated, after-tax basis. An NPV sensitivity analysis to discount rates was completed using discount rates of 6%,7%, 8% (selected rate), 9% and 10%.

The financial model is based on the Mineral Reserves outlined in Section 15, the mining rates and assumptions discussed in Section 16 and the recovery and processing rates and assumptions discussed in Section 13 and Section 17, respectively.

1.22.1 Economic Summary

Initial capital costs are estimated to be US$146M. Over the LOM, sustaining capital is estimated to be US$2,307M including the deferred stripping. Cash flow over the LOM is summarized in Table 1-6.

LOM operating costs (mine, plant and G&A) are estimated to be US$8,916M.

LOM marketing costs (TC/RC, freight, port and transport costs) are estimated to be US$1,271M.

Closure costs are estimated to be US$79M.

The pre-tax NPV discounted at 8% is US$ 3,773M and on a post-tax basis, the NPV discounted at 8% is US$2,893M.

Table 1-6: Summary of Cash Flow

General	Unit	Value
Copper Price	US$/lb	4.13
Gold Price	US$/oz	1,834
Mine Life	years	25
Production		**LOM Total / Avg.**
Total Mill Feed Tonnes	Kt	393,596
Mill Head Grade Cu	%	0.49
Mill Head Grade Au	g/t	0.10
Mill Recovery Rate Cu	%	87.8
Mill Recovery Rate Au	%	65.2
Total Copper Pounds Recovered	M lb	3,714
Total Gold Ounces Recovered	Koz	805
Total Average Annual Copper Production	M lb	149
Average Year 1 to 10 Annual Copper Production	M lb	189
Total Average Annual Gold Production	Koz	32
Average Year 1 to 10 Annual Gold Production	Koz	36
Operating Costs		**LOM Total / Avg.**
Mining Cost	US$/t Mined	1.57
Oxide Plant	US$/lb Cu	2.02
Processing Cost	US$/t Milled	9.60
G&A Cost	US$/lb Cu	0.11
C1	US$/lb Cu Eq.	$2.04
Capital Costs		**LOM Total / Avg.**
Initial Capital	US$M	146.1
Sustaining Capital	US$M	1,366
Exploration (Brownfields)	US$M	56.7
Deferred Stripping	US$M	929.5
Right of Use (ROU) Asset	US$M	35.0
Closure Costs	US$M	79.2
OPEX	US$M	8,916
Financials - Pre-Tax		**LOM Total / Avg.**
Revenue	US$M	19,364
Royalty	US$M	168
NPV (8%)	US$M	3,773
Financials - Post Tax		**LOM Total / Avg.**
Tax	US$M	1,272
NPV (8%)	US$M	2,893

Note: Totals may not sum due to rounding.

1.22.2 Sensitivity Analysis

A sensitivity analysis was performed on the financial model considering variations in:

- Metal prices (copper, and gold).
- Operating costs (including power).
- Capital costs.
- Cu recovery.
- Cu head grade.

The analysis shows that the Mantoverde NPV8% is most sensitive to changes in the copper price and copper head grade. The sensitivity analysis also shows that Mantoverde is less sensitive to changes in the gold and capital expenditures.

1.23 Other Relevant Data and Information

Capstone's next phase of transformational growth will be a construction decision and integration of the expanded Mantoverde Mine with Santo Domingo development project. Capstone aims to create a 250 kt/a of copper cathode and concentrate (consolidated Mantoverde and Santo Domingo) world-class mining district in the Atacama region of Chile (MV-SD). Mantoverde Mine is located 35 km southwest of Capstone's Santo Domingo development project, 65 km via public roadways and 16 km southwest of Capstone's Sierra Norte property.

Santo Domingo is a copper-iron project, 100% owned by Capstone, described in the "Santo Domingo Project NI 43-101 Technical Report on Feasibility Study Update/ Atacama Region, Chile", effective 7 June 2024. Santo Domingo Project contemplates conventional open pit mining, crushing and grinding circuit, copper flotation and magnetic separation to produce an average of 68,000 tons of copper per year and 3.6 Mt/a of iron concentrate. The project is expected to have between 65 kt/d to 72 kt/d processing capacity and a mine life of 19 years and will produce copper concentrate with gold credits from sulphide ore and iron concentrate from magnetite ore. The operation will use desalinated sea water for the processes and both concentrates will be transported by truck and pipeline respectively to a designated port. Santo Domingo Project presents additional opportunities to increase its production treating copper oxides and cobalt.

The Sierra Norte property is an IOCG-type copper deposit and covers over 7,000 ha. Copper mineralization at Sierra Norte occurs in irregular tabular bodies of specularite breccias and stockwork with chalcopyrite and lesser pyrite. Copper oxide mineralization is present above the sulphide orebody. A historical resource estimate, not compliant with NI 43-101, of 100 Mt at 0.45% TCu is shown in Table 1-7. Sierra Norte represents an opportunity to potentially become a future sulphide feed source for Santo Domingo, extending its higher-grade copper sulphide life, with additional upside for future exploration for copper oxides and sulphides.

Table 1-7: Sierra Norte - Historical Mineral Resource

Category	Tonnage (Mt)	Grade		Contained Metal
		TCu(%)	SCu (%)	Cu (kt)
Carmen-Paulina				
Measured	8	0.47	0.16	35
Indicated	63	0.46	0.10	292
Total Measured + Indicated	**71**	**0.46**	**0.11**	**327**
Inferred	25	0.40	0.04	102
Esther				
Measured	1	0.42	0.26	3
Indicated	3	0.40	0.24	13
Total Measured + Indicated	**4**	**0.40**	**0.24**	**16**
Inferred	0.1	0.35	0.22	0.3

The Historical Mineral Resource was derived from the report "Actualización del Modelo Geológico y de la Estimación de Recursos Minerales del Proyecto Diego de Almagro" completed by Amec Foster Wheeler with an effective date of April 29, 2016, prepared for Alxar S.A. The historical estimates are strictly historical in nature and are not compliant with NI 43-101 and should not be relied upon. A qualified person has not done sufficient work to classify the historical estimates as current "mineral resources", as such term is defined in NI 43-101 and it is uncertain whether, following further evaluation or exploration work, the historical estimates will be able to report as mineral resources in accordance with NI 43-101. Capstone has not done sufficient work to classify the historical estimate as current mineral resources and is not treating the historical estimate as current mineral resources. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability. The historical estimate is reported using a cut-off grade of 0.20% with further economic extraction parameters outlined below. Categories are based on average spacing of drill holes and levels of confidence in the grade estimation. There are no more recent estimates or data available to Capstone. The Sierra Norte deposit will require further evaluation including drilling to verify the historical estimate as current mineral resources. Readers are cautioned not to rely on the historical estimate in this section. Economic Parameters for the historical estimate include the following: Copper price: $3.00/lb; Mining cost: $1.69/t; Sulphide recovery: 91%; Sulphide processing cost: $7.26/t; Oxide (heap) recovery: 60%; Oxide (heap) processing cost: $8.12/t; Oxide (SX-EW) processing cost: $0.30/lb; Concentrate selling costs: $0.41/lb; and Cathodes selling costs: $0.04/lb.

1.24 Interpretation and Conclusions

Based on the assumptions and parameters presented in this report, the Mantoverde FS shows positive economics (i.e., $2,893M post-tax NPV discounted at 8%). The FS supports a decision to carry out additional detailed studies.

1.25 Recommendations

Mantoverde is an operating mine and all work supporting the Recommendations necessary to achieve the MV-O plan described in this Report is expected to be completed within the operating budgets. The Recommendations can be completed concurrently as part of the Capstone team's ongoing work on the project. No third-party services or costs are required to complete the Recommendations, which include ranking of exploration targets, increased diamond drilling, estimation of sulfur and iron in the Mineral Resource estimate, further optimization of mine movement to improve NPV and refining cut-off grade strategy to more precisely incorporate bio-leach economics.

2 INTRODUCTION

2.1 Introduction

This technical report was compiled by Ausenco for Capstone Copper Corp. (Capstone) to conform to the regulatory requirements of Canadian National Instrument (NI) 43-101 using the form 43-101 F1 Standards of Disclosure for Mineral Projects. The Mantoverde Project involves the development of mining and processing facilities on Capstone's Mantoverde Property (the Property), located in the Atacama Region (Region III) of the Republic of Chile.

2.2 Terms of Reference

The term "Property" is used in reference to the overall mineral tenure holdings that encompass the Mantoverde property. The Mantoverde property covers an area of 39,254 hectares (ha) with 303 mining exploitation licenses and three exploration licenses.

The Mantoverde property is owned by Capstone Copper (69.9%) and Mitsubishi Materials Corporation (30%). On November 30, 2021, it was announced that the Mantos Copper ownership would combine with Capstone Mining Corp. to form Capstone Copper Corp. The operating entity is Mantoverde (MV), as the Chilean holding company for the Property.

The project includes conventional open pit mining of a copper with ore feeding a processing oxide plant and sulphides plant, to produce separate cathodes copper and copper concentrates. Tailings are stored on the Property. Filtered copper concentrate is trucked to the port.

MV-O will treat 16.4 Mt/a of sulphide material through a concentrator to produce copper. The mine will also continue to treat oxides as part of the MV-O plan.

A previous technical report was issued with an effective date of November 29, 2021, that was filed on January 5, 2022 (referred to as the 2022 Technical Report), describing the Mantoverde Development Project (MVDP). At the time the 2022 Technical Report was published, the Mantoverde Mine operated heap and dump (ROM) leaching and conventional SX-EW to treat oxide ore to produce 45 kt/y to 50 kt/y of copper cathodes. The MVDP added the additional processing of 12.3 Mt/a of sulphide material through a concentrator to produce copper.

2.3 Qualified Person

The Qualified Person (QP) for the report is Peter Amelunxen, P.Eng., Capstone's Senior Vice President, Technical Services. Mr. Amelunxen is not independent from Capstone. Mr. Amelunxen visited the property May 21 though 23, 2024. During this visit, he inspected the processing facilities and tailings storage facility (TSF), observed concentrate in the storage area, toured the active mining areas, visited the site laboratory, reviewed permitting and community engagement strategy, viewed drill core at the core logging facility and met with geology and engineering personnel.

2.4 Report Contributors

Senior personnel from Capstone contributed to the preparation of the report sections listed in Table 2-1.

Table 2-1: Report Contributors

Section #	Section Description	Report Contributor
1	Summary	Peter Amelunxen, Giancarlo Daroch, Luis Tapia, Mauricio Arce, Guillermo Pareja, Clay Craig, Patricio Prieto, Gabriel Carrizo, Brandon Akerstrom, Alejo Gutiérrez
2	Introduction	Peter Amelunxen, Giancarlo Daroch, Luis Tapia, Mauricio Arce, Guillermo Pareja, Clay Craig, Patricio Prieto, Gabriel Carrizo, Alejo Gutiérrez
3	Reliance on Other Experts	Peter Amelunxen
4	Property Description and Location	Luis Tapia
5	Accessibility, Climate, Local Resources, Infrastructure and Physiography	Luis Tapia
6	History	Luis Tapia
7	Geological Setting and Mineralization	Luis Tapia, Giancarlo Daroch
8	Deposit Types	Giancarlo Daroch, Luis Tapia
9	Exploration	Giancarlo Daroch
10	Drilling	Luis Tapia
11	Sample Preparation, Analyses and Security	Luis Tapia
12	Data Verification	Guillermo Pareja
13	Mineral Processing and Metallurgical Testing	Peter Amelunxen
14	Mineral Resource Estimates	Luis Tapia
15	Mineral Reserve Estimates	Clay Craig
16	Mining Methods	Patricio Prieto, Gabriel Carrizo
17	Recovery methods	Peter Amelunxen
18	Project Infrastructure	Patricio Prieto
19	Market Studies and Contracts	David Osachoff, Peter Amelunxen
20	Environmental Studies, Permitting and Social or Community Impact	Alejo Gutiérrez
21	Capital and Operating Costs	Patricio Prieto, Peter Amelunxen
22	Economic analysis	Sabrina Champigny, Maximiliano Undurraga, Peter Amelunxen
23	Adjacent Properties	Peter Amelunxen
24	Other relevant data and information	Peter Amelunxen
25	Interpretation and conclusions	Peter Amelunxen, Giancarlo Daroch, Luis Tapia, Mauricio Arce, Guillermo Pareja, Clay Craig, Patricio Prieto, Gabriel Carrizo, Alejo Gutiérrez
26	Recommendations	Peter Amelunxen, Giancarlo Daroch, Luis Tapia, Mauricio Arce, Guillermo Pareja, Clay Craig, Patricio Prieto, Gabriel Carrizo, Alejo Gutiérrez
27	References	Peter Amelunxen, Giancarlo Daroch, Luis Tapia, Mauricio Arce, Guillermo Pareja, Clay Craig, Patricio Prieto, Gabriel Carrizo, Alejo Gutiérrez

2.5 Effective Dates

The Report uses critical information dated as follows:

- Date of supply of last assay data used in resource estimation: October 17, 2022.
- Date of Mineral Resource estimate: June 1, 2024.
- Date of Mineral Reserve estimate: June 1, 2024.
- Date of Financial analysis: July 1, 2024.

The effective date of the Report is taken to be the date of the financial analysis, which is July 1, 2024.

2.6 Information Sources and References

Information sources supporting the Report include the 2022 Technical Report (Capstone, 2022) and other documents prepared to support the MV-O study.

Information used to support this Report was also taken from expert documents cited in Section 3 and from the reports and documents listed in Section 27. Additional information was sought from Capstone personnel where required.

2.7 Previous Technical Reports

Capstone has filed the following technical reports on the Mantoverde property:

- Guzmán, C., Tapia, G., Turner, R., 2022: Mantoverde Mine and Mantoverde Development Project NI 43-101 Technical Report, Chañaral/Región de Atacama, Chile: technical report prepared by NCL Ingeniería y Construcción SpA., GT Metallurgy and Golder Associates S.A. Chile for Capstone Mining Corp., effective date November 29, 2021.

2.8 Currency, Units, Abbreviations and Definitions

All units of measurement in this report are metric and all currencies are expressed in United States of America dollars (symbol: US$ or currency: USD) unless otherwise stated. Contained gold metal is expressed as troy ounces (oz), where 1 oz = 31.1035 g. All material tonnes are expressed as dry tonnes (t) unless stated otherwise. A list of abbreviations and acronyms is provided in Table 2-2, and units of measurement are listed in Table 2-3.

Mineral Resources and Mineral Reserves are reported in accordance with the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Definition Standards for Mineral Resources and Mineral Reserves (May 2014; the 2014 CIM Definition Standards).

Years discussed in the mine and production plan and in the economic analysis are presented for illustrative purposes only, as no decision has been made on mine construction by Capstone.

Table 2-2: Abbreviations and Acronyms

Abbreviation	Description
AA	Atomic Absorption Spectroscopy
Ag	Silver
Ai	Bond Abrasion Index
Au	Gold
Az	Azimuth
BWi	Bond Ball Mill Work Index
CAD:USD	Canadian American Exchange Rate
$CaCO_3$	Calcium Carbonate
CIM	Canadian Institute of Mining, Metallurgy and Petroleum
CIM Definition Standards	CIM Definition Standards for Mineral Resources and Mineral Reserves 2014
Co	Cobalt
CoG	Cut-Off Grade
CRM	Certified Reference Material
CWi	Bond Crusher Work Index
DDH	Diamond Drill Hole
DIA	Environmental Impact Declaration (Declaración Impacto Ambiental)
EIA	Environmental Impact Assessment
EM	Electromagnetic
FA	Fire Assay
G&A	General And Administration
ICP	Inductively Coupled Plasma
IOCG	Iron Oxide Copper Gold
ISO	International Organization for Standardization
LBMA	London Bullion Market Association
LCT	Locked Cycle Test
LME	London Metal Exchange
LOM	Life of Mine
NAG	Non-Potentially Acid Generating
NI 43 101	National Instrument 43-101 (Regulation 43-101)
NSR	Net Smelter Return
OCT	Open Cycle Test
OK	Ordinary Kriging
P_{80}	Particle Size at Which 80% Of the Material Will Pass When Screened
QA/QC	Quality Assurance/Quality Control
QEMScan	An Automated Quantitative Electron Microscopy Technique
QP	Qualified Person (As Defined in National Instrument 43-101)
RC	Reverse Circulation

Abbreviation	Description
REE	Rare Earth Elements
ROM	Run Of Mine
RQD	Rock Quality Designation
RWi	Bond Rod Mill Work Index
SAG	Semi-Autogenous Grinding
SCu	Acid-soluble copper primarily from oxide mineralization
SMC	Semi-Autogenous Mill Competency Test
TCu	Total Copper from both Sulphide and Oxide Mineralization
TSF	Tailings Storage Facility
UG	Geological Unit
UTM	Universal Transverse Mercator Coordinate System

Table 2-3: Units of Measurement

Abbreviation	Description
%	percent
% solids	percent solids by weight
CAD	Canadian dollar (currency)
$/t	dollars per metric tonne
°	angular degree
°C	degree Celsius
µm	micron (micrometre)
B	billion
cm	centimetre
cm^3	cubic centimetre
dwt	discrete wavelet transform
ft	foot (12 inches)
g	gram
g/cm^3	gram per cubic centimetre
g/L	gram per litre
g/t	gram per metric tonne
h	hour (60 minutes)
ha	hectare
kg	kilogram
kg/t	kilogram per tonne
km	kilometre
km^2	square kilometre
kW	kilowatt
kWh/t	kilowatt-hour per tonne
kt	Thousand tonnes
L	litre
lb	pound

Abbreviation	Description
m, m^2, m^3	metre, square metre, cubic metre
M	million
Ma	million years (annum)
masl	metres above mean sea level
mm	millimetre
Moz	million (troy) ounces
Mt	million tonnes
Mt/a	million tonnes per year
MW	megawatt
oz	troy ounce
oz/t	ounce (troy) per tonne
ppb	parts per billion
ppm	parts per million
t	metric tonne (1,000 kg)
t/d	tonnes per day
USD	US dollars (currency)
US$	US dollar (as symbol)
wmt	wet metric tonne

3 RELIANCE ON OTHER EXPERTS

3.1 Introduction

The QP has relied upon the expert reports, which provided information regarding mineral rights, surface rights, property agreements, taxes and marketing sections of this Report as noted below.

3.2 Mineral Tenure, Rights of Way, and Easements

The QP has not reviewed the mineral tenure, nor independently verified the legal status, ownership of the Property, underlying property agreements or permits. The QP has fully relied upon, and disclaims responsibility for, information derived from Capstone experts and experts retained by Capstone for this information through the following documents:

- Baker McKenzie (Abogados): Mining Tenements – Mantoverde S.A.: legal opinion, January 11th, 2024.

This information is used in Section 1.4 and Section 4 of the Report. It is also used in support of the Mineral Resource statement in Section 14, the Mineral Reserve statement in Section 15 and the economic analysis result in Section 22.

3.3 Taxation

The QP has fully relied upon and disclaims responsibility for, information supplied by Capstone staff and experts retained by Capstone for information related to taxation as applied to the financial model as follows:

- Ernst and Young, 2023: Capstone Copper Model Review – Tax Aspects, dated September 21, 2023, for complete revision and validation of the tributary aspects contained on Financial Model.

This information is used in the financial model in Section 22 of the Report, as well as Section 1.16 and 25.1.6.

3.4 Commodity Markets

The QP has fully relied upon, and disclaim responsibility for, information supplied by experts retained by Capstone for copper marketing and pricing through the following documents:

- David Osachoff, Marketing Consultant to Capstone, for specialized commodity market knowledge summarized in Section 19 (June 14, 2024) (Capstone, 2024a).

This information is used in Sections 1.14, 1.15, 1.22, 19, 22, 25.2.4 and 25.2.5 of the Report and in support of the Mineral Reserve statement in Section 15. It is also used to support the reasonable prospects for eventual economic extraction in Section 14. Metals price forecasting is a specialized business requiring knowledge of supply and demand, economic activity and other factors that are highly specialized and requires an extensive global database that is outside of the purview of a QP.

The QP considers it reasonable to rely upon the information provided by Mr. Osachoff as the review considers up-to-date, in-depth insight and analysis into all facets of the metals industry, including production supply and costs as well as consumption demand, and metal price forecasts.

4 PROPERTY DESCRIPTION AND LOCATION

4.1 Introduction

Mantoverde is located in the province of Chañaral, Atacama Region, 56 km southeast of the city of Chañaral and 100 km north of Copiapó (straight line distances), at an altitude of 900 masl. The site has two accesses from the town of Chañaral. Mantoverde is located 35 km southwest of Capstone's Santo Domingo development project.

The centre of the Mantoverde property is located at geographic coordinates 26° 33' 38'' S latitude and 70° 19' 27'' W longitude and Universal Transverse Mercator (UTM) 7,061,860 m N and 369,340 m E (datum: WGS 84, Zone 19S).

4.2 Project Ownership

Legal title and ownership of the Project is in the name of Mantoverde S.A., owned 69.99% by Mantoverde Holding Spa, a Chilean company that is a wholly owned subsidiary of Capstone Copper Corp., through Mantos Copper Holding SpA (Mantos), and 30% by Mitsubishi Materials Corporation as a partnership with Mantos.

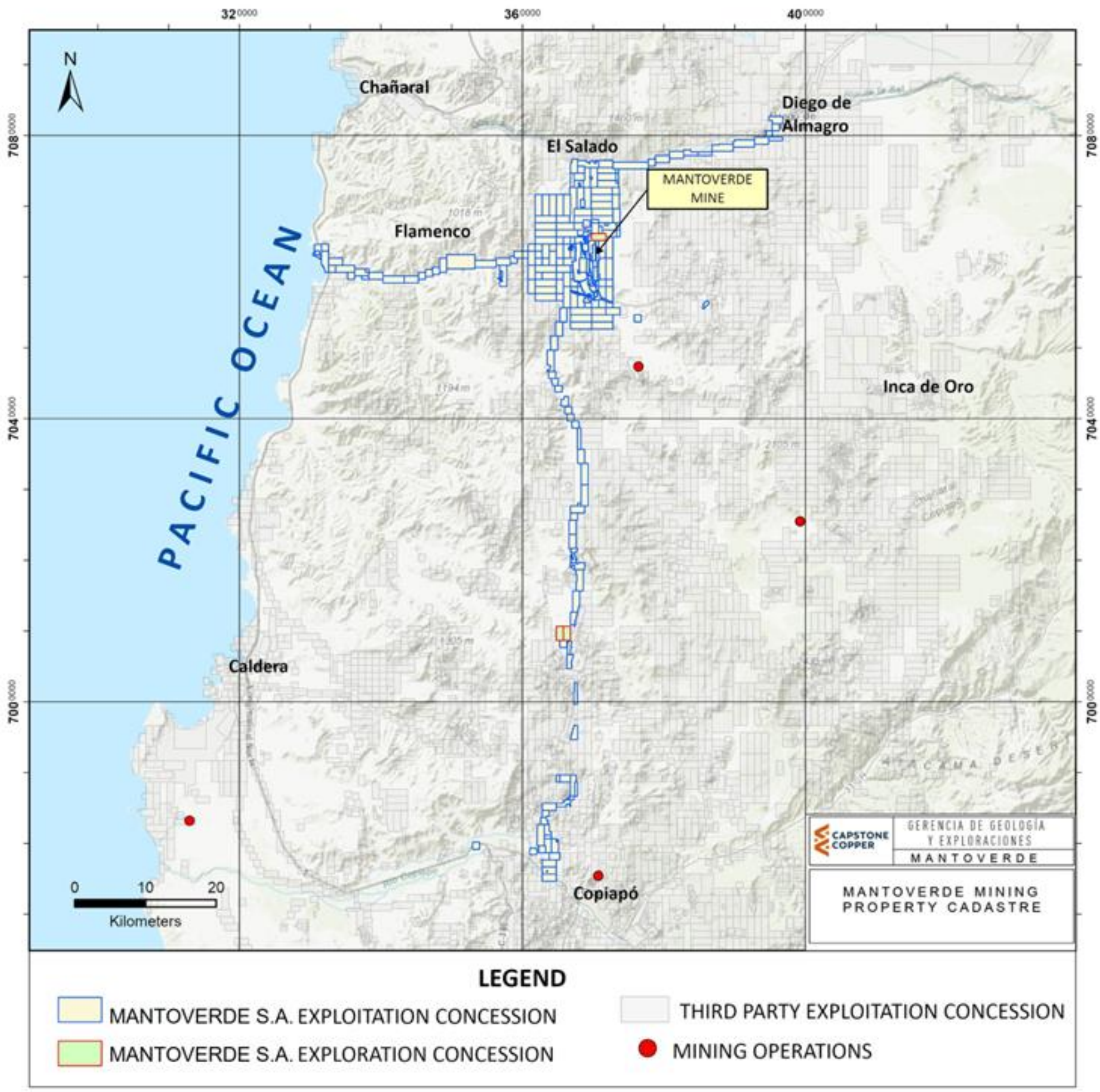
4.3 Mineral Tenure

Mantoverde S.A. controls 39,299 ha of land covered by 307 exploitation mining concessions and three exploration mining concessions (Figure 4-1, Table 4-2, and Figure 4-2) including 38,699 ha of exploitation licences and 600 ha of exploration licences. Exploration concessions in progress are included in the total. Concessions are in good standing as of the effective date of this report.

Exploitation mining concessions are granted indefinitely and give the holder the right to explore and to exploit any mineral resource found within the concession boundary. All Mineral Resources and Mineral Reserves are within granted exploitation concessions (Figure 4-2). Figure 4-3 shows the location of the main infrastructure in the operations area, including the open pits and TSF.

Concessions are maintained through annual payments to Chile's federal treasury, based on the age and area of the concession, due in March each year. Concessions payments are up to date as of the effective date of this report, paid in March 2024, as confirmed in a Legal Title Opinion (Baker McKenzie, 2024). The next payment will be due in March 2025. For exploration concessions only, as of January 2024, a summary of the geoscience work completed is required at the end of the term or a fine will be levied.

Figure 4-1: Mineral Tenure Plan



Source: Capstone, 2024

Table 4-1: Mineral Tenure – Exploitation Concessions

N°	ROL	Concession	Owner	Ha	Status	Folio	Page	Grant date
1	03101-1125-2	ALTAMIRA I 1/10	Mantoverde S.A.	100	Constituted	26	104	2019
2	03101-1126-0	ALTAMIRA II 1/20	Mantoverde S.A.	150	Constituted	27	105	2019
3	03101-1127-9	ALTAMIRA III 1/20	Mantoverde S.A.	117	Constituted	28	106	2019

N°	ROL	Concession	Owner	Ha	Status	Folio	Page	Grant date
4	03101-0450-7	AMALIA	Mantoverde S.A.	3	Constituted	29	107	2019
5	03202-0212-4	AMERICA	Mantoverde S.A.	2	Constituted	30	108	2019
6	03202-0193-4	ANDREA	Mantoverde S.A.	5	Constituted	31	109	2019
7	03201-5719-6	ANDREITA I 1/30	Mantoverde S.A.	137	Constituted	303	1195 vuelta	2019
8	03101-0449-3	ANITA	Mantoverde S.A.	1	Constituted	32	110	2019
9	03202-0194-2	ANITA	Mantoverde S.A.	5	Constituted	33	111	2019
10	03202-0195-0	ATACAMA 1/39	Mantoverde S.A.	195	Constituted	34	112	2019
11	03202-0196-9	ATACAMA 1/50 (40)	Mantoverde S.A.	3	Constituted	35	113	2019
12	03202-0197-7	ATACAMA 41/50	Mantoverde S.A.	50	Constituted	36	114	2019
13	03101-0169-9	AVANZADA	Mantoverde S.A.	5	Constituted	37	115	2019
14	03202-0446-1	AZUL 1/3	Mantoverde S.A.	15	Constituted	38	116	2019
15	03101-1068-K	BARBARA I 3/25	Mantoverde S.A.	92	Constituted	39	117	2019
16	03101-1069-8	BARBARA II 1/8	Mantoverde S.A.	31	Constituted	40	118	2019
17	03101-1070-1	BARBARA III 1/6	Mantoverde S.A.	26	Constituted	41	119	2019
18	03101-1686-6	BARBARA IV	Mantoverde S.A.	1	Constituted	42	120	2019
19	03101-1687-4	BARBARA V	Mantoverde S.A.	1	Constituted	43	121	2019
20	03101-3746-4	BARQUITO 73/176	Mantoverde S.A.	32	Constituted	20	73 vta	1954
21	03101-0958-4	BLANCA C 1/17	Mantoverde S.A.	34	Constituted	44	122	2019
22	03101-0995-9	BLANCA D 1/12	Mantoverde S.A.	12	Constituted	45	123	2019
23	03101-1039-6	BLANCA F 1/15	Mantoverde S.A.	30	Constituted	46	124	2019
24	03202-0201-9	BORNITA 1	Mantoverde S.A.	2	Constituted	47	125	2019
25	03202-0199-3	BRILLADOR	Mantoverde S.A.	5	Constituted	48	126	2019
26	03101-0136-2	CALIFORNIA	Mantoverde S.A.	5	Constituted	49	127	2019
27	03101-1242-9	CARAMELO I 1/4	Mantoverde S.A.	8	Constituted	50	128	2019
28	03202-0202-7	CARMEN	Mantoverde S.A.	2	Constituted	51	129	2019
29	03101-0160-5	CEBADILLA	Mantoverde S.A.	5	Constituted	52	130	2019
30	03201-A319-8	CHAMONATE I 1/20	Mantoverde S.A.	191	Constituted	304	1196 vuelta	2019
31	03201-A321-K	CHAMONATE III 1/20	Mantoverde S.A.	180	Constituted	305	1197 vuelta	2019
32	03201-A322-8	CHAMONATE IV 1/10	Mantoverde S.A.	50	Constituted	306	1198 vuelta	2019
33	03101-3289-6	CHILLON I 1/30	Mantoverde S.A.	260	Constituted	53	131	2019
34	03202-0183-7	CONSUELO	Mantoverde S.A.	5	Constituted	54	132	2019
35	03101-3529-1	CORONA I 1/30	Mantoverde S.A.	300	Constituted	55	133	2019
36	03101-3530-5	CORONA II 1/30	Mantoverde S.A.	300	Constituted	56	134	2019
37	03101-3531-3	CORONA III 1/30	Mantoverde S.A.	300	Constituted	57	135	2019
38	03101-3532-1	CORONA IV 1/30	Mantoverde S.A.	300	Constituted	58	136	2019
39	03101-3537-2	CORONA IX 1/20	Mantoverde S.A.	190	Constituted	59	137	2019
40	03101-3533-K	CORONA V 1/30	Mantoverde S.A.	270	Constituted	60	138	2019
41	03101-3534-8	CORONA VI 1/30	Mantoverde S.A.	300	Constituted	61	139	2019

N°	ROL	Concession	Owner	Ha	Status	Folio	Page	Grant date
42	03101-3535-6	CORONA VII 1/30	Mantoverde S.A.	300	Constituted	62	140	2019
43	03101-3536-4	CORONA VIII 1/30	Mantoverde S.A.	300	Constituted	63	141	2019
44	03101-3538-0	CORONA X 1/25	Mantoverde S.A.	250	Constituted	64	142	2019
45	03101-3539-9	CORONA XI 1/30	Mantoverde S.A.	300	Constituted	65	143	2019
46	03202-0186-1	COVELITA 1/2	Mantoverde S.A.	4	Constituted	66	144	2019
47	03202-0185-3	CUARTA	Mantoverde S.A.	5	Constituted	67	145	2019
48	03101-1815-K	DE LA PAZ 1/10	Mantoverde S.A.	41	Constituted	68	146	2019
49	03202-0187-K	DECIMA QUINTA	Mantoverde S.A.	5	Constituted	69	147	2019
50	03202-0189-6	DECIMA SEPTIMA	Mantoverde S.A.	4	Constituted	70	148	2019
51	03202-0188-8	DECIMA SEXTA	Mantoverde S.A.	5	Constituted	71	149	2019
52	03101-3215-2	DELFIN E10 1/10	Mantoverde S.A.	100	Constituted	72	150	2019
53	03101-3216-0	DELFIN E11 1/10	Mantoverde S.A.	100	Constituted	73	151	2019
54	03101-3217-9	DELFIN E12 1/20	Mantoverde S.A.	200	Constituted	74	152	2019
55	03101-3218-7	DELFIN E13 1/80	Mantoverde S.A.	800	Constituted	75	153	2019
56	03101-3219-5	DELFIN E14 1/30	Mantoverde S.A.	300	Constituted	76	154	2019
57	03101-3220-9	DELFIN E15 1/20	Mantoverde S.A.	300	Constituted	77	155	2019
58	03101-3221-7	DELFIN E16 1/10	Mantoverde S.A.	85	Constituted	78	156	2019
59	03101-3211-K	DELFIN E6 1/20	Mantoverde S.A.	200	Constituted	79	157	2019
60	03101-3212-8	DELFIN E7 1/30	Mantoverde S.A.	300	Constituted	80	158	2019
61	03101-3213-6	DELFIN E8 1/20	Mantoverde S.A.	200	Constituted	81	159	2018
62	03101-3214-4	DELFIN E9 1/10	Mantoverde S.A.	100	Constituted	82	160	2019
63	03102-2672-6	DELFIN II 1/20	Mantoverde S.A.	200	Constituted	104	520 vta.	2019
64	03102-2673-4	DELFIN III 1/20	Mantoverde S.A.	200	Constituted	105	521 vta	2019
65	03102-2674-2	DELFIN IV 6/10 - 16/20	Mantoverde S.A.	100	Constituted	106	522 vta	2019
66	03101-1650-5	DELFIN XI 1/50	Mantoverde S.A.	420	Constituted	83	161	2019
67	03101-1651-3	DELFIN XIV 1/50	Mantoverde S.A.	500	Constituted	84	162	2019
68	03101-1737-4	DELFIN XIX 1/10	Mantoverde S.A.	100	Constituted	85	163	2019
69	03102-3515-6	DELFIN XLII 1/13	Mantoverde S.A.	130	Constituted	107	523 vta.	2019
70	03102-3516-4	DELFIN XLIII 1/20	Mantoverde S.A.	100	Constituted	108	524 vta.	2019
71	03102-3518-0	DELFIN XLIV 1/329	Mantoverde S.A.	290	Constituted	109	525 vta	2019
72	03101-2682-9	DELFIN XLV 1/20	Mantoverde S.A.	189	Constituted	86	164	2019
73	03101-1724-2	DELFIN XVIII 1/10	Mantoverde S.A.	100	Constituted	87	165	2019
74	03101-1799-4	DELFIN XXI 1/10	Mantoverde S.A.	100	Constituted	88	166	2019
75	03101-1813-3	DELFIN XXII 1/30	Mantoverde S.A.	248	Constituted	89	167	2019
76	03101-1814-1	DELFIN XXIII 1/20	Mantoverde S.A.	200	Constituted	90	168	2019
77	03102-3027-8	DELFIN XXIV 1/30	Mantoverde S.A.	296	Constituted	110	526 vta	2019
78	03101-2334-K	DELFIN XXXIX 1/5	Mantoverde S.A.	25	Constituted	91	169	2019
79	03101-2024-3	DELFIN XXXVI 1/20	Mantoverde S.A.	200	Constituted	92	170	2019

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80	03101-2025-1	DELFIN XXXVII 1/20	Mantoverde S.A.	200	Constituted	93	171	2018
81	03101-0141-9	DELICIA	Mantoverde S.A.	1	Constituted	94	172	2019
82	03102-3000-6	DIEGUITO I 1/20	Mantoverde S.A.	175	Constituted	111	527 vta	2019
83	03102-3001-4	DIEGUITO II 1/10	Mantoverde S.A.	100	Constituted	112	528 vta	2019
84	03102-3018-9	DIEGUITO III 1/9	Mantoverde S.A.	83	Constituted	113	529 vta.	2019
85	03101-1134-1	DON DIPE I 1/17	Mantoverde S.A.	32	Constituted	95	173	2019
86	03101-1767-6	DON DIPE II 1	Mantoverde S.A.	1	Constituted	96	174	2019
87	03101-0143-5	DOWA 1/36	Mantoverde S.A.	126	Constituted	97	175	2019
88	03202-1427-0	DUCTO MV I 1/20	Mantoverde S.A.	126	Constituted	16	67	2019
89	03202-1419-K	DUCTO MV II 1/20	Mantoverde S.A.	165	Constituted	17	67 vuelta	2019
90	03202-1420-3	DUCTO MV III 1/30	Mantoverde S.A.	290	Constituted	18	68	2019
91	03202-1421-1	DUCTO MV IV 1/30	Mantoverde S.A.	283	Constituted	19	68 vuelta	2019
92	03201-9330-0	DUCTO MV IX 1/50	Mantoverde S.A.	200	Constituted	307	1199 vuelta	2019
93	03202-1422-K	DUCTO MV V 1/20	Mantoverde S.A.	144	Constituted	20	69	2019
94	03202-1428-9	DUCTO MV VI 1/12	Mantoverde S.A.	92	Constituted	21	69 vta	2019
95	03201-9328-1	DUCTO MV VII 1/25	Mantoverde S.A.	50	Constituted	308	1200 vuelta	2019
96	03201-9329-K	DUCTO MV VIII 1/50	Mantoverde S.A.	200	Constituted	309	1201 vuelta	2019
97	03201-9331-1	DUCTO MV X 1/50	Mantoverde S.A.	200	Constituted	310	1202 vuelta	2019
98	03101-0161-3	EL POZO	Mantoverde S.A.	1	Constituted	98	176	2019
99	03202-0174-8	EMILIO	Mantoverde S.A.	3	Constituted	99	177	2019
100	03101-0451-5	EMMA	Mantoverde S.A.	5	Constituted	100	178	2019
101	03101-0145-1	ENRIQUITO	Mantoverde S.A.	5	Constituted	101	179	2019
102	03101-1487-1	ESCAPADA 1/3	Mantoverde S.A.	3	Constituted	102	180	2019
103	03101-1400-6	ESTEBAN I 1/20	Mantoverde S.A.	80	Constituted	103	181	2019
104	03101-1459-6	ESTEBAN II 1/20	Mantoverde S.A.	200	Constituted	104	182	2019
105	03101-1804-4	ESTEBAN IV 1/5	Mantoverde S.A.	5	Constituted	105	183	2019
106	03101-1805-2	ESTEBAN V 1/2	Mantoverde S.A.	2	Constituted	106	184	2019
107	03101-1806-0	ESTEBAN VI 1	Mantoverde S.A.	1	Constituted	107	185	2019
108	03101-2239-4	ESTEBAN VII 1/5	Mantoverde S.A.	5	Constituted	108	186	2019
109	03101-1385-9	FILADELFIA II 1-3/6	Mantoverde S.A.	19	Constituted	109	187	2019
110	03101-1234-8	FLAMENCO I 1/10	Mantoverde S.A.	60	Constituted	110	188	2019
111	03101-1235-6	FLAMENCO II 1/20	Mantoverde S.A.	200	Constituted	111	189	2019
112	03101-1236-4	FLAMENCO III 1/20	Mantoverde S.A.	186	Constituted	112	190	2019
113	03101-1237-2	FLAMENCO IV 1/15	Mantoverde S.A.	91	Constituted	113	191	2019
114	03101-1238-0	FLAMENCO V 1/10	Mantoverde S.A.	100	Constituted	114	192	2019
115	03101-1239-9	FLAMENCO VI 1/20	Mantoverde S.A.	144	Constituted	115	193	2019
116	03101-1240-2	FLAMENCO VII 1/20	Mantoverde S.A.	200	Constituted	116	194	2019
117	03101-1723-4	FLAMENCO X 1/20	Mantoverde S.A.	200	Constituted	117	195	2019

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118	03101-2637-3	FLAMENCO XI 1/10	Mantoverde S.A.	100	Constituted	118	196	2019
119	03101-3290-K	FLEURANCE 1/4	Mantoverde S.A.	4	Constituted	119	197	2019
120	03101-2318-8	FORTUNA I 1/10	Mantoverde S.A.	100	Constituted	120	198	2019
121	03101-2319-6	FORTUNA II 1/28	Mantoverde S.A.	242	Constituted	121	199	2019
122	03101-2320-K	FORTUNA III 1/29	Mantoverde S.A.	270	Constituted	122	200	2019
123	03202-0573-5	FRANKO 1/4	Mantoverde S.A.	20	Constituted	123	201	2019
124	03101-0452-3	GENERAL KUROKI	Mantoverde S.A.	3	Constituted	124	202	2019
125	03202-0355-4	GRITON	Mantoverde S.A.	5	Constituted	125	203	2019
126	03101-1339-5	GUAMANGA 1/3	Mantoverde S.A.	3	Constituted	126	204	2019
127	03101-1720-K	GUAMANGA I 1/30	Mantoverde S.A.	300	Constituted	127	205	2019
128	03101-1721-8	GUAMANGA II 1/20	Mantoverde S.A.	200	Constituted	128	206	2019
129	03101-1722-6	GUAMANGA III 1/10	Mantoverde S.A.	100	Constituted	129	207	2019
130	03101-2638-1	GUAMANGA IV 1/30	Mantoverde S.A.	300	Constituted	130	208	2019
131	03101-2643-8	GUAMANGA IX 1/20	Mantoverde S.A.	200	Constituted	131	209	2019
132	03101-2639-K	GUAMANGA V 1/20	Mantoverde S.A.	200	Constituted	132	210	2019
133	03101-2640-3	GUAMANGA VI 1/10	Mantoverde S.A.	100	Constituted	133	211	2019
134	03101-2641-1	GUAMANGA VII 1/10	Mantoverde S.A.	100	Constituted	134	212	2019
135	03101-2642-K	GUAMANGA VIII 1/20	Mantoverde S.A.	200	Constituted	135	213	2019
136	03101-2644-6	GUAMANGA X 1/20	Mantoverde S.A.	200	Constituted	136	214	2019
137	03101-2645-4	GUAMANGA XI 1/20	Mantoverde S.A.	200	Constituted	137	215	2019
138	03101-2867-8	GUAMANGA XII 1/20	Mantoverde S.A.	200	Constituted	138	216	2019
139	03101-2868-6	GUAMANGA XIII 1/30	Mantoverde S.A.	300	Constituted	139	217	2019
140	03101-2869-4	GUAMANGA XIV 1/30	Mantoverde S.A.	300	Constituted	140	218	2019
141	03101-2870-8	GUAMANGA XV 1/10	Mantoverde S.A.	100	Constituted	141	219	2019
142	03101-2871-6	GUAMANGA XVI 1/30	Mantoverde S.A.	300	Constituted	142	220	2019
143	03101-2333-1	JESUS NORTE 1/9	Mantoverde S.A.	9	Constituted	143	221	2019
144	03101-2332-3	JESUS SUR 1/15	Mantoverde S.A.	15	Constituted	144	222	2019
145	03101-0150-8	JORGE	Mantoverde S.A.	5	Constituted	145	223	2019
146	03202-0177-2	JUPITER	Mantoverde S.A.	5	Constituted	146	224	2019
147	03101-1631-9	LA CORINA 1/3	Mantoverde S.A.	3	Constituted	147	225	2019
148	03101-1084-1	LA REGALADA 1/3	Mantoverde S.A.	3	Constituted	148	226	2019
149	03101-0162-1	LAS CASAS	Mantoverde S.A.	2	Constituted	149	227	2019
150	03101-0163-K	LAURA	Mantoverde S.A.	2	Constituted	150	228	2019
151	03101-0164-8	LAURITA	Mantoverde S.A.	1	Constituted	151	229	2019
152	03101-1892-3	LOURDES 1/10	Mantoverde S.A.	86	Constituted	152	230	2019
153	03101-0152-4	LUCITA	Mantoverde S.A.	5	Constituted	153	231	2019
154	03202-0182-9	MANTO ATACAMA	Mantoverde S.A.	5	Constituted	154	232	2019
155	03101-0194-K	MANTO RUSO 1/2	Mantoverde S.A.	10	Constituted	155	233	2019

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156	03101-1340-9	MANTO SUR 1/20	Mantoverde S.A.	20	Constituted	156	234	2019
157	03202-0429-1	MANTO VERDE	Mantoverde S.A.	5	Constituted	157	235	2019
158	03202-0165-9	MANTO VERDE 1/197	Mantoverde S.A.	985	Constituted	157	235	2019
159	03101-0165-6	MARGARITA	Mantoverde S.A.	2	Constituted	158	236	2019
160	03101-1091-4	MARIA TERESA 1/10	Mantoverde S.A.	100	Constituted	29	100	1994
161	03101-0153-2	MARTE	Mantoverde S.A.	5	Constituted	159	237	2019
162	03202-0180-2	MAURICIO	Mantoverde S.A.	5	Constituted	160	238	2019
163	03101-0154-0	MERCURIO	Mantoverde S.A.	5	Constituted	161	239	2019
164	03202-0957-9	MICHEL VII 1/20 (19/20)	Mantoverde S.A.	20	Constituted	162	240	2019
165	03202-0179-9	MIRADOR	Mantoverde S.A.	5	Constituted	163	241	2019
166	03202-0222-1	MONTECRISTO 1/20	Mantoverde S.A.	100	Constituted	164	242	2019
167	03101-1684-K	OLVIDADA	Mantoverde S.A.	1	Constituted	165	243	2019
168	03202-0168-3	ORIENTE	Mantoverde S.A.	3	Constituted	166	244	2019
169	03202-0903-K	PALOMA I 1/20	Mantoverde S.A.	200	Constituted	22	70	2019
170	03202-0904-8	PALOMA II 1/20	Mantoverde S.A.	200	Constituted	23	70 vuelta	2019
171	03201-5639-4	PALOMA III 1/30	Mantoverde S.A.	300	Constituted	311	1203 vuelta	2019
172	03201-5640-8	PALOMA IV 1/10	Mantoverde S.A.	100	Constituted	312	1204 vuelta	2019
173	03101-1516-9	PALOMA IX 1/10	Mantoverde S.A.	100	Constituted	167	245	2019
174	03201-8249-2	PALOMA LIII 1/15	Mantoverde S.A.	150	Constituted	313	1205 vuelta	2011
175	03201-8250-6	PALOMA LIV 1/30	Mantoverde S.A.	200	Constituted	280	1197 vta.	2011
176	03201-8251-4	PALOMA LV 1/20	Mantoverde S.A.	141	Constituted	315	1207 vta.	2019
177	03101-1512-6	PALOMA V 1/9	Mantoverde S.A.	90	Constituted	168	246	2019
178	03101-1513-4	PALOMA VI 1/14	Mantoverde S.A.	124	Constituted	169	247	2019
179	03101-1514-2	PALOMA VII 1/10	Mantoverde S.A.	100	Constituted	170	248	2019
180	03101-1515-0	PALOMA VIII 1/10	Mantoverde S.A.	100	Constituted	171	249	2019
181	03101-1738-2	PALOMA XL 1/30	Mantoverde S.A.	270	Constituted	172	250	2019
182	03101-1740-4	PALOMA XLI 1/30	Mantoverde S.A.	300	Constituted	173	251	2019
183	03201-6484-2	PALOMA XLII 1/20	Mantoverde S.A.	151	Constituted	316	1208 vta	2019
184	03201-6969-0	PALOMA XLIX 1/20	Mantoverde S.A.	80	Constituted	317	1209 vta.	2019
185	03201-6966-6	PALOMA XLVI 1/20	Mantoverde S.A.	200	Constituted	318	1210 vta.	2019
186	03201-6967-4	PALOMA XLVII 1/10	Mantoverde S.A.	92	Constituted	319	1211 vta,	2019
187	03201-6968-2	PALOMA XLVIII 1/10	Mantoverde S.A.	92	Constituted	320	1212 vuelta	2019
188	03201-5900-8	PALOMA XVIII 1/15	Mantoverde S.A.	126	Constituted	321	1213 vta.	2019
189	03101-1739-0	PALOMA XXXIX 1/20	Mantoverde S.A.	200	Constituted	174	252	2019
190	03202-1947-7	PALOMITA E5 1/10	Mantoverde S.A.	100	Constituted	24	71	2019
191	03201-5689-0	PALOMITA I 1/20	Mantoverde S.A.	150	Constituted	322	1214 vta.	2019
192	03201-6036-7	PALOMITA II 1/6	Mantoverde S.A.	38	Constituted	323	1215 vta.	2019

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193	03101-1685-8	PALOMITA III 1/30	Mantoverde S.A.	150	Constituted	175	253	2019
194	03201-8342-1	PALOMITA XII 1/15	Mantoverde S.A.	120	Constituted	324	1216 vta.	2019
195	03101-1393-K	PATRICIO I 1/25	Mantoverde S.A.	238	Constituted	176	254	2019
196	03101-1394-8	PATRICIO II 1/30	Mantoverde S.A.	300	Constituted	177	255	2019
197	03101-1395-6	PATRICIO III 1/30	Mantoverde S.A.	289	Constituted	178	256	2019
198	03101-1396-4	PATRICIO IV 1/30	Mantoverde S.A.	300	Constituted	179	257	2019
199	03101-1397-0	PATRICIO V 1/10	Mantoverde S.A.	100	Constituted	180	258	2019
200	03202-1943-4	PICHON A3 1/20	Mantoverde S.A.	200	Constituted	29	87	2019
201	03202-1944-2	PICHON A4 1/10	Mantoverde S.A.	100	Constituted	25	71 vuelta	2019
202	03101-3610-7	PICHON B1 1/20	Mantoverde S.A.	200	Constituted	181	259	2019
203	03101-3611-5	PICHON B2 1/20	Mantoverde S.A.	200	Constituted	182	260	2019
204	03101-2632-2	PICHON I 1/30	Mantoverde S.A.	300	Constituted	183	261	2019
205	03101-2633-0	PICHON II 1/20	Mantoverde S.A.	198	Constituted	184	262	2019
206	03101-2634-9	PICHON III 1/10	Mantoverde S.A.	100	Constituted	185	263	2019
207	03101-2635-7	PICHON IV 1/10	Mantoverde S.A.	90	Constituted	186	264	2019
208	03101-2636-5	PICHON V 1/30	Mantoverde S.A.	300	Constituted	187	265	2019
209	03202-0171-3	PORVENIR	Mantoverde S.A.	3	Constituted	188	266	2019
210	03202-0170-5	PRIMERA	Mantoverde S.A.	5	Constituted	189	267	2019
211	03101-1597-5	PRINCESA I 1/2	Mantoverde S.A.	2	Constituted	190	268	2019
212	03101-2859-7	PUERTO I 1/20	Mantoverde S.A.	117	Constituted	191	269	2019
213	03101-2860-0	PUERTO II 1/30	Mantoverde S.A.	261	Constituted	192	270	2019
214	03101-2861-9	PUERTO III 1/20	Mantoverde S.A.	200	Constituted	193	271	2019
215	03101-2862-7	PUERTO IV 1/10	Mantoverde S.A.	100	Constituted	194	272	2019
216	03101-2863-5	PUERTO V 1/27	Mantoverde S.A.	270	Constituted	195	273	2019
217	03101-2864-3	PUERTO VI 1/10	Mantoverde S.A.	100	Constituted	196	274	2019
218	03101-2865-1	PUERTO VII 1/20	Mantoverde S.A.	175	Constituted	197	275	2019
219	03101-2866-k	PUERTO VIII 1/10	Mantoverde S.A.	50	Constituted	198	276	2019
220	03101-3291-8	PUNTA FLAMENCO 1/10	Mantoverde S.A.	100	Constituted	199	277	2019
221	03202-0226-4	QUINTA	Mantoverde S.A.	5	Constituted	200	278	2019
222	03202-0153-5	RAQUEL	Mantoverde S.A.	5	Constituted	201	279	2019
223	03101-1129-5	REINA I 1/30	Mantoverde S.A.	250	Constituted	202	280	2019
224	03101-1092-2	REINA I/34,7/8, 11/12,14/16, Y 18/20	Mantoverde S.A.	17	Constituted	203	281	2019
225	03101-1100-7	REINA II 1/30	Mantoverde S.A.	210	Constituted	204	282	2019
226	03101-1101-5	REINA III 1/30	Mantoverde S.A.	181	Constituted	205	283	2019
227	03101-1130-9	REINA IV 1/20	Mantoverde S.A.	125	Constituted	206	284	2019
228	03101-1131-7	REINA V 1/23	Mantoverde S.A.	206	Constituted	207	285	2019

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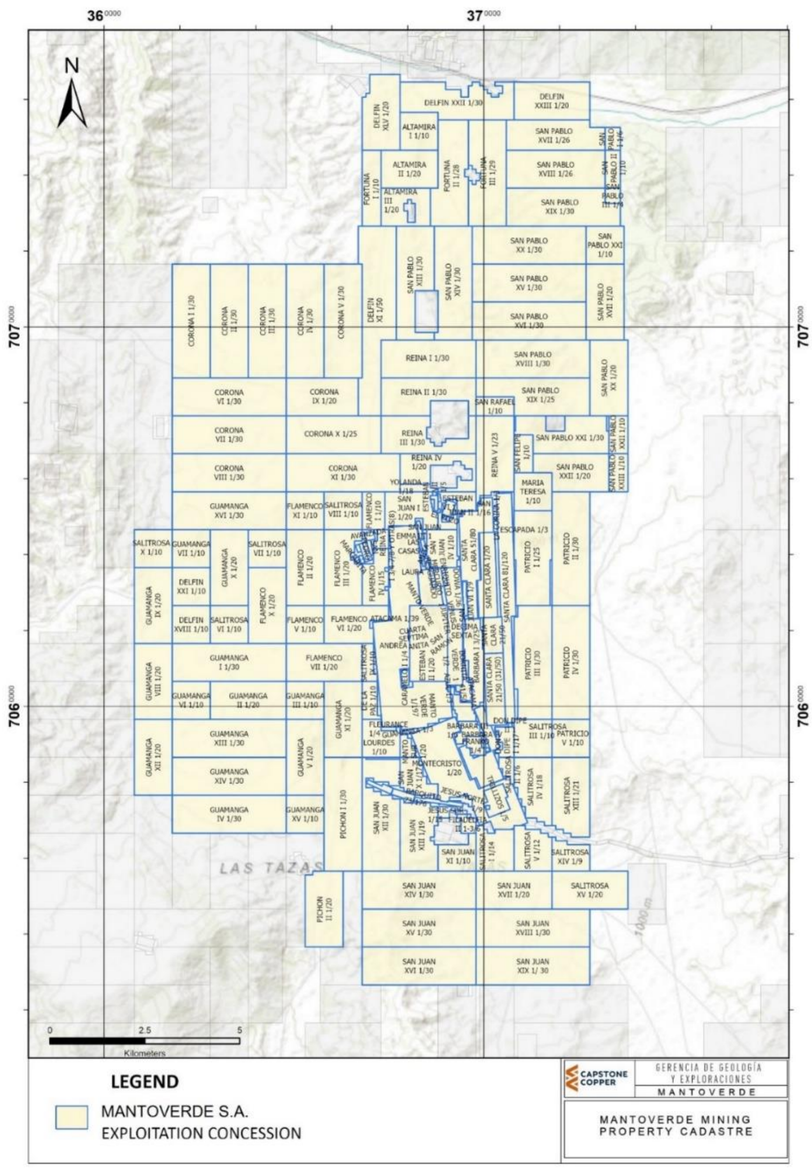
229	03101-0128-1	RESGUARDO	Mantoverde S.A.	5	Constituted	208	286	2019
230	03101-0166-4	RESGUARDO	Mantoverde S.A.	5	Constituted	209	287	2019
231	03101-0129-K	ROBERTO	Mantoverde S.A.	5	Constituted	210	288	2019
232	03101-1770-6	SALITROSA I 1/14	Mantoverde S.A.	110	Constituted	211	289	2019
233	03101-1771-4	SALITROSA II 1/6	Mantoverde S.A.	20	Constituted	212	290	2019
234	03101-1772-2	SALITROSA III 1/10	Mantoverde S.A.	100	Constituted	213	291	2019
235	03101-1773-0	SALITROSA IV 1/18	Mantoverde S.A.	150	Constituted	214	292	2019
236	03101-1819-2	SALITROSA IX 1/10	Mantoverde S.A.	32	Constituted	215	293	2019
237	03101-1775-7	SALITROSA V 1/12	Mantoverde S.A.	109	Constituted	216	294	2019
238	03101-1816-8	SALITROSA VI 1/10	Mantoverde S.A.	100	Constituted	217	295	2019
239	03101-1817-6	SALITROSA VII 1/10	Mantoverde S.A.	100	Constituted	218	296	2019
240	03101-1818-4	SALITROSA VIII 1/10	Mantoverde S.A.	100	Constituted	219	297	2019
241	03101-2329-3	SALITROSA X 1/10	Mantoverde S.A.	100	Constituted	220	298	2019
242	03101-2328-5	SALITROSA XII 1/10	Mantoverde S.A.	100	Constituted	221	299	2019
243	03101-2856-2	SALITROSA XIII 1/21	Mantoverde S.A.	201	Constituted	222	300	2019
244	03101-2857-0	SALITROSA XIV 1/9	Mantoverde S.A.	75	Constituted	223	301	2019
245	03101-2858-9	SALITROSA XV 1/20	Mantoverde S.A.	200	Constituted	224	302	2019
246	03101-1457-K	SAN FELIPE 1/10	Mantoverde S.A.	50	Constituted	225	303	2019
247	03202-0155-1	SAN FRANCISCO	Mantoverde S.A.	5	Constituted	226	304	2019
248	03201-C318-0	SAN FRANCISCO 1/10	Mantoverde S.A.	100	Constituted	325	1217 vuelta	2019
249	03101-1117-1	SAN JUAN I 1/20	Mantoverde S.A.	122	Constituted	227	306	2019
250	03101-1118-K	SAN JUAN II 1/16	Mantoverde S.A.	56	Constituted	228	306	2019
251	03101-1119-8	SAN JUAN III 1	Mantoverde S.A.	1	Constituted	229	307	2019
252	03101-1120-1	SAN JUAN IV 1/10	Mantoverde S.A.	78	Constituted	230	308	2019
253	03101-1180-5	SAN JUAN V	Mantoverde S.A.	1	Constituted	231	309	2019
254	03101-1241-0	SAN JUAN VI 1/9	Mantoverde S.A.	9	Constituted	232	310	2019
255	03101-2325-0	SAN JUAN X 1/17	Mantoverde S.A.	68	Constituted	233	311	2019
256	03101-2326-9	SAN JUAN XI 1/10	Mantoverde S.A.	76	Constituted	234	312	2019
257	03101-2848-1	SAN JUAN XII 1/30	Mantoverde S.A.	269	Constituted	235	313	2019
258	03101-2849-K	SAN JUAN XIII 1/19	Mantoverde S.A.	173	Constituted	236	314	2019
259	03101-2850-3	SAN JUAN XIV 1/30	Mantoverde S.A.	300	Constituted	237	315	2019
260	03101-2855-4	SAN JUAN XIX 1/30	Mantoverde S.A.	300	Constituted	238	316	2019
261	03101-2851-1	SAN JUAN XV 1/30	Mantoverde S.A.	300	Constituted	239	317	2019
262	03101-2852-K	SAN JUAN XVI 1/30	Mantoverde S.A.	300	Constituted	240	318	2019
263	03101-2853-8	SAN JUAN XVII 1/20	Mantoverde S.A.	200	Constituted	241	319	2019
264	03101-2854-6	SAN JUAN XVIII 1/30	Mantoverde S.A.	300	Constituted	242	320	2019
265	03101-0239-3	SAN MANUEL 1/56	Mantoverde S.A.	50	Constituted	243	321	2019
266	03101-1778-1	SAN PABLO I 1/6	Mantoverde S.A.	24	Constituted	244	322	2019

N°	ROL	Concession	Owner	Ha	Status	Folio	Page	Grant date
267	03101-1776-5	SAN PABLO II 1/10	Mantoverde S.A.	40	Constituted	245	323	2019
268	03101-1777-3	SAN PABLO III 1/4	Mantoverde S.A.	16	Constituted	246	324	2019
269	03101-2680-2	SAN PABLO XIII 1/30	Mantoverde S.A.	245	Constituted	247	325	2019
270	03101-2681-0	SAN PABLO XIV 1/30	Mantoverde S.A.	289	Constituted	248	326	2019
271	03101-2876-7	SAN PABLO XIX 1/25	Mantoverde S.A.	250	Constituted	249	327	2019
272	03101-2322-6	SAN PABLO XIX 1/30	Mantoverde S.A.	284	Constituted	250	328	2019
273	03101-2872-4	SAN PABLO XV 1/30	Mantoverde S.A.	300	Constituted	251	329	2019
274	03101-2873-2	SAN PABLO XVI 1/30	Mantoverde S.A.	300	Constituted	252	330	2019
275	03101-2874-0	SAN PABLO XVII 1/20	Mantoverde S.A.	200	Constituted	252	331	2019
276	03101-2324-2	SAN PABLO XVII 1/26	Mantoverde S.A.	200	Constituted	254	332	2019
277	03101-2323-4	SAN PABLO XVIII 1/26	Mantoverde S.A.	260	Constituted	255	333	2019
278	03101-2875-9	SAN PABLO XVIII 1/30	Mantoverde S.A.	300	Constituted	256	334	2019
279	03101-2877-5	SAN PABLO XX 1/20	Mantoverde S.A.	200	Constituted	257	335	2019
280	03101-2321-8	SAN PABLO XX 1/30	Mantoverde S.A.	300	Constituted	258	336	2019
281	03101-2327-7	SAN PABLO XXI 1/10	Mantoverde S.A.	100	Constituted	259	337	2019
282	03101-2878-3	SAN PABLO XXI 1/30	Mantoverde S.A.	201	Constituted	260	338	2019
283	03101-2331-5	SAN PABLO XXII 1/10	Mantoverde S.A.	50	Constituted	261	339	2019
284	03101-2879-1	SAN PABLO XXII 1/20	Mantoverde S.A.	175	Constituted	262	340	2019
285	03101-2330-7	SAN PABLO XXIII 1/10	Mantoverde S.A.	50	Constituted	263	341	2019
286	03101-0167-2	SAN PEDRO	Mantoverde S.A.	5	Constituted	264	342	2019
287	03101-1458-8	SAN RAFAEL 1/10	Mantoverde S.A.	50	Constituted	265	343	2019
288	03202-0156-K	SAN RAMON	Mantoverde S.A.	1	Constituted	266	344	2019
289	03101-0170-2	SANTA CLARA 1/20	Mantoverde S.A.	100	Constituted	267	345	2019
290	03202-1005-4	SANTA CLARA 21/50 (21/30)	Mantoverde S.A.	50	Constituted	268	346	2019
291	03202-0219-1	SANTA CLARA 21/50 (31/50)	Mantoverde S.A.	100	Constituted	269	347	2019
292	03101-0171-0	SANTA CLARA 51/80	Mantoverde S.A.	150	Constituted	270	348	2019
293	03101-0172-9	SANTA CLARA 81/120	Mantoverde S.A.	200	Constituted	271	349	2019
294	03202-0157-8	SATURNO	Mantoverde S.A.	5	Constituted	272	350	2019
295	03202-0158-6	SEGUNDA	Mantoverde S.A.	5	Constituted	273	351	2019
296	03202-0159-4	SEPTIMA	Mantoverde S.A.	5	Constituted	274	352	2019
297	03201-C319-9	TENAMOCHA 1/9	Mantoverde S.A.	90	Constituted	326	1218 vuelta	2019
298	03202-0151-9	TERCERA	Mantoverde S.A.	4	Constituted	275	353	2019
299	03202-0209-4	TRILLIZOS 1/5	Mantoverde S.A.	25	Constituted	276	354	2019
300	03202-0019-9	VENUS 1	Mantoverde S.A.	5	Constituted	171	118	1906
301	03202-0445-3	VERDE 1/2	Mantoverde S.A.	10	Constituted	277	355	2019
302	03101-0168-0	VICTORIA	Mantoverde S.A.	2	Constituted	278	356	2019
303	03101-1627-0	YOLANDA 1/18	Mantoverde S.A.	18	Constituted	279	357	2019

N°	ROL	Concession	Owner	Ha	Status	Folio	Page	Grant date
304	Rol pending	LOS MORADOS III 1, 1-40	Mantoverde S.A.	200	In Progress	195	369	2023

Note: ROL is a unique identifier used for properties in Chile.

Figure 4-2: Mining Concessions, Mine Area



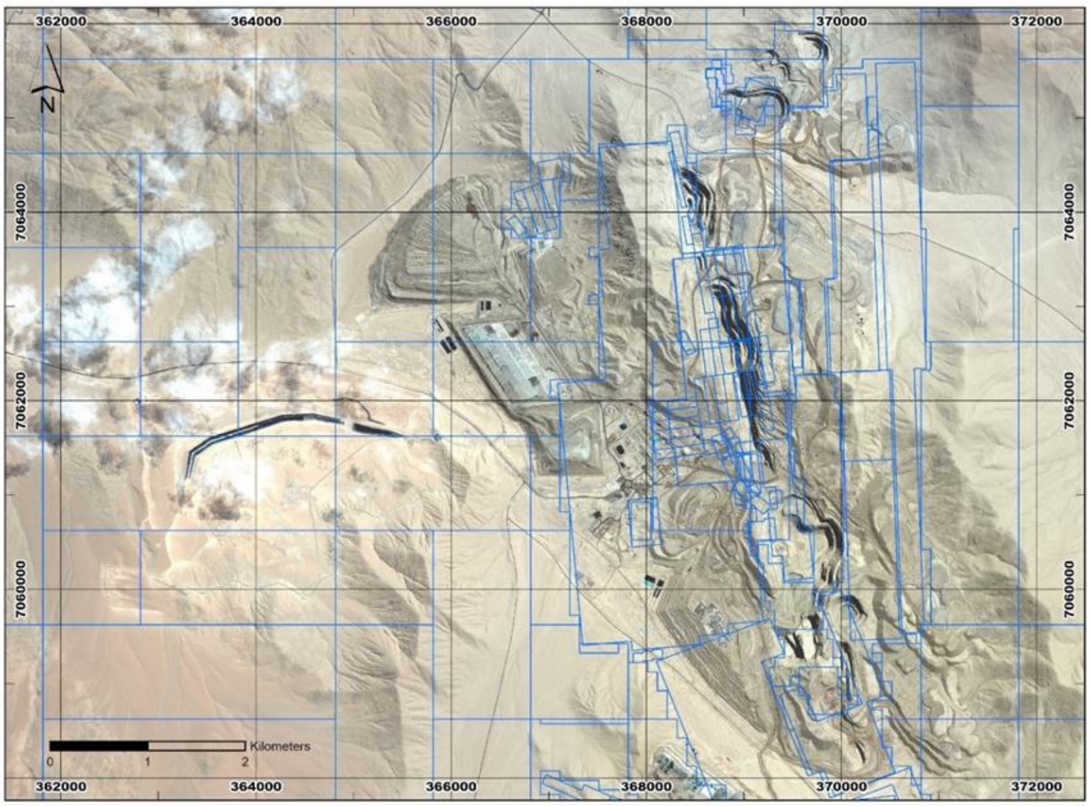
Source: Capstone, 2024.

Table 4-2: Mineral Tenure Exploration

N°	ROL	Concession	Owner	Ha	Page	Number	Year	Status
1	03202-4024-7	LOS MORADOS IV 1	MANTOVERDE	200	959	520	2023	Constituted
2	03202-4025-5	LOS MORADOS IV 2	MANTOVERDE	200	961	521	2023	Constituted
3	03101-9086-1	LOS MORADOS IV 3	MANTOVERDE	200	449	274	2023	In Progress

Note: ROL is a unique identifier used for properties in Chile.

Figure 4-3: Mineral Tenure Layout in Relation to Operating Pits

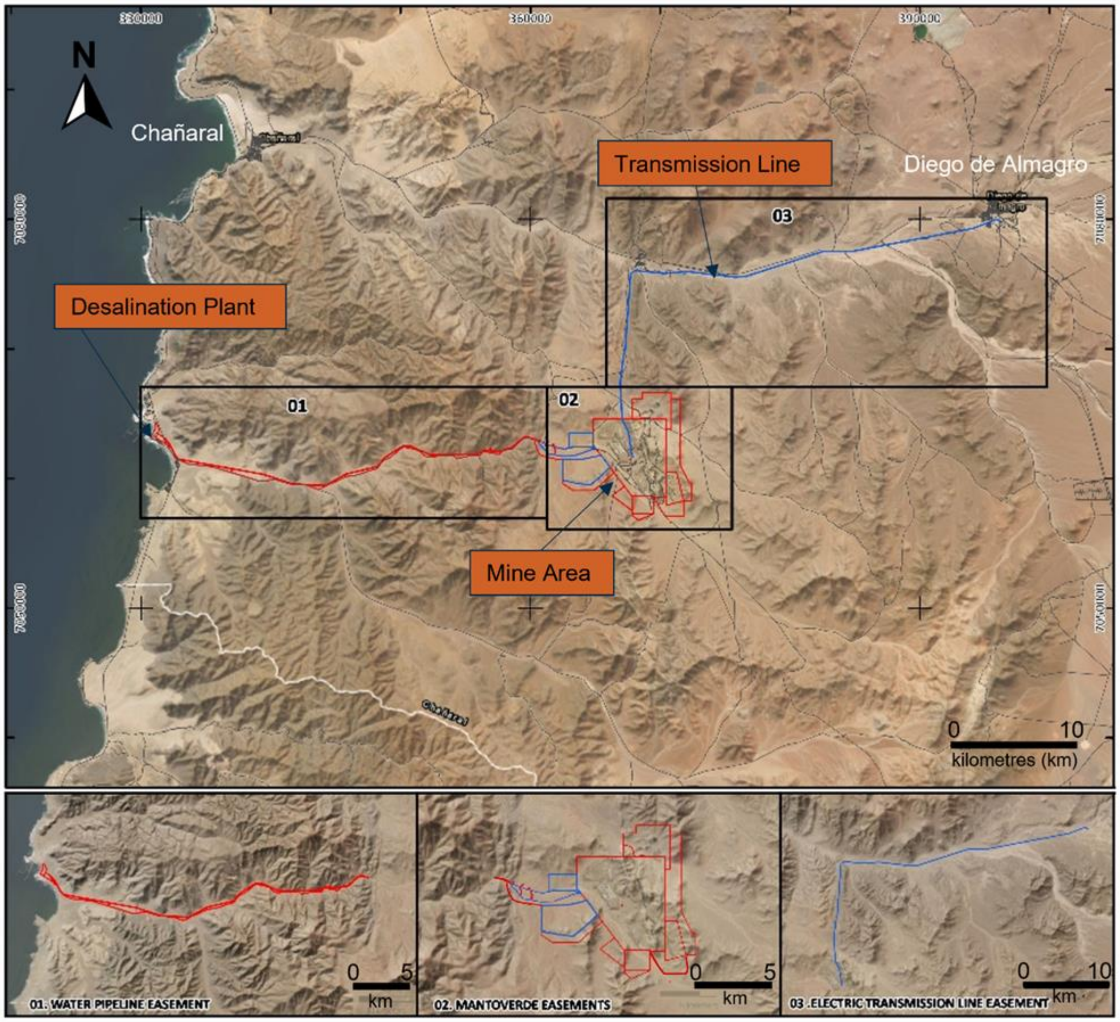


Source: Capstone, 2024.

4.4 Surface Rights

Capstone Copper currently holds 5,376 ha of surface rights (Figure 4-4). This is sufficient to support the open pit oxide operations, the desalination plant and associated pipelines and power transmission lines. In addition, grants of surface rights of 1,024 ha are in progress to further support sulphide operations in the areas proposed for the mine, plant and TSF. Provisional grants were received from the Antofagasta Regional Court over 2022 and 2023; final grants are expected by the end of 2024.

Figure 4-4: Current Surface Rights in Relation to Existing and Proposed Facilities



Source: Capstone, 2024.

4.5 Water Rights

Water requirements for MV-O are 380 L/s, supplied by a wholly owned sea water desalination plant located on the coast 40 km from the mine site, shown in Figure 4-4.

Capstone also holds a total of 228.3 L/s of groundwater rights in the provinces of Copiapó and Chañaral.

4.6 Royalties and Encumbrances

No royalties are payable on Mantoverde. No other royalties or encumbrances are currently known other than the requirement to pay the Chilean mining tax.

4.7 Offtake Agreements

4.7.1 Anglo American

Mantoverde, along with Capstone's Mantos Blancos Mine, entered into an offtake agreement relating to cathode production with Anglo American, most recently amended and re-stated on August 31, 2019.

Under the agreements, Mantoverde and Mantos Blancos are required to sell, and Anglo American is required to buy, all production of copper cathodes until the aggregate sum of cathodes delivered from Mantoverde and Mantos Blancos reaches 275,000 t, achieved in September 2024. The agreement can be extended to 31 December 2027 subject to a 20% increase in the amount of cathodes to be delivered. The price for cathodes is determined based on the monthly average London Metal Exchange (LME) copper price plus a premium.

4.7.2 Boliden

As part of the financing for the MVDP, Mantoverde entered into an offtake agreement with Boliden Commercial AB (Boliden) dated February 4, 2021, for 75,000 t of copper concentrates in each contract year. The agreement expires 10 years after the commencement of commercial production of the MVDP (as defined in the agreement), subject to potential extension if less than 750,000 t of copper concentrates have been delivered at the contract terms, and subject to termination if production does not commence by December 31, 2024. The price of the full copper content of the concentrate is based on average LME prices and subject to adjustments based on the percentage of copper content. The amount payable for the gold by-product is determined by London Bullion Market Association (LBMA) prices, subject to terms stated in the agreement.

4.7.3 Mitsubishi Materials Corporation

As part of the financing for the MVDP, Mitsubishi Materials Corporation ("MMC") acquired a 30% non-controlling interest in Mantoverde S.A. and agreed to make an additional $20 million contingent payment upon satisfaction of certain technical requirements relating to the expansion of the TSF.

In addition to the contingent arrangement, MMC agreed to provide a $60M Cost Overrun Facility (COF) in exchange for additional off-take of copper concentrate production under a 10-year contract. The COF initially carried an interest rate of 3-month US$ London InterBank Offered Rate (LIBOR) plus 1.70% and amortizing over 37 quarters from the earlier of September 30, 2024, or three quarters after project completion. As a result of Interest Rate Benchmark Reform, the Company completed the transition from LIBOR to an adjusted secured overnight financing rate (SOFR) with MMC. The transition resulted in a variable rate of SOFR compounded daily to a 3-month period plus 0.2616% per annum, with margins unchanged.

MMC advanced its pro-rata share of funding requests, which amounted to an additional $150.9M, to Mantoverde in the form of a shareholder loan forming part of the financing for the MVDP. Total funds advanced by MMC on March 31, 2024, including accrued interest of $8.8M (31 December 2023 - $6.0M), was $219.7M (December 31, 2023 - $195.9M). As of the end of 2023, Capstone has fully drawn on the MV Project Finance Facilities and the COF.

The agreement covers the duration of Mantoverde's commercial mine life. The amount payable for copper is based on average LME prices, subject to terms stated in the agreement. The amount payable for gold by-product is determined by LBMA prices, subject to terms stated in the agreement.

4.8 Property Agreements

There are no other property agreements relevant to the Mantoverde.

4.9 Permitting, Environmental, and Social License Considerations

Permitting, environmental and social license considerations are discussed in Section 20.

4.10 Political Risk Considerations

Capstone used the 2023 Fraser Institute Annual Survey of Mining Companies report (the Fraser Institute survey) as a credible source for assessment of the overall political risk facing an exploration or mining project in Chile. Each year, the Fraser Institute sends a questionnaire to selected mining and exploration companies globally. The Fraser Institute survey is an attempt to assess how mineral endowments and public policy factors such as taxation and regulatory uncertainty affect exploration investment.

Chile has a Policy Perception Index rank of 49 out of the 86 jurisdictions in the Fraser Institute survey. Chile's Investment Attractiveness Index rating is 38 out of the 86 jurisdictions and is ranked 26 of 58 on the Best Practices Mineral Potential Index.

Based on the Fraser Institute survey, Capstone considers Chile a stable jurisdiction to continue business operations.

4.11 Comments on Section 4

Information from Capstone's land manager and the title opinion supports that the mining tenure held is valid and is suitable to support the declaration of Mineral Resources and Mineral Reserves.

All current infrastructure is covered by existing surface rights. A significant portion of the required surface rights have been obtained for the infrastructure that will be required to support mining and processing of sulphide material. The pending easements have been requested, and all required documentation has been submitted to the National Assets authority. Mantoverde is awaiting a resolution, with a high likelihood of a favorable outcome for the project. The risk of an unfavorable decision is minimal, given that the process has progressed smoothly without issues. Alternatives are available and are considered in each case.

There are no other, known significant factors or risks that may affect access, title or the right or ability to perform work on the property that have not been discussed in this Report.

5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

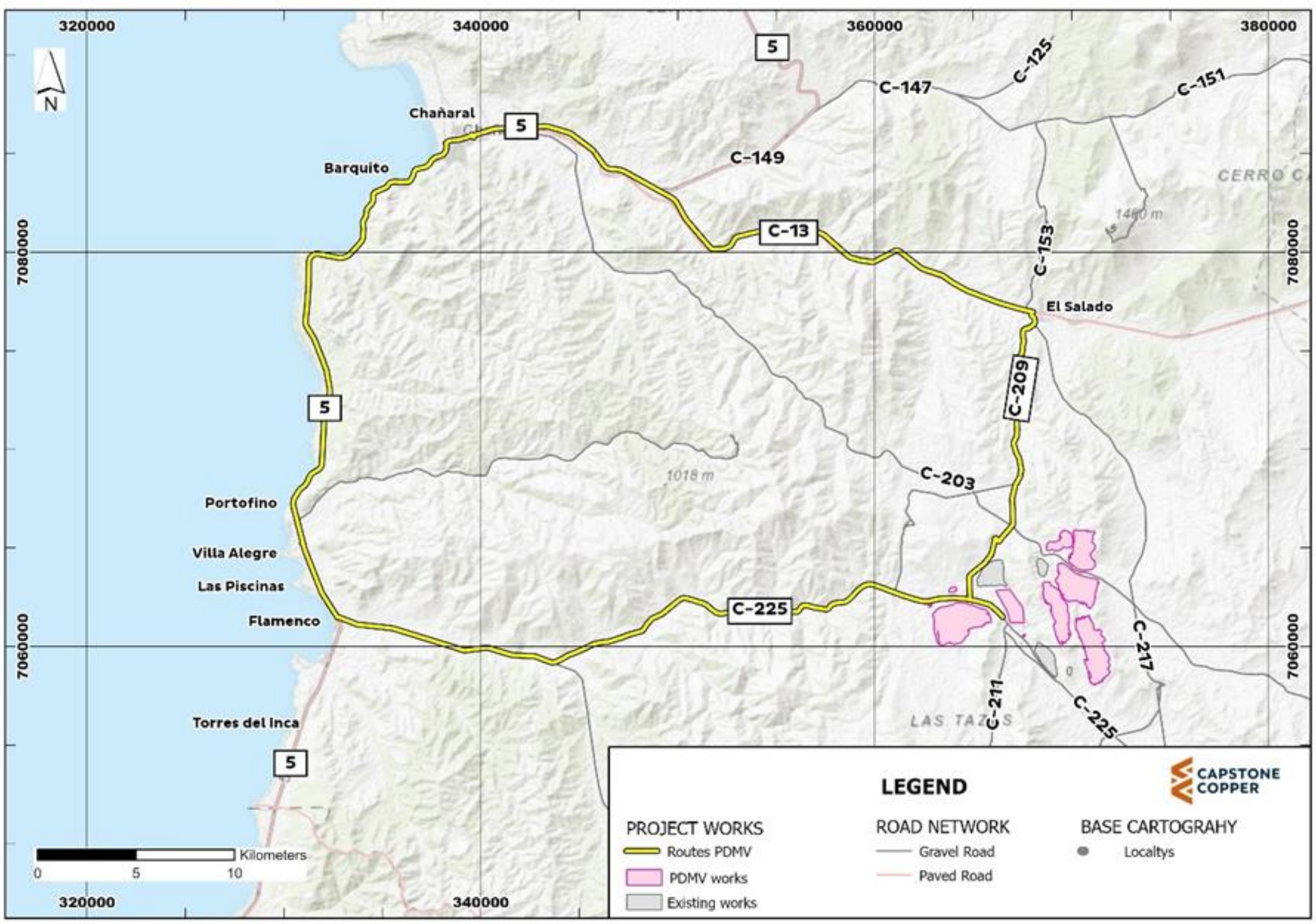
5.1 Accessibility

5.1.1 Roads

The mine is situated 176 km by paved road from the major city of Copiapó. A 45 km long secondary road which turns off Route 5 North at Bahía Flamenco between Chañaral and Caldera to the south (not shown on the map). Figure 5-1shows site access. The site can also be accessed from the north from Chañaral via El Salado.

Access roads within the site are gravel.

Figure 5-1: Road Access to Mantoverde Site



Source: Capstone, 2024.

5.1.2 Airport

The Desierto de Atacama airport is the main regional airport and is located 50 km to the northwest of Copiapó 133 km from the operation by road.

5.2 Climate

The Mantoverde deposit is located in a desert area, with hot, dry summers and colder winters that have limited rainfall. If rainfall does occur, it is normally between May and August. The area is also subject to fog.

Mining operations are currently conducted year-round. It is expected that the future mining operation will also be conducted on a year-round basis.

5.3 Local Resources and Infrastructure

Additional information on the infrastructure and setting is provided in Section 18, including the description of the port, and Section 20.

The closest settlement is El Salado, 15 km to the north of the mine. The communities of Chañaral, Diego de Almagro and Flamenco are located in the province of Chañaral, Atacama Region, and are within the mine area of influence. The closest major population centre is Copiapó which provides services for a number of large mining operations in the area.

5.4 Physiography

Mantoverde is located in the Norte Grande macro-zone in the sub-zones of the Cordillera de la Costa (coastal range) and the Atacama Desert, in the Atacama Region. The general physiography is typical of the Atacama Region, consisting of high-altitude desert plains and strongly dissected mountain ranges. The current process plant is located at an altitude of 900 masl.

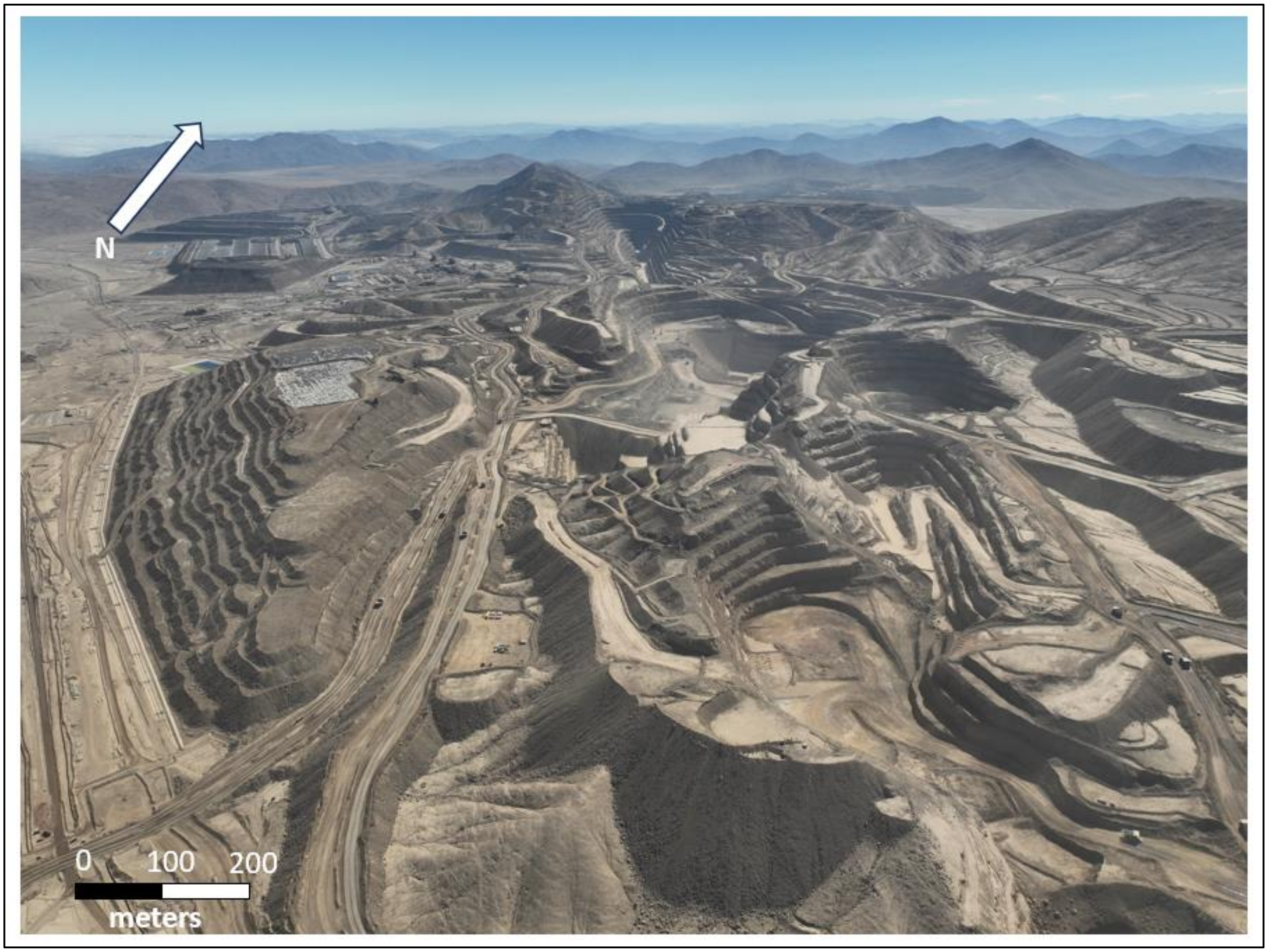
The physiography in the mine area has been significantly impacted by the mining operations (Figure 5-2).

There is little or no vegetation on the ridges and only minor vegetation along valley floors. There is no natural vegetation within the deposit area.

There is no known Area under Official Protection that is affected by the current mining activity or the projected sulphide operation. There are no Priority Sites under official protection within the operation and Project boundaries. However, some of the surface works proposed will affect the Quebrada Guamanga area, which is included in the list of 28 Regional Priority Sites of the Region of Atacama in the Red Book of Native Flora of Atacama. Potential impacts were assessed in the environmental approval processes; control, mitigation and compensation measures were proposed and are being implemented by Mantoverde.

The areas to be used for mining and processing purposes have been classified as unsuitable for agricultural use.

Figure 5-2: Aerial Photograph Showing Physiography of the Mine Area



Source: Capstone, 2024. Photograph is looking from the southeast.

5.5 Seismicity

The central Andes Mountain range is considered to be one of the most active seismic regions in the world. Earthquakes are distributed in three main zones based on the hypo-centre depth:

- A low-depth strip that ranges from 0 km to 60 km in coastal and underwater areas.
- A medium-depth strip that ranges from 60 km to 300 km at the foothills and mountain range.
- A high-depth strip of 700 km to the east of the Andes Mountains.
- The maximum credible earthquake (MCE) is defined as (Ausenco, 2021):

- Interplate earthquake.
- Seismic envelope (percentile 84).
- Earthquake M8.8.
- Located at a hypo-central distance of 45km from the Project.
- Peak ground acceleration (PGA) of 0.86 g.

5.6 Geohazards

Geomorphological assessment has identified a number of geohazards including rock falls, debris avalanches, debris flows, debris flood and landslide deposits.

Within the mine and plant area two specific zones with potential rock falls along the slope have been identified: on the northern side of the existing Oxide Plant and on the western side of the south low-grade leach pad. The first area shows some indications of rock block movements on the high slope and debris flows on the lower slope which has formed a foothill. A ditch was excavated between the slope and the mining road to mitigate the risk of rock falling on the road. Debris flows and landslides are found in quebrada (ravine) areas. The Guamanga and Las Ánimas Quebradas and El Salado River are the areas most prone to this type of risk.

Historically, major rainfall events have affected local communities every 5 to 10 years in the El Salado River basin. There are no human settlements in the Guamanga and Las Ánimas basins. The rainfall events can result in flooding, debris flows and landslides that can block access roads and railways, damage buildings, affect drinking water quality and cause temporary interruption of access roads. The effect of these events on existing operations has been primarily temporary interruptions on access roads and power supply, no significant impact on operating facilities has occurred.

5.7 Comments on Section 5

The QP notes that the site has favourable local conditions to continued operation:

- The Mantoverde site is easily accessible by road and has good access to ports and the local airport.
- There is no known Area under Official Protection that is affected by the current mining activity or the projected operation.
- The favourable climate allows the MV-O to operate year-round.

6 HISTORY

6.1 Regional History

Small scale mining activities in the Mantoverde district were first documented in the 18th century, along with a period of mining from 1906 to 1938 (Rieger, 2010). No production records from these activities were located. Early exploration in the district was completed by the Anaconda Mining Company in 1950, Empresa Nacional de Minería (ENAMI) in 1972 and Sociedad Minera Pudahuel from 1978 to 1981.

At the end of 1988 Empresa Minera Mantos Blancos S.A. (EMMB) acquired an option to purchase the Mantoverde Mine. Exploration was undertaken by Anglo American Chile (AAC) on behalf of EMMB from 1989 to 1990. EMMB completed a feasibility study in 1991–1992, which evaluated the Mantoverde Norte and Mantoruso deposits and the Montecristo area. The Mantoverde Sur and Franko deposits were discovered during this period.

In August 2001, the mine was renamed the Mantoverde Division of AAC. (MAAC) The Kuroki, Punto 62, Celso and Quisco deposits were subsequently identified.

Audley Mining Advisors Ltd. and Orion Mine Finance LLP acquired the operation in August 2015 through the purchase of Mantos Copper from AAC.

From 2016 until 2021 Mantos Copper resumed exploration activities focused on delineating the sulphide mineralization along the main mining areas at the Mantoverde mine. Activities were also carried out to the north of the property, including geological mapping, geochemical surveys and a property-wide airborne ZTEM survey.

In 2021, Mantos Copper commenced construction of MVPD focused on a concentrator plant to process sulphide ore in addition to oxide ore. MVDP comprised a concentrate plant designed to process a nominal 32,000 ore tonnes per day (t/d), a TSF and expanded the site's existing desalination plant and other infrastructure.

On March 23, 2022, Mantos Copper (Bermuda) Limited moved from Bermuda into British Columbia, Canada and merged with Capstone Mining Corp, acquiring all of their issued and outstanding common shares, forming Capstone Copper Corp.

6.2 Production

Open pit mining operations started in 1995. A complete production history is not available; however, the historical production from 2010 to August 2015, when the mine was an operating division of MAAC, are presented in Table 6-1 along with production as Mantos Copper and Capstone.

Table 6-1: Mantoverde Production 2010-June 2024

Operator	Period	Production (t Cu)
AAC	2010	61,058
	2011	58,718
	2012	62,239
	2013	56,755
	2014	51,795
Mantos Copper	2015	50,444
	2016	49,739
	2017	42,113
	2018	41,771
	2019	42,939
	2020	36,640
	2021	49,013
Capstone	2022	36,301
	2023	35,401
	To June 1st 2024	15,109

7 GEOLOGICAL SETTING AND MINERALIZATION

7.1 Regional Geology

The Mantoverde deposit is located in the Province of Chañaral, Atacama Region, Chile, in the eastern part of the Cordillera de la Costa and is part of the Chilean Iron Belt (CIB) which is defined as north-south belt stretching for over 2,000 km parallel to the Chilean coast between 25° and 31°S. This metallogenic belt has a diverse type of deposits, including iron-oxide-copper-gold (IOCG) and the iron-oxide-apatite (IOA):

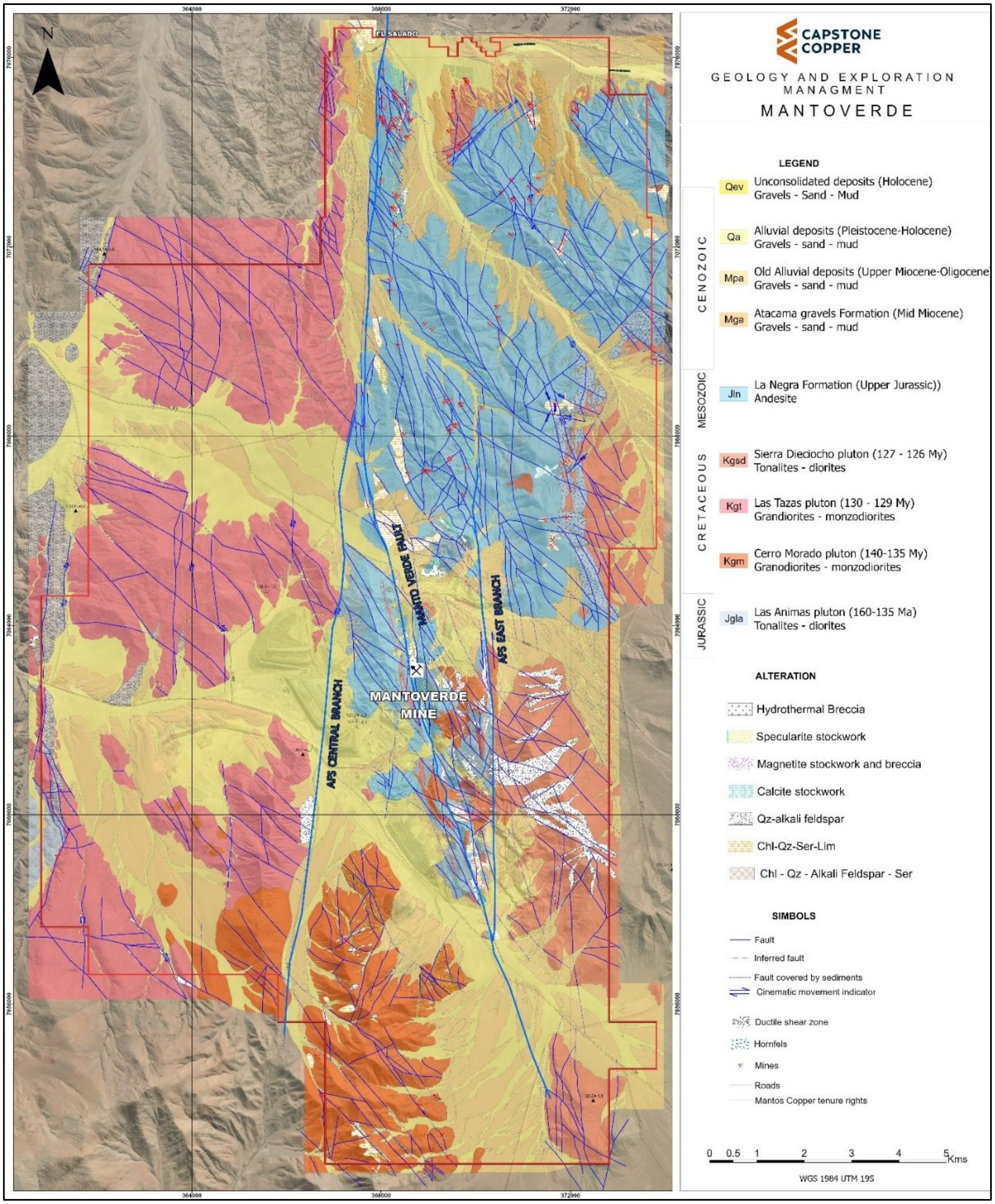
- IOCG deposits contain abundant hydrothermal hematite and/or magnetite with supergene and hypogene copper mineralization. Alteration varies, but commonly, these deposits are associated with potassic, extensive sodic, and sodic calcic mineral assemblages. Carbonates are typically common. Copper-bearing end members includes Candelaria-Punta de Cobre, Sierra Norte, Casualidad and Santo Domingo.
- IOA deposits have magnetite as main ore mineral and can be classified as Kiruna-type magnetite–apatite deposits with associated actinolite–apatite and calcic-sodic alteration. Host rocks are typically brecciated volcanic materials, or brecciated intrusions. Some examples of the larger Kiruna-type deposits in the CIB include Romeral, Cerro Negro Norte and Cerro Iman.

Mantoverde is located in the southern section of the Atacama Fault System. This structural system is interpreted to be related to an oblique subduction of the Jurassic to early Cretaceous magmatic arc. Initial faulting took the form of strike-slip, causing mylonite development and ductile deformation followed by dip-slip fault movement and brittle deformation during extensional tectonism. This process accommodated several volcanic- or intrusive-hosted breccia zones which became sites for the formation of a number of iron-oxide apatite (IOA) and iron-oxide–copper–gold (IOCG) deposits. Volcanic rocks at regional scale are the Middle to Upper Jurassic andesites of the La Negra Formation, and the Lower Cretaceous Punta del Cobre Formation. Marine sedimentary rocks assigned to the Lower Cretaceous Chañarcillo Group (Segerstrom and Parker, 1959) are exposed in the eastern part of the belt and represent back arc basin environment. Coeval plutonism occurred between 132 Ma to 106 Ma, including the Sierra Dieciocho, Las Tazas, Cerro Morado and Las Animas plutonic complexes which are exposed in the vicinity of Mantoverde (Figure 7-1). Paleozoic metasedimentary rocks and Triassic plutons are the older rocks and are located in the western and northern portions of the belt.

The Atacama Fault System (AFS) is the main structural element in the Mantoverde area (Figure 7-1) (The larger Cu-rich deposits are spatially associated with it, where the emplacement of the mineralization is associated with several internal oblique faults that have favoured the development of extensional structures. These deposits are typically hosted by Middle to Upper Jurassic andesites and Lower Cretaceous diorite to quartz diorite plutons.

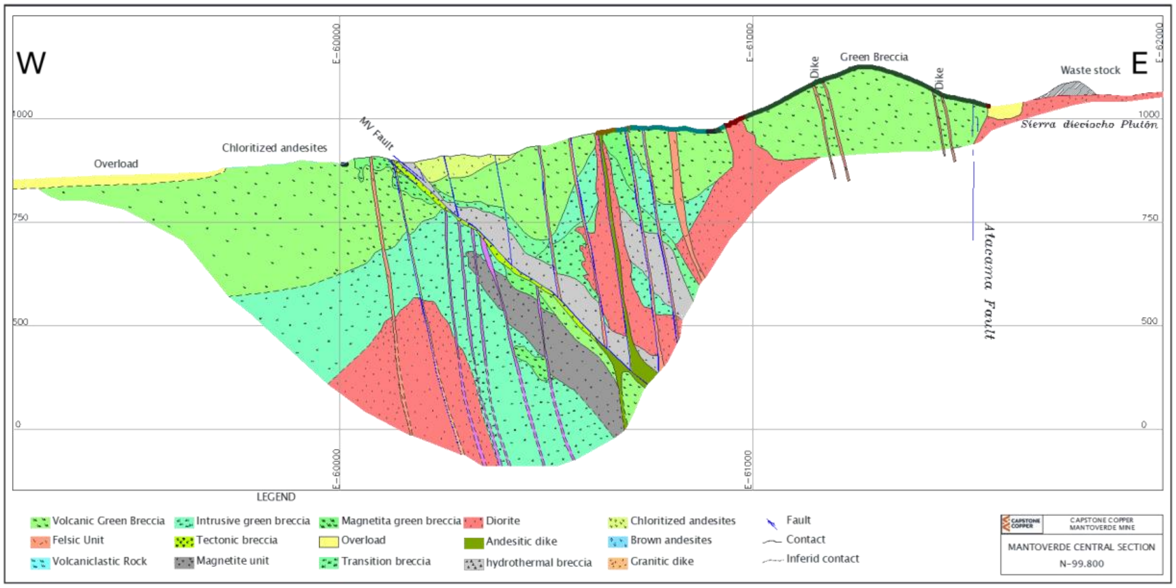
The rocks of the Mantoverde area show a complex hydrothermal evolution involving early sub-sea floor albitization, followed by very low-grade metamorphism. This was followed, in paragenetic terms, by local potassic and iron metasomatism (stage I) and hydrolysis (stage II), all preceding the emplacement of mineralized sulphide-bearing hematitic breccias and veins (stage II) (Benavides et al., 2008).

Figure 7-1: Mantoverde Regional Geology



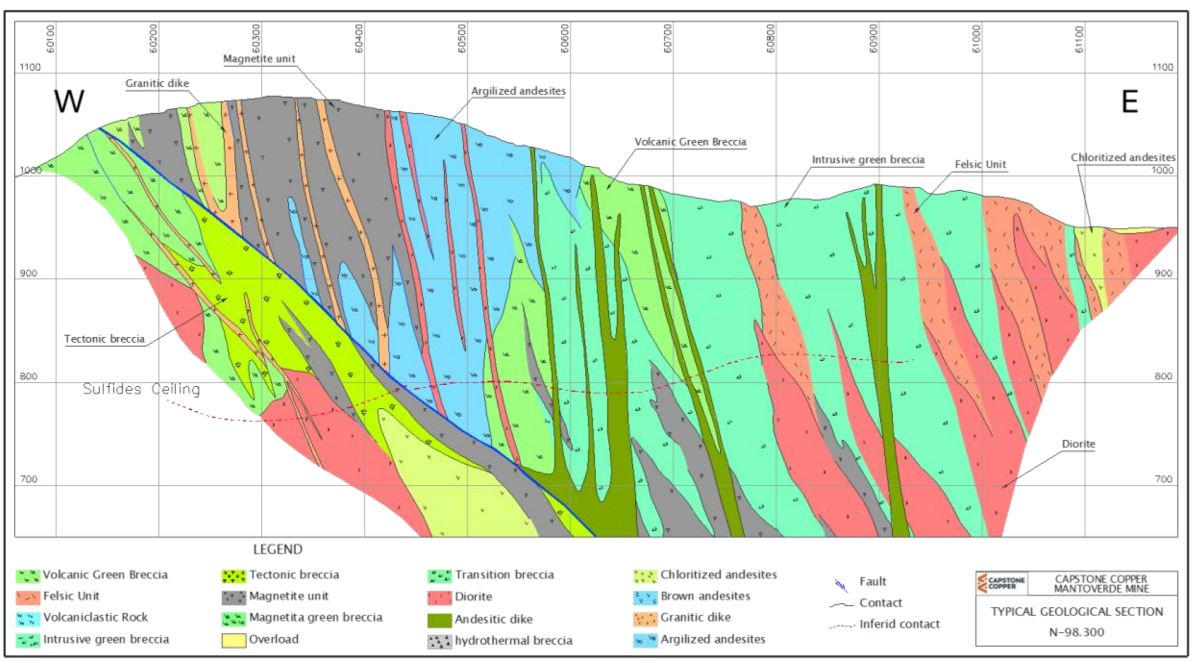
Source: Capstone, 2024.

Figure 7-2: Cross Section through Mantoverde Norte



Source: Capstone, 2024.

Figure 7-3: Cross Section through Mantoverde Sur



Source: Capstone, 2024. Note: Red line indicates location of the top of the Sulphide zone (T. S.).

7.2 Deposit Geology Overview

The Mantoverde deposit has been defined as an iron-oxide-copper-gold type (IOCG), located in the Chilean Iron Belt associated with the Atacama Fault System (AFS). Locally, it is located along the Mantoverde Fault (FMV), which is a 12 km long subsidiary structure between two north-south main branches of the Atacama Fault System. The FMV has a general orientation N15°-20°W and dip varying from 40°E in the south to 65°E in the north of the deposit.

Main rock types correspond to chlorite and k-feldspar altered volcanic andesites and diorite porphyries. These rocks have been intensely affected by tectonic and hydrothermal brecciation associated with the majority of the mineralization in the Mantoverde Deposit. Discrete narrow and sub-vertical rhyolite and andesitic dikes cut the previous rocks and mineralization events. The local geological units described for Mantoverde comprise a mixture of lithology, alteration and brecciation styles (Figure 7-2 and Figure 7-3).

Mineralization in Mantoverde is mostly hosted by cataclastic andesitic and dioritic porphyry rocks, with three breccia units paralleling the FMV. The copper mineralization is hosted in at least three geological environments: i) tabular bodies along the FMV with discontinuous copper mineralization and dominated by magnetite and specularite (Mantoverde Sur and Mantoverde Norte respectively); ii) Pipe breccias (Celso and Mantoruso) in the north west of the area; and iii) irregular west dipping tectonic breccias (Montecristo) (Figure 7-4).

Copper mineralization extends for 7.5 km in the NS, 250 m in EW and 800 m in depth. The deposit is oxidized to 200 m depth. Breccias in the sloping fault block contain abundant specular hematite with brochantite, minor antlerite, chrysocolla, malachite and atacamite, occurring in veinlets, patches and disseminated in the specularite-rich matrix.

Hypogene mineralization at depth is disseminated within the specularite-rich matrix and consists of chalcopyrite and pyrite (chalcopyrite/pyrite = 5/1).

These two main sulfides are almost exclusively associated with gold and cobalt, respectively. Wavelength Dispersive X-ray Spectroscopy (WDS) and Electron Microprobe Analysis (EMPA) mapping have revealed multiple stages of pyrite mineralization, indicated by distinct chemical zoning patterns of Ni and Co. In some grains, Co and Ni are geochemically coupled, while in others, their zoning forms an alternating sequence. Three distinct chemical groups of pyrite have been identified in the Mantoverde IOCG deposit, characterized by Co/Ni ratios of <1, 1–20, and >90. Chalcopyrite by the other hand is chemically homogeneous and does not incorporate detectable amounts of Ni or Co, as shown by EMPA (Johansson, 2017).

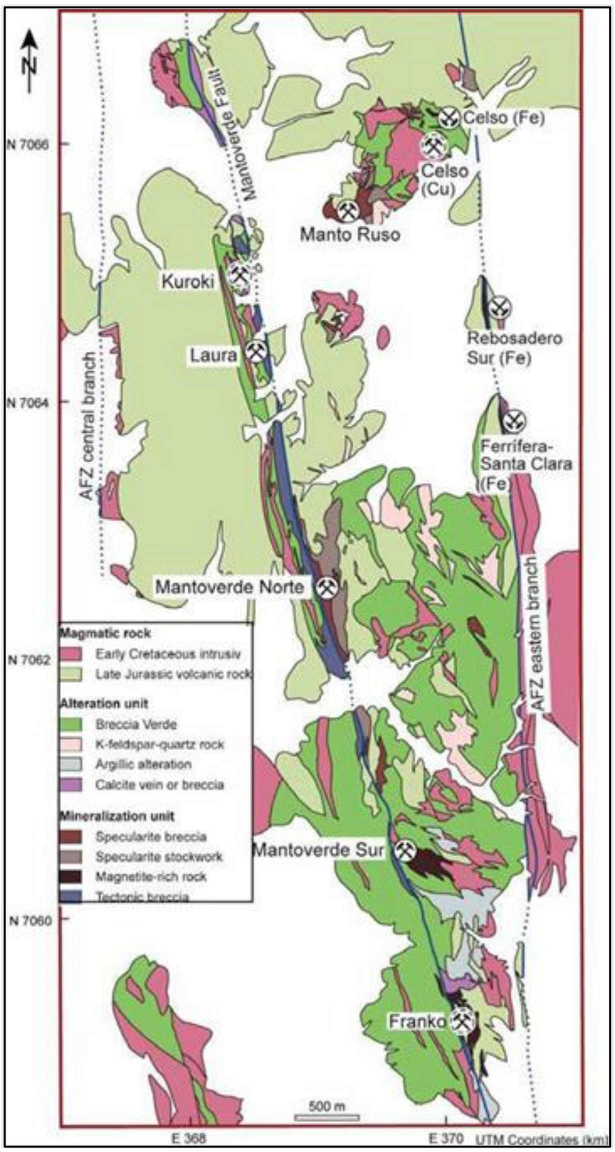
Cobalt concentrations in Mantoverde are primarily associated with the southern sector of the deposit, with a clear boundary at the local coordinate 101,000N. North of this coordinate (Manto Ruso/Celso), cobalt concentrations average around 66 ppm, whereas in the south, the average reaches 117 ppm, with maximum values exceeding 3,700 ppm.

Gold mineralization, appears closely associated with Cu (chalcopyrite), as indicated by the positive correlation between Au and Cu concentrations in the ore and the limited presence of native gold or gold alloys. This correlation supports the hypothesis that Au was transported with Cu in chlorine complexes, following the formation of the primary iron oxides (hematite and magnetite) and before the extensive calcite veining phase (Rieger et al., 2010).

The deposition of magnetite ore bodies was produced by the oxidation of iron in solution, whereas the subsequent deposition of hematite resulted from the progressive oxidation of magnetite (Zamora and Castillo, 2001; Lopez, 2002).

Between the oxidized zone and the hypogene sulphide zone there is a thin sub-horizontal mixed zone. The mixed zone has a thickness ranging from 15 m to 45 m depending on its proximity to the Mantoverde fault. Mixed zone mineralization is characterized by chalcocite (±covellite), brochantite, chrysocolla and could contain native copper, cuprite and tenorite.

Figure 7-4: Mantoverde District Geology Map



Source: Rieger et al., 2010.

7.3 Hydrothermal Alteration

Hydrothermal alteration at Mantoverde is very similar across all the Cu-Au orebodies and characterized by variably intense potassic (k-feldspar) alteration, chloritization, sericitization, silicification, and/or carbonatization.

Potassic alteration is a characteristic feature of the Mantoverde deposit. Massive k-feldspar-quartz altered zones are locally exposed in the Mantoverde Norte, Sur and Mantoruso sectors and are usually associated with copper bearing mineralization events. Chlorite-rich assemblages, usually with quartz, occur within volcanic andesites and diorite porphyries as very distinctive green cemented breccias, which gave rise to some of the local names from Mantoverde units ("Green Breccia", "Volcanic Green Breccia", "Intrusive Green Breccia", "Magnetite Green Breccia", etc.). Sericite with quartz and argillic alteration can be found only locally across the deposit. Carbonate alteration is associated with the later phases of alteration into the system (Rieger et al., 2010 and 2009), and is composed of calcite and lesser siderite veining and can exhibit an intense brecciation. A clear zonation of this carbonatization can be observed along the Mantoverde Fault, passing from a relatively low volume of disseminated calcite in the south to pervasive veinlets and breccias in the north. The hydrothermal alteration associated with the magnetite(-apatite) and copper-barren bodies in the Mantoverde district is manifested as variable proportions of sericite, chlorite, carbonate, and quartz (Rieger et al., 2010).

7.4 Age Dating

Two types of samples were tested to establish the probable age of iron–copper–gold mineralization and/or hydrothermal alteration at Mantoverde. Samples were obtained from altered andesites cutting the Transition Zone (a distal specularite stockwork zone in UG3, described below) and an altered granite dike. Minimum values of 117±3 Ma and 121±3 Ma, respectively, were obtained using the potassium–argon method in sericite. Gelcich et al. 2002 also report two U-Pb ages of 128,9±0.3 and 126.4±0,3 Ma for a potassically altered quartz-monzodiorite and hydrothermal titanite from Mantoverde mine. These values are similar to the sericitic alteration accompanying mineralization in the same age range identified in other Cretaceous deposits in the Cordillera de la Costa (Vila et al., 1996)

7.5 Fluid Inclusion Studies

Fluid inclusion studies indicate homogenization temperatures of 180°C to 250°C, and salinities of 30 to 47 % by weight NaCl for the iron–copper–gold mineralization. This suggests a late magmatic to hydrothermal origin for the mineralization (Vila et al., 1996; Collao and Ortega, 1999).

7.6 Oxide Deposit Descriptions

The main oxide deposits at Mantoverde include:

- Mantoverde Norte: The first exploited pit hosts copper mineralization controlled by the FMV, associated with specularite. It occurs in the form of breccias, stockworks and disseminations.
- Mantoverde Sur: The mineralization is controlled by the FMV and unnamed NE structures. The copper mineralization is associated with magnetite breccias, stockworks and disseminations.

- Franko: Mineralization is emplaced along the Franko fault, sub parallel to the FMV (hanging wall of the FMV) withing a tectonic breccia, with disseminated specularite and/or magnetite.
- Laura and Kuroki: hosted in a tectonic breccia formed in a recumbent block of the FMV (i.e. below the FMV). At depth, the oxide gives way to chalcopyrite associated with hydrothermal breccias and specularite stockwork zones.
- Mantoruso and Celso: oxide copper mineralized bodies are associated with hydrothermal specularite breccias that may grade into specularite stockwork zones.
- Rebosadero: located in a tectonic breccia generated by the intersection of the eastern branch of the AFS with a set of northwest–southeast and northeast–southwest-trending structures. It consists of a tabular body with oxide copper mineralization in the upper levels, and pyrite and chalcopyrite at depth.

The first four previously exposed copper oxide deposits transition to hypogene sulphide mineralization at depth.

7.7 Hypogene Deposit Description

Hypogene sulphide mineralization consists mainly of chalcopyrite and pyrite with lesser amounts of chalcocite, covellite and traces of bornite within specularite and magnetite-cemented breccias and associated stockworks. Magnetite is predominant in the Mantoverde deposits and hematite dominates in the Mantoruso and Celso deposits, exhibiting a relatively well-defined iron oxide zoning.

Based on the different lithologies and location with respect to the FMV seven main geological units (UG) have been defined that host mineralization in the Mantoverde deposit (Vila et al., 1996; Rieger et al., 2010). These units are known as geological units UG1 to UG7:

- UG1: Magnetite zone that is found mainly in the south of the Mantoverde deposit, also forms small subordinate bodies. In the central and northern areas, the UG1 unit occurs below 650 masl
- UG2: Green breccia, found in all deposit areas.
- UG3: Hydrothermal breccia, found mainly in the centre of the deposit; forms small bodies in the southern portion of the area.
- UG4: The specularite stockwork is associated with the distal zones of the hydrothermal breccia found in the center of the deposit. This unit is also called the transition zone because of its position between the mineralized UG3 and the waste wall rock in the hanging wall of the Mantoverde fault.
- UG5: Tectonic breccia, found along the footwall of the Mantoverde fault.
- UG6 and 7: pipe-like breccias that grade into areas of specularite stockwork; found in the Mantoruso and Celso deposits.

7.7.1 Magnetite Zone (UG1)

The UG1, which combines the “Magnetite Unit” and “Magnetite Green Breccia” (Figure 7-2 and Figure 7-3), is a magnetite-rich unit hosting copper sulphides which can occur in both the hanging wall and footwall of the FMV. It is characteristic of the Montecristo and Altavista areas of the Mantoverde Sur deposit. Two styles of mineralization are identified:

- Magnetite stockworks and disseminations.
- Elongate magnetite-cemented breccia or massive magnetite bodies.

Rocks in the magnetite zone typically consist of magnetite-chlorite-K-feldspar cemented breccias, with igneous rock fragments that have been altered by magnetite, K-feldspar and quartz. Magnetite and mushketovite (the pseudomorph replacement of an earlier specular hematite by magnetite) have been observed. The rocks are cut by K-feldspar ± quartz, calcite, sericite and late specularite-calcite veins. The magnetite-rich rocks may be barren or may contain chalcopyrite (and/or pyrite), mainly in the form of disseminations, patches and discontinuous veining.

The magnetite zone exhibits variable proportions of sericite, chlorite, and quartz, with notable but localized development of these alterations in the western wall of Mantoverde Sur.

At Mantoverde Norte the magnetite zone occurs below 680 masl and is open at depth.

7.7.2 Green Breccia (UG2)

The UG2 unit consists of silicified clasts of volcanic and intrusive rocks of andesitic composition in an altered chlorite-silica-feldspar matrix. The matrix may also contain calcite, subordinate sericite and, locally, zeolite-group minerals (chabazite-phyllite) and small amounts of tourmaline. The rock is cut by low to moderately dense assemblages of K-feldspar quartz, calcite ±siderite, specularite ± quartz and sericite veins. The distribution of this unit can be seen in Figures 7-3 and 7-5 labeled as “Volcanic Green Breccia” and “Intrusive Green Breccia”.

Rock fragments show pervasive K-feldspar alteration. Towards the surrounding country rocks the UG2 unit grades into a chlorite–quartz-rich stockwork. UG2 is mostly barren, though locally it can host elevated copper–gold grades. In this case, mineralization is normally related to specularite veinlets.

7.7.3 Hydrothermal Breccia (UG3)

The UG3 unit is a specularite-rich zone hosting copper sulphides which can occur in both the hanging wall and foot wall of the FMV. It is characteristic of the Mantoverde Norte deposit.

The UG3 unit is a tabular hydrothermal breccia, with an average thickness of 80 m, but can be up to 200 m thick. The breccia is composed of sub-angular to sub-rounded andesite or granitoid igneous rock fragments in a coarse-grained, calcite-bearing, mineralized specularite matrix. Rock fragments range from a few millimeters to 35 cm in diameter. They are usually affected by varying degrees of widespread feldspar alteration with chloritization, sericitization, silicification and/or carbonatization. Locally, tourmaline, minor sphene or scapolite may be present. The distribution of this unit can be seen in Figure 7-3, 7-5 and 7-6.

Below the oxidation zone (below mining level 780 masl), the specularite-rich matrix contains pyrite and chalcopyrite. Digenite and bornite can locally replace the chalcopyrite.

UG3 is cut by veinlets of K-feldspar ±quartz, tourmaline or sericite. The last stage of hydrothermal activity consists of calcite and specularite veinlets.

7.7.4 Transition Zone (UG4)

The distal zone of the hydrothermal breccia unit (UG3) is called the Transition Zone (UG4)' It contains oxide, mixed or sulphide copper mineralization depending on depth. The Transition Zone is characterized by less intense specularite stockwork compared with UG3. Wall rock alteration in this unit is essentially the same as that in the UG3 unit. Minor alteration phases include tourmaline, sphene and apatite. This unit is also called "Transition Breccia" and its distribution can be found in Figure 7-3, Figure 7-4 and Figure 7-5.

7.7.5 Tectonic Breccia (UG5)

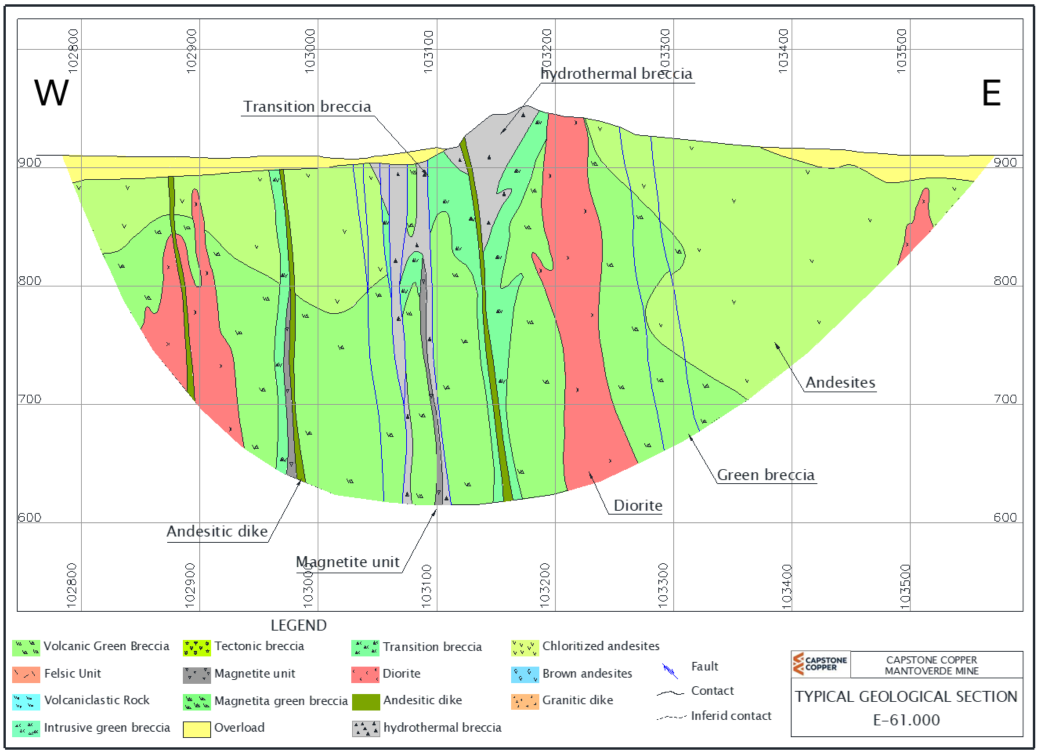
The Mantoverde Breccia is a cataclastite rock with a rock flour matrix (Vila et al., 1996) which is located in the footwall of the main fault plane of the Mantoverde fault. Its thickness is commonly between 20 and 40 m but can reach up to 150 m in La Verde Valley, which lies between the Mantoverde Norte and Mantoverde Sur areas. In the Mantoverde Norte pit, the rock is composed of angular andesite and/or diorite fragments that commonly are a few mm to 10 cm in diameter, and show silicification, chlorite, and minor to moderate K feldspar alteration.

7.7.6 Mantoruso (UG6)

The UG4 unit is found in the Mantoruso deposit that has been subject to small-scale mining activity. Prior to mining, the deposit was a 400 m long and 100 m wide body, oriented N70° to 80°E, it was covered by unconsolidated material to the south. The thickness of the oxidation zone is variable and lies between 40 m and 150 m below surface level (800 masl to 850 masl). Hypogene copper mineralization is present at depth.

The Mantoruso deposit is hosted by andesitic volcanic–volcaniclastic rocks and intrusive diorite of the Sierra Dieciocho complex, the latter outcrops immediately to the east of the deposit. The deposit consists of a sub-horizontal specularite-cemented hydrothermal breccia. The breccia contains angular andesite and diorite fragments which are affected by strong K-feldspar alteration and silicification ±chloritization. Pyrite, chalcopyrite and, locally, bornite and digenite occur interstitial to specularite. The specularite-cemented breccia grades into a specularite stockwork zone (the Transition Zone). Host rocks are characterized by strong pervasive quartz, K-feldspar or sericite alteration. The rocks are cut by specularite–calcite veinlets (see Figure 7-5).

Figure 7-5: Mantoruso Geological Section



Source: Capstone, 2024.

7.7.7 Celso (UG7)

The UG4 unit is also found in the Celso area, east of Mantoruso; this area was previously mined for iron (Ferrífera Celso). The magnetite bodies appear to be controlled by north and northwest-trending structural corridors and are located mainly at the contact between volcanic rocks and diorites. The copper mineralization is related to a 20 m to 60 m thick, N 40° to 55° W trending and 55° to 70° W dipping, specularite-cemented hydrothermal breccia body (the Celso breccia). The breccia is surrounded by a specularite stockwork hosted predominantly in diorites. The oxidation level extends to 100 m to 150 m depth (820 masl to 920 masl). Below these levels hypogene sulphides occur over a vertical distance of at least 300 m. The host rocks at Celso are similar to those hosting the mineralization at Mantoruso, the Celso breccia is also similar to the breccias at Mantoverde Norte and Mantoruso. The breccia is composed of fragments of silicified diorite and minor andesite in a specularite matrix. It contains matrix disseminations of chalcopyrite and pyrite and is cut by chalcopyrite–pyrite–bearing veinlets. The surrounding copper sulphide-bearing specularite stockwork (the Transition Zone) is hosted in pervasively silicified and chloritized rocks.

7.8 Comments On Section 7

In the opinion of the QP, the level of study and understanding of the geology and mineralization of the Property is adequate to support Mineral Resource estimation.

8 DEPOSIT TYPES

8.1 Introduction

The Mantoverde deposit is a typical example of a Chilean iron oxide–copper–gold (IOCG) deposit (e.g., Williams et al., 2005, Benavides et al., 2007, Rieger et al., 2010).

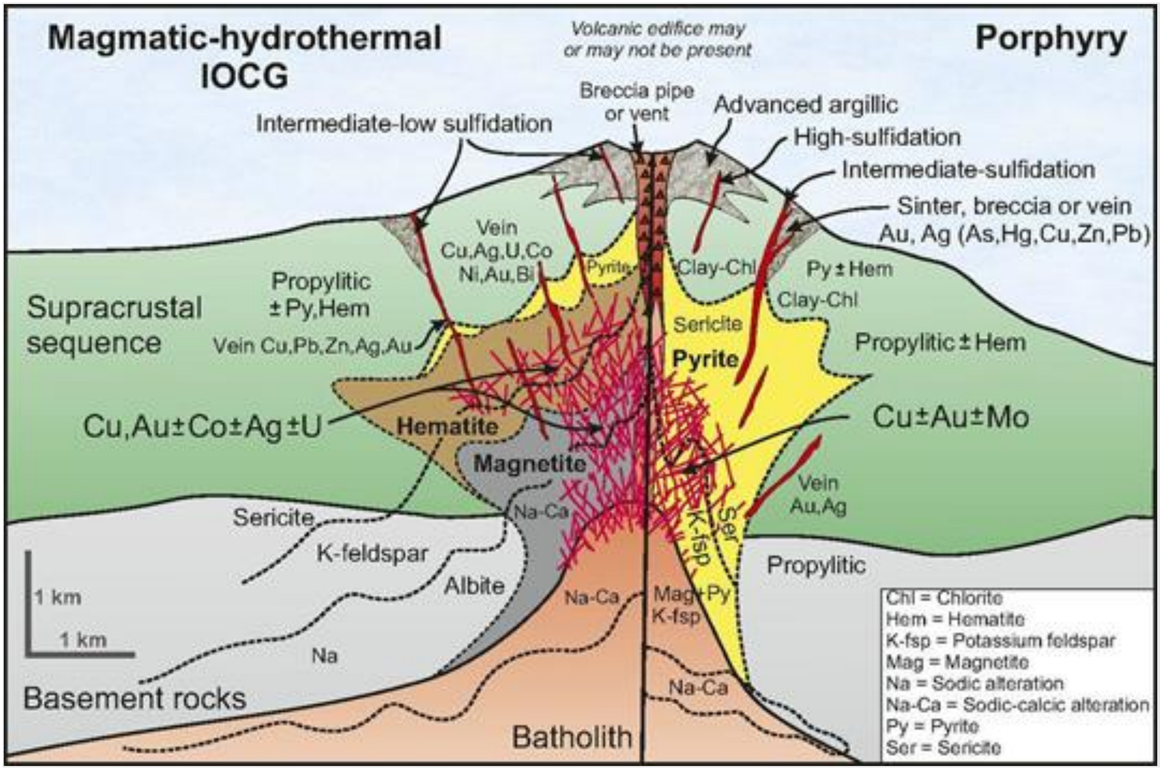
IOCG deposits, comprehend a geological diverse group of deposits with an empirical definition based on geochemical features with copper, iron and with or without gold, as main economic metals.

These deposits display intense hydrothermal alteration characterized by sodic-calcic, potassic, sericitic, and skarn replacement when carbonate rocks are present. Mineralization content abundant hematite and magnetite as the main iron oxides, commonly associated with pyrite and chalcopyrite and to a lesser extend bornite, chalcocite, pyrrhotite and sphalerite. Barite and anhydrite occur in some deposits. Hematite dominated assemblages in the form of specularite, commonly have higher sulphide content than magnetite ores, and may be replaced by magnetite (known as mushketovite).

Structural and/or stratigraphic controls are pronounced, with deposits characteristically localized on fault bends and intersections, shear zones, rock contacts, or breccia bodies, or as lithology-controlled replacements.

Global examples include Olympic Dam in the Gawler Craton in Australia, Salobo and Sossego in Carajas District in Brazil, Candelaria, Punta del Cobre and Santo Domingo in Chile, and Mina Justa in Peru along the Andean Jurassic-Cretaceous belt. Figure 8-1 shows a typical schematic of an IOCG deposit.

Figure 8-1: Typical Schematic Section, IOCG Deposit



Source: Figure from Richards and Mumin, 2013.

8.2 Iron Oxide – Copper – Gold (IOCG) Deposits

IOCG deposits typically present the following characteristics, summarized from Williams et al., 2005 and Barton, 2014:

- Exhibit elevated contents of Cu, Au, REE, P, U, Ag and Co. Unusual minor element suite, includes combinations of fluorine, nickel, arsenic, molybdenum and barium.
- Wide range of host rock settings, the most common of which include plutonic granitoids, volcanic and metavolcanic rocks, volcaniclastic and sedimentary rocks, siliclastic–metabasic rocks and their metamorphic equivalents.
- Structural and stratigraphic controls are important; deposits frequently are located on fault bends and intersections, shear zones, rock contacts, breccia bodies; they can also occur as lithological-controlled replacements.
- Space–time association with Fe-oxide apatite-bearing (Kiruna type) iron oxide ores and with plutonic complexes.
- Occur in crustal settings that commonly display extensive and pervasive alkali metasomatism.
- Wide range of ages from Archean to Jurassic–Cretaceous.

- Host rocks may be similar in age to the mineralization or there may be a significant age gap such that host rocks pre-date mineralization and ore formation relates to a different geological event.
- Mineralization occurs over a wide depth range from close to the surface to nearly 10 km deep.
- Intense hydrothermal alteration is common. Typical associations contain Potassic, Sodic-Calcic, Chloritic and Carbonate types of hydrothermal alteration. Where present, sodic and sodic–calcic alteration is more extensive, distal from the ore, and occurred early in time compared with potassic–iron alteration events which are closer to the mineralization and later in time.
- When iron mineralization is dominantly magnetite; biotite, K-feldspar and amphibole are the dominant alteration minerals. When iron mineralization is dominantly hematite; sericite, chlorite and carbonates are the dominant alteration minerals.

8.3 Mantoverde Deposit

Features of the Mantoverde deposit that support classification as an IOCG deposit include:

- Strong structural controls: hosted in a subsidiary structure of the Atacama Fault System and a strong regional tectonic control by northwest to north–northwest-trending brittle structures.
- Copper ± gold as the main elements of economic interest: abundance of iron oxides associated with copper minerals and a lower proportion of gold; chalcopyrite-rich and hematite-cemented breccias and veins. Iron and cobalt are also relevant associated with hematite-magnetite ore and pyrite, respectively.
- Hydrothermal mineralization styles: hypogene zone formed mainly by chalcopyrite, pyrite and minor amounts of chalcocite, covellite and bornite in specularite and magnetite breccias associated with the Mantoverde fault and/or second order structures, distributed in three main bodies: Mantoverde (MV), Mantoruso (MR) and Celso (CE).
- Hydrothermal alteration characterized by the presence of k-feldspar and chlorite associated with the mineralization.
- Space–time association with batholiths: The deposit is hosted by Middle to Upper Jurassic andesites and Lower Cretaceous dioritic to quartz dioritic plutons.
- Space–time association with Fe-oxide apatite-bearing (Kiruna type) iron oxide bodies: district-scale association with bodies of metasomatic magnetite and magnetite–fluoroapatite–pyrite.

8.4 Comment On Section 8

Exploration programs are based on copper-rich IOCG deposit models, taking into account the structural controls at Mantoverde. The QP considers this approach is considered appropriate.

9 EXPLORATION

9.1 Geological Mapping

Field mapping activities have been carried out on the property since 1977. EMMB completed detailed surface maps from 1977 to 1982 that described lithology, alteration, structure and mineralogy. During 2012 and 2013, AAC completed a 1:10,000, 1:5,000 and 1:2,000 mapping program focused on identification of lithologies, alteration, mineralization, and structures at the Property and the district. Between 2015-2016, Mantoverde staff compiled all available geoscientific data in support of exploration, including geological, geochemical and geophysical surveys and structural mapping. More recently, in 2017 geological mapping was carried out at a scale of 1:5000 for all mining properties around the Mantoverde deposit. The detailed mapping defined sectors of interest (targets) where north-south structures intersect with northeast structures and where geology shows evidence of surface mineralization.

During 2023 and in the first half of 2024, Capstone completed a detailed 1:2,000 geological and structural mapping across east west transects in the northern portion of the Property in an area 6 by 8 km. This mapping also includes generalized cross section interpretations and a 3D structural model of the district.

9.2 Geochemistry

Geochemical sampling has been undertaken since the 1970s. Rock chip, grab, soil and channel sampling delineated copper, gold and silver anomalies, used to provide additional vectors to mineralization. Over 2017 and 2018, Mantos Copper completed a geochemical sampling of drainage sediments in an area of 7 x 5 km, to the north and northeast of the Mantoverde area. A total of 787 samples were collected and assayed using a multi-element aqua regia method for 33 elements.

More recently, between 2023 and first half of 2024 Capstone completed a detailed rock chip sample program. The program collected 946 samples along east-west transects in the northern portion of the property. The sample spacing was 50 m. Duplicate and replicates were inserted as part of QA/QC program, and the samples were assayed using four acid digestion and multi-trace element ICP mass spectrometry. Results supported the identification of new multi-element anomalies and confirmed exploration targets previously identified.

9.3 Geophysics Surveys

Several ground and airborne geophysical surveys have been carried out over the Mantoverde area. During the 1990s and 2000s, various methods, including electrical (induced polarization and resistivity), electromagnetic audio-magnetotellurics (AMT), gravity and magnetic surveys were done by different specialized contractors, which includes Quantec, Geo-Exploraciones S.A., Geodata Ltda., World Geoscience Corporation (WGC) and Fugro Airborne Surveys (Fugro).The induced polarization/resistivity and AMT surveys identified areas of disseminated sulphides in veins and zones of moderate to strong resistivity contrasts. Other methods, such magnetics, supported structural and lithological interpretations that were used for exploration vectoring.

During 2017, an airborne ZTEM and magnetic survey was carried out along the Mantoverde area, (10 x 22 km) focusing in the areas of major geological interest based on the geological mapping and geochemistry sampling. The survey was carried out using the ZTEM methodology and helicopter flight lines separated by 500 m and 250 m. The results of this geophysical survey provided useful data at different depths depending on the penetration of the applied Hz, which ranged from 600 Hz (360 m) to 19 Hz (2,000 m). The geophysical results reflect the major NW and NE structures that are present around the area of interest and are believed to be controlling the occurrence of copper mineralization.

Recently, during July and August 2023 Capstone completed an orientation ground survey of induced polarization in the northern portion of the Mantoverde area. A total of 10 lines accounting for 33.7-line kilometers were completed. Additionally, 32.3-line kilometers of the historic induced polarization survey covering the Mantoverde deposit have been reprocessed. The chargeable and resistivity anomalies were identified to be generally associated with iron oxides and sulphide mineralization within Mantoverde area.

9.4 Petrology, Mineralogy, and Research Studies

A number of research studies were completed in support of determination of deposit mineralogy and mineralization paragenesis, as well as papers and presentations describing the deposit genesis and setting. Three bachelor degrees theses were completed on the deposit, and one PhD thesis. A selection of these works, in chronological order, includes:

- Diaz, M., 2000: Geologic Resource Estimation for Guamanga Prospect (Montecristo – Franko sectors). Chañaral Province. III Region, Chile. Thesis for Geology Degree. Geology Department. Engineering and Geological Science School. Católica del Norte University. Antofagasta.
- Astudillo, C., 2001: Distribution and Characterization of Mantoverde Carbonates, Chañaral Province. III Region, Chile. Thesis for Geology Degree. Geology Department. Engineering and Geological Science School. Católica del Norte University. Antofagasta.
- Lopez, E., 2002: Petrographic Characterization and Study of the Hydrothermal Alteration and Mineralization of the Mantoverde District, Chañaral Province. III Region, Chile. Thesis for Geology Degree. Geology Department. Engineering and Geological Science School. Católica del Norte University. Antofagasta.
- Benavides, J., 2006: Iron oxide-copper-gold deposits of the Mantoverde area, northern Chile: Ore genesis and exploration guidelines: Unpublished Ph.D. thesis, Kingston, Ontario, Queen’s University, 355 p.
- Rieger, A.A., Marschik, R., Díaz, M., Hölzl, S., Chiaradia, M., Akker, B., & Spangenberg, J.E., 2010: The Hypogene Iron Oxide Copper-Gold Mineralization in the Mantoverde District, Northern Chile. Economic Geology, 105, 1271-1299.
- Johansson C, Barra F, Reich M, Deditius AP, Simon AC, Rojas P, 2017: The Co-Ni signature of sulphide minerals from the Mantoverde IOCG deposit, northern Chile. Goldschmidt Abstracts, 1871.
- Childress, T.M., Simon, A.C., Reich, M., Barra, F., Arce, M., Lundstrom, C.C., & Bindeman, I.N. 2020. Formation of the Mantoverde iron oxide-copper-gold (IOCG) deposit, Chile: insights from Fe and O stable isotopes and comparisons with iron oxide-apatite (IOA) deposits. Mineralium Deposita, 55, 1489-1504.

9.5 Exploration Potential

Exploration activities along the Mantoverde structural system has evolved with the deeper understanding of the structural geology of the district and the deposit. Main controls for the mineralization are the intersection of the north-south, north-west and north-east structures. A more recent re-interpretation based on new drilling information led to a reassessment of the current exploration potential of the Property.

Mantoverde exploration potential can be subdivided in near mine and district potential. The near mine exploration potential includes Santa Clara Corridor and other areas with potential to expand the current mineral resource inside and in the vicinity of the Mantoverde mine. The district potential is mostly to the north of Mantoverde deposit and goes for 10 km along the Atacama Fault System and its subsidiary structures where Capstone identified various prospects within the Property (Figure 9-1).

9.5.1 Prospects/Targets

9.5.1.1 Near Mine – Santa Clara Corridor

The Santa Clara Corridor is a NE trending area of 2 km wide, located at the northern portion of the Mantoverde deposit near the Celso and Mantoruso pit. Along this corridor the intersection of north-south with north-east structures are forming hydrothermal breccias with iron oxides and sulphide mineralization. The area has been partially tested by drilling and mineralization is open in various directions. Futures exploration programs will aim to identify the mineralized connection between the Santa Clara Corridor and the Mantoverde Fault.

9.5.1.2 District - Paloma

The Paloma prospect is located 10 km north of Mantoverde deposit, along the main Atacama Fault System and their subsidiaries. The area has various small and artisanal workings with outcropping copper oxide mineralization. The prospect was drilled by AACH between 1999 and 2004 and later in 2014. The mineralization identified consist of magnetite-pyrite-chalcopyrite hydrothermal breccias with subordinate specular hematite hosted in volcanic andesites. The geophysical signatures associated with the prospect correspond to a magnetic high partially coincident with medium to high chargeability and lower resistivity anomaly.

9.5.1.3 District – Animas

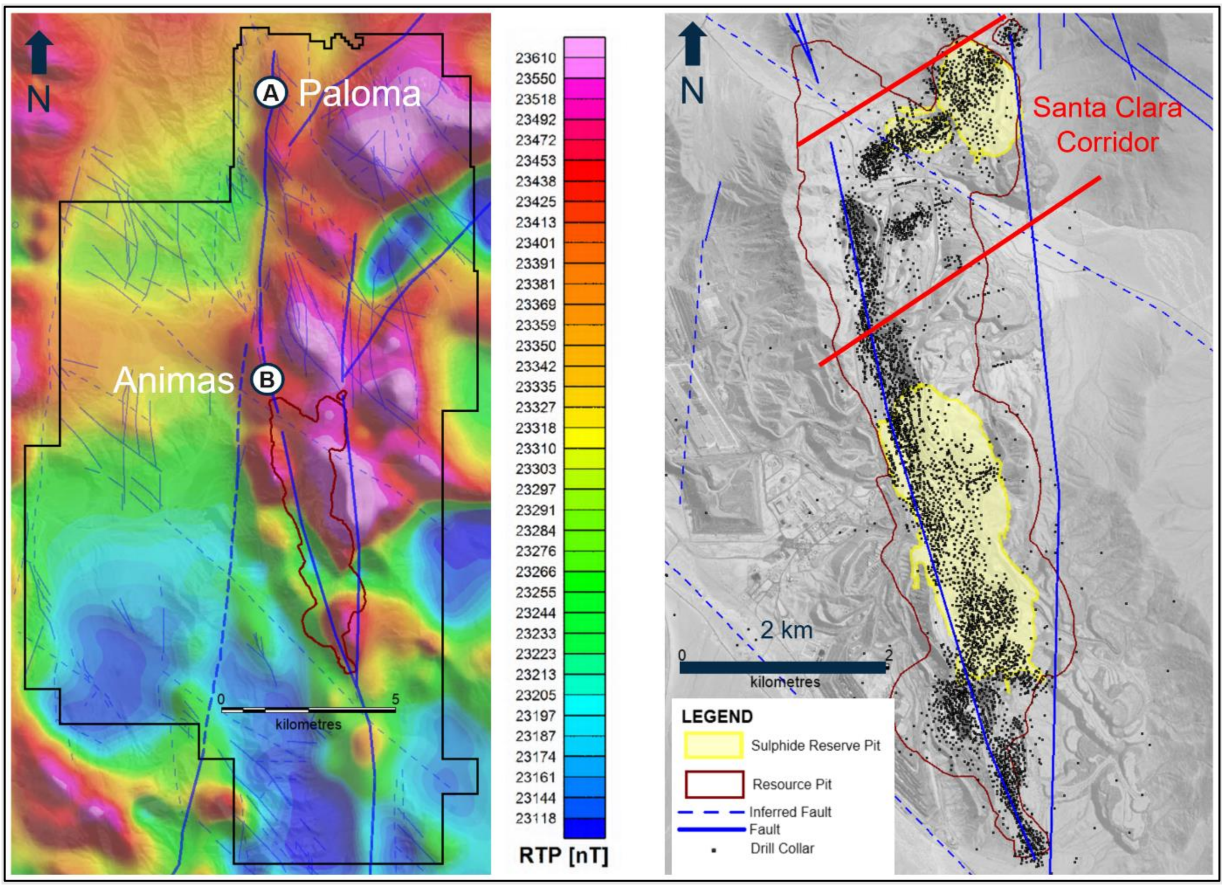
The Animas prospect is located 1 km north of Mantoverde deposit. The prospect has been partially drilled by Mantos Copper. The mineralization is characterized by calcite-specular hematite rich hydrothermal breccias with coarse grained chalcopyrite. The mineralized area is dipping to the east and is currently open along strike. The area coincides with a medium magnetic high and a weak chargeable and resistive anomaly.

9.5.1.4 District – Other Prospects

Various other early-stage prospects have been identified in the northern portion of the Mantoverde District, between Mantoverde Mine and El Salado town, along the Atacama Fault System and their subsidiaries. The prospects typically have outcropping oxide mineralization and were identified using detailed geological and structural mapping, geochemistry and different geophysical methods.

Left side of Figure 9-2 shows the airborne magnetics RTP and the right side of Figure 9-2 shows the location of the Santa Clara Corridor and its relationship with the deposit.

Figure 9-1: Airborne Magnetics RTP & Location of The Santa Clara Corridor



Source: Capstone, 2024.

10 DRILLING

10.1 Introduction

From 1989 to 1 June 2024, a total of 926,570 m has been drilled. The majority (674,881 m) were drilled using the reverse circulation (RC) technique and the remainder (251,689 m) were cored DDH.

Drilling is summarized in Table 10-1 by operator. Drill collar locations are shown in Table 10-2: Drilling Campaigns Summary – Sulphide Target Drilling

Company	Year	RC Holes	Metres (m)	DDH Holes	Metres (m)	Total Metres (m)
Anglo American	2000	2	180	6	2,724	2,904
	2001	9	3,518	18	10,106	13,624
	2007	27	8,574	32	13,401	21,975
	2008	36	11,632	69	26,427	38,059
	2010	43	13,158	33	13,741	26,899
	2011	5	1,720	18	4,545	6,265
	2012	0	0	1	601	601
	2014	1	580	95	29,860	30,440
	2015	0	0	16	8,587	8,587
Mantos Copper	2016	0	0	113	37,772	37,772
	2017	0	0	0	0	0
	2018	0	0	15	6,990	6,990
Total	**-**	**123**	**39,362**	**416**	**154,754**	**194,116**

Figure 10-1, Figure 10-2, Figure 10-3 and Figure 10-4 presents a subset of the total drilling data that supports the hypogene mineralization model (sulphides).

10.2 Historical Drill Data

10.2.1 Mantos Blancos–Anglo American (1988–2014)

AAC began exploration activities during 1988 in the area now occupied by the Mantoverde Norte pit.

The down the hole hammer (DTH) method was used only to a maximum depth of 60 m. No DTH drilling is used in the construction of the block model and no DTH data is used to support the Mineral Resource Estimate.

All drill holes were drilled with initial angles ranging between -50° and 90°. RC holes were drilled at 5½“ diameter and core holes were HQ size.

Drilling identified hypogene sulphide mineralization at depth. Hence, during 2000 and 2001 drill holes were drilled specifically to test for hypogene mineralization. During 2000, two RC drill holes (180 m) and six DDH drill holes (2,724 m) were completed; and during 2001 nine RC holes (3,518 m) and 18 DDH holes (10,106 m) were drilled.

Several exploration campaigns for sulphide mineralization were carried out between 2007 and 2014, supported by findings from infill drilling campaigns during mining operations (see Table 10-1).

10.2.2 Enami (1999)

During 1999 seven RC (2,127 m) and seven DDH (1,122 m) drill holes totaling 3,249 m were drilled in the Laura-Laurita sector. RC holes were drilled at 114.3 mm diameter. Core holes were HQ (63.5 mm core diameter).

10.2.3 Mantos Copper (2015-2021)

The Mantos Copper drilling program includes all data collected since Mantos Copper acquired the project in September 2015. Mantos Copper has completed a total of 370 RC drill holes (60,500 m) and 132 DDH (45,402 m), totalling 105,902 m (see Table 10-1, years 2016-2020).

For DDH drill holes the usual diameter is HQ, although occasionally PQ (85 mm) was used to obtain metallurgical samples and NQ (47.6 mm) was used to solve operational problems or to deepen holes beyond the original planned depth. For RC holes, the normal diameter is 114.3 mm.

Drilling companies acting as contractors during the hypogene drilling programs include Geoperaciones S.A., Terraservice S.A. and Mineral Drilling S.p.A. Equipment used includes a Schramm T685WS drill rig for RC drilling, and Sandvik DE710 and Atlas Copco CT20 drill rigs for DDH.

10.2.4 Capstone (2022-2023)

The Capstone drilling information includes all data collected since Capstone acquired Mantoverde in March 2022. Capstone completed a total of 211 RC drill holes (31,220 m) and 2 DDH (270 m), totalling 31,490 m (see Table 10-1, years 2022-2024).

The drilling information comes primarily from the annual infill drilling program for copper oxides.

Table 10-1: Drilling Campaigns Summary

Company	Year	RC Holes	Metres (m)	DDH Holes	Metres (m)	Total Metres (m)
Mantos Blancos Anglo American	1989	47	10,547	20	4,599	15,147
	1990	25	4,176	10	1,901	6,077
	1991	14	896	71	8,156	9,052
	1992	1	29	83	8,312	8,341
	1993	14	2,471	0	0	2,471
	1994	0	0	21	2,353	2,353
	1996	46	7,475	30	4,248	11,722

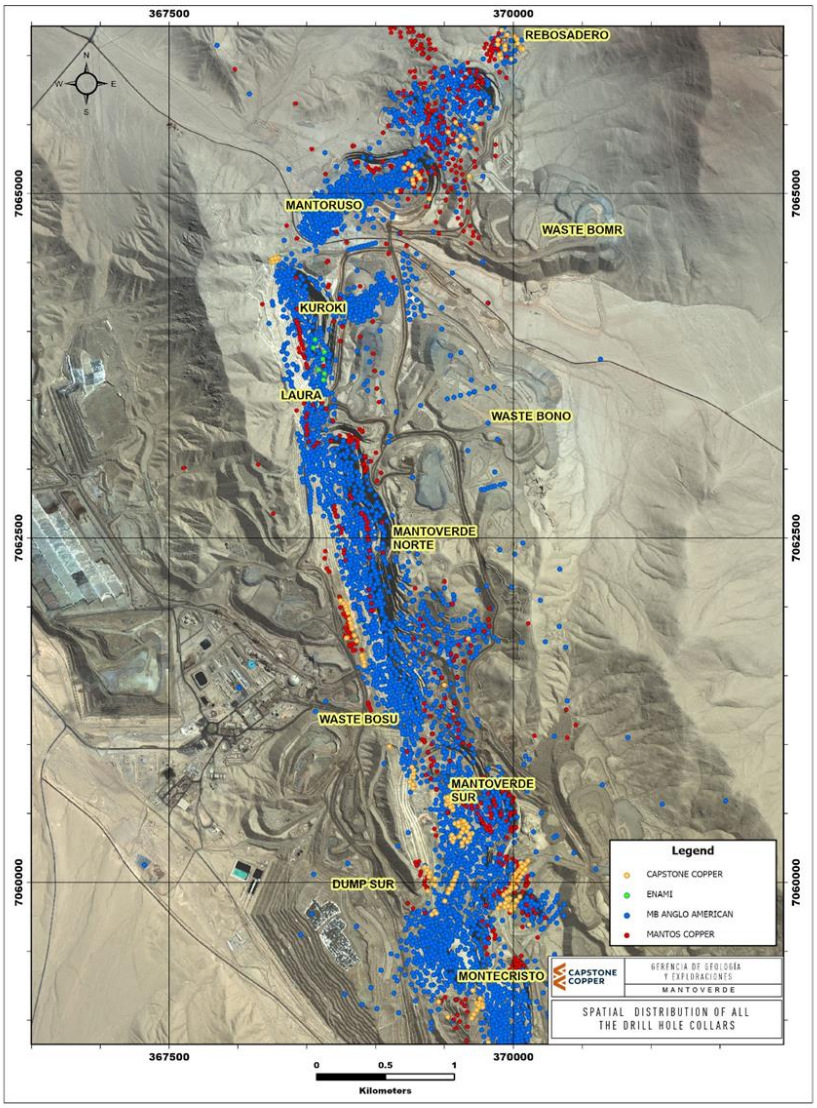
Company	Year	RC Holes	Metres (m)	DDH Holes	Metres (m)	Total Metres (m)
	1997	64	8,824	17	2,072	10,896
	1998	99	19,190	16	3,388	22,578
Enami	1999	7	2,127	7	1,122	3,249
Anglo American	1999	122	23,827	11	5,336	29,163
	2000	164	29,634	26	7,957	37,591
	2001	261	50,104	31	15,711	65,815
	2002	253	43,262	7	1,015	44,277
	2003	325	52,729	0	0	52,729
	2004	291	49,040	0	0	49,040
	2005	143	26,556	0	0	26,556
	2006	102	18,678	3	253	18,931
	2007	94	20,030	32	13,350	33,380
	2008	87	23,229	76	27,428	50,656
	2009	102	17,472	6	1,991	19,464
	2010	138	30,936	33	13,956	44,892
	2011	143	25,574	29	5,893	31,467
	2012	95	18,999	35	12,680	31,679
	2013	157	25,200	58	18,363	43,563
	2014	209	36,935	105	34,075	71,010
	2015	162	27,991	16	8,413	36,403
Mantos Copper	2016	127	27,146	113	37,772	64,918
	2017	84	12,046	0	0	12,046
	2018	51	5,862	15	6,990	12,852
	2019	19	1,486	1	120	1,606
	2020	4	1,174	0	0	1,174
	2021	85	12,786	3	520	13,306
Capstone Copper	2022	141	22,026	0	0	22,026
	2023	66	8,436	9	2,095	10,531
	2024 (Jun 1stMay)	43	7,988	15	1,620	9,608
Total		**3,785**	**674,881**	**899**	**251,689**	**926,570**

Table 10-2: Drilling Campaigns Summary – Sulphide Target Drilling

Company	Year	RC Holes	Metres (m)	DDH Holes	Metres (m)	Total Metres (m)
Anglo American	2000	2	180	6	2,724	2,904
	2001	9	3,518	18	10,106	13,624
	2007	27	8,574	32	13,401	21,975
	2008	36	11,632	69	26,427	38,059
	2010	43	13,158	33	13,741	26,899
	2011	5	1,720	18	4,545	6,265
	2012	0	0	1	601	601

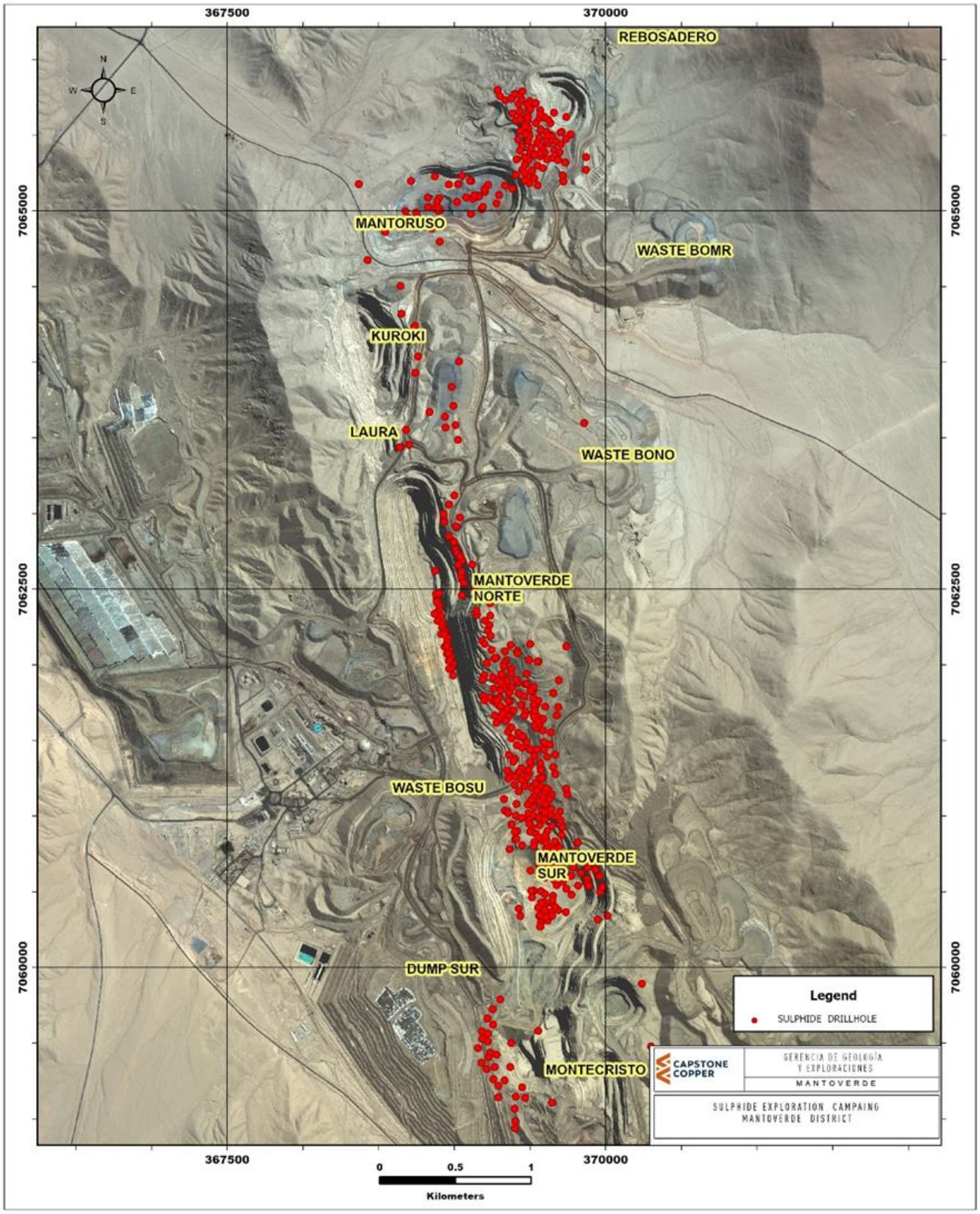
Company	Year	RC Holes	Metres (m)	DDH Holes	Metres (m)	Total Metres (m)
	2014	1	580	95	29,860	30,440
	2015	0	0	16	8,587	8,587
Mantos Copper	2016	0	0	113	37,772	37,772
	2017	0	0	0	0	0
	2018	0	0	15	6,990	6,990
Total	**-**	**123**	**39,362**	**416**	**154,754**	**194,116**

Figure 10-1: Drill Hole Collar Locations



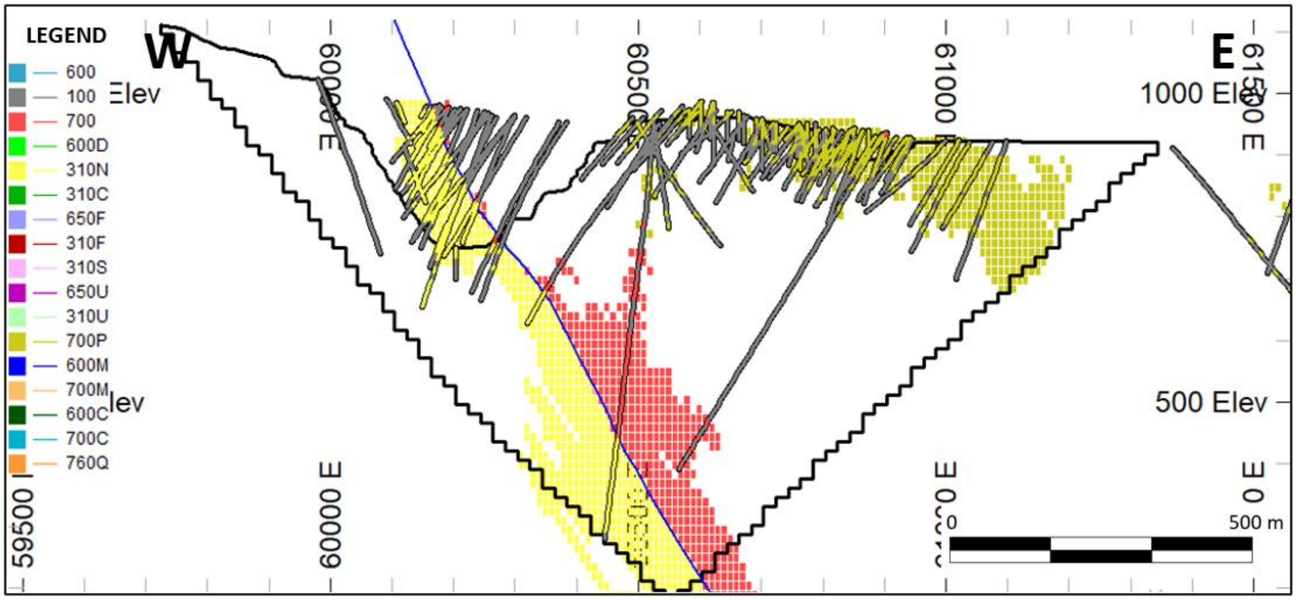
Source: Capstone, 2024.

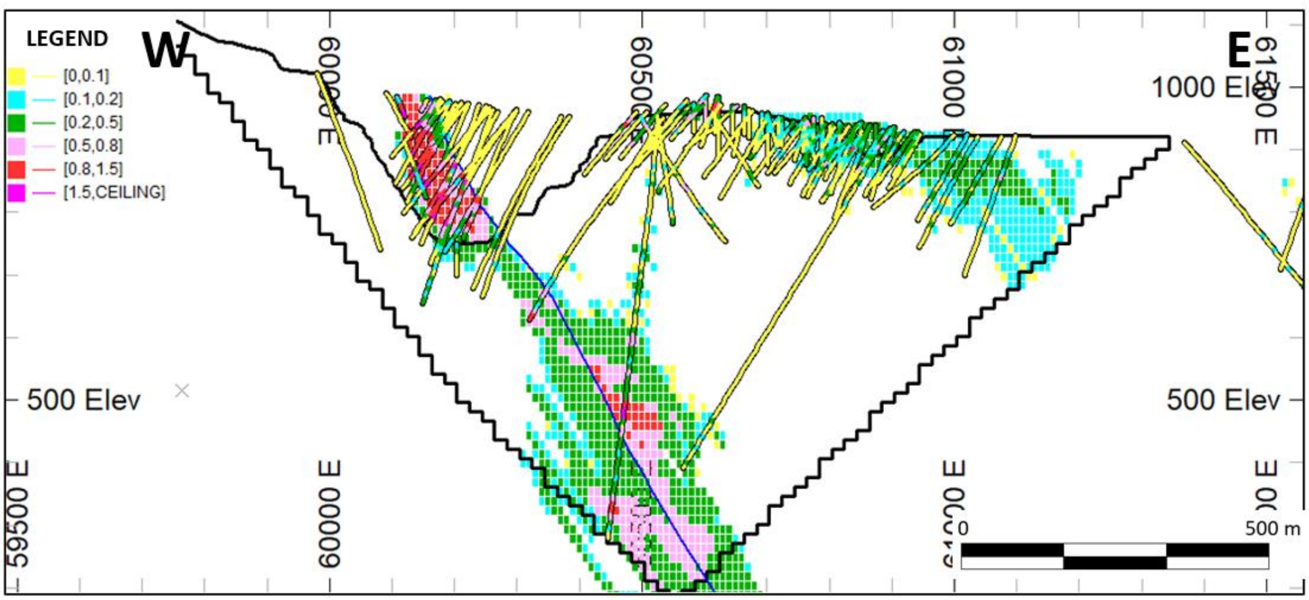
Figure 10-2: Drill Collar Location MVDP



Source: Capstone, 2024.

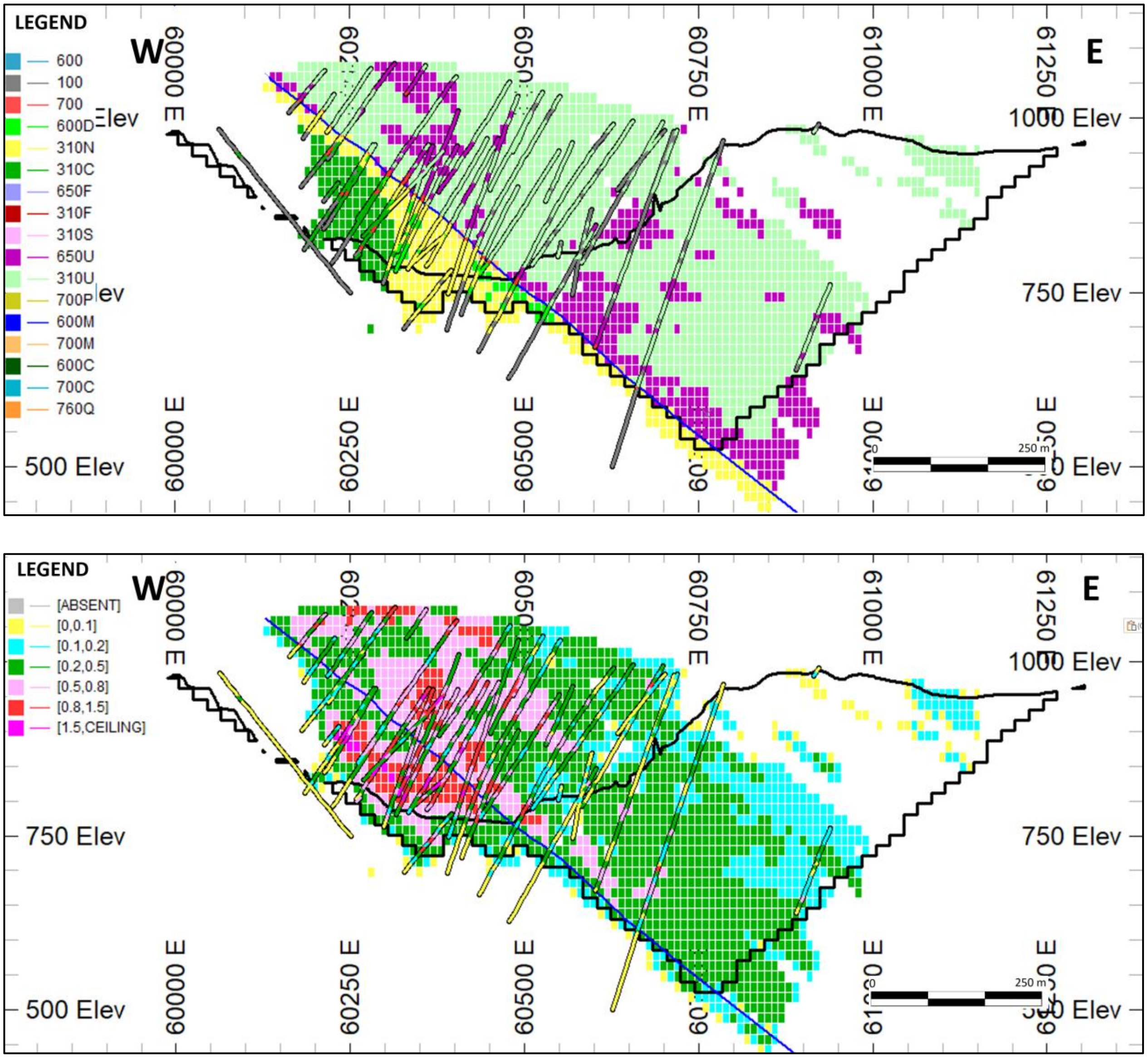
Figure 10-3: Section 102,390 N showing Block Model and Composites





Source: Capstone, 2024. Note: Top: Estimation Unit (EU) Bottom: TCu Topography corresponds to the Resource Pit on June 1, 2024. W=West, E=East.

Figure 10-4: Section 98,320N showing Block Model and Drill Holes



Source: Capstone, 2024. Note: Top: Estimation Unit, Bottom: TCu, Topography corresponds to the Resource Pit on 1 June 2024. W=West, E=East.

10.3 Logging Procedures

10.3.1 Historical Logging

No record of the logging procedures used is available for holes drilled by Enami in 1999; however, these drill holes are typically located in mined-out areas.

During the AAC drilling campaigns, logging procedures followed their corporate standards. Paper sheets were used to record the main geological variables used for the geological modelling.

Digital drill hole logging using a laptop computer began within the 2007 drilling campaign. Pre-defined legends and alphanumeric codes were used to record RC and DDH drill hole descriptions. Data recorded includes geological variables of lithology, structure (faults, fractures, fault angles with respect to the core axis), alteration (sodic-calcareous, potassic, silicification, chloritization and presence of magnetite, specularite, calcite), mineralization (iron oxides, copper oxides, copper sulphides, pyrite, style of mineralization) and oxidation zones (oxide, sulphide and transition). The data was exported directly to a corporate database managed using BDGEO (a local database system).

Mantos Copper administration, continued using the same geological criteria and logging standards developed by Anglo American. Logging was performed by external contractors using these standards, under the supervision of Mantos Copper personnel.

Geological logging at Mantoverde is carried out in its dedicated building on-site.

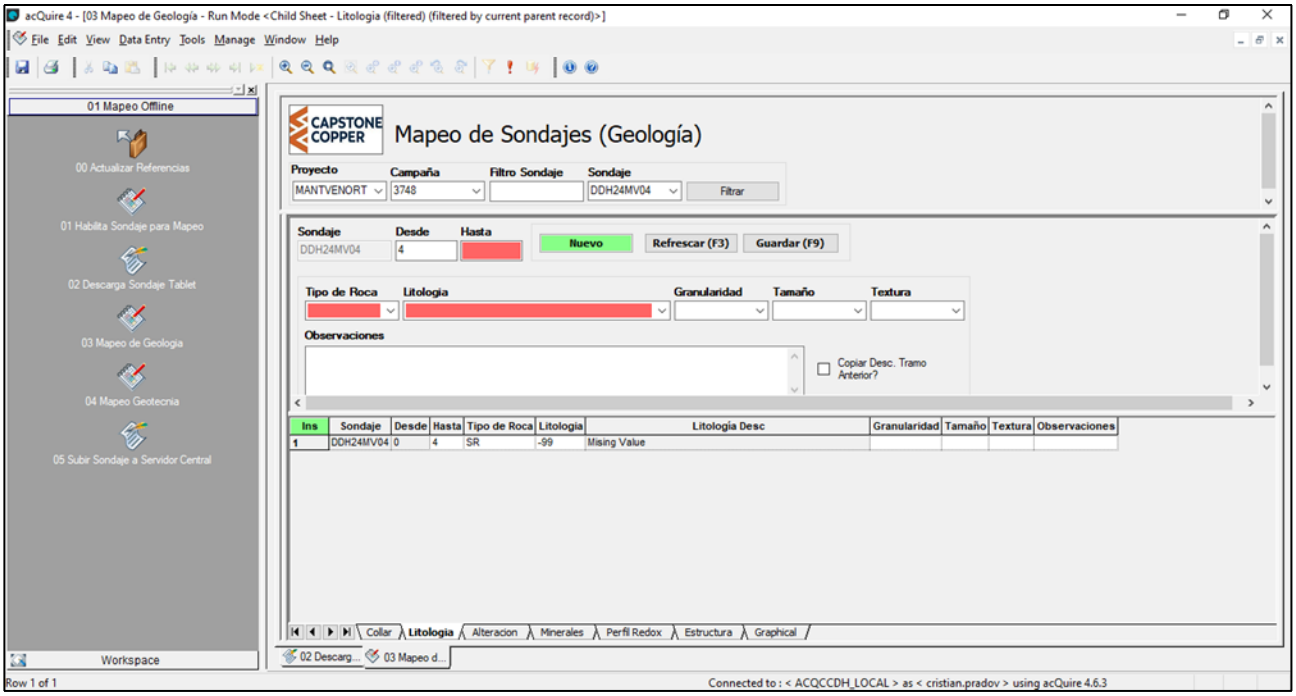
10.3.2 Capstone Logging

Capstone maintained the pre-existing standards and procedures for geological logging and migrated data management from BDGEO to acQuire.

RC drill cuttings and DDH cores are logged by recording the geological contacts in the Mantoverde logging shed. Geologists use the same format and codes to log cores and RC drill holes. The information is recorded digitally using portable field computers (Getac Notebook V110G3). Figure 10-5 shows a snapshot of a logging screen from acQuire.

Logging includes recording geological variables such as lithology, alteration intensity, mineralogy, occurrence types, structures and visual grade estimation. Geomechanical logging information collected includes weathering, alteration, rock quality designation (RQD), estimated strength, presence of water, fracture spacing, fracture opening, fracture frequency, fracture shape, roughness, fill thickness, fill type, fracture condition, rock mass ratio (RMR), geological strength index (GSI), fault angle and fault fill.

Figure 10-5: Example of Notebook Getac V110G3 Logging Screen (acQuire)



Source: Capstone, 2024.

10.4 Drill Hole Sample Recoveries

10.4.1 Historical Recoveries

Drill hole recovery information is not available for the Enami period. During the Mantos Blancos-Anglo American and Mantos Copper periods drill hole recovery was determined by calculating the ratio of actual drill hole footage to core footage as a percentage. Recovery in RC drilling for each 2 m sample interval was calculated by comparing the real weight to the estimated weight, which was calculated using the drill hole diameter (mainly 5½"), the length of the interval and the sample density, which ranged from 2.49 g/cm^3 to 3.08 g/cm^3. Recoveries typically ranged from 85% to 95%.

10.4.2 Capstone Recovery

RC recoveries are calculated using the same methodologies employed by Mantos Blancos-Anglo American and Mantos Copper. Core recoveries were measured for each sample interval at the logging facility by trained personnel. Recoveries were typically greater than 90% due to the good quality of the rock mass. Recovery percentages are set by contract with the drilling company; recoveries out of the expected ranges are penalized.

10.5 Drill Hole Collar Surveys

All historical drill collars at Mantoverde were surveyed. Prior to November 2014, collar coordinates were picked up with a Trimble S6 total station instrument. A Trimble R4 GPS with an error of ±4 mm has been used since November 2014.

10.6 Downhole Surveys

Historical and current downhole deviation surveys were performed by the drilling contractors using methods and instruments that are unaffected by magnetic rocks. Historically, measurements were taken every 10 m downhole and every 50 m topside.

From 2000 through 2017, measurements were taken by Comprobe Ltd. using a Humphrey digital gyroscope. Since 2018, Mantoverde has used a Fiber Optic Gyroscope (FOG). Records are submitted digitally and in hard copy and are reviewed and validated by Mantoverde personnel before being uploaded to the database. Original certificates are archived in folders.

As part of the current quality assurance/quality control (QA/QC) program, 5% of the drill holes are checked and measurements are taken from a standard drill hole to calibrate the FOG equipment. Calibration is also performed when a new downhole survey instrument is acquired. Prior to the start of the 2016 drilling campaign, the deviation of a test hole was measured using two different gyroscopes (Gyro-197 and Gyro Reflex).

10.7 Drill Hole Bearing Preference

Strong structural controls by structures such as the FMV and its subsidiary structures cause the mineralized zones to be tabular in shape. To intercept true widths, drill holes are usually directed orthogonal to the mineralized zone or to the structures controlling mineralization.

Depending on the dip of the drill hole and the dip of the mineralization, drill hole intercept widths are usually greater than the true thickness of the mineralized deposit.

10.8 Comments On Section 10

- Drilling programs have been executed in alignment with standard industry practices over the years, maintaining consistent protocols across all programs conducted by both previous and current owners.
- The spacing and orientation of the drill holes are deemed suitable for this deposit, taking into account its geology, geometry and mineralization style. Collar and downhole survey work and results are acceptable.
- Logging procedures are well designed and implemented.
- Collar positions conform well to topography surfaces.
- The drilling methods employed are acceptable, adhering to industry-standard practices, and are appropriate for the mineralization style, making them suitable for Mineral Resource estimation.

11 SAMPLE PREPARATION, ANALYSES, AND ASSURANCE

11.1 Sampling Methods

Sampling methodologies, preparation and assay have remained the same across the ownership of Anglo American, Mantos Copper and Capstone, facilitating level comparison of results.

11.1.1 Diamond Drilling (DDH)

Diamond drilling is the primary source of sulphide zone information used in the Mantoverde resource model. All DDH sampling at Mantoverde is conducted by contractors under the technical direction of Capstone.

Core is placed into wooden boxes (Figure 11-1) with wooden run blocks inserted at appropriate distances; the boxes are closed using lids. The drill hole identifier and interval meterage in the box are written on the box lid. Core boxes are delivered by the drilling contractor to the geology sampling station. Core is photographed and core recovery and RQD are recorded. Any induced fractures in the core are noted.

Figure 11-1: Example of Mineralized Core

Source: Capstone, 2024.

The sampling interval is fixed and typically 2 m; the cutting plane is drawn by the geologist with a line parallel to the core axis. The core cutting process uses a hydraulic splitter for oxide and sulphide material (Figure 11-2). This is acceptable for the mineralization found in the deposit. For poorly consolidated material, small sampling shovels are used.

One half of the core is placed back in the core box, and the other half is bagged into a plastic sample bag. After each 2 m sampling interval is completed, a sample tag is attached to the bag and the bag is sealed. The entire sampling and sample identification process is carried out using bar codes.

every 20 m, a 20 cm length sample is taken for density and Geomechanical testing in the laboratory.

Figure 11-2: General View of The Sampling Area

Source: Capstone, 2024. Notes: Left, hydraulic splitter. Right, electric saw.

11.1.2 Reverse Circulation Drilling

The sampling interval is fixed and typically 2 m. All RC sampling at Mantoverde is conducted by contractors under the technical direction of Capstone.

Dry samples are collected at the drill rig, weighed and split in halves and quarters using a riffle splitter. A rotary wet splitter is used when extremely wet conditions exist and two smaller fractions are collected in porous sample bags at the drill rig, labelled and dried.

A sample of 15 kg to 20 kg representing 1/4 of the original sample is bagged and labelled for shipment to the chemical laboratory. A second sample is stored as a duplicate sample.

From the smaller samples, a sample of ½ kg is used for geological logging purposes and a representative sample of the rock cuttings from each sampling interval is placed in labelled chip trays. The samples are delivered by the drilling contractor to the geological sampling station. Drillers deliver the sample reject material to a central sample store.

11.1.3 Blast Hole Drilling

Mantoverde personnel design and implement the drilling and blasting using the Caterpillar MD6240-6380 and Atlas Copco DM50 drills with 9" and 105/8” tricone drill bits. Blast hole grids are defined according to the pit location, going from 5.5 m x 6.5 m in MVN to 9.1 m x 10.5 m in MV1.

Blast hole samples are taken in a tray that collects the material using a guillotine-type blade from the four gutter walls formed along a straight line that cuts the cone, totaling 16 kg. Sampled material is placed into a polyethylene bag which contains a sample barcode associated with the date, bench number, blast number and drill hole number. A sample submission form is completed to accompany the samples to the mine laboratory. Since 2023 the production database is managed using an acQuire™ database system.

Figure 11-3 shows an example of a blast hole rig setting out a blast pattern in the floor of the oxide open pit and also shows the blast hole cone being sampled.

Figure 11-3: Blast Hole Drilling and Sampling

Source: Capstone, 2024.

11.2 Density Determinations

A comprehensive program to enhance the existing density database was conducted during 2019 and included a total of 4,345 specific gravity (density) records. Density measurements were undertaken by Rock Test, an independent consultant, using the water displacement method. Samples were dried and wax coated prior to immersion. Figure 11-4 shows the equipment used in the non-destructive density testing. Figure shows the equipment used in the non-destructive density testing.

Density values are discussed in Section 14.12.

Figure 11-4: Density Measurement Equipment

Source: Capstone, 2024.

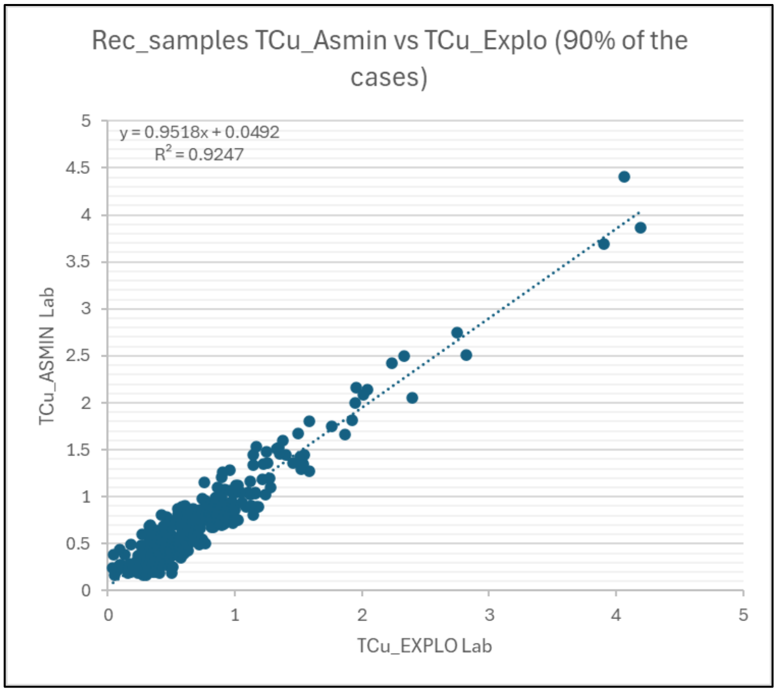
11.3 Analytical and Test Laboratories

Sample preparation and analysis was conducted by the GeoAssay Group, which is accredited under ISO 9001: 2000. GeoAssay is independent of Capstone and has provided external chemical lab services to Mantoverde since 2018.

11.3.1 Comparison of the Drill Hole Assays and Metallurgical Lab Assays

Capstone evaluated the difference between GeoAssay assays in the drill holes used in the block model versus those from the ASMIN laboratory supporting metallurgical test work. Between 2014 and 2017, 360 samples taken for sulphide metallurgical recovery tests were analyzed at both laboratories. Comparison of TCu results, shown in Figure 11-5, demonstrated that the datasets are not significantly different, with strong correlation at an R2 value of 0.9247. The QP agrees with this conclusion.

Figure 11-5: Comparison of Duplicate Samples Analyzed in ASMIN Lab vs Mantoverde Routine Exploration Lab GeoAssay



Source: Capstone, 2024.

11.4 Sample Preparation and Analysis

11.4.1 Sample Preparation

Sealed plastic bags labelled with bar codes containing chip or half-core samples are sent to the laboratory for sample preparation. Each sample shipment to the laboratory is accompanied by a detailed report describing the samples included. As part of the protocol when the samples are received the laboratory checks and verifies the reception.

Samples are weighed and dried at 105ºC. Core samples are crushed to 10 mesh (minus 2 mm) with a jaw crusher. Chip samples are screened to 10 mesh and oversize fractions are primary and secondary crushed.

The crushed material is reduced using a rotary divider through 24 increments to obtain a 750 g to 1,000 g fraction. A crushed (coarse) reject is taken, and the rejects are returned to Mantoverde each month.

The size fraction is pulverized to 95% minus 150 mesh in a LM-2 pulverizer to obtain a 200 g sub-sample that is sent to the laboratory for assaying.

11.4.2 Chemical Assay

The standard assay packages have included:

- 2000–2001: TCu (total copper), SCu (soluble copper) $CaCO_3$ and Au.
- 2001-2007: TCu, SCu, $CaCO_3$, Au, Fe, Co, and S.
- 2008 to date: SCu (soluble copper by citric acid), TCu, SCu, $CaCO_3$, Au, Fe, Co and S.

The general procedures for assaying are as follows:

1. Soluble Copper

- (1) 1 g of sample is dissolved in 25 ml of H_2SO_4 1.63v/v.
- (2) the solution is heated to the boiling point.
- (3) 50 ml of H_2O is added to cool the solution.
- (4) Soluble copper assay measured with atomic absorption.

2. Total Copper

- (1) First 1 g of sample is dissolved in 10 ml of HF, then after 30 min add 5 ml of HNO_3, 15 ml of HCL and finally 2ml of $HCLO_4$.
- (2) Heat the solution at 150ºC to first nitric steam and leave dry.
- (3) Add 10 ml of HCl and 20 ml of H_2O and heat to the boiling point.
- (4) When the solution has cooled, add 1 ml of Na_2SO_4 and water.
- (5) Shake vigorously with caution 10 times.
- (6) Total copper assay is performed with atomic absorption.

Total copper assay is conducted by atomic absorption spectroscopy (AAS) after acid digestion. The method has a detection limit of 0.001%TCu.

Soluble copper assay is conducted by AAS with a sulphuric acid digestion, with a detection limit of 0.001% SCu.

Gold assay is conducted using fire assay with an atomic absorption (AA) finish. The method has a detection limit of 0.01 g/t Au.

The sulphur and $CaCO_3$ analysis is conducted using LECO high-temperature combustion and infrared detection. Sulphur has a detection limit of 0.01%, and $CaCO_3$ has a detection limit of 0.01%.

The cobalt samples are treated with a mix of four acids and high temperature, followed by analysis using atomic absorption spectroscopy to determine element concentrations by comparing with known standards. The method has a detection limit of 0.5 ppm.

11.5 Quality Assurance and Quality Control

Quality Assurance (QA) is the system and set of procedures used to ensure the quality of sampling and assay results. Quality Control (QC) is the data used to check that the results of sample preparation and chemical analysis are adequate.

Capstone continued and enhanced the Quality Assurance and Quality Control (QA/QC) program originally implemented by Anglo American, which considers the insertion of:

- Coarse Duplicate: material weighing between 15 kg and 18 kg, twin of the original "A" sample and collected in the field (the B sample).
- Pulp Duplicates: Corresponds to the twin of the "A" pulp. Mantoverde accepts differences of less than 10% in 90% of the results.
- Certified Reference Materials (CRM): Corresponds to the control sample introduced in a blind manner for the laboratory in the sample batches. The six of the nine current CRMs were constructed and certified in 2018 by GeoAssay Group. These CRMs were prepared using mineralized material from Mantoverde. Four of them are certified for TCu, SCu, Carbonate content, while the remaining two are certified for TCu and gold. In 2018, three additional CRMs for cobalt were introduced. These CRMs were sourced directly from Ore Research & Exploration (OREAS 902, OREAS 907) and Geostats (GBM314-6).
- Blank: Material in which the presence of the elements to be monitored is confirmed to be under the detection limit. Initially this material was sourced from waste material from the Mantoverde pits. However, as the number of analyzed base elements increased, the blanks were switched to quartz to ensure low concentration of each element. There are two types:
    - Coarse Blanks: Material with the same granulometry as the routine samples, which follows the entire mechanical preparation process. They are inserted when generating the batch. These establish the presence of contamination during the mechanical preparation.
    - Analytical Blanks (BA): Material pulverized and inserted after mechanical preparation. These establish the presence of contamination during the chemical assay in the laboratory.

Until 2018, the QAQC for cobalt samples consisted of 5% pulp and coarse duplicates, pulp blanks, and coarse blanks analyzed in the same laboratories and batches as the other elements. During that same year, a reanalysis campaign of historical pulps was conducted to improve the interpretation of cobalt in the block model. Following this campaign, the QAQC was enhanced by incorporating commercial CRMs obtained from Oreas Research & Exploration and Geostat PTY LTD. Initially, the CRMs were inserted at a rate of 1%, which later increased to 2% of the samples analyzed, reaching the same insertion rate as the gold standards. The available QAQC for cobalt and gold show acceptable errors across all control samples.

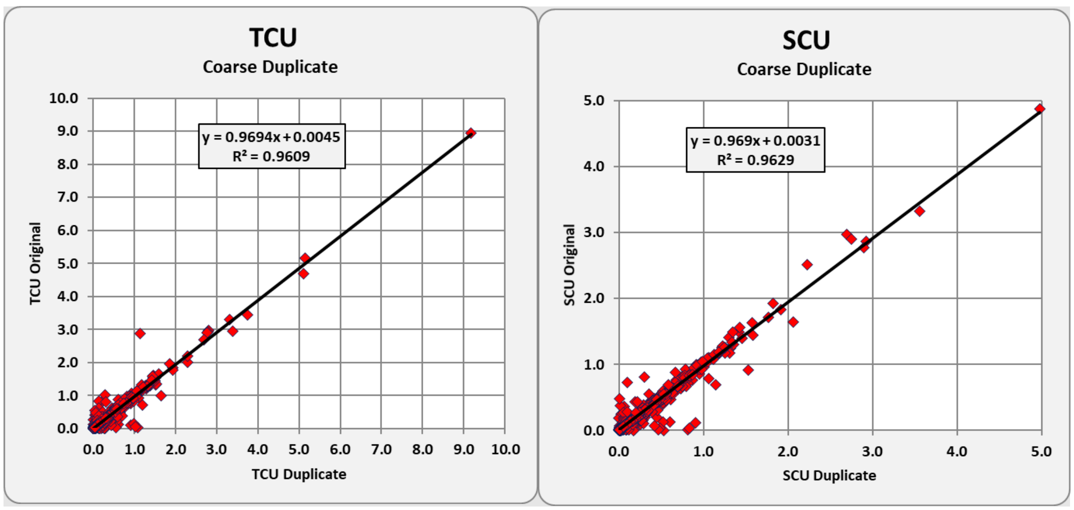
11.5.1 2012–2015

The QA/QC program included coarse and pulp duplicates, coarse and fine blanks, and CRMs. Each control is inserted at 5%.

Error rates for the duplicate samples are within acceptable limits for TCu and SCu, and there is no material evidence of contamination from the fine and coarse blank results. Figure 11-6 and Figure 11-7 show the coarse and pulp duplicate results for TCu and SCu for the period 2012-2015.

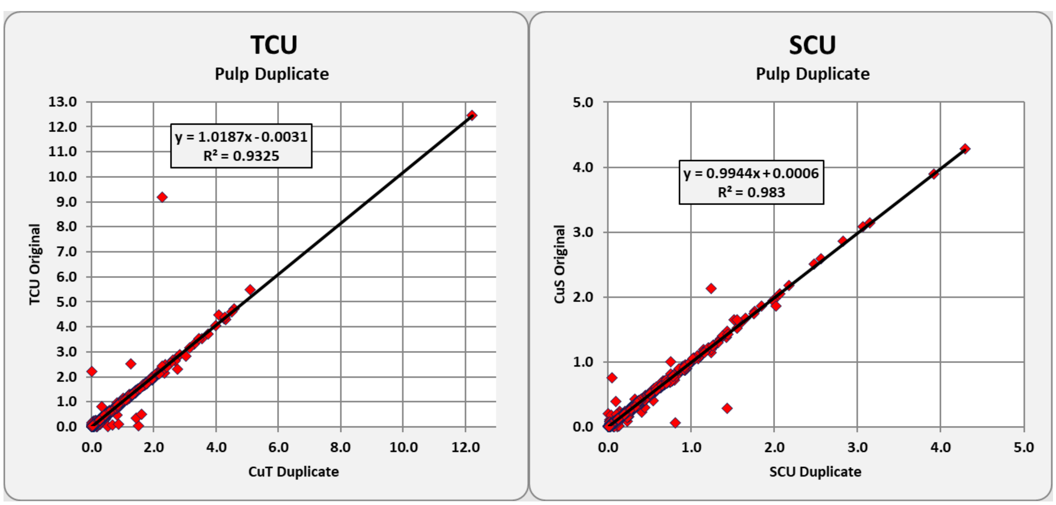
Twenty CRMs covering high, intermediate and low copper grades were used in the drill programs. Results indicate acceptable performance, with scarce results outside the 2 standard deviation acceptable ranges and no evidence of bias. Figure 11-8 through Figure 11-11 show the results for CMRs 7355 and 73576, coarse and fine blanks, respectively.

Figure 11-6: TCu and SCu Coarse Duplicates Results 2012-2016



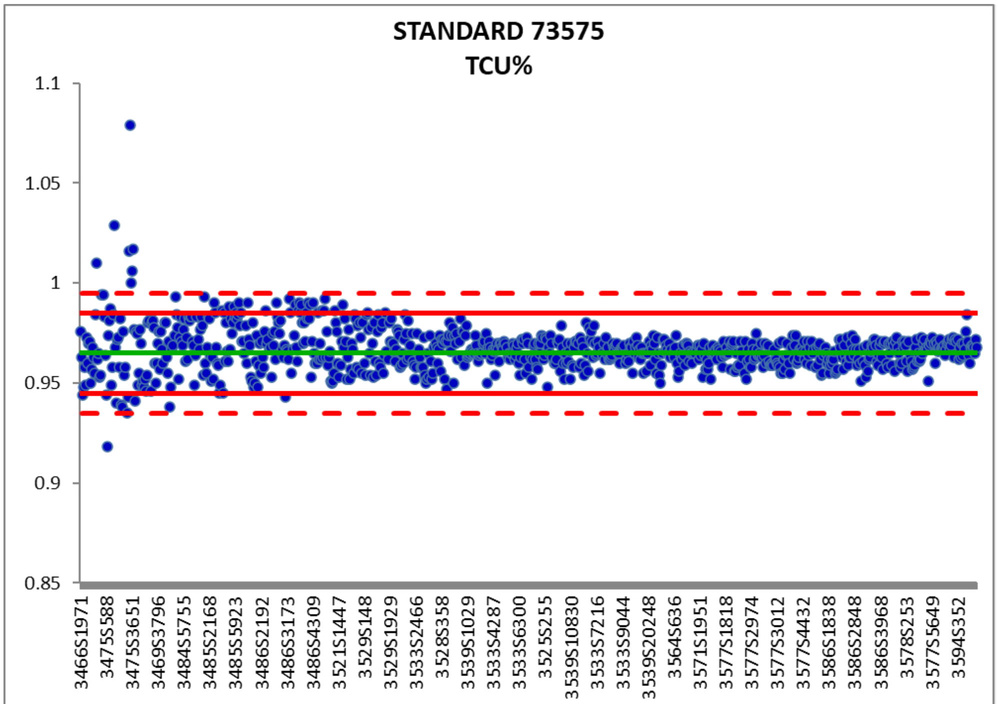
Source: Capstone, 2024.

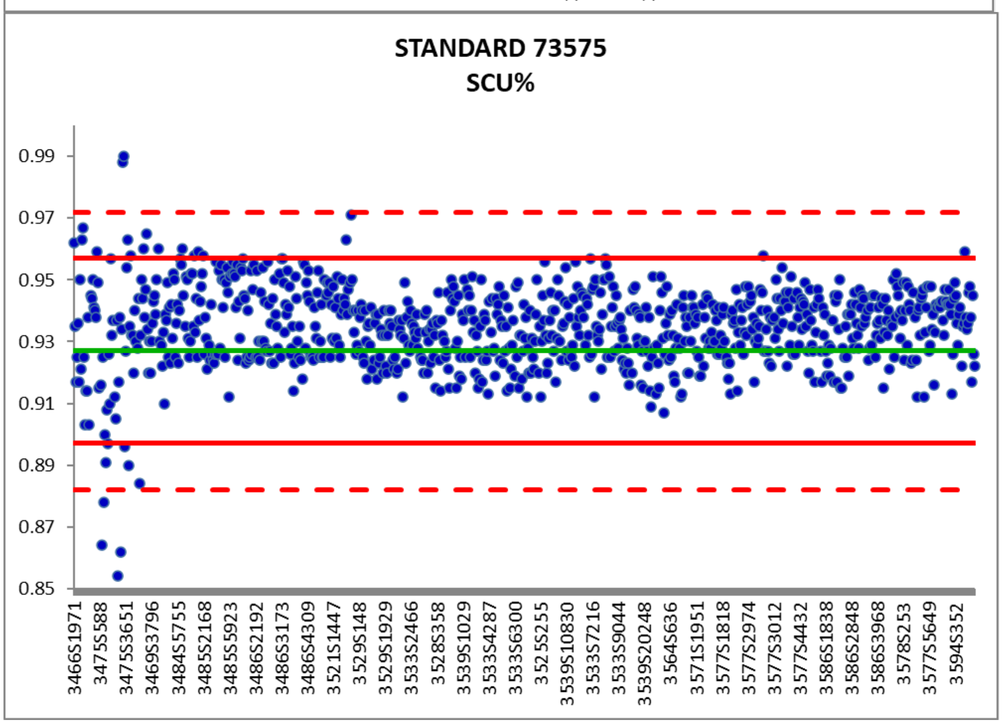
Figure 11-7: TCu and SCu Pulp Duplicates Results 2012-2016



Source: Capstone, 2024.

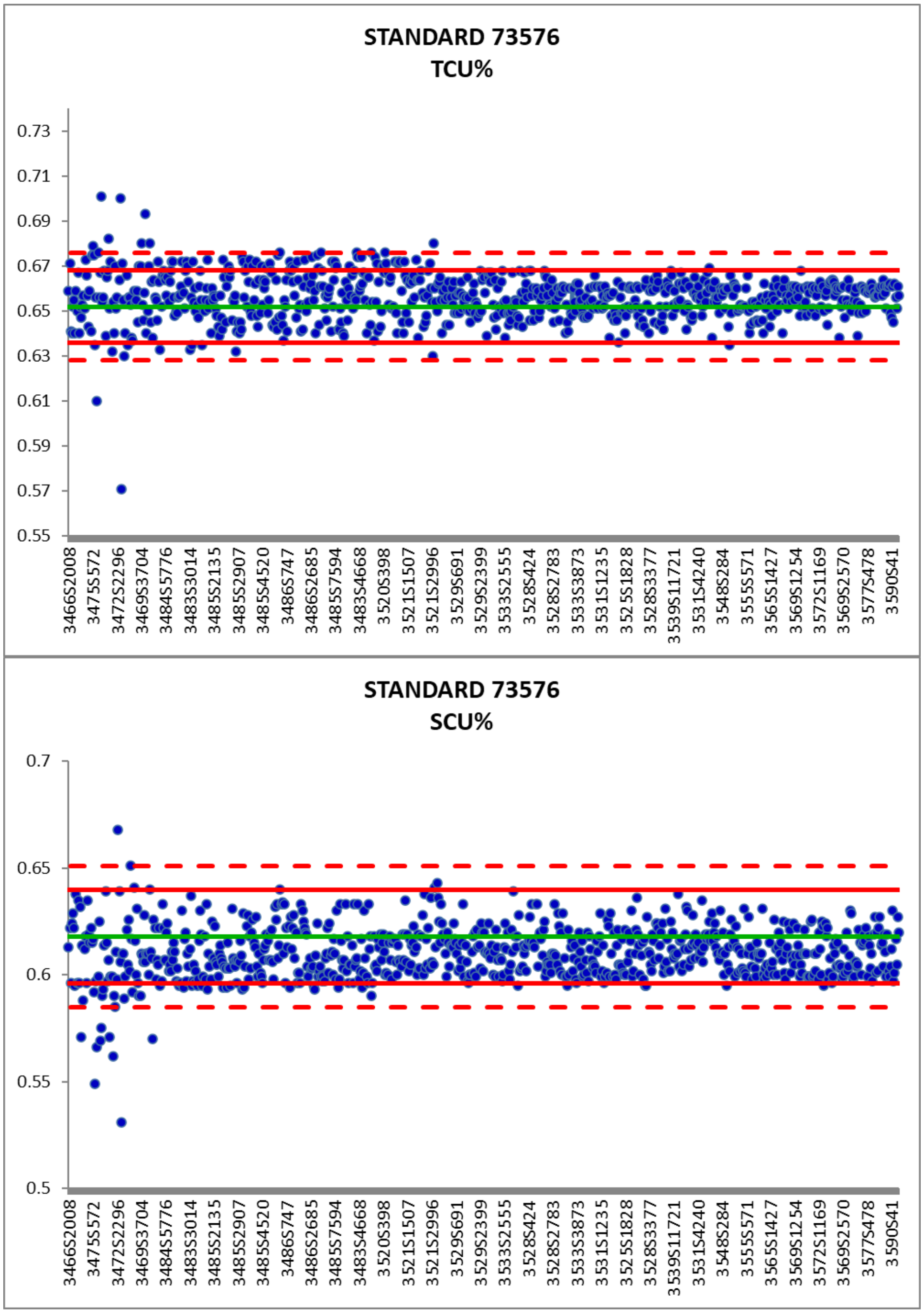
Figure 11-8: CRM 73575 for TCu and SCu, 2012-2015





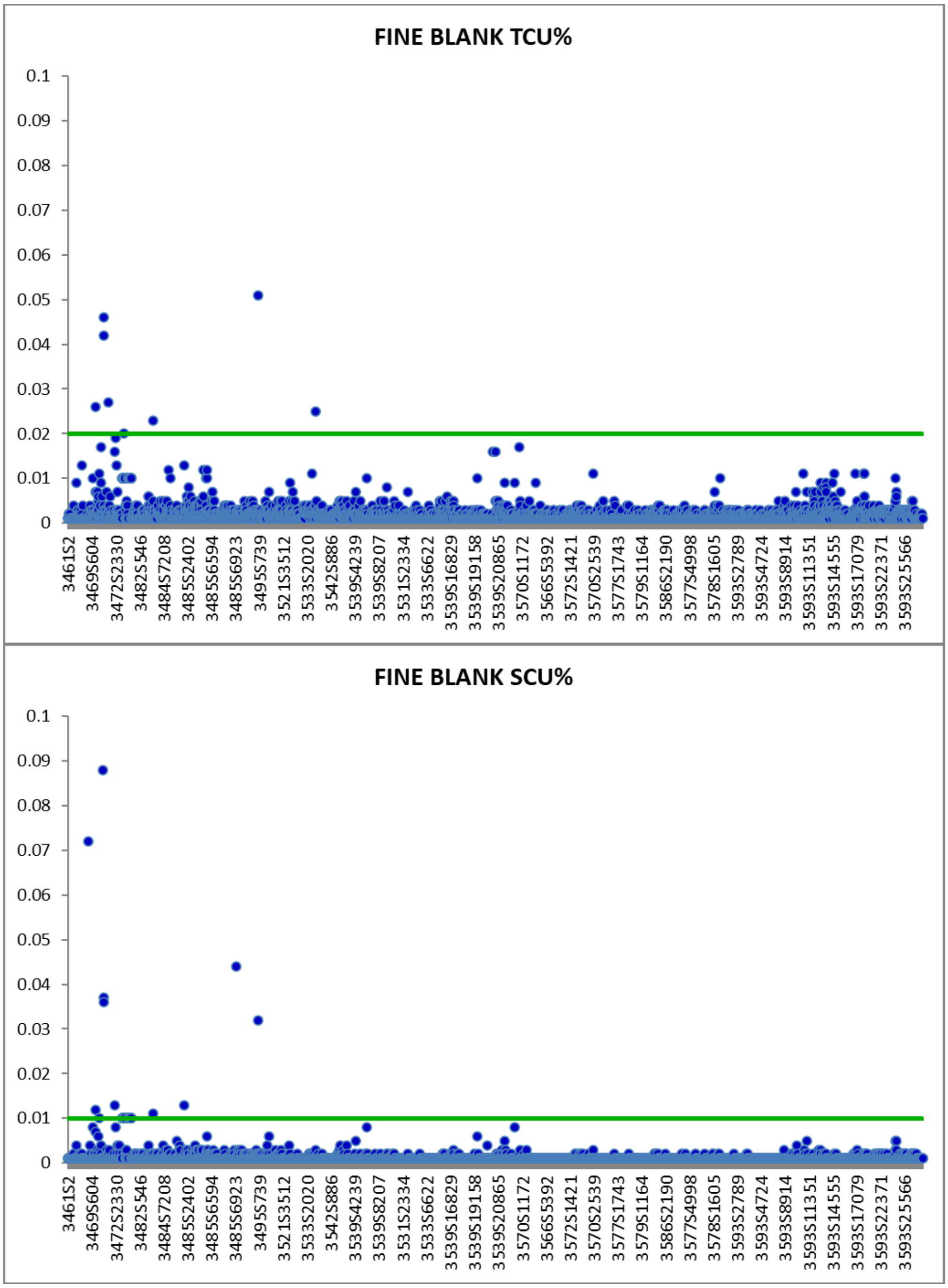
Source: Capstone, 2024.

Figure 11-9: CRM 73576 for TCu and SCu, 2012-2015



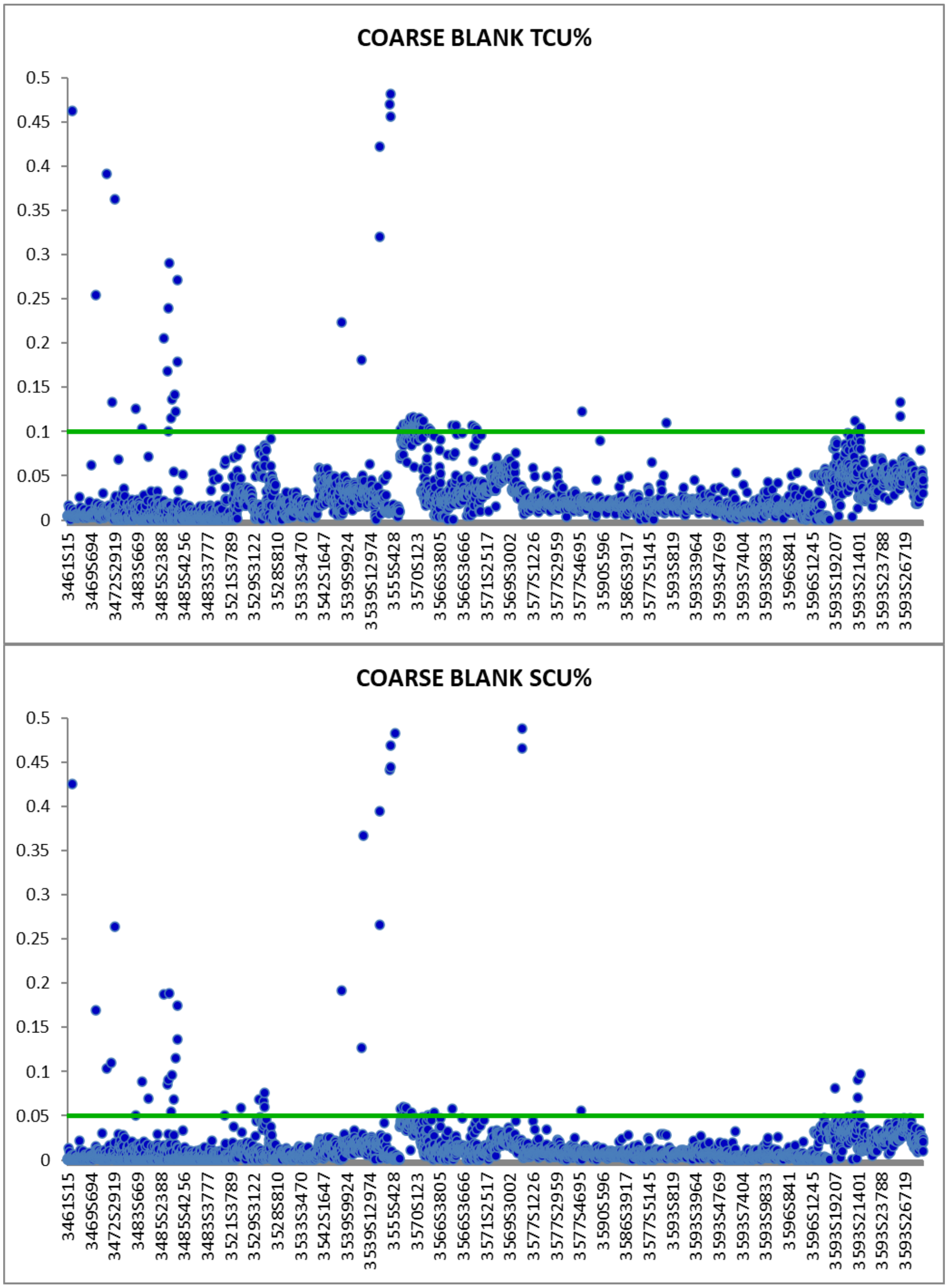
Source: Capstone, 2024.

Figure 11-10: Fine Blanks for TCu and SCu, 2012-2015



Source: Capstone, 2024.

Figure 11-11: Coarse Blanks for TCu and SCu, 2012-2015



Source: Capstone, 2024.

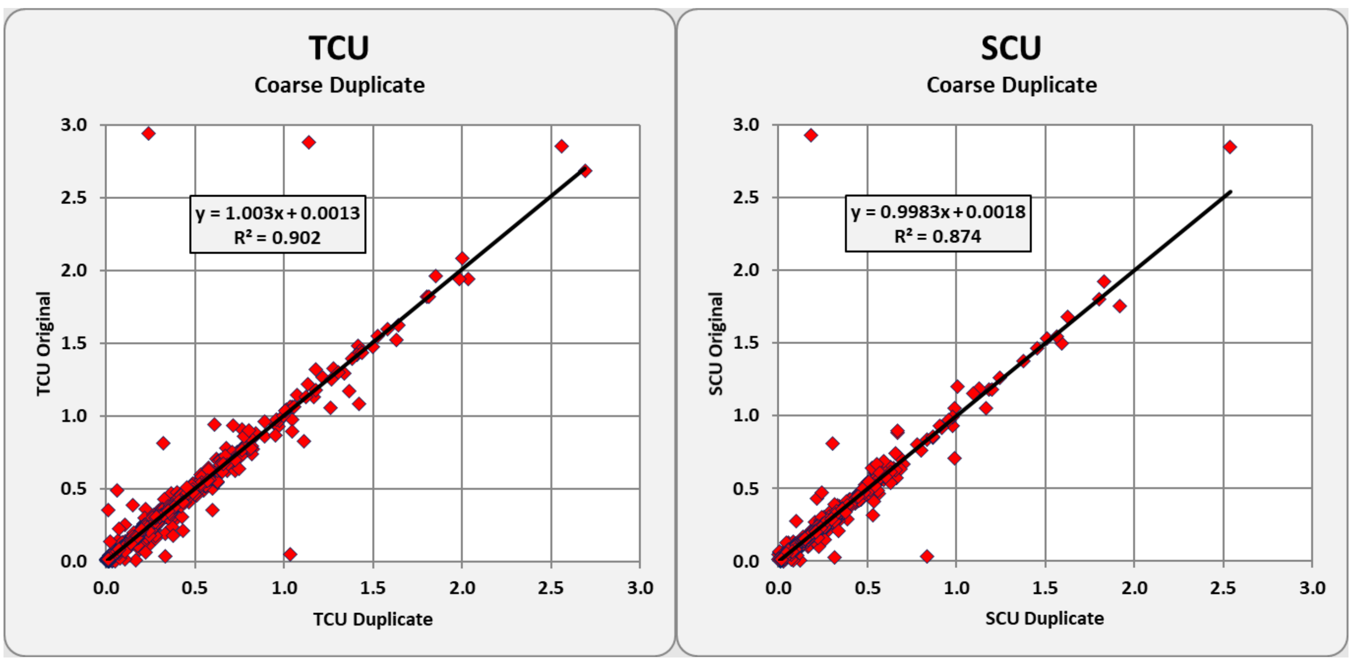
11.5.2 2016–2020

For the 2016–2020 drill program's QA/QC included insertion of coarse and pulp duplicates, coarse and fine blanks, and CRMs at 5% per control. No field duplicates or external check samples were used.

The control samples were inserted into the batches on site, prior to submission to GeoAssay. The QA/QC program results indicate acceptable preparation and analytical precision; error rates for coarse and fine duplicates are within accepted limits. $CaCO_3$ error rates for coarse duplicates are slightly over the limit. Contamination and accuracy for all CRMs analyzed are also within acceptable limits of two standard deviations.

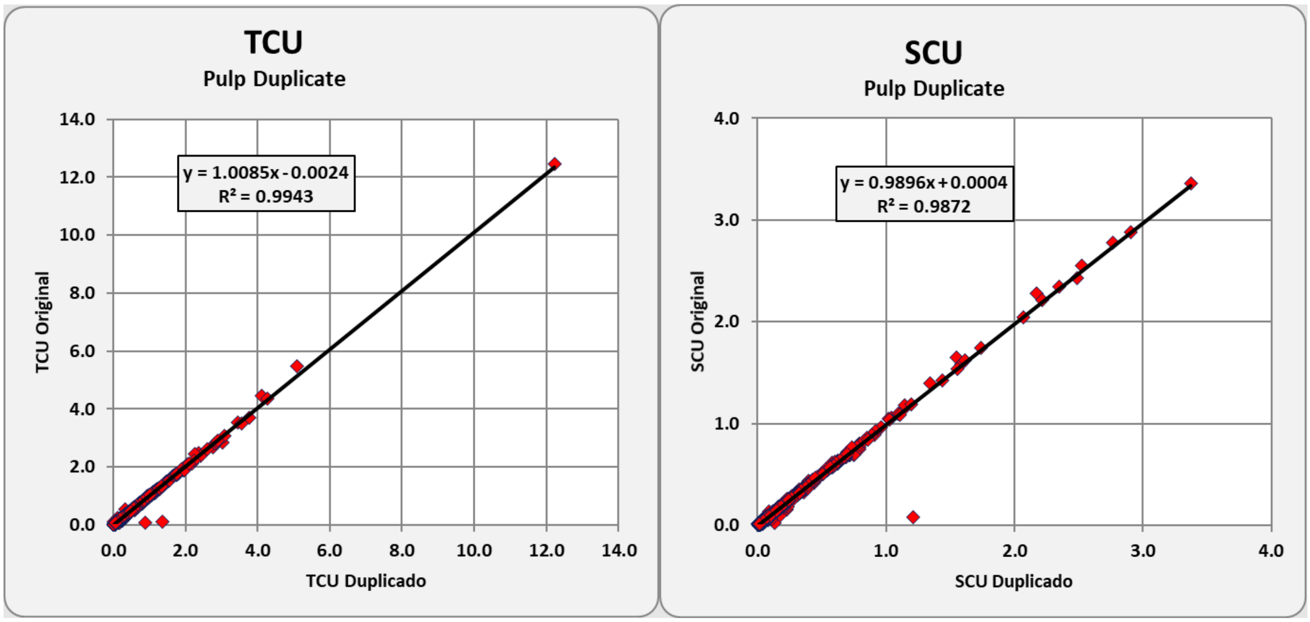
Figure 11-12 and Figure 11-13 show the coarse and pulp duplicate results for TCu and SCu for the period 2016-2020. Figure 11-14 through Figure 11-16 show the results for TCu and SCu for CRM 73575, and fine and coarse blanks, respectively.

Figure 11-12: TCu and SCu Coarse Duplicates Results 2016-2020



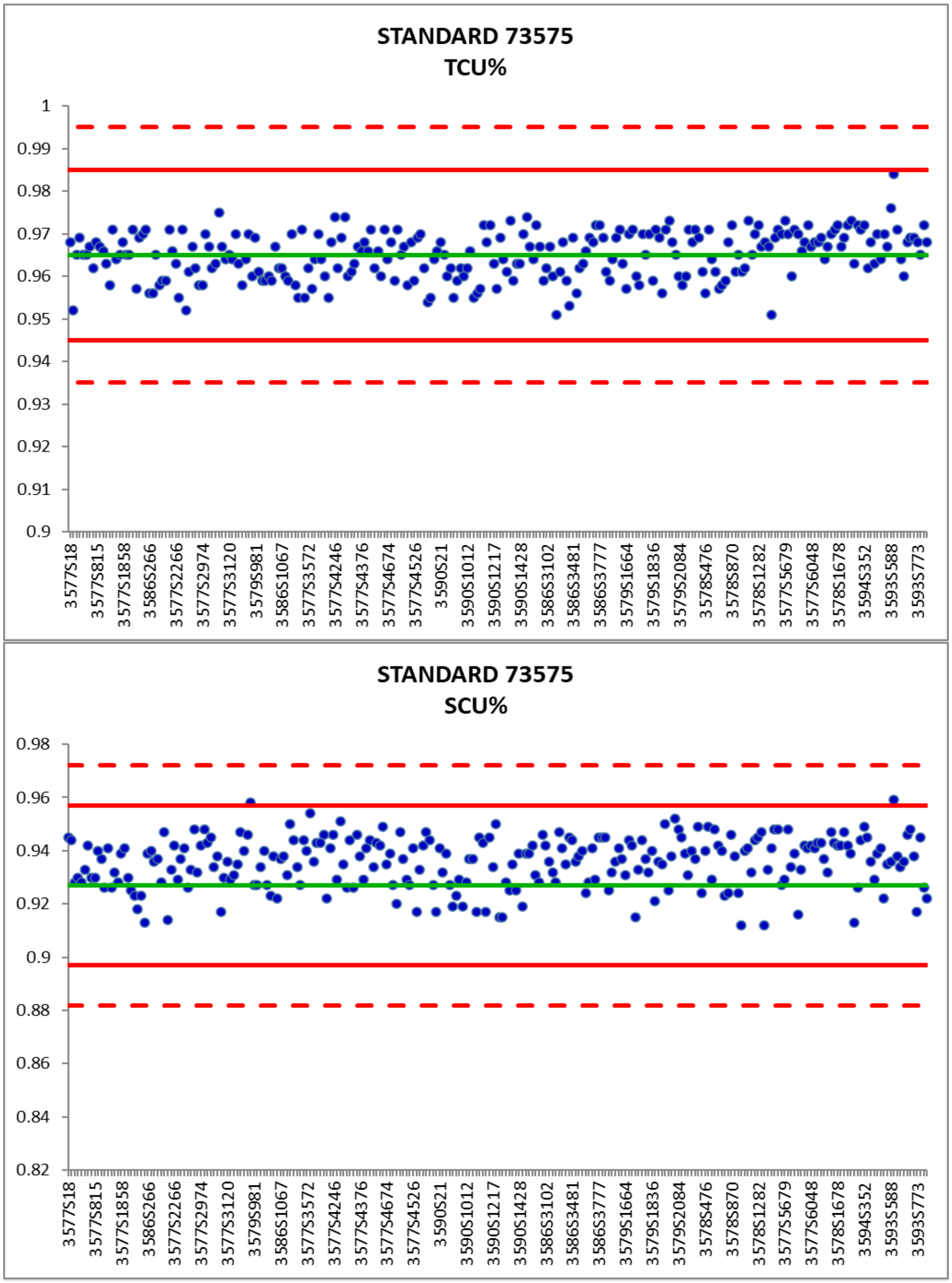
Source: Capstone, 2024.

Figure 11-13: TCu and SCu Pulp Duplicates Results 2016-2020



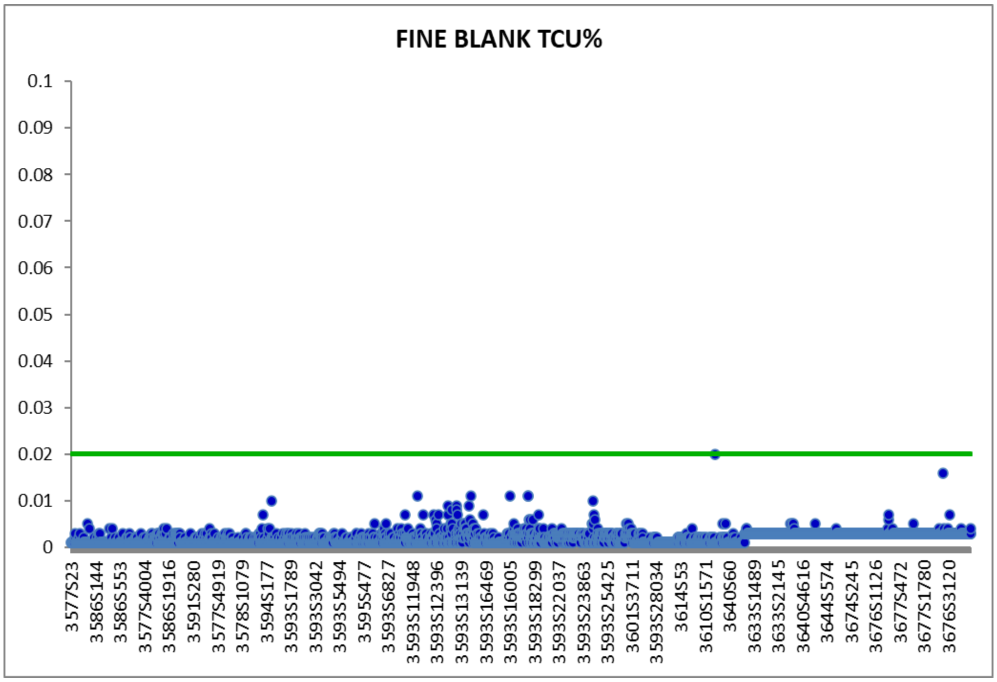
Source: Capstone, 2024.

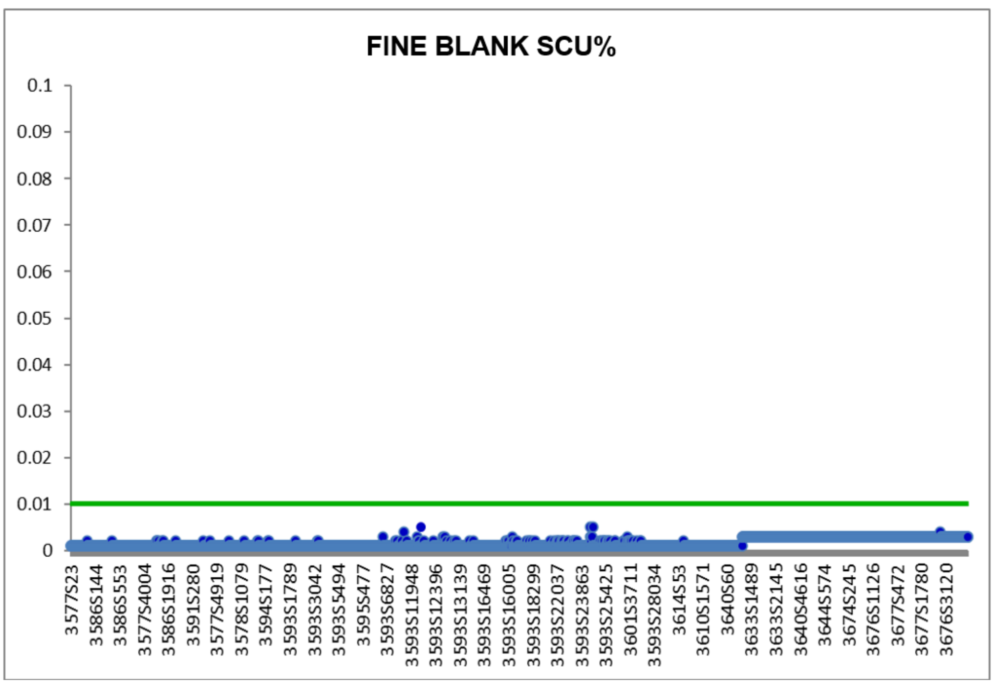
Figure 11-14: CRM 73575 for TCu and SCu, 2016-2020



Source: Capstone, 2024.

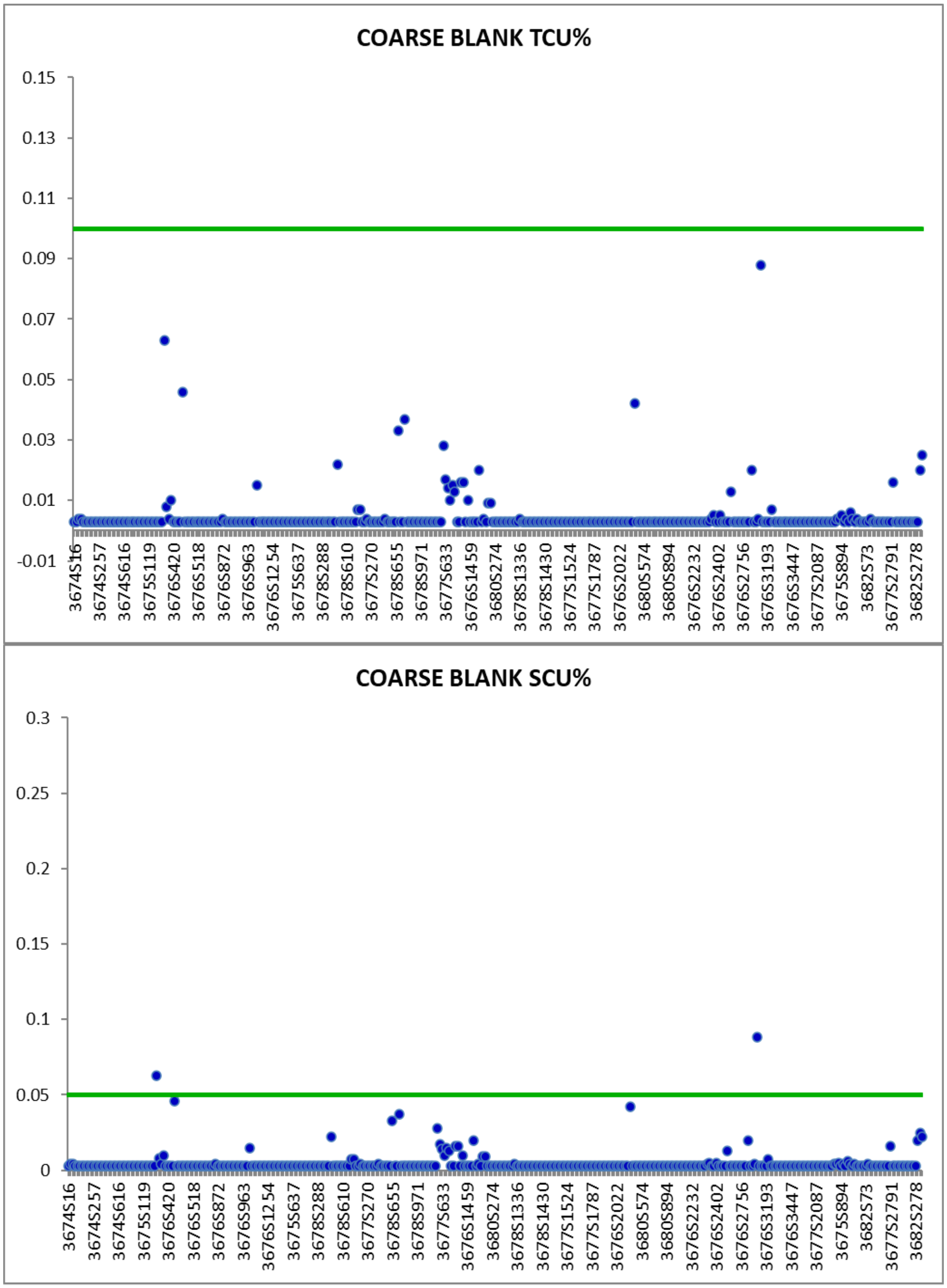
Figure 11-15: Fine Blanks for TCu and SCu, 2016-2020





Source: Capstone, 2024.

Figure 11-16: Coarse Blanks for TCu and SCu, 2016-2020



Source: Capstone, 2024.

11.5.3 2021–2024 (June 1st)

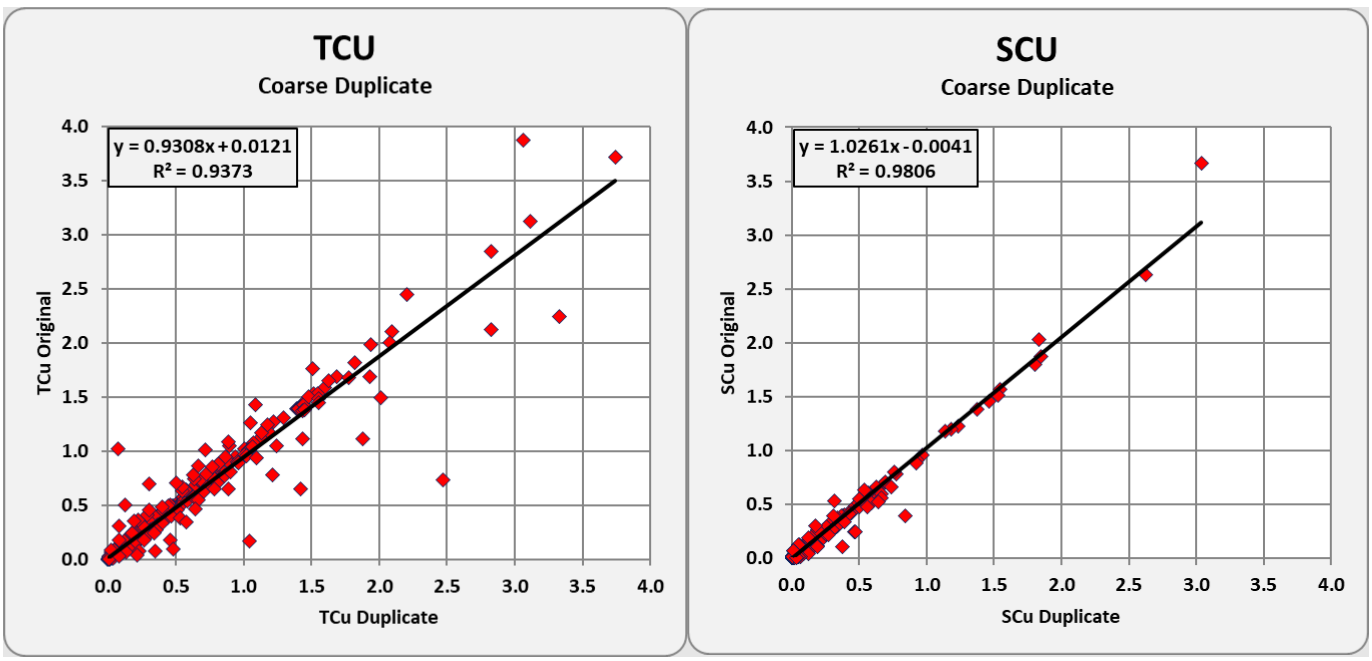
The QA/QC under Capstone continued using the same QA/QC program, which includes insertion of 25% control samples such as coarse duplicates (5%), pulp duplicates (5%), coarse blanks (5%), fine blanks (5%) and CRMs (5%). No field duplicates or external check samples were used.

The control samples were inserted into the batches on site, prior to submission to GeoAssay, eliminating a possible step where the laboratory could identify control samples. The QA/QC program results indicate acceptable preparation and analytical precision; error rates for coarse and fine duplicates of TCu-SCu and Carbonate are within accepted limits. Contamination and accuracy for all CRMs analyzed are also within acceptable limits of 2 standard deviations.

Figure 11-17 and Figure 11-18 show the coarse and pulp duplicate results for TCu and SCu for the period 2021-2024.

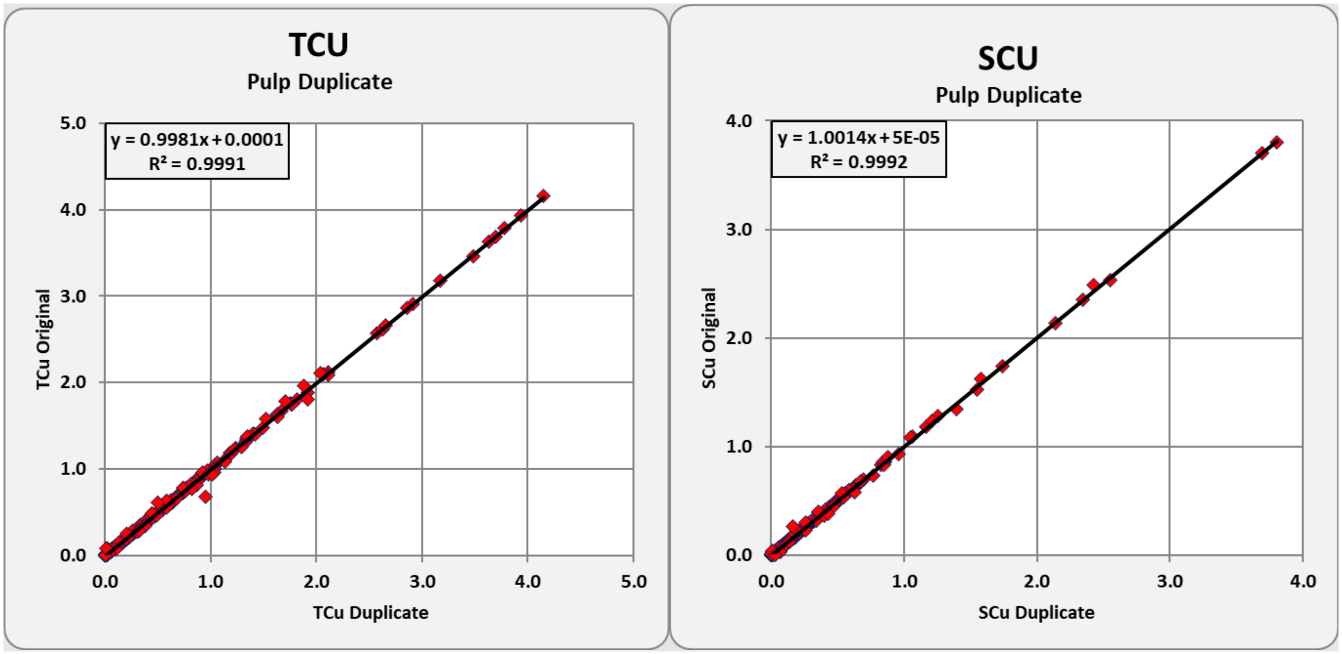
Figure 11-19 through Figure 11-21 show the results for TCu and SCu for CRM 73588, and fine and coarse blanks, respectively.

Figure 11-17: TCu and SCu Coarse Duplicates Results 2021-2024



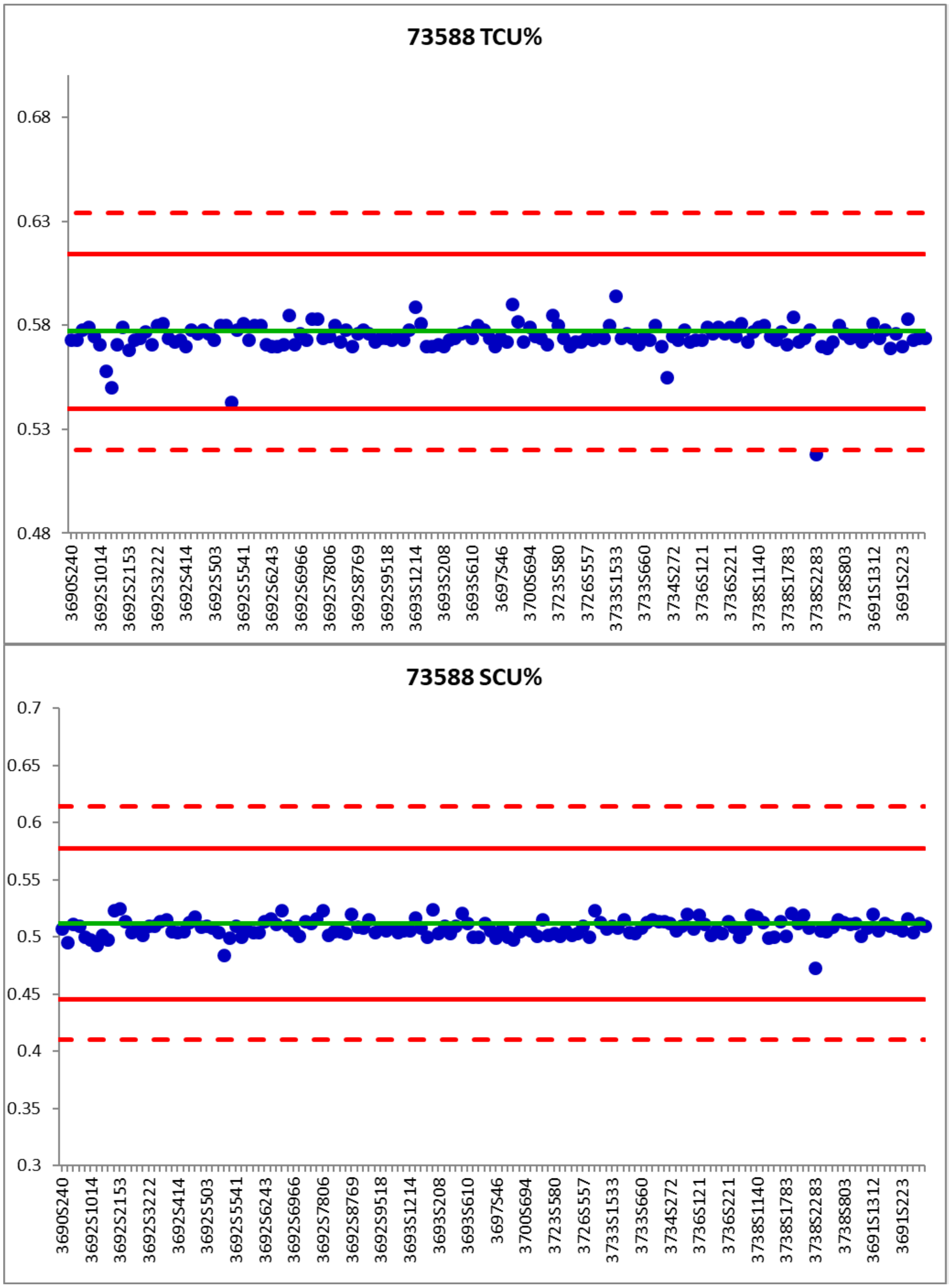
Source: Capstone, 2024.

Figure 11-18: TCu and SCu Pulp Duplicates Results 2021-2024



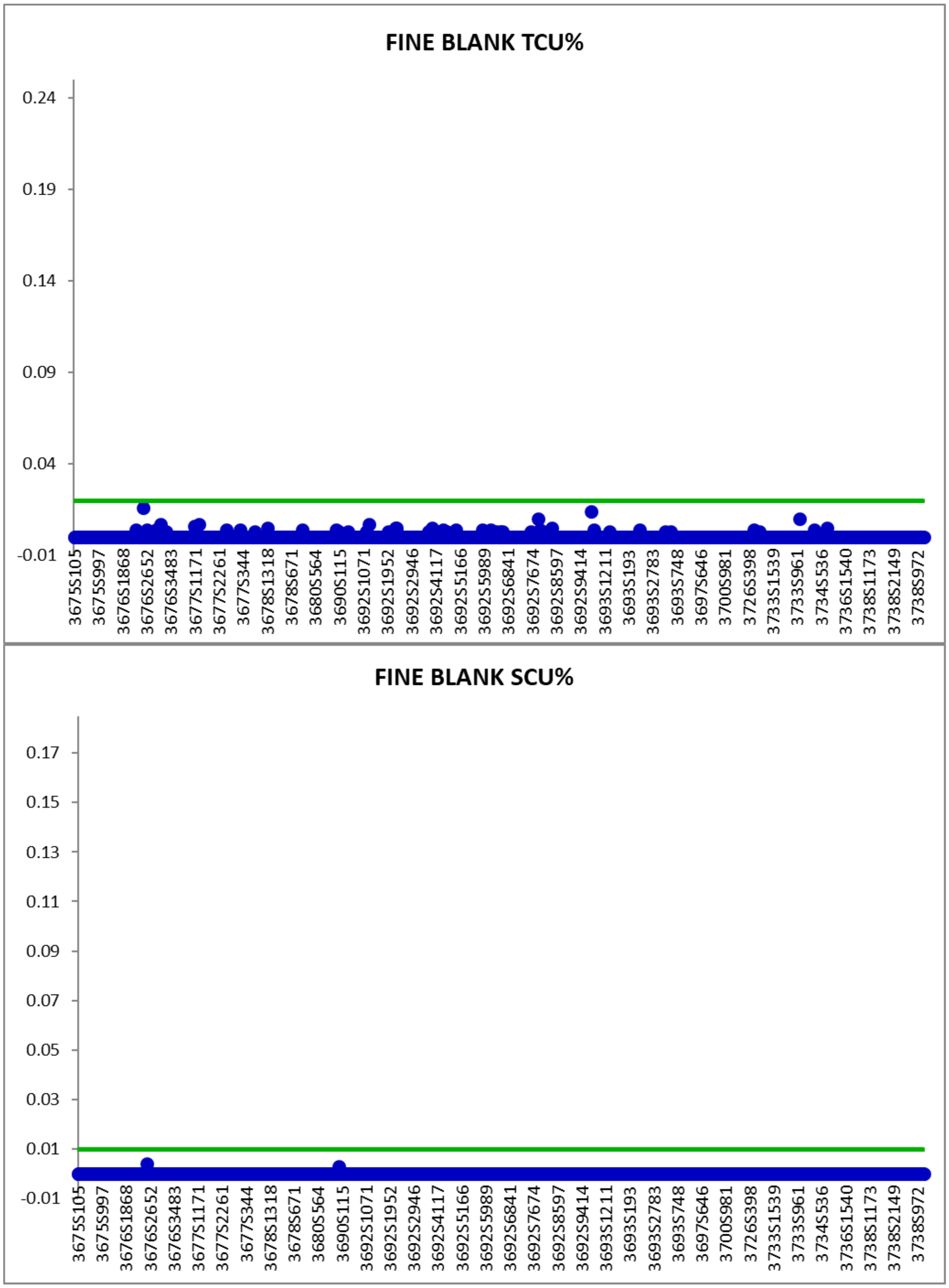
Source: Capstone, 2024.

Figure 11-19: CRM 73588 for TCu and SCu, 2021-2024



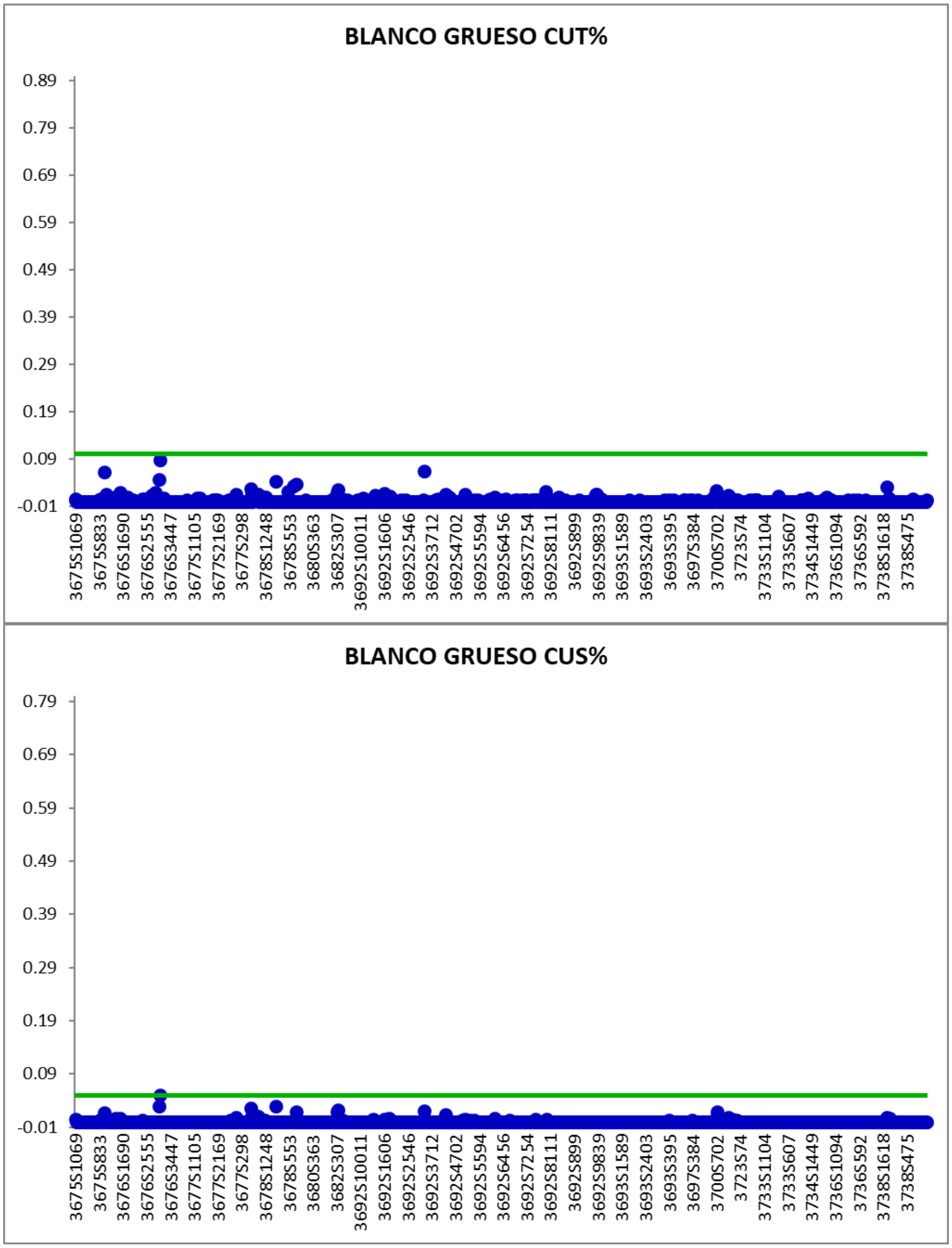
Source: Capstone, 2024.

Figure 11-20: Fine Blanks for TCu and SCu, 2021-2024



Source: Capstone, 2024.

Figure 11-21: Coarse Blanks for TCu and SCu,2021-2024



Source: Capstone, 2024.

11.6 Blast Holes

Samples from blast holes are collected by trained personnel at the collar, using a spatula and receiving tray along a pre-marked sampling direction on the rubble cone. For QA/QC purposes, a twin sample (coarse duplicate) is collected perpendicular to the first one. The QA/QC program for blastholes included coarse and pulp duplicates, coarse and fine blanks, and CRMs. Each control is inserted at 5%. Analytical results from blast holes are not used for resource modelling purpose.

11.7 Databases

Assay data is imported into the database directly from digital certificates of analysis sent by the laboratory.

Since 2022, Mantoverde updated its database management system, evolving from BDGEO to an acQuire database to manage and facilitate the capture, registration, processing, maintenance, storage, recovery and safeguarding the geological data. The update was done in two main stages, starting with exploration data followed by production data. During the implementation period, a paper backup was implemented to validate the stored information.

The database is subject to regular back-up procedures as part of Capstone's information technology policies.

11.8 Sample Security

Core boxes are transported daily from drilling platform to the core shed by personnel from the drilling company. Analytical samples are transported by laboratory personnel using their own vehicles. Core boxes and samples are stored in safe, controlled areas.

Sample bags with RC material that are bar coded are transported daily by the drilling company personnel from the rig to the sample warehouse. RC reject and back-up samples are also taken off the drill platform daily to sample storage areas destined for this purpose.

Chain of custody procedures are followed whenever samples are moved between locations, to and from the laboratory, by filling out sample submittal forms.

11.9 Sample Storage

Currently, four types of samples are stored: half core, RC, coarse and pulp sample rejects. Half-core samples are stored indoors in wooden boxes stored on steel racks. To ensure an optimal storage for future drilling campaigns of core samples, three new racks, each with a capacity of 600 wooden boxes, were built during 2021.

Two types of RC samples are kept in storage. The first, 1/4 kg, is considered representative of the rock type from each sampling interval. These are placed in labelled chip trays. The second type comes from the final RC splitting and is temporarily stored under plastic sheets, with a barcode for identification. Pulp samples are stored in paper packets and identified by a bar code inside the cardboard boxes. There is a map in the storehouse showing the locations of the stored samples. Boxes placed near the floor have been impacted by floods, resulting in sample integrity having been compromised. Action has been taken to prevent water from entering the storage shed in the future.

Figure 11-22 and Figure 11-23 show the current storage conditions.

Figure 11-22: Storage Conditions

Source: Capstone, 2024. Notes: Left, pulp box storages. Right, rock chip archive.

Figure 11-23: Core Storage Conditions

Source: Capstone, 2024. Notes: Left, general view. Right, detail showing labels on core racks.

11.10 Comments On Section 11

The sample preparation, security, and analytical procedures, along with the quality control measures and quality assurance actions implemented by Mantoverde, adhere to the 2019 CIM Best Practice Guidelines. These practices provide sufficient confidence in collection of drill hole data for use in Mineral Resource estimation.

The acQuire database improved digital capture of information, such as recording sample weights with a barcode reader and importing surveys or collar coordinates directly from contractor certificates, reducing transcription errors compared to older paper-based methods.

12 DATA VERIFICATION

Results of data verification and validation activities conducted under the supervision of the author and Qualified Person, Peter Amelunxen, P. Eng., Capstone's Senior Vice President, Technical Services, are described in this section.

12.1 External Mineral Resource Audit

As part of its internal procedures Mantoverde undertakes external, annual Mineral Resources and Mineral Reserves audits. The audits since 2016 include:

- Golder Associates, Level 2 Resource Audit, Mantoverde Sulphides, III Region, Chile, Technical Report, July 2016.
- Golder Associates, Level 1 Resource Audit, Mantoverde Sulphides, III Region, Chile, Technical Report, October 2017.
- Golder Associates, Level 1 Resource Audit, Mantoverde Resources, III Region, Chile, Technical Report, May 2019.
- Golder Associates, Level 2 Cobalt Estimation Audit, Mantoverde Resources, III Region, Chile, Technical Report, March 2019.
- Magri, A., Revisión de muestreo en mina y planta, Mantoverde Mantos Copper. December 2019.
- Golder Associates, Level 2 Resource Audit, Mantoverde Sulphides, III Region, Chile, Technical Report, April 2020.
- Golder Associates, Level 1 Resource Audit, Mantoverde Resources 2021, III Region, Chile, Technical Report, May 2022. Golder Associates was acquired by WSP Global Inc. (WSP) in 2021.
- WSP, Level 2 Resource Audit, Mantoverde Resources 2023, III Region, Chile, Technical Report, Jun 2024.

The findings of the 2023 Resources Audit state that WSP staff:

"… carried out a detailed validation of the Mineral Resources reported for the project and consider that they were estimated using appropriate data, geological interpretation and estimation methodology, which represent the current understanding of the deposit.

The methodologies used in the construction of the Resource model are reasonable, repeatable and were applied correctly. The resources comply with the 2019 CIM Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines and adequately support the resource inventory. Mantoverde has developed internal protocols and controls to manage its processes to ensure the adequacy of the data in the construction of the resource model. Furthermore, the grade estimate has implemented routines that allow for adequate traceability and repeatability, allowing the work to be carried out to the industry standards.

Mantoverde's resource audit has not detected any fatal errors that invalidate its results."

12.2 Internal Data Quality Reviews

Mantoverde conducts monthly reviews of its production processes (reconciliation) and QA/QC, which are reflected annually in the year-end reports and in the Resource model reports. No significant issues with the data reviewed were identified.

12.2.1 QA/QC

Mantoverde personnel have conducted QA/QC programs for the data capture process; these include the following:

- QA/QC Proyecto Súlfuro, 2007–2008
- Actualización Modelo Geológico Proyecto Sulfuro, 2011
- QA/QC en Campaña de Exploración Sulfuros, 2010–2011
- Estado y Actualización de Recursos Minerales, April 2014
- M. Arce, L. Tapia, Informe de Elaboración Modelo de Recursos Minerales Mantoverde (Block Model 2020 Report), May 2020.
- M. Arce, L. Tapia, Informe de Elaboración Modelo de Recursos Minerales Mantoverde (Block Model 2022 Report), Oct 2022.
- M. Arce, L. Tapia, Informe de Elaboración Modelo de Recursos Minerales Mantoverde (Block Model 2023 Report), Jun 2023.

12.2.2 Annual Internal Audits

Capstone Copper's Resource Group conducts an annual review for each of the company's operations, including the Mantoverde mine. The reviews check that the corporate governance processes in terms of data collection, data verification and validation, and estimation procedures are being followed and met. The audits also review the governance process results.

The most recent review, completed in July 2023, noted no issues that would materially affect the Mineral Resource Estimates. The next audit is scheduled for October-November 2024.

12.2.3 Production Monitoring

No significant issues were observed during reconciliation of the production data against the Oxide Mineral Resource Estimate.

No reconciliation data is available for sulphide material, because the concentrator recently completed the last stage of ramping up as of the effective date of this Report.

12.3 Comments On Section 12

The QP is of the opinion that:

- Capstone's database verification procedures for Mantoverde comply with industry standards and are adequate for the purposes of Mineral Resource estimation, and that the database is of sufficient quality to support a Mineral Resource estimate.
- Capstone's database workflows and controls are both systematic and thorough.
- Repeated verification work over the life of the project has ensured that the database was of sufficient quality to support Mineral Resource estimation.

13 MINERAL PROCESSING AND METALLURGICAL TESTING

13.1 Introduction

The leach plant has a copper production capacity of 67 kt per year of cathodes, current production ranges between 35 kt per year and 40 kt per year. Production has decreased over the last several years due to declining oxide grades. The existing process infrastructure consists of a three-stage crushing plant, agglomeration, dynamic heap leach facility, dump leach facilities and a solvent extraction and electro-winning (SX-EW) plant (See Section 17 for more details). An optimization program was undertaken starting in 2022 to review the potential to increase copper production from the oxides via:

- Improved Heap and Dump management
- The addition of bioleaching and aeration to the heap to extract sulphide based copper.

In support of this project, a test work program was developed focusing on improving the oxide leach extraction and to examine future cobalt extraction/recovery.

Mantoverde recently constructed a sulphide concentrator (MVDP) and a tailings storage facility (TSF), with an expansion of the existing sea water desalination plant at the coast. The throughput rate was originally designed to process a nominal of 11.6 Mt/a of sulphide feed, equivalent to 31,781 t/d. This plant is currently in the commissioning phase and consists of a crushing and grinding plant, flotation and regrind plant, concentrate thickening and filtering, tailings thickener and sand plant.

Although the sulfide concentrator only started producing copper in 2024, Capstone Copper recognized the potential to increase throughput further without significant upgrades to the key process equipment. This study focuses on recent metallurgical test work and plant modifications required to achieve 16.4 Mt/a mill throughput.

Prior to the 2022 Technical Report, (document 10100001-RPT-0001) three metallurgical programs evaluating the sulphide mill feed material were conducted, and a summary of the test work is as follows:

- 2005-2008 - Centro de Investigación Minero-Metalúrgico (CIMM): exploratory flotation test work identifying potential geometallurgical domains.
- 2009-SGS Lakefield Santiago: laboratory-scale metallurgical program based on 189 variability samples and four geometallurgical domains to establish the optimum comminution and flotation process conditions, as well as identifying differences in the mineralization responses. Tests performed included hardness indices such as Bond ball mill work index (BWi), Bond rod work index (RWi), abrasion index (Ai), low energy impact (LIT) and exploratory potential for the use of high-pressure grinding rolls (HPGR). In addition, test work on flotation recovery methods was completed, including kinetic rates for rougher stage, standard rougher flotation, and open cycle (OCT) and locked cycle (LCT) flotation tests. Several environmental characterization tests were conducted.
- 2014–2017 - ASMIN: laboratory-scale program on 158 variability drill samples and 11 composites that represented eight geometallurgical domains. In addition to the characterization (mineralogy and chemical assays), comminution

test work included hardness tests such as JK drop weight (JKDWT) and semi-autogenous grinding (SAG) mill comminution (SMC) tests, work indices (CWi, RWi, BWi, Ai), and TSAG tests (SAG power index protocols). Flotation tests included kinetic rates and standard flotation rougher tests for all samples. OCT and LCT were undertaken on the sample composites. Standard settling tests for tailings, as well as tailings environmental test responses in terms of acid generating capacity and metals leaching were also performed.

ASMIN also conducted pilot-scale test work for flotation performance on two composite samples assessing the copper sulphide response. The program included a tailings assessment program with settling and rheology, thickening, classification, pumping loop and deposited tailings characterization.

During 2017, test work on 70 selected samples was performed to improve the information used in the geometallurgical model that is the basis for the current mine plan. The program included characterization (mineralogy and chemical assays), rougher flotation tests (kinetic rates and standard), Bond ball work index tests, TSAG tests, and tailings settling tests. The geometallurgical information obtained was used to update the block model.

From 2022 additional metallurgical test work has been completed to compliment and verify the historic results. The information derived from this work is intended to improve the understanding of the metallurgical performance of the sulphide concentrator when increasing the throughput rate to 45 kt/d. In addition, bio-oxidation test work was completed to determine the potential improvement in cathode production from the existing heap leach facility. A summary of the work conducted is below:

- 2022–2023 – Aminpro: laboratory-scale tests were conducted to determine flotation performance of four geometallurgical units. Flotation tests included kinetic response for rougher and cleaner stages and sensitivity to grind size.
- 2023 – Tailpro: laboratory-scale test was conducted for thickening performance on two composite samples, provided by Aminpro, with different P_{80}. Thickening tests included a general characterization, static and dynamic sedimentation, and a thickener sizing.
- 2023-2024 – Aminpro: laboratory-scale column tests were conducted to determine the benefit of bio-oxidation technology on the Mantoverde oxide ore which currently feeds the existing dynamic leach facility.
- 2024 – Metso: laboratory-scale test was conducted for regrind performance on one copper ore sample, provided by Capstone Copper. The Jar Mill Grindability Test was performed to determine the specific energy required to grind the sample to the target grind specification.

13.2 Metallurgical Test Work – Oxides

13.2.1 Metallurgical Recovery

Metallurgical recovery for the oxide material varies by lithology and the soluble copper (CuAS) content as shown in Table 13-1. For lithologies where the soluble copper is >1%, a single recovery value is assigned; however, the recovery for those lithologies with the soluble copper content is <1% is estimated using the equations included in the table. The equations are based on a combination of metallurgical test work (bottle, column and production plant) completed during the pre-feasibility and feasibility studies, leach column test work, and results from operations. The set values were defined by Capstone and are used for the budget for the mine planning (Capstone, 2020).

Table 13-1: Recovery Models for Copper Oxide

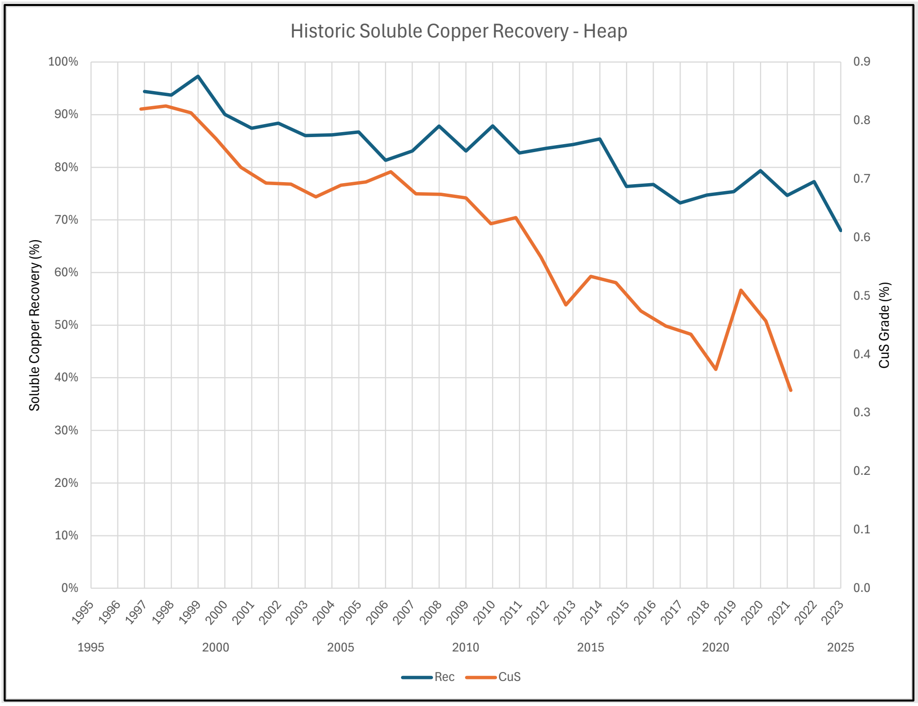
Heap Leach Recovery Model 2020		
Valid Range	**Sector (MS-ZOREC)**	**Soluble Copper Recovery (%)**
% Soluble Cu > = 1%	1_CEL-QUI-MR-REB	81.4
	2_KUR	85.7
	3_PTO62	86.5
	4_MVN-MVW	88.3
	5_MVS-PE-LLA	89.1
	6_FRA	88.5
0.38% ≤ % Soluble Cu <1% (*)	1_CEL-QUI-MR-REB	((0.32*Ln(%CuAS) + 84.1) - 0.81*%$CaCO_3$)*0.96
	2_KUR	((87.78 + 6.87 * %CuAS – 0.85 * %$CaCO_3$) * 0.95 * 0.97)
	3_PTO62	((87.78 + 6.87 * %CuAS – 0.85 * %$CaCO_3$) * 0.95 * 0.97)
	4_MVN-MVW	((87.78 + 6.87 * %CuAS – 0.85 * %$CaCO_3$) * 0.96)
	5_MVS-PE-LLA	((5.6171 * Ln(%CuAS) + 92.125) -0.81*%$CaCO_3$)*0.96
	6_FRA	((9.7835 * LN(%CuAS)+91.44) -0.81*%$CaCO_3$)*0.96
0.20% ≤ %Soluble Cu < 0.38% (*)	1_CEL-QUI-MR-REB	((0.32*Ln(%CuAS) + 84.1) -0.81*%$CaCO_3$)*0.93
	2_KUR	((87.78 + 6.87 * %CuAS – 0.85 * %$CaCO_3$) * 0.92 * 0.97)
	3_PTO62	((87.78 + 6.87 * %CuAS– 0.85 * %$CaCO_3$) * 0.92 * 0.97)
	4_MVN-MVW	((87.78 + 6.87 * %CuAS – 0.85 * %$CaCO_3$) * 0.92)
	5_MVS-PE-LLA	((5.6171 * Ln(%CuAS) + 92.125) -0.81*%$CaCO_3$)*0.93
	6_FRA	((9.7835 * LN(%CuAS)+91.44) -0.81*%$CaCO_3$)*0.93
0.15% ≤ % Soluble Cu < 0.20%	All	46

*For $CaCO_3$ greater than 30%, consider $CaCO_3$ = 30%

Dump Leach Recovery Model 2020	
Valid Range	**Soluble Copper Recovery (%)**
0.13% ≤ %Soluble Cu < 0.30%	42
0.10% ≤ % Soluble Cu < 0.13%	32

The copper recovery equations consider the soluble copper grade (CuAS) and the carbonate content and have been shown to be reasonably accurate predictors of copper production, shown in Figure 13-1.These equations do not consider the grade of the insoluble copper species (CuI) such as chalcopyrite. Testing has shown that a minimal quantity of the CuI minerals are leached in the current acid leach environment, at around 5 to 7%.

Figure 13-1: 1995 to 2023 Soluble Copper Recovery and Feed Grade



Source: Capstone, 2024.

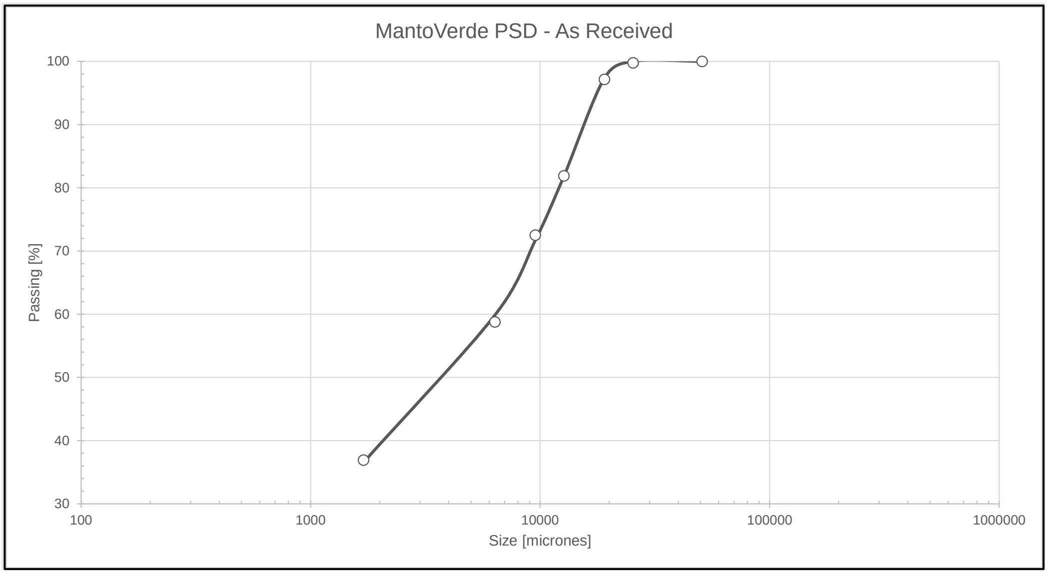
In 2023 the soluble copper recovery was 68.0% at a feed grade of 0.34% CuAS. The total recovery based on a TCu grade of 0.46% was 50.1%. The proportion of insoluble copper sulphide minerals has been steadily increasing as the open pit has deepened, currently accounting for 20 to 25% of the total copper grade. There has been a classic migration in the heap feed from oxide to supergene/hypogene copper minerals. The south dump recovery is currently 42% based on the CuAS feed grade and 29% based on the TCu grade.

In 2022 Capstone embarked on a program to examine the potential to recover a greater portion of the insoluble copper. The program also examined the potential to recover additional copper and cobalt from the concentrator flotation cleaner scavenger tails (CST). The flotation CST material contains residual CuI minerals as well as high levels of pyrite and cobalt. A test work program was developed to investigate the use of pyrite agglomeration wherein the CST material is agglomerated with the ore and placed on the heap. The addition of acidophile bacteria and air to the heap augments the process. As a result of delays in the test work, the pyrite agglomeration was not included in this report but the usage of bioleach system on the heap leach ore was analyzed and is included below.

13.2.2 Column Test Work

The bioleach column test work was performed at Aminpro in Santiago, Chile. The oxide ore was sourced from Mantoverde in September 2023. The assayed copper and iron head grades of the sourced material was 0.350% and 11.6%, respectively. The calcium carbonate head grade of the sourced oxide ore was 1.50%. The P_{80} of the received material was 12 mm with a P_{100} of 25.4 mm. This is reasonably representative of the ore placed on the dynamic heap at Mantoverde. The particle size distribution of the received oxide ore is presented in Figure 13-2.

Figure 13-2: Particle Size Distribution of as Received MV Oxide Material



Source: Capstone, 2024.

The oxide material was agglomerated with acid, inoculum, and water. However, the acid addition during agglomeration was not representative of that employed commercially. The bioleach columns were inoculated with 1.5% wt/wt inoculum during agglomeration. The columns were irrigated with a pH 1.2 solution containing an initial 1.0 gpl Fe(III) as ferric sulfate. The target irrigation rate was 10 L/m^2/hr. In a typical bioleach, the columns would be aerated, and temperature controlled. However, the bioleach column (column 3) was not aerated, nor temperature controlled. This was due to the original scope of the project with goal of reproducing the commercial heap environment.

The inoculum used include *acidithiobacillus thiooxidans, acidithiobacillus caldus,* and *sulfobacillus acidophilus*. This mixture of inoculum was sourced from GRE in Denver, CO.

The testing parameters of the three columns test are presented in Table 13-2 below.

Table 13-2: Operating Parameters for Columns 1, 2, and 3

Column	Height (m)	Diameter (mm)	Objective	Closed/Open Circuit	Agglomeration	Leach
1	1.2	145	For comparison to closed column (2)	Open	acid/water	Acid
2	1.2	145	For comparison to open column (1)	Closed	acid/water	Acid
3	1.2	145	For comparison to closed column (1)	Closed	acid/water/inoculum	Bioleach

The leach effluent was continuously collected and analyzed for copper, total iron, ferrous iron, pH, Eh, and free acid. The pH was maintained with sulphuric acid additions as required. Distilled water was added as makeup solution. A solution bleed of the PLS was performed periodically to maintain reasonable copper and iron concentrations in the system.

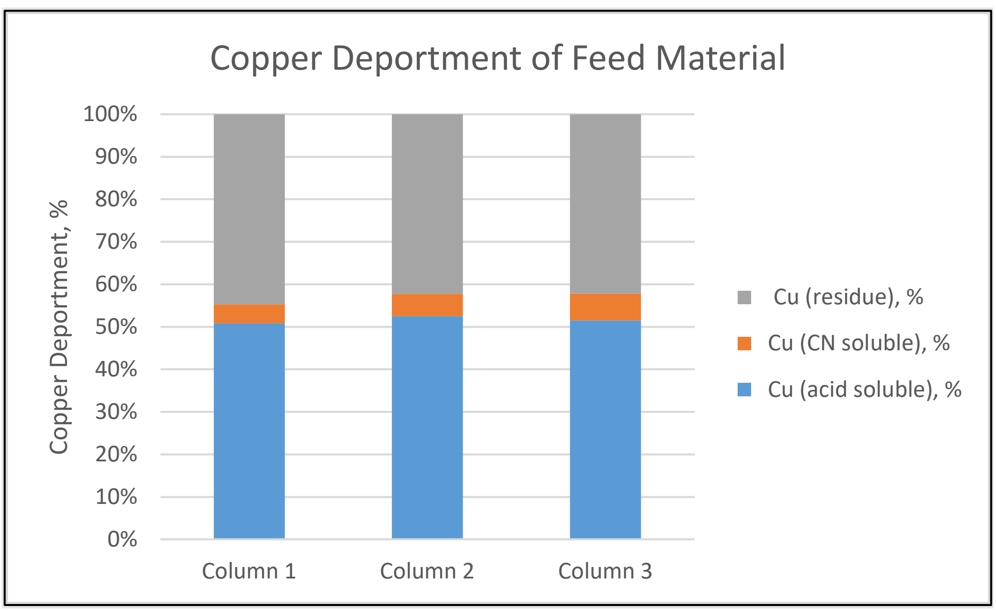
A sequential leach test of the feed ore was conducted to determine acid soluble copper present in the system. The results of the sequential leach tests are presented in Table 13-3 below.

Table 13-3: Sequential Leach Results of Feed Ore

Test ID	Cu (acid soluble), %	Cu (acid soluble), %	Cu (CN soluble), %	Cu (CN soluble), %	Cu (residue), %	Cu (residue), %
Column 1	0.183	50.8%	0.0160	4.4%	0.161	44.7%
Column 2	0.189	52.5%	0.0190	5.3%	0.152	42.2%
Column 3	0.187	51.5%	0.0230	6.3%	0.153	42.1%

Acid soluble copper relates to the following copper minerals; Malachite, Azurite, tenorite, chrysocolla, and cuprite. Cyanide soluble copper relates to the following minerals: chalcocite, bornite, and possible chalcopyrite. The residue copper relates to chalcopyrite. Historically, the oxide minerals have accounted for 80% of the contained copper. The sequential leach test results are presented graphically in Figure 13-3.

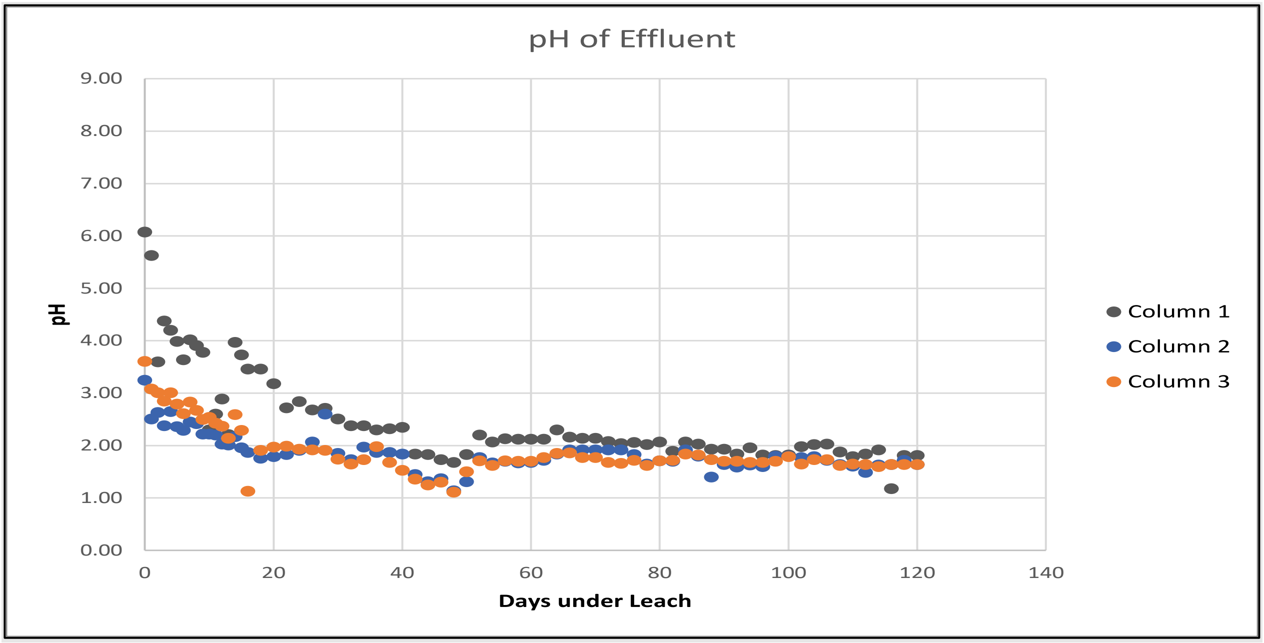
Figure 13-3: Copper Deportment of Feed Material



Source: Capstone, 2024.

The pH and Eh profiles of column effluents are presented in Figure 13-4 and Figure 13-5 below, respectively.

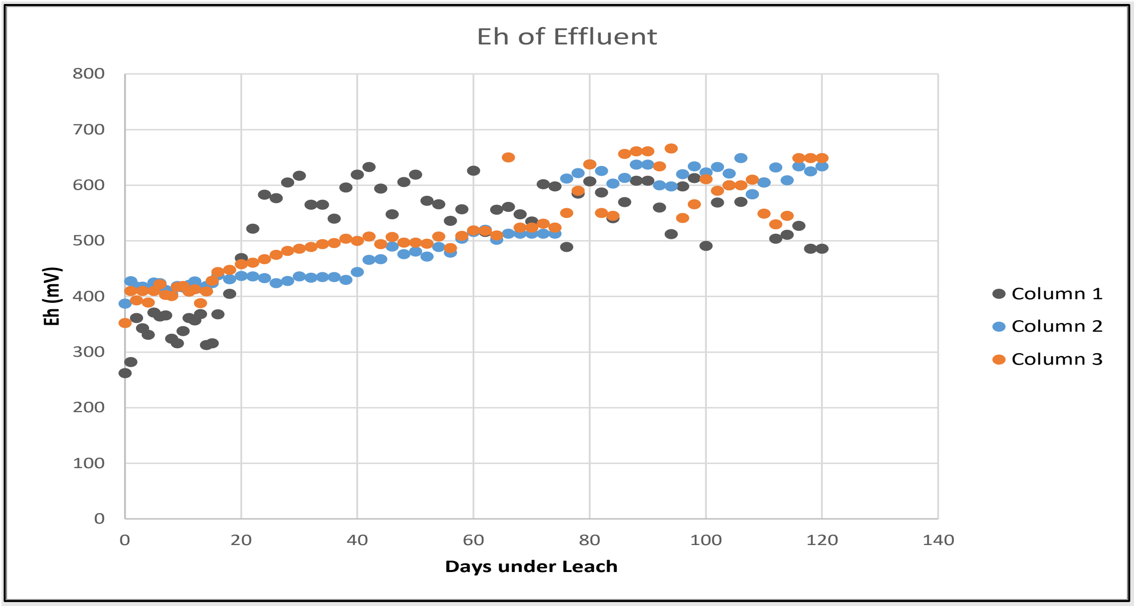
Figure 13-4: pH Profile of the Effluent in Column Tests



Source: Capstone, 2024.

The pH of all column tests effluent stabilized around pH 1.7 near day 50 under leach.

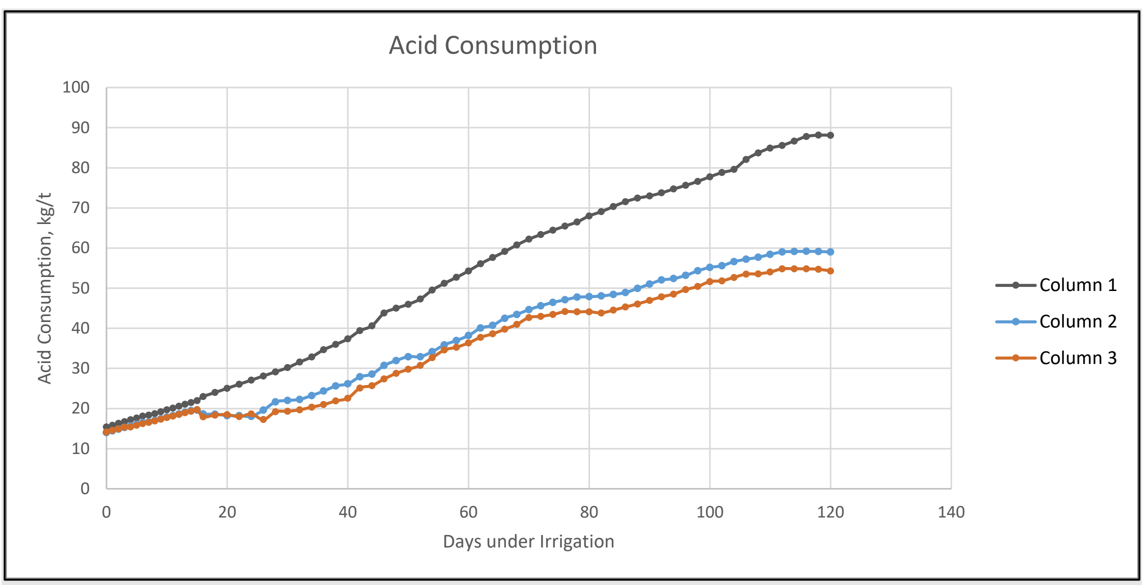
Figure 13-5: Eh Profile of the Effluent in Column Tests



Source: Capstone, 2024.

The Eh effluents of all columns stabilized near 600 mV throughout the tests. The acid consumptions of the column tests are presented in Figure 13-6.

Figure 13-6: Acid Consumption of Column Tests



Source: Capstone, 2024.

The final acid consumption of column tests 1, 2, and 3 were 88.13, 59.04, and 54.3 kg/t, respectively. The acid consumption of the closed-circuit columns is representative of that observed on the dynamic heap. The open circuit column had a higher acid consumption because the acid contained in the PLS is not recycled.

The calculated copper and iron grades of the MV oxide material is presented in Table 13-4. The calculated head was determined using residue assays and solution removed from the system due to sampling and periodic bleeds of the PLS solution.

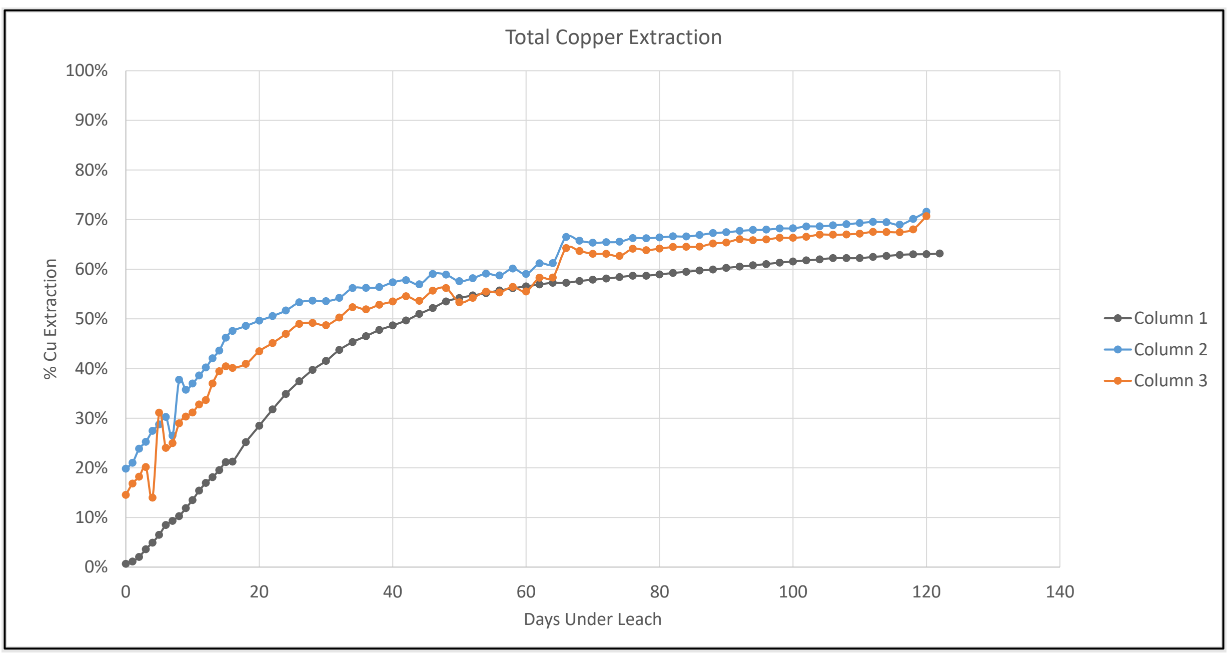
Table 13-4: Calculated Head Assays of Oxide Material

Test ID	Initial Mass (kg)	Residue Mass (kg)	Calculated Cu Head Grade, %	Calculated Fe Head Grade, %
Column 1	33.20	30.40	0.37	11.47
Column 2	32.90	31.94	0.39	10.67
Column 3	34.32	32.07	0.39	11.32

Columns 1, 2, and 3 had mass losses of 8.4%, 2.9%, and 6.6%, respectively.

Total copper extractions based on calculated head assays is presented in Figure 13-7 below.

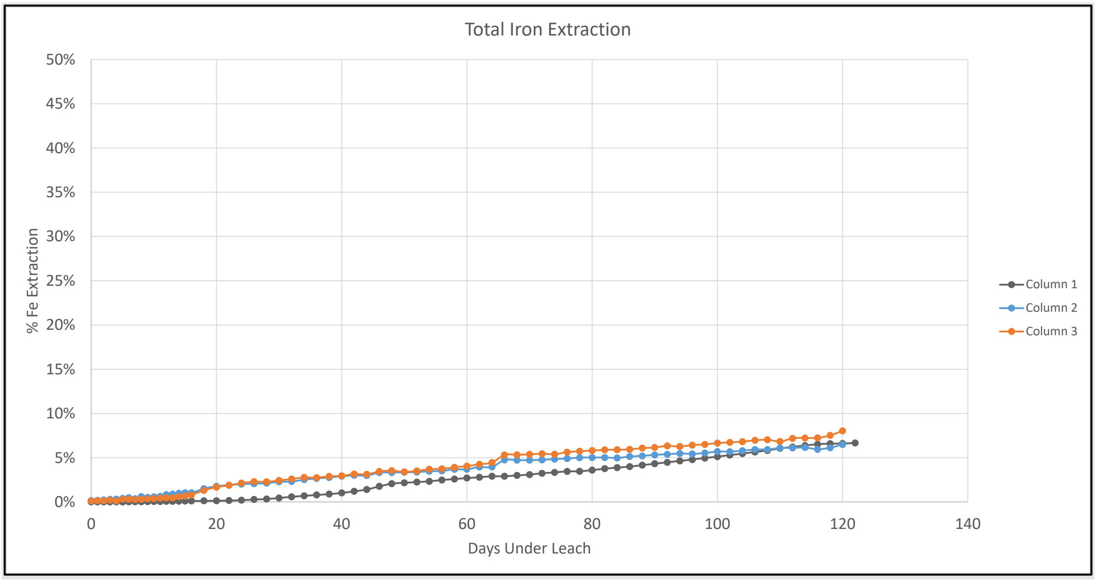
Figure 13-7: Total Copper Extraction



Source: Capstone, 2024.

The total copper extractions for columns 1, 2, and 3 were 66.5%, 71.6%, and 70.7%, respectively. Industrial heap leach (total) copper extractions are typically in the range of 50% to 55% with a 90-day leach cycle. It is evident from the column tests that an increase in copper extraction has been observed over that typical of the commercial heap performance. Total iron extraction is shown in Figure 13-8.

Figure 13-8: Iron Extraction



Source: Capstone, 2024.

The total iron extractions for columns 1, 2, and 3 were 6.7%, 6.5%, and 8.0%, respectively. The iron extraction represents the iron in solution not the total iron leached, iron tends to precipitate during leaching.

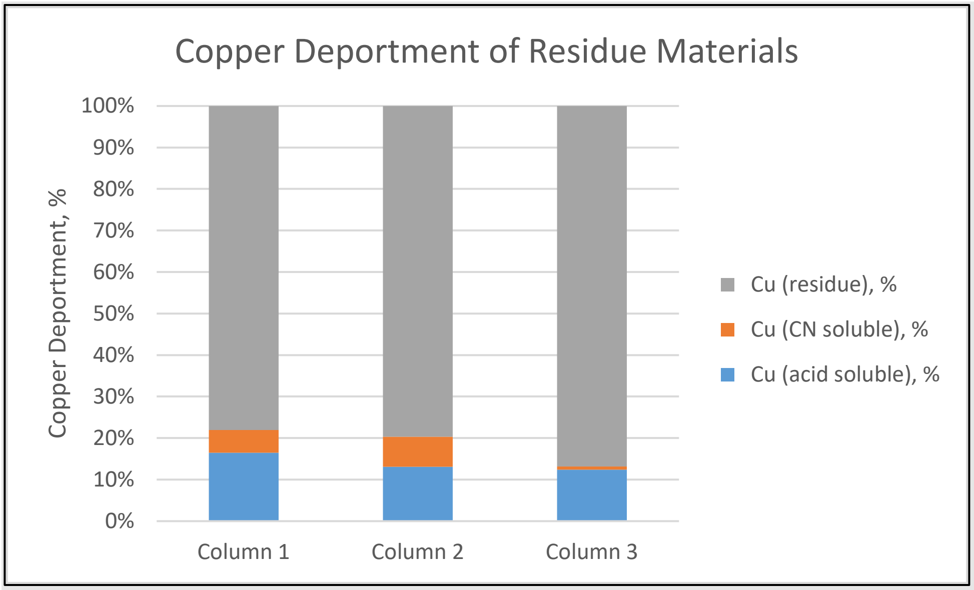
Sequential copper leaching of the residue materials indicates that a majority of the soluble copper was recovered from the system while the sulfidic portion accounted for ~18-20% of the total copper recovery. The results of the residue diagnostic leach tests are presented in Table 13-5 below.

Table 13-5: Diagnostic Leach Results for Column Residues

Test ID	Cu (acid soluble), %	Cu (acid soluble), %	Cu (CN soluble), %	Cu (CN soluble), %	Cu (residue), %	Cu (residue), %
Column 1	0.024	16.4%	0.008	5.5%	0.114	78.1%
Column 2	0.018	13.0%	0.010	7.3%	0.110	79.7%
Column 3	0.017	12.4%	0.001	0.7%	0.119	86.9%

The sequential leach tests of the residue materials are presented graphically in Figure 13-9.

Figure 13-9: Copper Deportment of Residue Materials



Source: Capstone, 2024.

The bioleach column was not subjected to forced aeration nor temperature controlled. This reduces the benefit of the addition of inoculum to the bioleach column. Previous test work by GRE provides substantial evidence that with the addition of aeration and temperature control, copper extraction of the sulfidic portion will increase. It is also likely that that cross contamination of non-bioleach columns with bacteria occurred given the Eh profiles.

The iron extraction of the bioleach column exceeded the baseline acid leach column by ~20%. This infers the bacteria oxidized a portion of the sulfidic ore present. This is further supported by lower acid consumptions of the bioleach column as acid was generated due to oxidation of pyritic material.

Note that the above column leach tests were used in conjunction with Mantoverde industrial solution chemical analyses to develop a comprehensive phenomenological model based on the MetSim modeling platform. This validated model was then used to determine industrial heap performance of the bio-oxidative HLF as described in Section 17.1.

It is recommended that further bioleach columns be conducted with aeration and temperature control to confirm the maximum potential uplift in copper production.

13.2.3 Acid Consumption

Commercial acid addition rates have been determined using semi-empirical methods based on a combination of the acid consumption tests and the operational response from the heap leach and dump leach facilities. Table 13-6 and Table 13-7 presents the initial acid additions for the heap leach and dump leach during the agglomeration and cure stages.

Table 13-6: Targeted Agglomeration Acid Additions Heap Leach

Grade $CaCO_3$ (%)	Acid Addition in Agglomeration (kg/t)	Acid Addition in Leaching (kg/t)
$CaCO_3 < 1.5$	3.53 x $CaCO_3$(%) + 15.21	21.25
$1.5 \le CaCO_3 < 2.5$	3.53 x $CaCO_3$ + 15.21	23.8
$2.5 \le CaCO_3 < 3.5$	3.53 x $CaCO_3$ + 15.21	26.35
$3.5 \le CaCO_3 < 4.5$	3.53 x $CaCO_3$ + 15.21	27.2
$4.5 \le CaCO_3 < 5.5$	3.53 x $CaCO_3$ + 15.21	28.9
$CaCO_3 \ge 5.5$	3.53 x $CaCO_3$ + 15.21	35.7

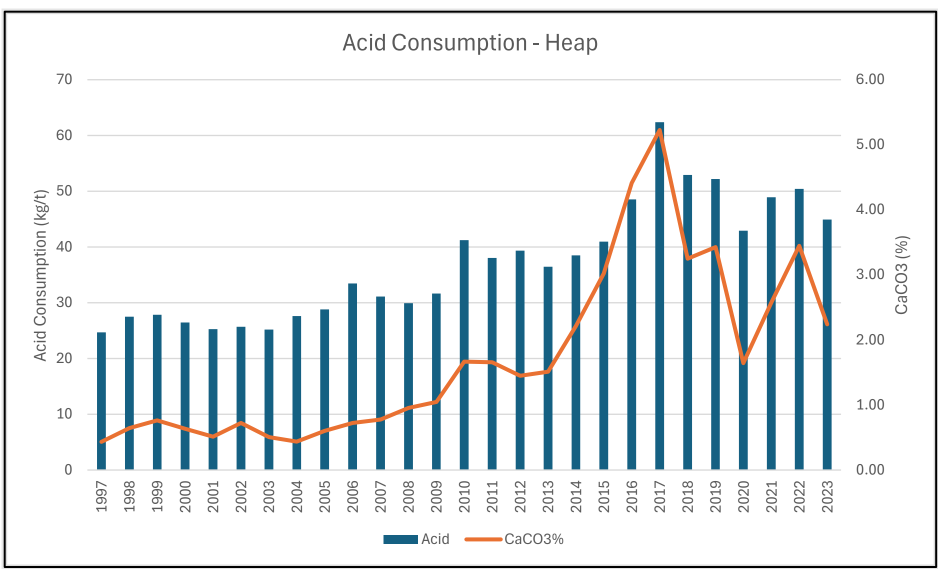
Table 13-7: Estimated Acid Additions Dump Leach

Grade $CaCO_3$ (%)	Acid Addition in Cure (kg/t)	Acid Addition in Leaching (kg/t)
$CaCO_3 < 1.0$	5	4.55
$1.0 \le CaCO_3 < 2.0$	6	5.2
$2.0 \le CaCO_3$	8	6.5

Acid consumption varies by ore type and carbonate grade as well as the leaching method. Crushed dynamic heap feed material tends to have much higher acid consumptions despite generally having lower carbonate feed grades (by design). Acid consumption for the heap ranges from 45 to 75 kg/t and 9 to 12 for the south dump Figure 13-10.

The dynamic heap accounts for 75% of the site acid consumption.

Figure 13-10: Historic Heap Acid Consumption and Feed Carbonate Grade



Source: Capstone, 2024.

13.2.4 Cobalt Extraction

The bio-oxidative heap leach (bioleach) approach considers, optionally, the recovery of the pyrite from the cleaner-scavenger tails via froth flotation to produce a cobaltiferous pyrite concentrate, which is then leached in dynamic copper leach pads to oxidize the pyrite and dissolve the cobalt. The cobalt is recovered from the solution by treating a bleed stream of copper SX raffinate through a continuous, counter-current ion exchange (CCIX) facility. This approach to by-production of cobalt confers the following benefits:

- It requires significantly lower capex compared with the pyrometallurgical approach to cobalt liberation from pyrite (oxidative roasting).
- It reduces acid consumption, as the pyrite is acid-forming on dissolution.
- The bio-oxidation of pyrite produces ferric ion and increases the temperature of the heap, both of which assist in primary copper sulphide leaching.
- The pyrite concentrate contains some copper, which will also leach and report to cathode. This also provides for an additional degree of freedom when optimizing the concentrator grade-recovery curve for changing copper prices, gold prices, freight costs, concentrate treatment charges, and copper refining costs.
- The process removes acid-producing pyrite from the tailings impoundment facility and redirects it to a lined heap leach facility, reducing mine acid drainage potential.

Column test results and pilot plant testing of the ion-exchange recovery circuit indicate that this approach to cobalt recovery is likely to be technically and economically feasible for Mantoverde.

Column leach tests were conducted at Aminpro in Santiago, Chile, scaling up the simple bottle roll testwork to columns. The initial test matrix was designed to determine the impact of several key parameters on the extraction of cobalt from pyrite. These parameters include:

- Bio-oxidation,
- Aeration,
- Temperature,
- Pyrite concentrate loading,
- Pyrite concentrate source (Mantoverde vs. Santo Domingo),
- Pyrite concentrate particle size, and
- Raffinate type, synthetic vs actual raffinate (from the Mantoverde commercial leach circuit)

Although the test program is not complete at the time of reporting, initial unreconciled results from the columns show that over 90% of the cobalt can be extracted from the pyrite within the typical dynamic leach cycle that currently exists at Mantoverde. Further analysis of the results is required and will be available in future technical reports post the completion of the column program.

In parallel to the column tests conducted at Aminpro, a pilot program has started at Mantoverde to simulate the conditions of the third stage of cobalt extraction. Capstone Copper have proposed a novel process for concentrating the leached cobalt using ion exchange. The process description for the pilot plant is described below.

Feed to the pilot plant is raw raffinate solution, derived from the Mantoverde commercial heap operation, which is spiked with cobalt sulphate to simulate the modelled concentration of cobalt reporting to the heap leach PLS in the future. The pilot circuit, shown in Figure 13-11, consisted of an iron cementation stage followed by filtration of the precipitate. Filtrates are pH adjusted and passed through a continuous counter current ion exchange unit (CCIX), developed by Puritech, filled with BPA resin to target the cobalt in solution. Loaded elements, including cobalt, nickel and iron, are stripped from the resin in stages to produce a cobalt rich PLS, nickel rich PLS and raffinate. Key variables tested in the program included:

- Feed grade with cobalt, nickel, total iron and ferrous to ferric ratio adjusted,
- Iron powder dosage,
- pH of CCIX feed,
- Cementation residence time and ORP target,
- Feed flow and strip flow rates,
- Acid concentration in strip,
- PLS recycle, and
- CCIX indexing time.

Figure 13-11: Pilot Ion Exchange Circuit at Mantoverde for The Recovery of Synthetic Cobalt Solutions

Source: Capstone, 2024.

Although testwork is ongoing to simulate the full range of parameters, the results suggest that cobalt can effectively be loaded and stripped from the resin given suitable conditions. A visual of the cobalt loading can be found in Figure 13-12.

Figure 13-12: Cobalt Loading onto BPA Resin

Source: Capstone, 2024.

Further work is required to determine the optimal conditions for cobalt loading while reducing deportment of deleterious elements to the cobalt PLS. Once a clean high grade cobalt solution is produced the final product is anticipated to be formed by precipitation of the cobalt using magnesium oxide. This work and the detailed results of the pilot program will be published in future technical reports.

13.3 Metallurgical Test Work – Sulphide

A complete list of metallurgical test work supporting the sulphide operation is summarized in Table 13-8. Detailed analysis of the test work from 2005 to 2017 is referenced in the 2022 Technical Report. The test work conducted since 2017 will be expanded on in the following sections.

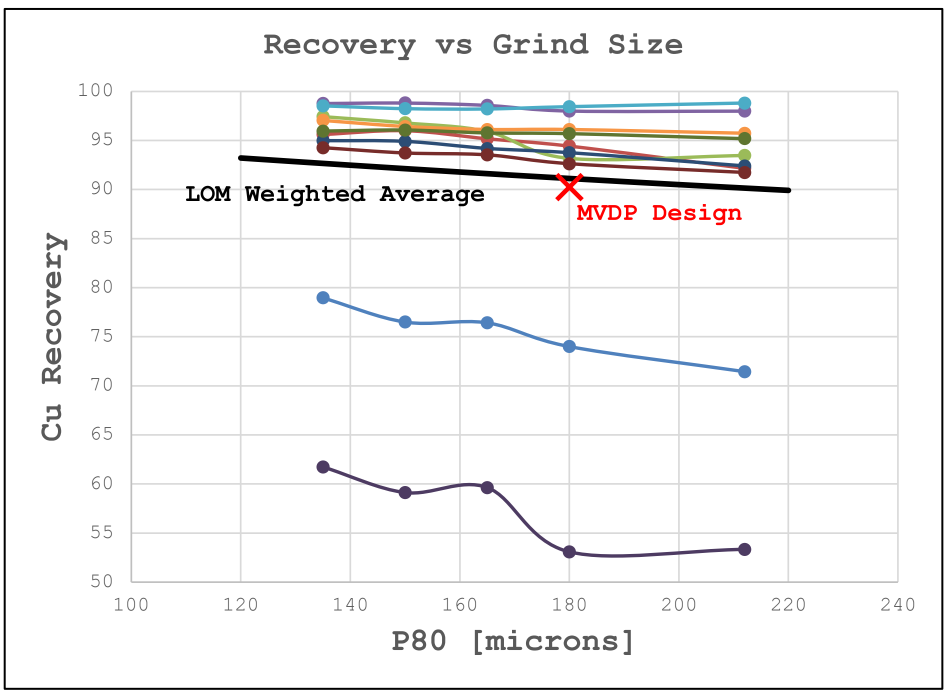
Table 13-8: Metallurgical Test Work – Sulphide

Year	Laboratory	Work Completed
2005	CIMM T&S	Comminution tests, BWi, chemical and mineralogical characterization, kinetic rougher flotation tests, OCTs and LCTs
2007	CIMM T&S	Comminution tests, BWi, chemical and mineralogical characterization, kinetic rougher flotation tests, OCTs and LCTs

Year	Laboratory	Work Completed
2008	CIMM T&S	Chemical and mineralogical characterization, kinetic rougher flotation tests, OCTs, settling tests on rougher tailings
2009	SGS Lakefield Chile	Chemical and mineralogical characterization; comminution, rougher flotation, cleaning flotation tests; OCTs and LCTs
2015	ASMIN	Chemical and mineralogical characterization; comminution, rougher flotation cleaning flotation tests; OCTs and LCTs, tailings settling tests. Flotation/tailings pilot-scale performance. Magnetic susceptibility and Davis tube test (DTT)
2017	ASMIN	Chemical and mineralogical characterization; comminution, rougher flotation, cleaning flotation tests; OCTs and LCTs, tailings settling tests
2022 – 2023	Aminpro	Kinetic flotation test, for rougher and cleaner stage, and OCTs.
2023	Tailpro	General characterization, static sedimentation, dynamic sedimentation and thickener sizing
2024	Metso	Jar mill test

Perhaps the most relevant conclusions derived from the large body of historical test work is the relationship between the flotation feed size distribution and the rougher recovery (Figure 13-13). As the concentrator throughput is increased from 32 kt/d to 45 kt/d, it is expected that the flotation feed size will increase from the current design of 180 microns to 212 microns, resulting in an average overall drop of 1.4% recovery (from 92.5% to 91.1%). Cleaner losses would be added on top of these figures.

Figure 13-13: Flotation Feed P_{80} vs. Rougher Recovery For Main Ore Types



Source: Capstone, 2024.

13.3.1 Aminpro Laboratory Tests (2022 – 2023)

13.3.1.1 Rougher Flotation Kinetic Test

Additional rougher tests were conducted at Aminpro to compliment the variability flotation tests completed by ASMIN prior to 2018. The latest test work focused on the flotation kinetics of the copper minerals from the early phases of the LOM plan to confirm if the existing MVDP infrastructure would handle an increase in throughput rate and fluctuations in feed grade. The samples used for the kinetic test were described as the following:

- Composite of First 5 Years, 1.08% Cu head grade,
- Geological unit Mantoverde Sur, 1.16% Cu head grade,
- Geological unit Mantoverde Norte, 1.04% Cu head grade,
- Geological unit Manto Ruso, 0.90% Cu head grade, and
- Geological unit Celso, 1.20% Cu head grade.

Details of the flotation program are described below:

- Chemical characterization of copper, gold, silver, cobalt, iron and sulphur.
- Batch flotation tests at target rougher feed P_{80} (212µm) using the anticipated full scale reagent suite. Specifically, MIBC as frother, AP-9950 as primary collector and AX-343 as secondary collector. The pH was adjusted to 9.5 using lime.
- The flotation tests were carried out using desalinated water at a pulp density of 33% w/w solids.
- Concentrate samples were taken using a fast scrap technique (one every 2-3 seconds) for the first 2 minutes, and then a slower scrape (one every 10 seconds).
- Head assay analysis on each concentrate product and size by assay analysis on the feed and tail product.

Table 13-9 shows the most relevant results from the kinetic test.

Table 13-9: Kinetic Parameters for Chalcopyrite from the Rougher FKT Flotation Tests

Parameter	Unit	Composite First 5 Years	MVS	MVN	MR	Celso
Rmax	%	97.17	98.00	97.84	97.77	99.75
k	min^{-1}	2.64	2.31	3.67	4.04	2.89

Results suggest the primary copper mineral of chalcopyrite is fast floating with most of the copper recovered in the early sections of the rougher stage.

13.3.1.2 Cleaner Flotation Kinetic Test

Following the rougher tests at Aminpro, additional cleaner tests were conducted to compliment the flotation tests completed by ASMIN prior to 2018. Similarly to the rougher tests, the latest test work focused on the flotation kinetics of the copper minerals. The samples used for the kinetic test were described as the following:

- Composite of First 5 years, rougher concentrate,
- Geological unit Mantoverde Sur, rougher concentrate,
- Geological unit Mantoverde Norte, rougher concentrate,
- Geological unit Manto Ruso, rougher concentrate, and
- Geological unit Celso, rougher concentrate.

The flotation tests included the following:

- Chemical characterization of copper, gold, silver, cobalt, iron and sulphur.
- Initial regrind to achieve the target particle size P80 for each sample (38µm).
- The reagents used for flotation were MIBC as frother for all tests. The pH was adjusted to 11.0 using lime.
- The flotation tests were carried out using desalinated water at a pulp density of 20% w/w solids.
- Concentrate samples were taken using a fast scrape technique (one every 2-3 seconds) for the first 2 minutes, and then a slower scrape (one every 10 seconds).
- Head assay analysis on each concentrate product and size by assay analysis on the feed and tail product.

Table 13-10 shows the most relevant results from the kinetic test.

Table 13-10: Kinetic parameters for Chalcopyrite from the Cleaner Flotation Tests

Parameter	Unit	Composite First 5 Years	MVS	MVN	MR	Celso
Rmax	%	99.42	98.97	99.09	99.87	98.89
k	min^{-1}	1.75	2.89	2.07	1.21	2.12

Similarly to the rougher tests, the results suggest the primary copper mineral of chalcopyrite is fast floating with an Rmax close to 100%.

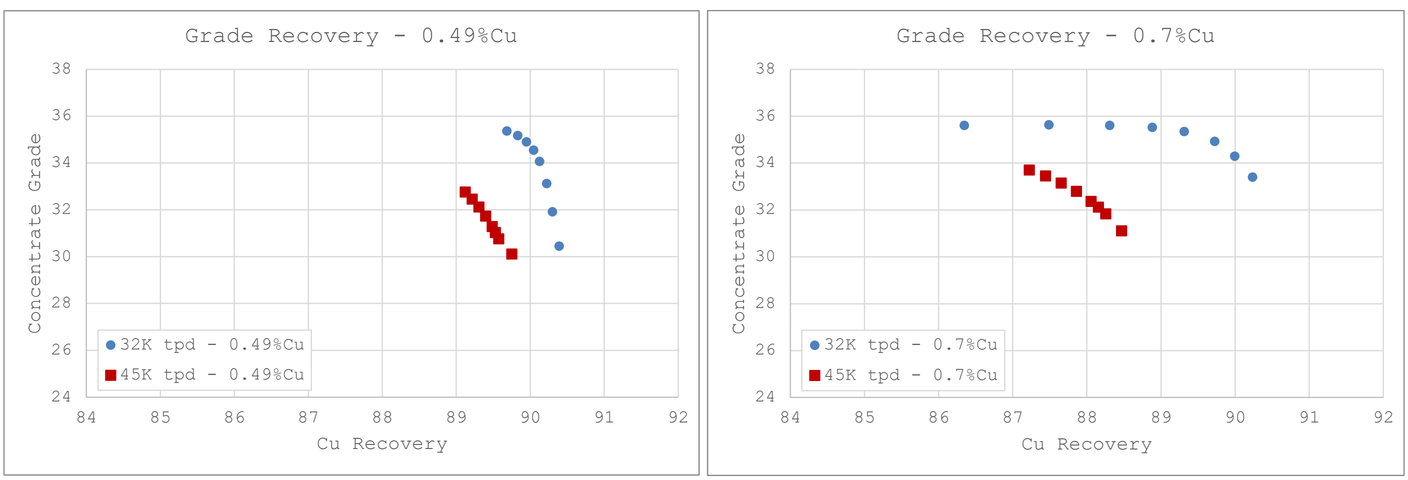
The rougher and cleaner kinetics tests were used to extract the kinetic parameters (the first order collection rate constant, k, and the maximum recovery, Rmax) for subsequent use in a phenomenological model configured with the MVDP primary equipment sizes and calibrated to existing operations. In this manner, residence times, circulating loads, and stream grades were determined for the 45 kt/d scenario, demonstrating that the major equipment can sustain the estimated recoveries and concentrate grades at the higher throughput rates.

13.3.1.3 Phenomenological Flotation Simulator

The maximum recovery and first order collection rate constants described above were input to the AminFloat flotation circuit simulation tool and the resulting model was tuned to the operating performance of the Mantoverde concentrator. Steady state metallurgical data was taken during October 2024, when processing ores with average grades of around 0.7%Cu. Simulations were also performed for the LOM average grades of 0.49%Cu. For the 45 kt/d, the carrying capacity of the 3rd cleaner column would limit production, so the third cleaner column was reconfigured as a 2nd cleaner (resulting in three parallel columns operating in a second cleaning duty). The rougher feed size was increased to 212 microns and the cleaner regrind P80 to 60 microns. The results are presented in Figure 13-14 in the form of the projected grade recovery curves for the current circuit and tonnage (blue circles) and the expanded tonnage and new circuit (red squares). The results offer independent support for the curves presented in Figure 13-13 and further confirm that the flotation circuit is capable of operating at the higher throughputs without significant losses in metallurgical recovery.

Note that the grade-recovery curves shown in Figure 13-14 are process-limited grade recovery curves and do not reflect operating inefficiencies that may occur due to non-steady-state conditions, spillage, or minor equipment constraints. For this reason, the projected recoveries are usually lower than the simulated values.

Figure 13-14: Grade vs. Recovery at 0.49%Cu and 0.7%Cu for Current MVDP Concentrator (32K t/d) and Future MV-O Flowsheet (45K t/d)



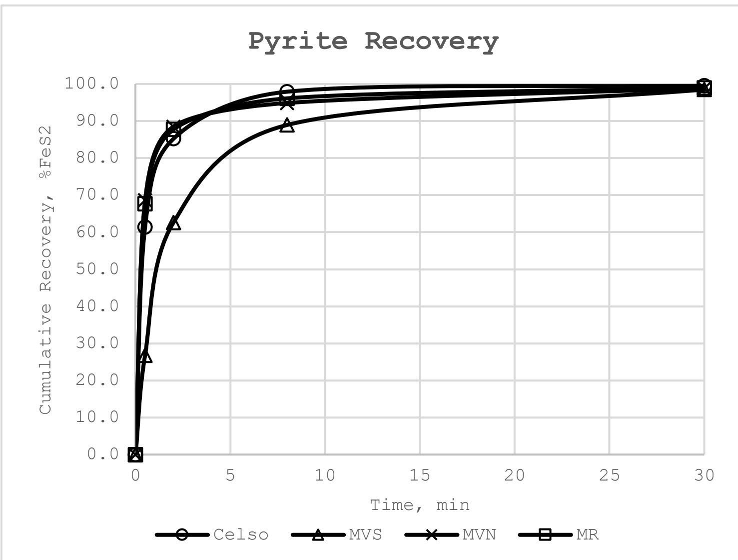
Source: Capstone, 2024.

13.3.1.4 1315Pyrite Flotation (2023)

Cleaner scavenger tailings, derived from bench scale test work on the four primary geological zones of Celso, Mantoverde North, Mantoverde South and Manto Ruso, was exploited for bench scale pyrite flotation tests. Each test was conducted using the FKT procedure to produce kinetic information for pyrite and cobalt, for each zone.

To promote the flotation of pyrite the pH of the pulp was set at 8 and potassium ethyl xanthate used as the collector. Figure 13-16 presents cumulative pyrite recovery over time for each of the geological zones and shows the pyrite is fast floating for most of the samples tested. The kinetic parameters derived from the FKT tests are available in Table 13-11. As expected, the pyrite and cobalt closely align with respect to the Rmax and rate constant for each of the tests.

Figure 13-16: Pyrite Flotation Kinetics for Each Geological Unit



Source: Capstone, 2024.

Table 13-11: Kinetic Parameters from the Pyrite Flotation Tests

Parameter	Unit	FeS2 Celso	FeS2 MVS	FeS2 MVN	FeS2 MR	Co Celso	Co MVS	Co MVN	Co MR
Rmax	%	98.51	98.22	97.61	97.53	96.30	95.85	86.47	83.41
k	min^{-1}	1.86	0.51	2.32	2.24	1.82	0.51	2.42	2.41

The kinetic parameters derived from the flotation tests were fed into the whole of plant phenomenological model to assist in development of future equipment sizing and equipment type. This information will be used in the next study phase of the cobalt extraction project.

13.3.2 TAILPRO Laboratory Tests (2023)

The samples used were described as the following:

- For Tailings Thickening:
  - Sample 1 (M1), with P_{80} of 180 µm
  - Sample 2 (M2), with P_{80} of 212 µm

- For Slimes Thickening:
  - Sample 3 (M3), produced from the M1 sample
  - Sample 4 (M4), produced from the M2 sample

13.3.2.1 General Characteristics

The samples were characterized with general test, as specific gravity, pH and conductivity (see Table 13-12). Also, a laser diffraction was performed to analyze the granulometry of the samples (see Table 13-13). Additionally, a laser diffraction was performed to analyze the granulometry of the sands generated at the sand hydrocyclone and its performance in complying with the maximum allowable fines requirement for sands (see Table 13-14).

Table 13-12: Samples General Characteristics

Sample	Specific Gravity	Pulp pH	Conductivity (mS/cm)
M1	3.23	9.1	0.49
M2	3.18	8.8	0.6
M3	3.26	8.4	N/A (diluted at cyclone)
M4	3.24	8.0	N/A (diluted at cyclone)

Table 13-13: Samples Average Granulometry

Sample	P_{80} (µm)	P_{50} (µm)	P_{20} (µm)	P_{10} (µm)
M1	190	63	11	6
M2	209	61	11	5
M3	74	21	5	3
M4	71	20	6	4

Table 13-14: Sand Samples Average Granulometry (Sand Cyclone Underflow)

Sample	P_{80} (µm)	P_{50} (µm)	P_{20} (µm)	P_{10} (µm)	%Passing 75 µm
M3	288	175	82	27	18.54
M4	299	178	75	20	19.97

13.3.2.2 Static Sedimentation

A natural sedimentation test was carried out. and results showed that every sample achieved less than 200 NTU at 60 min without using flocculant. This result indicates that the mineral has good sedimentation characteristics of the ultra-fines particles.

The Tailpro finding from this test work are summarized below:

- Samples M1 to M4 showed good sedimentation inside the thickener. The operational parameters were consistent with the expectations for tailings with these characteristics. Consolidation rates were better than expected for all four samples tested with most consolidation occurring in the first and a half hour.
- Regarding water clarity, less than 200 NTU was observed int samples M1 and M2, even for thickening rates up to 1.0 t/h/m^2. For sample M3, the overflow water clarity was poorer compared to M4, but still within acceptable ranges. At a thickening rate of 0.5 t/h/m^2, overflow clarity values of 226 NTU and 113 NTU for M3 and M4 were observed.
- The non-shear yield stress from the thickening tests was relatively low for the target solids concentrations in the thickener discharge. For the integral tailings, M1 and M2 at 58% w/w solids had a yield stress between 19 to 29 Pa. For the slimes samples, M3 and M4 at 55% w/w solids had a yield stress between 6 to 15 Pa.

13.3.2.3 Dynamic Sedimentation

The dynamic sedimentation test for tailings thickening (M1 and M2) included the following parameters:

- Natural pH.
- Feed solids concentration of 15%.
- Flocculant (AP2024) feed of 20 g/t.
- Thickening rate of 0.4, 0.5, 0.59, 0.65, 0.7, 0.8 and 1 t/h/m^2.

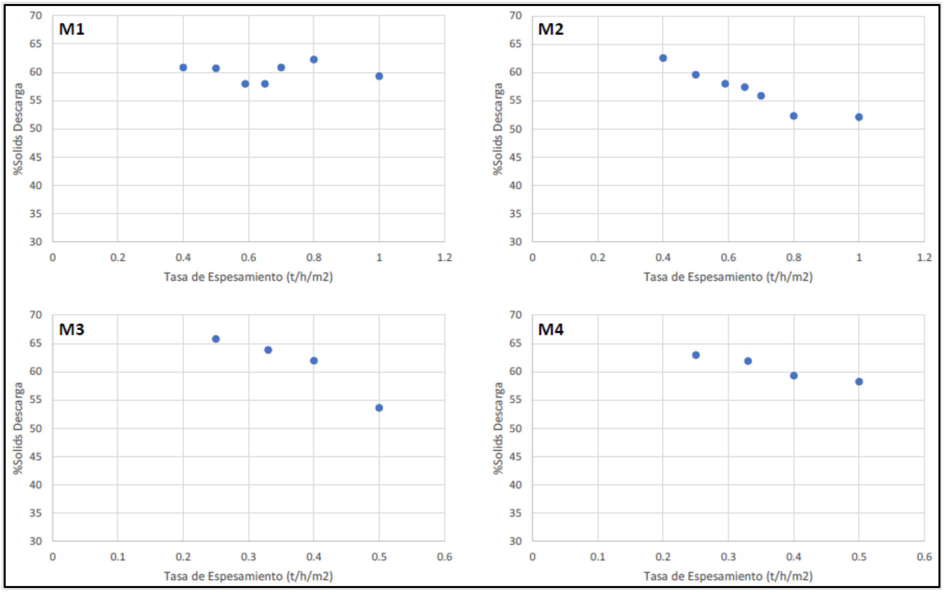
The dynamic sedimentation test for slimes thickening (M3 and M4) included the following parameters:

- Natural pH.
- Feed solids concentration of 8%.
- Flocculant (AP2024) feed of 35 g/t.
- Thickening rate of 0.25, 0.33, 0.4 and 0.5 t/h/m^2.

The Tailpro findings from this test work are summarized below:

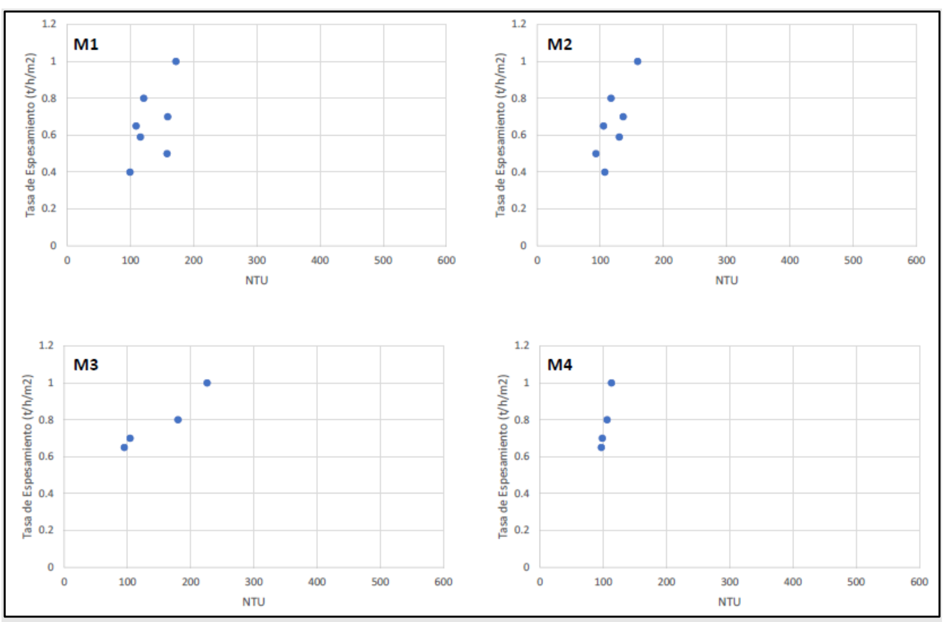
- The thickened tailings generate a good quality water (overflow), see Figure 13-17.
- The discharge solids content is on the category “medium to high” and it is expected to be better during a big scale test, see Figure 13-18.

Figure 13-17: Thickener Discharge Solids (%Cp) According A Variable Thickening Rate



Source: Tailpro, 2023.

Figure 13-18: Water Quality (NTU) According to A Variable Thickening Rate



Source: Tailpro, 2023.

13.3.2.4 Thickener Sizing

Vietti SlurryTec (VST) was asked by Tailpro Consulting to do a technical review of the thickening test results and perform a corroboration of the current thickener design for different treatment scenarios.

The specification of the thickener that were studied are listed in Table 13-15.

Table 13-15: Specification of the Thickener

	Unit	Value
Tailings Thickener		
Type	-	High Rate
Diameter	M	55
Wall height	M	3.3
Max. feed design	t/d	36.4
Feed Solids Content	%	15
Discharge Solids Content	%	60
Maximum Operating Torque (MOT)	MNm	8.13
Scenarios:		
Design Actual Tonnage	kt/d	36.4 max
Future Tonnage	kt/d	40.0 max
Future Tonnage	kt/d	45.0 max
Slimes Thickener		
Type	-	High Rate
Diameter	M	55
Wall height	M	3.3
Max. feed design	t/d	21.0
Feed Solids Content	%	8
Discharge Solids Content	%	50
Maximum Operating Torque (MOT)	MNm	8.13
Scenarios:		
Design Actual Tonnage	kt/d	21.0 max
Future Tonnage	kt/d	23.1 max
Future Tonnage	kt/d	29.9 max

The main findings from VST are listed below:

- Tailings Thickener:
  - The thickener is adequately sized for the settling characteristics of M1 and M2 samples when it is operating at rates between 0.64 and 0.79 t/h/m^2, representing 36.4 kt/d and 45 kt/d respectively. It is noted that between

0.7 and 0.79 t/h/m^2 there is accumulation of solids in the bed and exceeds the normal levels considered for good operation, so good control of the thickener is needed to avoid unstable operation.

  - The torque can handle the discharge of 58% solids, even being able to handle up to concentrations of 64%.

- Slimes Thickener:
  - The thickener is adequately sized for the settling characteristics of M3 and M4 samples when it is operating at rates between 0.34 and 0.46 t/h/m^2.
  - The torque can handle the discharge of 55% solids, even being able to handle up to concentrations of 63%.

13.3.3 METSO Laboratory Test (2024)

The Jar Mill grindability test was performed to determine the Vertimill specific energy to grind the sample from 118.5 µm (F_{80}) to 38 µm (P_{80}). The result returned was 3.79 kWh/mt.

13.4 Metallurgical Variability

Capstone Copper has made a significant effort to study in detail the behavior of the feed under the proposed process. More than 360 samples were tested to define the variability of the feed to the comminution and flotation process. Eight geometallurgical domains were identified for sulphide material and two domains for Mixed material to describe the feed characteristics. The design takes this variability into consideration and the variability is within the normal range in the industry.

The QP is of the opinion that the test program reasonably covered the different types of material in the deposit. The sulphide test materials responded to the design in a reasonable manner under varied simulations of operational situations. The Mixed material requires more test work is necessary to improve the results. This test work should be done as part of an operational optimization program improving the knowledge of this material and investigating reagent suites to improve recoveries.

13.5 Metallurgical Recovery

The metallurgical recoveries obtained from test work results were used to design the sulphide plant. The recoveries for the current mine plan and economic evaluation were obtained directly from the geometallurgical model estimates that were developed by an independent consultant Geoinnova Consultores (Geoinnova) with support from the Capstone Copper team.

The recoveries applied in the LOM plan were compared with the recoveries obtained from the metallurgical test work and found to be consistent. The LOM recovery models assumed a maximum rougher recovery ranging from 93.36% to 98.17% copper for the main sulphide zones and 81.59% to 89.32% copper for the Mixed zones.

The updated LOM model uses a cleaning efficiency of 98% for sulphide feed and two separate recoveries for the Mixed material; 96% was assumed for Mixed material with good recovery and 94% for Mixed material with low recovery.

The LOM metallurgical recoveries recommended for use in the financial analysis are provided in Table 13-16 for 2024 onward.

Table 13-16: Projected Metallurgical Recoveries

Sulphide Plant	Unit	2024	2025	2026	2027	2028	2029	2030	Average 2031-2039	Average 2040-2048	Total
Ore to mill MV	kt	9,803	12,724	16,067	16,399	16,470	16,399	16,425	16,435	16,440	**400,198**
TCu Mill Grade	%TCu	0.79	0.74	0.71	0.75	0.69	0.72	0.54	0.54	0.31	**0.49**
ICu Mill Grade	%ICu	0.69	0.63	0.60	0.65	0.59	0.64	0.45	0.46	0.24	**0.42**
Cu Metallurgical Recovery	%	88.2	87.6	87.5	88.6	88.6	87.5	87.5	88.3	87.0	**87.7**
Concentrate Grade	%	29.2	28.8	28.6	30.1	27.1	27.2	26.0	27.2	26.0	**27.0**
MVDP Copper Production	kt	68	83	100	109	101	104	78.0	78.7	43	**1,741**
Au Mill Grade	Au g/t	0.07	0.11	0.10	0.09	0.11	0.15	0.11	0.11	0.07	**0.10**
Au Metallurgical Recovery	%	74.6	71.4	69.5	71.9	73.0	72.6	69.4	70.0	64.5	**68.4**
Gold Production	koz	17.5	31.3	36.2	35.9	42.4	55.7	40.1	40.4	25.1	**849**

13.6 Deleterious Elements

The test work data indicates that the Mantoverde concentrate will be clean and free of deleterious elements. No significant quantities of deleterious elements have been identified to date. Table 13-17 shows the expected concentrate characteristics for the MVDP.

Table 13-17: Projected Concentrate Quality

Element		Unit	Expected	Minimum	Maximum
Copper	Cu	%	31.3	25.1	34.0
Iron	Fe	%	30.4	19.9	33.0
Sulphur	S	%	32.9	26.8	36.0
Gold	Au	g/t	6.3	4.2	7.0
Cobalt	Co	g/t	1,512	588	1,783
Zinc	Zn	ppm	26	74	120
Lead	Pb	ppm	476	194	675
Cadmium	Cd	ppm	0.50	0.50	1.00
Mercury	Hg	ppm	1.98	0.38	3.00
Silicon	Si	%	0.061	0.002	0.100
Arsenic	As	ppm	38.3	0.63	45.0
Chlorides	Cl	%	0.05	0.05	0.1
Antimony	Sb	ppm	5.5	2.50	8.0
Molybdenum	Mo	ppm	19.1	1.00	32.0
Fluorine	F	ppm	100	0.00	200

14 MINERAL RESOURCE ESTIMATES

14.1 Introduction

Mineral Resources were estimated in sixteen Estimation Units (EU), encompassing all the areas of the Mantoverde mine including MVN, MVS, FR, QUI, CE, MR, Ku, P62 and MC. The effective date for the updated Mineral Resource is June 1, 2024, reflecting mining activities up to the date of the most recent topographic survey.

The modeling and estimation methodologies and procedures have been validated during the oxide extraction period, with annual contained metal error rates averaging around 3% (first half of 2024). Given the continuity of the mineralized body, the Resource model is considered appropriate for this type of deposit and serves as a solid foundation for the commencement of sulphide mining. For estimation purposes, the database was closed on October 17, 2022, with a total of 4,895 drill holes and 901,024 meters. The software used for estimation was Datamine Studio RM™.

The Mantoverde block model was initially estimated with a block size of 5.0 m x 5.0 m x 5.0 m, and subsequently re-blocked to a final 10.0 m x 10.0 m x 15.0 m block size. This re-blocking imparts the proper amount of internal dilution to the model. The block size used is appropriate as a Selective Mining Unit (SMU) for this type of deposit and expected mining rate.

The block model definition parameters (block size, extents, origin, etc.) are shown in Table 14-1.

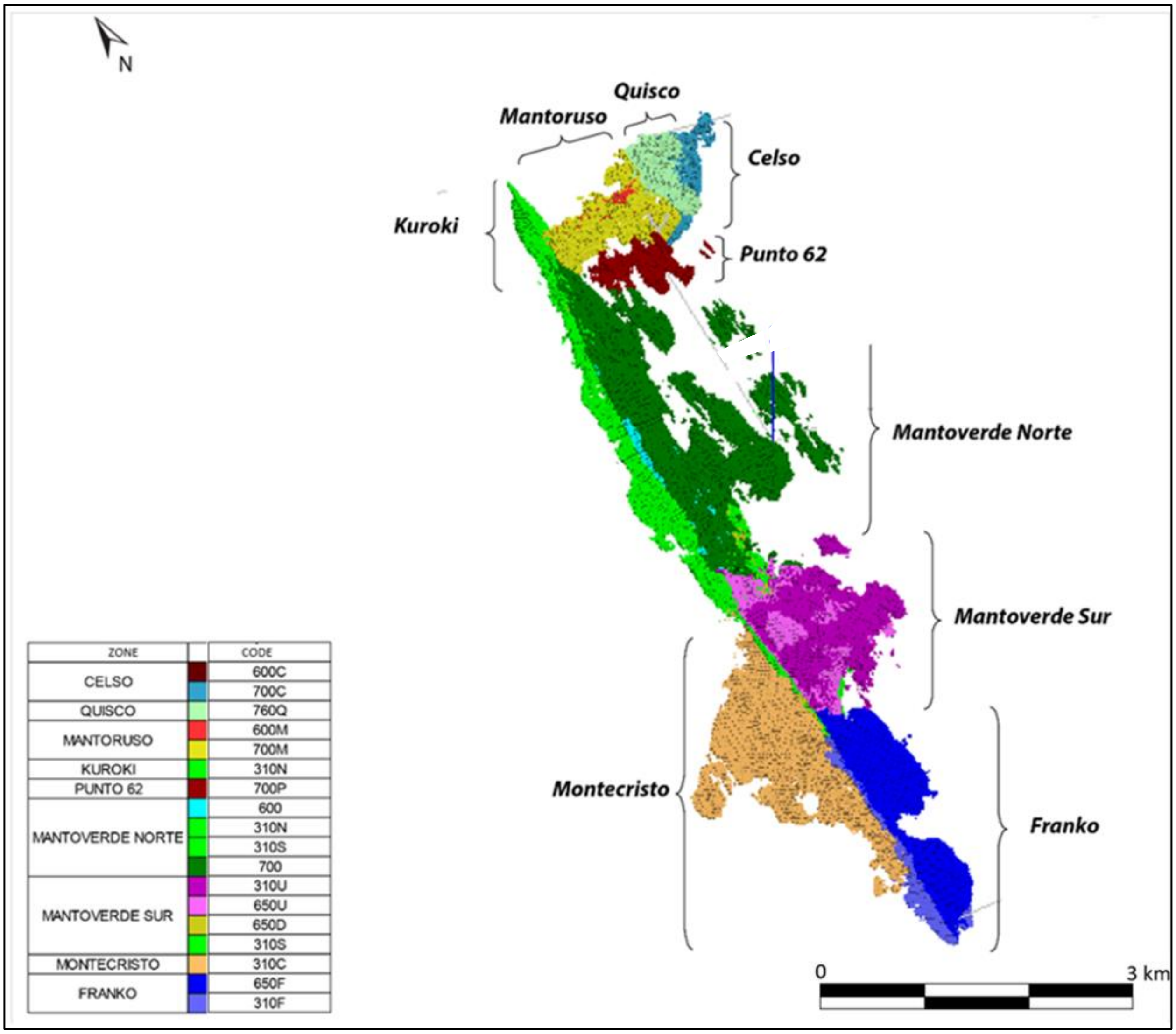
Table 14-1: Block Model Definition

	Azimuth	Dip	Plunge
	90°	0°	0°
Origin	East	North	RL
	58,785	93,735	0
Extension	3,850	12,030	1,200
Estimate Block Size (m)	5	5	5
Regularized Block Size (m)	10	10	15
N° Blocks	385	1,203	80

14.2 Geological Models

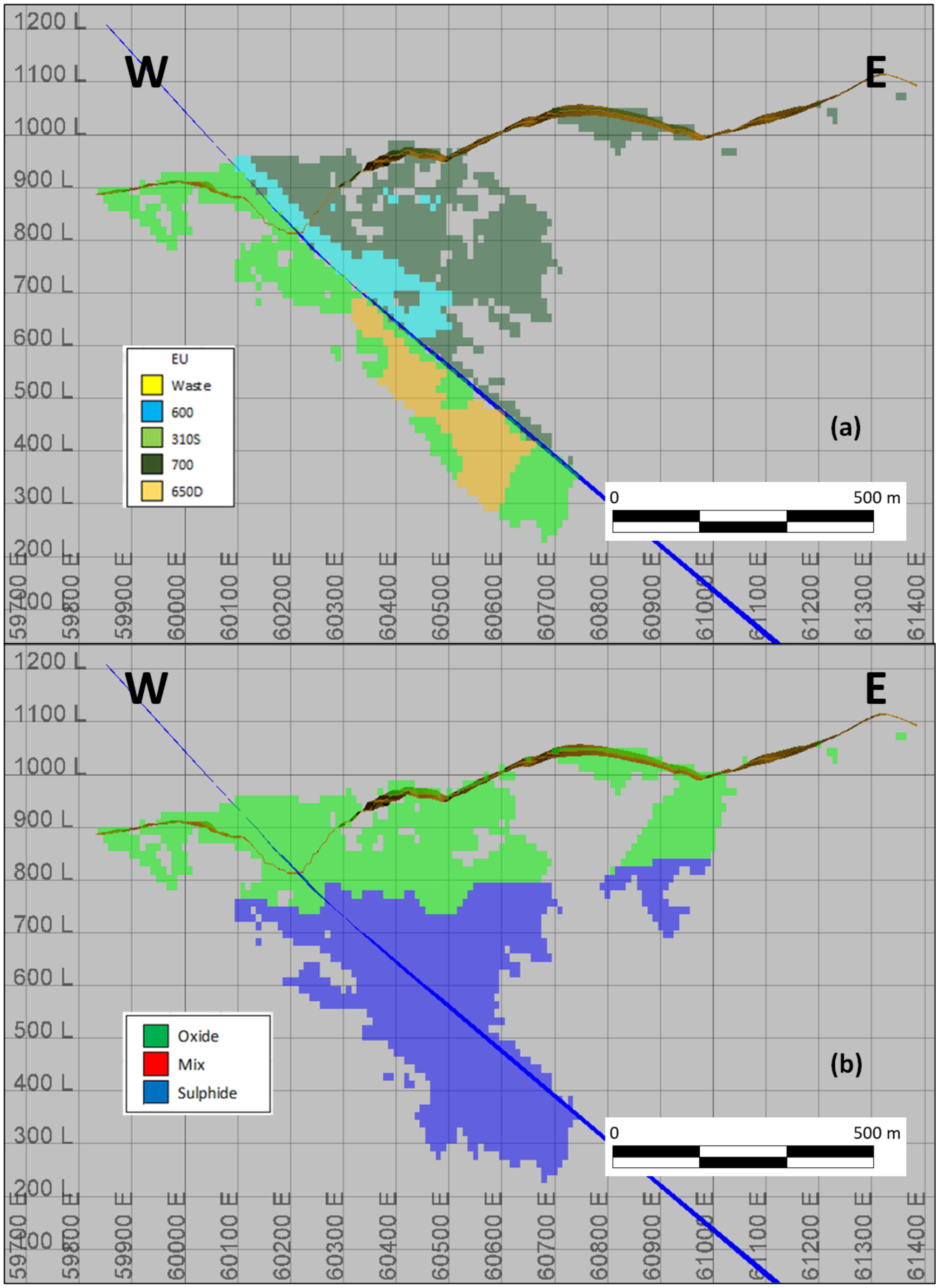
70% of the deposits at Mantoverde are located along the north-northeast-south-southwest trend of the FMV (Figure 14-1 and Figure 14-2). The other deposits (Mantoruso, Quisco, Celso) are located along a northeast-southwest trend extending 700 m east of the Kuroki mine (Figure 14-1 and Figure 14-3). In this zone, mineralization is controlled by the intersection of northwest-southeast and north-south trending secondary faults.

Figure 14-1: Spatial Distribution of the EU.



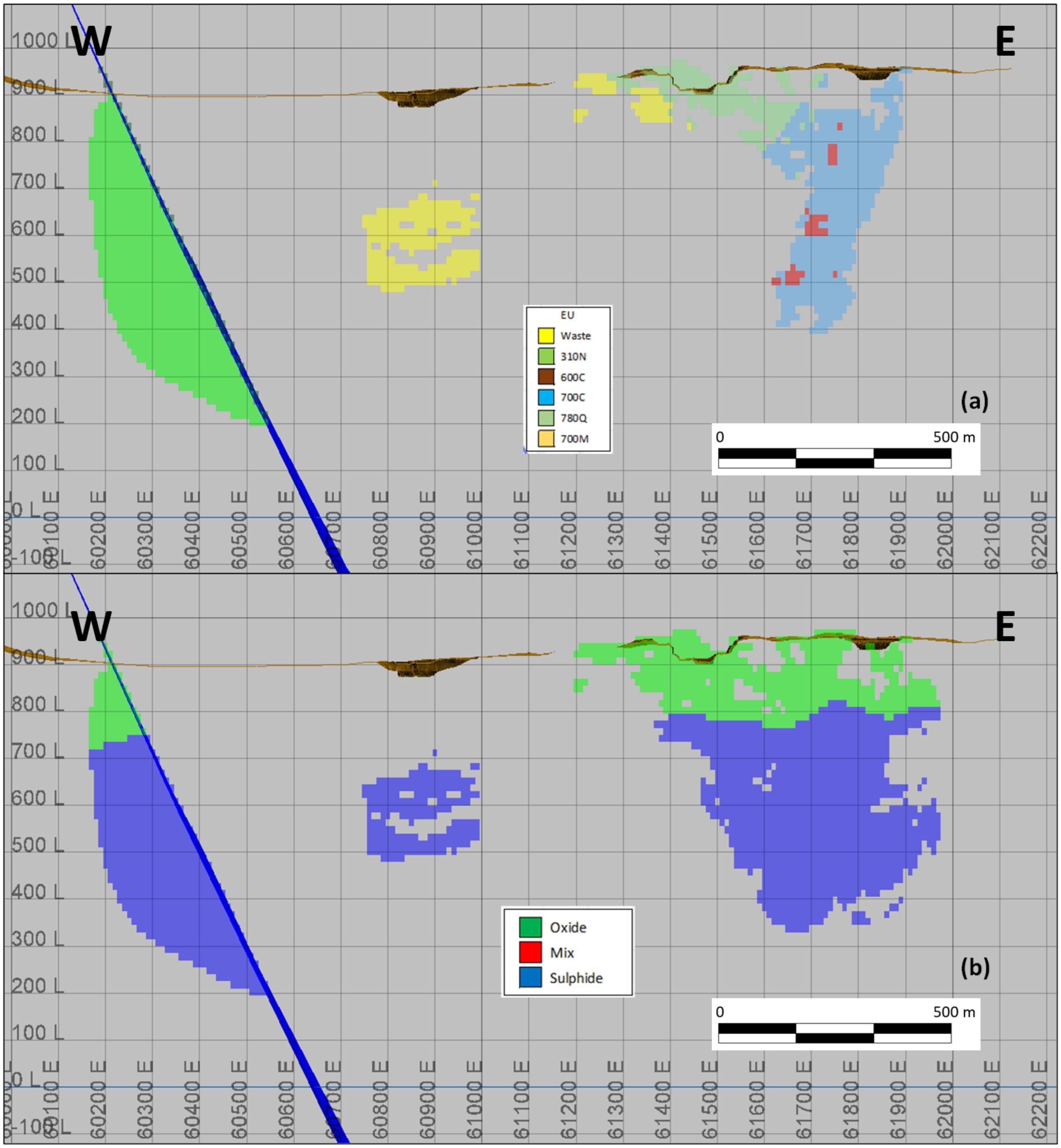
Source: Capstone, 2024.

Figure 14-2: East–West Section (99.950 N) Showing Spatial Distribution of (a) EU and (b) Mineral zones.



Source: Capstone, 2024. Note: EU = Estimation Unit, Referential topography 2024 (brown top surface) and Mantoverde Fault (blue, east-dipping surface).

Figure 14-3: East–West Section (103.400 N) Showing Spatial Distribution of (a) EU and (b) Mineral zones



Source: Capstone, 2024. Note: EU = Estimation Unit, Referential topography 2024 (brown top surface) and Mantoverde Fault (blue, east-dipping surface).

Geological modeling includes the interpretation of mineralized geological units that have been defined based on lithology, alteration, mineralization and location relative to the Mantoverde fault. The geological models were constructed using probabilistic models based on indicators.

14.3 Lithology Model

For the construction of the lithology model the lithologies logged by the geologists were grouped. These grouped units are the basis of the resource estimation units and are stored within the variable ZONE (see Table 14-2).

Mineralized samples (those with TCu>0.10%) were grouped as follows:

- If the rock code is in the following list (codes 150, 160,190, 200, 240, 250, 260, 270, 280, 281, 282, 283, 285, 300, 350, 400, 500, 550), it was assigned to unit 310.
- Initially all breccias are coded as 310, then grouped according to geographic position and separated into tectonic-breccia-breccia-green mineralized.
- If the rock corresponds to unit 610, it was assigned to unit 600.
- If the rock corresponds to unit 660, it was assigned to unit 650.
- If the rock corresponds to units 710 or 720, it was assigned to unit 700.
- If the rock corresponds to units 860 or 900, it was assigned to unit 850.
- If the rock corresponds to unit 800, it was assigned to unit 800.
- If the rock corresponds to Absent, it was assigned to unit 850 and later assigned to a lithology according to the conceptual model.
- If the sample is in the Mantoruso-Quisco-Celso deposits and the rock was mapped as unit 610 or 650), it was assigned to unit 600.
- If the sample is in the Mantoruso-Quisco-Celso deposits and the rock was mapped as units <600 or >650, it was assigned to unit 700.

Table 14-2: Database Lithological Codes and ZONE Variables

Description	Code	ZONE	Description	Code	ZONE
Absent	-9	ABSENT	hydrothermal breccia	600	600
Overburden	100	100	hydrothermal breccia	610	
coarse gravel	101		magnetite breccias	650	650
medium gravel	102		magnetite dissemination	660	
fine gravel	103		transition zone	700	700
sand, silt	104		transition zone	710	
sand	105		epidote zone	720	
silt	106		salband	800	800

Description	Code	ZONE	Description	Code	ZONE
clay	107		fault zone	850	850
gravel-rock interface	108		calcite vein	860	
terraced deposits	170		mylonite	900	
clastic rocks	180		-		
alluvium	226				
tonalitic porphyry	255				
granitic dyke	150	310			
felsic body	160				
brownish andesite	190				
gray andesite	200				
chloritized andesite	240				
diorite	250				
argillized andesite	260				
green breccia	270				
granodiorite-tomalite	280				
fine granodiorite	281				
coarse granodiorite	282				
tonalite	283				
green breccia in Gd	285				
green breccia	300				
mineralized green breccia	310				
dioritic dike	350				
andesitic dike	400				
tectonic breccia	500				
tectonic breccia	550				

14.4 Position with Respect to Mantoverde Fault

Samples were also flagged according to their position with respect to the FMV. The FMV is modelled as a wireframe within Datamine Studio 3 and is updated annually with the new drill hole information. Samples are coded as:

- PIN=1, within the hanging wall block of the Mantoverde Fault.
- PIN=2, within the footwall block of the Mantoverde Fault.

14.5 Minzone

Weathering occurs mainly in those zones close to and above the FMV. Samples were classified according to their redox state (oxide, mixed or sulphide), and subsequently used to create two separate boundary surfaces: Sulphide Top and Oxide Floor. These surfaces are updated annually in Datamine Studio RM with new information added into the model. These surfaces allow three zones to be differentiated:

Oxide Zone: characterized by the presence of oxidized minerals such as chrysocolla, brochantite, malachite, cupriferous limonite and copper wad. It is located above the Sulphide Top with maximum solubility ratio of 0.65 and coded as MINE=1.

Mixed Zone: transition zone where copper oxide minerals and copper sulphide minerals co-exist. It is located between the Oxide Floor and the Sulphide Top and coded as MINE=2.

Sulphide Zone: characterized by presence of hypogene sulphides such as chalcopyrite, pyrite, covellite and bornite. It is located below the Oxide Floor and coded as MINE=3.

14.6 Estimation Units

The EU were defined based on a probabilistic model based on a combination of the zone, sector, and the probability that the block was mineralized. The probabilistic model was constructed based on indicators as follows.

The samples are composited to 10 m preserving the original geological contacts and separated into two populations depending on the position relative to the FMV (hanging wall or footwall blocks).

An indicator IND1 is coded as 1 if the TCu grade is greater or equal to 0.1%, or 0 otherwise.

The IND1 indicator is interpolated into the block model using Ordinary Kriging (OK). Blocks with a probability greater than or equal to 50% are classified as mineralized (parameter MINERALISED), and the remaining blocks are classified as waste (parameter WASTE).

Indicators IND2 and IND3 are coded 0 or 1 depending on different combinations of the geological unit (parameter ZONE) and the location with respect to the FMV (parameter PIN). These indicators are subsequently interpolated using OK.

Together with the exploration geologists, the geological consistency of the model is reviewed. The incremental volumes of the block are reviewed in relation to the predicted results after the exploration drilling campaigns and a comparison of the model with the control geological sections are run every 25 m sections to ensure consistency.

A total of 16 EU were modelled using the probabilistic indicators methodology (Table 14-3).

Table 14-3: Codes Used to Identify the EU in the Block Model

ID	CODE	Estimation Unit	Zone	Sector	PIN	Area	Northing (N)
1	600	Hydrothermal Breccia	600	1	1	Mantoverde Norte	-
2	700	Transition Zone	700	1	1	Mantoverde Norte	-
3	650D	Magnetic Zone below MVF	650	3	2	Mantoverde Sur	-
4	310N	North Tectonic Breccia	310	3	2	Kuroki/Mantoverde Norte	N>100,250
5	310C	Montecristo Tectonic Breccia	310	4	2	Montecristo	-
6	650F	Franko Magnetite Zone	650	5	1	Franko	-

ID	CODE	Estimation Unit	Zone	Sector	PIN	Area	Northing (N)
7	310F	Franko Tectonic Breccia	310	6	2	Franko	-
8	310S	South Tectonic Breccia	310	3	2	Mantoverde Norte/Sur	YC<100,250
9	650U	Magnetite Zone above MVF	650	2	1	Mantoverde Sur	-
10	310U	Mineralized Green Breccia	310	2	1	Mantoverde Sur	-
11	700P	Punto 62 Transition Zone	700	7	1	Punto 62	-
12	600M	Mantoruso Hydrothermal Zone	600	8	1	Mantoruso	-
13	700M	Mantoruso Transition Zone	700	8	1	Mantoruso	-
14	600C	Ceslo Hydrothermal Breccia	600	9	1	Celso	-
15	700C	Celso Transition Zone	700	9	1	Celso	-
16	760Q	Quisco Hydrothermal Breccia	600/700	10	1	Quisco	-

14.7 Composites

The 2 m length samples are composited to 10 m using the Datamine Studio RM package. Because composites can be broken at geological contacts, composite lengths can be variable. Composite lengths between 6 to 14 m are considered acceptable. Each interval is assigned to a definitive EU in Excel and finally the file is re-composited at 10 m.

14.8 Total Copper (TCu) And Soluble Copper (SCu) Estimate

The exploratory data analysis is intended to find similarities of distributions among different populations and to determine possible groupings by geological attributes. The exploratory data analysis also seeks to detect possible drifts that may affect the estimation result. The statistical adequacy of the definitions of the EU was verified through the implementation of statistical and geostatistical tools. The analyses included basic statistics, cumulative probability and swath plots. The statistical analyses were performed using the composite database. Sixteen EU were defined using the geological units, sectors, and the north coordinates as controls.

Figure 14-4 shows an example of a cumulative plot created as part of the EDA. Although EU 700 and 310U exhibit very similar behaviour, they have been kept as separate EUs because there is a mineralization gap between them.

To prevent over-smoothing of high grades into lower grade areas, all the EUs were further sub-divided into high- and low-grade domains. The discrimination between low and high grades is based on the proportional effect between grade and sample variance. A ±0.4%TCu threshold was selected (Figure 14-5), and an indicator (IND0.4) was coded in the composites as follows:

The low-grade population (IND0.4=0), characterized by a low TCu grade (below 0.4%TCu) and low variability.

The high-grade population (IND0.4=1), characterized by a high TCu grade (over 0.4%TCu) and higher copper variability.

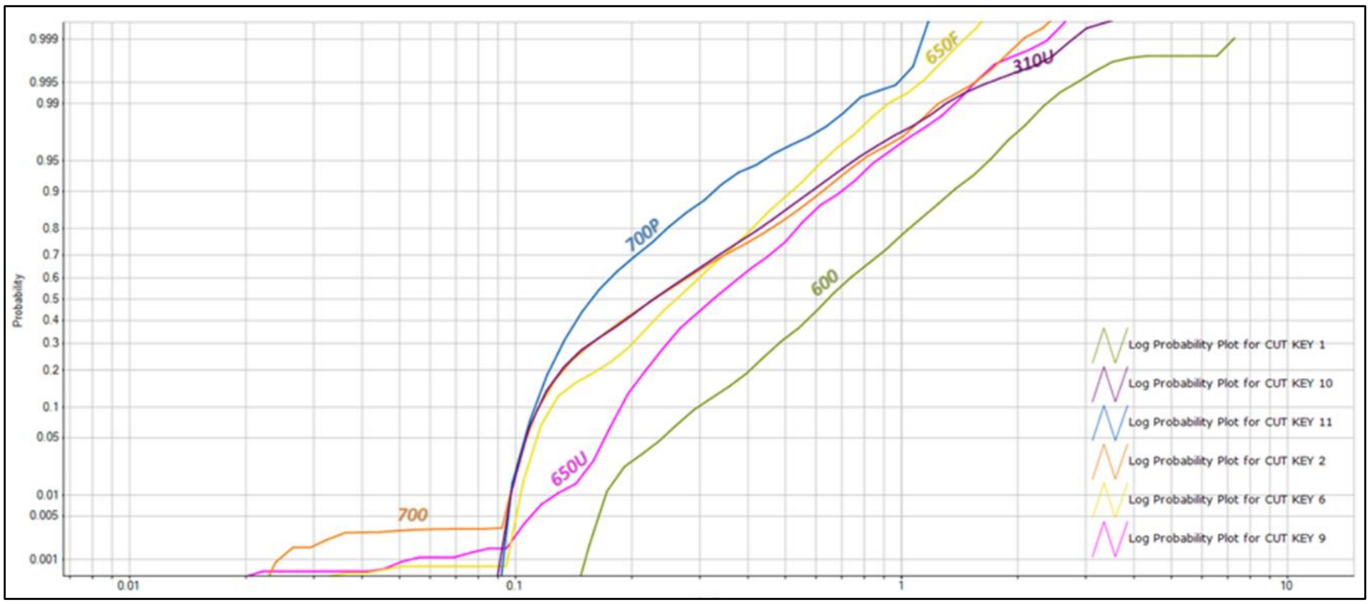
Coding of high- and low-grade zones into the block model was accomplished by the interpolation of the IND0.4 indicator, using a probability cut-off of 50%. Once high-grade and low-grade blocks were defined for each EU, low- and high-grade composites were separated. Semi-hard boundaries between the low- and high-grade domains were imposed using the following criteria:

If along a composited drill hole interval, a low-grade section (either at the start or end) is found in contact with one or more high-grade sections, two high-grade composites in direct contact with the low-grade zone are added to the low-grade database.

This process was conducted for each low-grade section per EU.

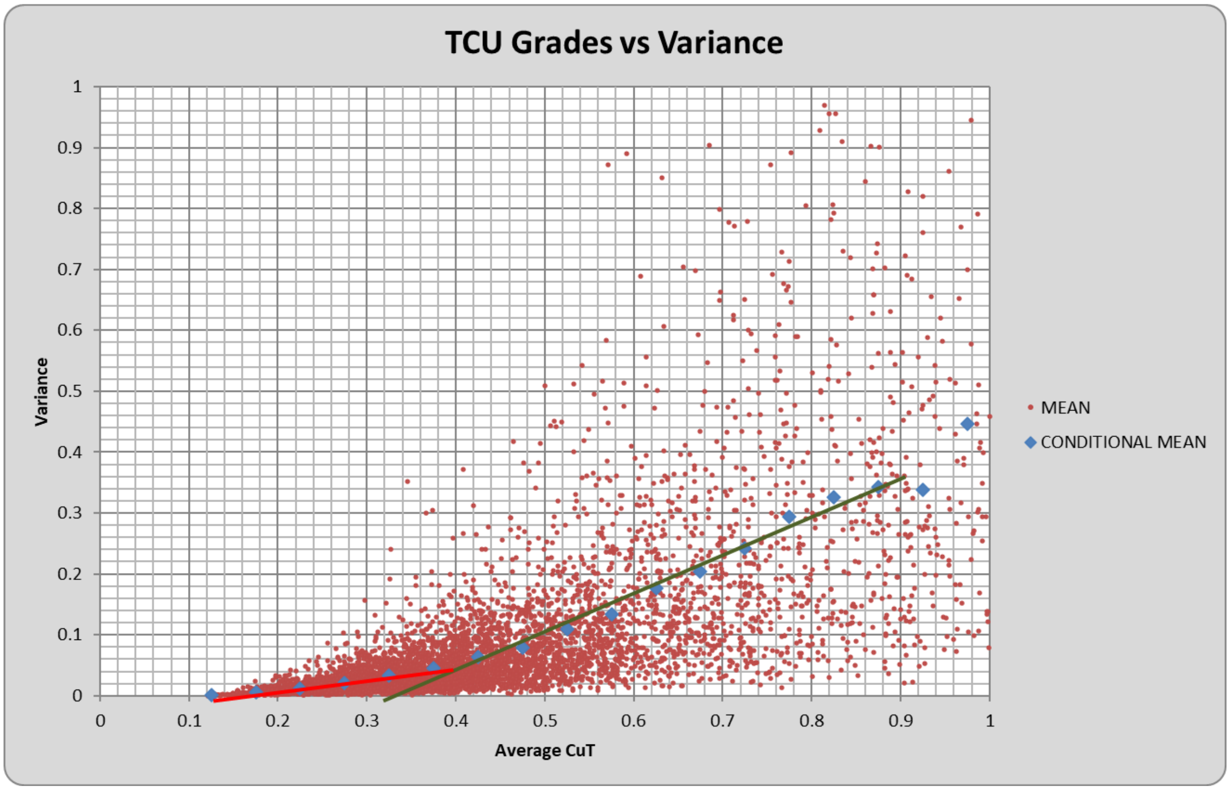
The procedure creates a low-grade drill hole database with a high-grade halo with a thickness of ±10 m for each EU.

Figure 14-4: **Cumulative Probability Plot by EU at the Hanging Wall of the FMV**



Source: Capstone, 2024.

Figure 14-5: Sample Distribution as a Function of the TCu Grade and Variance



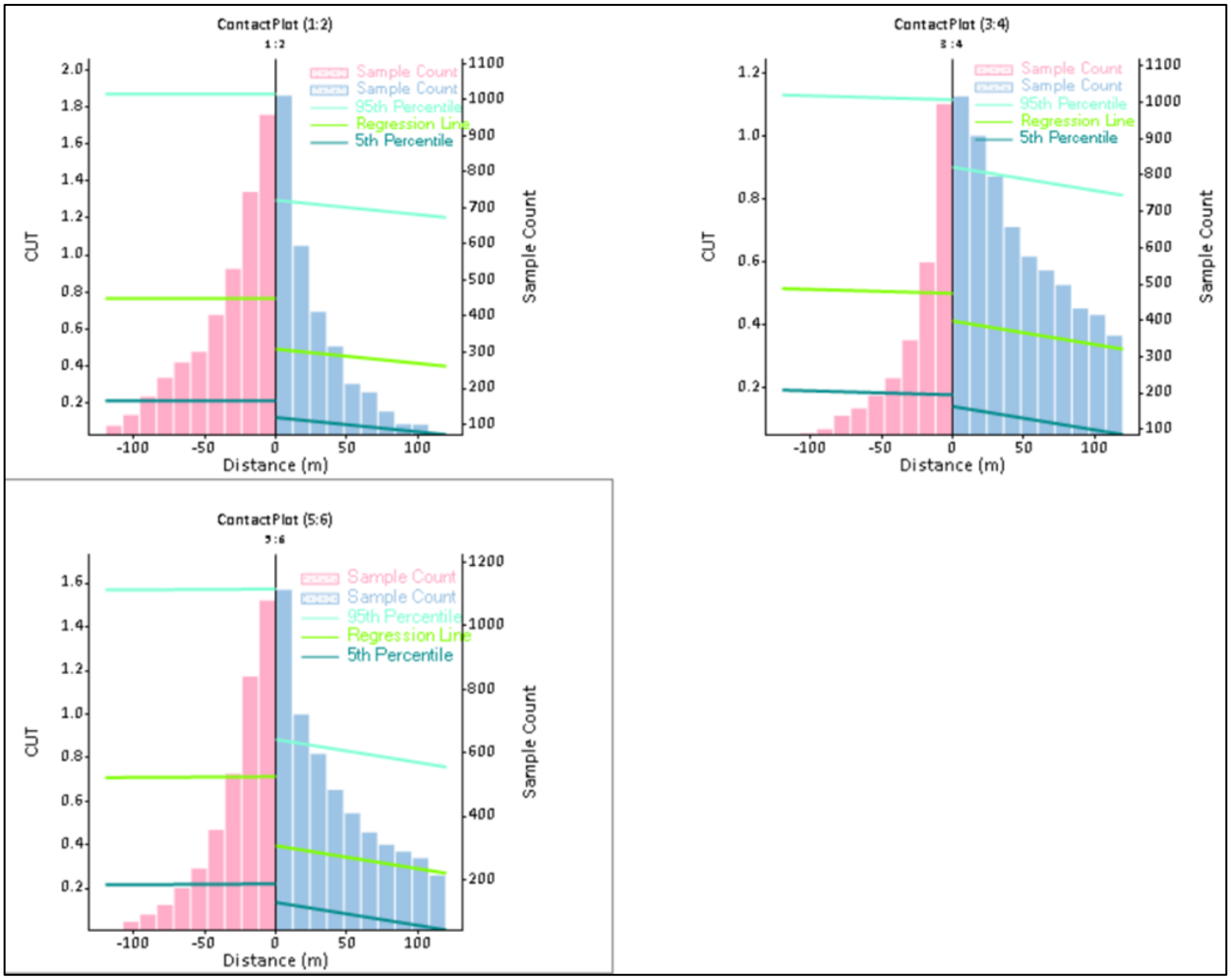
Source: Capstone, 2024.

14.8.1 TCu-SCu Contact Analysis

To establish the type of contact (soft, semi-soft or hard) between the EUs, a contact analysis was carried out. Contact analysis is a mathematical method to define the grade behaviour between samples of different EUs as they approach a contact. Contact analysis takes samples from one EU and pairs them with samples from another EU based on a separation distance. Pairs are constructed over an average separation distance. For each separation distance the average grade of the composites from the first EU is plotted against the average grade calculated for the second EU. The graph locates the separation distances on the horizontal axis (X-axis) and the average grade on the vertical axis (Y-axis). The data for the first EU is plotted as a negative distance in order to observe the differences within the graph.

Contact analyses were prepared across the volumetrically most important units (310N, 310S, 600, 650 and 700) to assess the type of contact between them. This analysis takes into account the geological hard boundary represented by the Mantoverde fault and the spatial continuity or location of the estimation units. Based on that analysis, Mantoverde decided to use hard contacts between all the EUs. (Figure 14-6).

Figure 14-6: TCu Contact Analysis for Different EUs



Source: Capstone, 2024. Note :Code 1=650D, code 2=310S, Code 3=650U, code 4=310U, code 5=600 and code 6=700.

14.8.2 TCu-SCu Grade Capping/Outlier Restrictions

High-grade outlier control is necessary to control the excess metal generation from samples that are considered anomalous in the global or local distribution of grades.

Mantoverde controlled the anomalous TCu samples by capping; prior to applying capping, the solubility ratio was calculated for each sample. This ratio was then used to recalculate the soluble copper content for samples where total copper had been capped so that the original solubility ratio was maintained. The thresholds used in capping are shown in Table 14-4.

Table 14-4: TCu Capping Values by Estimation Unit

EU	Capping TCu (%)
600	4.0
310C	5.5
310F	2.4
600C	2.9
600M	3.1
700C	2.1
760Q	1.3
700, 310N, 310S, 310U, 650U, 650D, 650F, 700P, 700M	NA

14.8.3 TCu-SCu Variography

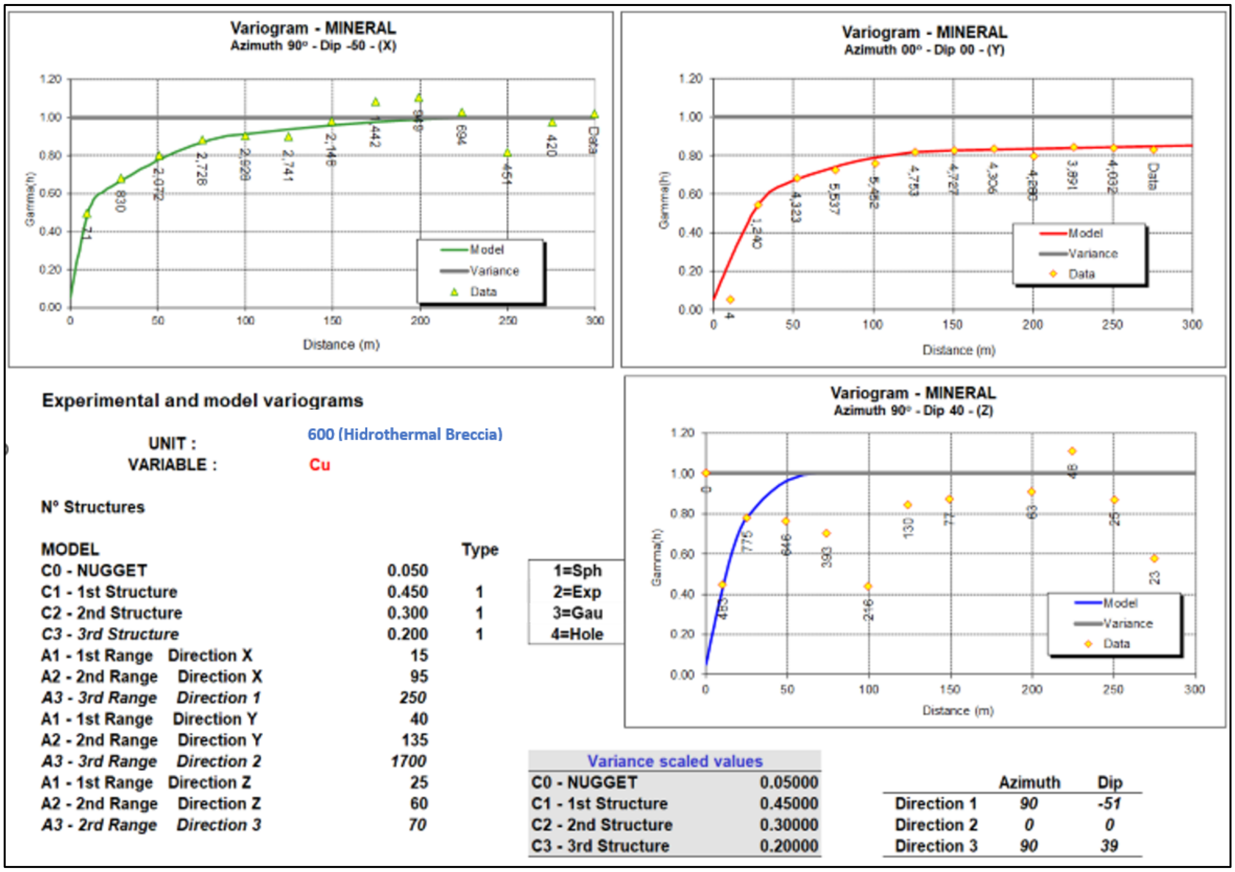
Mantoverde variogram analysis was performed using down the hole and 3D correlograms. Directional correlograms were calculated for each EU based on 10 m composites. Each of the estimation domains presents a 3-structure spherical model correlogram. To avoid logical inconsistencies, such as SCu being greater than TCu, the same variograms were used for TCu and SCu.

Figure 14-7 shows the variogram for EU 600.

Table 14-5: Correlograms Parameters for TCu and SCu

EU	Nugget	Rotation X	Rotation Y	Rotation Z	Type	First Structure				Second Structure				Third Structure			
						Sill	Major Axis	Semi Major Axis	Minor Axis	Sill	Major Axis	Semi Major Axis	Minor Axis	Sill	Major Axis	Semi Major Axis	Minor Axis
600	0.05	0	-51	0	SPH	0.45	15	40	20	0.3	95	135	60	0.2	250	1,700	70
700	0.2	0	-51	0	SPH	0.25	15	30	25	0.25	95	85	55	0.3	200	400	240
310N	0.15	-30	0	-42	SPH	0.35	20	35	18	0.23	35	50	30	0.27	150	250	50
310U	0.05	0	0	0	SPH	0.42	20	30	20	0.3	40	40	40	0.23	200	220	215
650U	0.1	0	0	0	SPH	0.3	60	30	100	0.4	50	71	150	0.2	1000	320	250
310S	0.2	-30	0	-42	SPH	0.35	55	30	30	0.2	95	40	40	0.25	140	250	150
650F	0.15	-0	-39	0	SPH	0.3	30	30	20	0.35	70	90	60	0.2	110	4,000	100
310C	0.1	0	30	0	SPH	0.5	30	35	15	0.25	60	75	90	0.15	120	500	150
310F	0.2	0	-36	0	SPH	0.4	25	30	15	0.2	30	110	45	0.2	90	110	30
650F	0.1	0	-36	0	SPH	0.4	30	30	10	0.25	90	60	30	0.25	90	170	35
600C	0.15	64	0	0	SPH	0.38	20	30	20	0.25	30	60	35	0.22	130	100	60
700C	0.15	64	0	0	SPH	0.38	25	40	30	0.25	45	75	35	0.22	400	210	80
760Q	0.1	-28	0	0	SPH	0.3	15	20	10	0.35	40	30	15	0.25	70	120	30
600M	0.1	0	0	0	SPH	0.45	30	30	30	0.25	65	80	90	0.2	160	100	120
700M	0.1	0	0	0	SPH	0.45	30	40	30	0.25	35	60	60	0.2	130	120	120
700P	0.15	0	0	0	SPH	0.35	15	20	20	0.3	40	70	50	0.2	70	100	700

Figure 14-7: TCU Variography EU 600



Source: Capstone, 2024.

14.8.4 TCu and SCu Estimation Plan

TCu and SCu were estimated using Ordinary Kriging (OK) with three nested passes in which the search radii are increased, and the sample restriction are relaxed for each successive pass. Table 14-6 details the interpolation parameters for each EU.

Common interpolation parameters are:

- Minimum number of samples is 7, 4 and 4 for the first, second and third passes, respectively.
- Maximum number of samples per run is 16 for the three passes.
- Estimation with a minimum of two drill holes (maximum 3 samples per hole).
- No octant restriction was applied.

Table 14-6: TCu-SCu Interpolation Parameters

EU Name	EU Code	Type	Rotation			Pass	Samples		Max	Search (m)		
			x	y	z		Min	Max	Hole	x	y	z
Hydrothermal Breccia	600	Sphere	0	-51	0	1	7	16	3	180	150	45
						2	4	16	3	180	150	45
						3	4	16	3	360	300	90
Transition Zone	700	Sphere	0	-51	0	1	7	16	3	150	150	130
						2	4	16	3	150	150	130
						3	4	16	3	300	300	260
Mineralized Green Breccia	310U	Sphere	0	0	0	1	7	16	3	150	175	150
						2	4	16	3	150	175	150
						3	4	16	3	300	350	300
Magnetite Zone Above	650U	Sphere	0	0	0	1	7	16	3	60	150	100
						2	4	16	3	60	150	100
						3	4	16	3	120	300	200
Magnetite Zone Below	650D	Sphere	0	-39	0	1	7	16	3	100	100	80
						2	4	16	3	100	100	80
						3	4	16	3	200	200	160
North Tectonic Breccia	310N	Sphere	0	-56	0	1	7	16	3	100	150	50
						2	4	16	3	100	150	50
						3	4	16	3	200	300	100
South Tectonic Breccia	310S	Sphere	0	-42	-30	1	7	16	3	140	180	130
						2	4	16	3	140	180	130
						3	4	16	3	280	360	260
Montecristo Tectonic	310C	Sphere	0	30	0	1	7	16	3	100	100	100
						2	4	16	3	100	100	100
						3	4	16	3	200	200	200
Franko Magnetite Zone	650F	Sphere	0	-36	0	1	7	16	3	75	130	35
						2	4	16	3	75	130	35
						3	4	16	3	150	260	70
Franko Tectonic Breccia	310F	Sphere	0	-36	0	1	7	16	3	80	100	35
						2	4	16	3	80	100	35
						3	4	16	3	160	200	70
Punto 62 Transition Zone	700P	Sphere	0	0	0	1	7	16	3	60	80	70
						2	4	16	3	60	80	70
						3	4	16	3	120	160	140

EU Name	EU Code	Type	Rotation			Pass	Samples		Max	Search (m)		
			x	y	z		Min	Max	Hole	x	y	z
Mantoruso Hydrothermal	600M	Sphere	0	0	0	1	7	16	3	130	100	70
						2	4	16	3	130	100	70
						3	4	16	3	260	200	140
Mantoruso Transition	700M	Sphere	0	0	0	1	7	16	3	100	100	80
						2	4	16	3	100	100	80
						3	4	16	3	200	200	160
Quisco Hydrothermal	760Q	Sphere	0	-28	0	1	7	16	3	60	100	30
						2	4	16	3	60	100	30
						3	4	16	3	120	200	60
Celso Hydrothermal	600C	Sphere	0	64	0	1	7	16	3	70	80	50
						2	4	16	3	70	80	50
						3	4	16	3	140	160	100
Celso Transition Zone	700C	Sphere	0	64	0	1	7	16	3	60	80	50
						2	4	16	3	60	80	50
						3	4	16	3	120	160	100

14.9 Gold (Au)

The number of samples assayed for Au is smaller than the number of samples assayed for TCu; however, for the sulphide units, the number of samples assayed for Au is similar to the number assayed for TCu. Table 14-7 shows the proportion (in percentage) of samples by mineral zone assayed for Au relative to those assayed for TCu. It shows that the oxide units are less sampled for Au, with a total average of 10%, while for the sulphide units the proportion is close to 92%. Because of the relatively high proportion of Au samples in the sulphide zone, it is considered that the Au grades estimated using those samples have an acceptable level of confidence. The low proportion of gold assays in the oxide zone is not significant because gold is not recovered in oxide material.

Table 14-7: Parity in Percentage of Samples with Gold Grades with Respect to TCu by Zone - Gold

EU	Oxide	Mixed	Sulphide
600	10%	51%	81%
700	22%	64%	97%
310C	19%	60%	91%
310F	7%	88%	99%
310N	6%	38%	89%
310S	8%	41%	67%
310U	3%	43%	0%
600C	3%	25%	17%
600M	7%	70%	94%

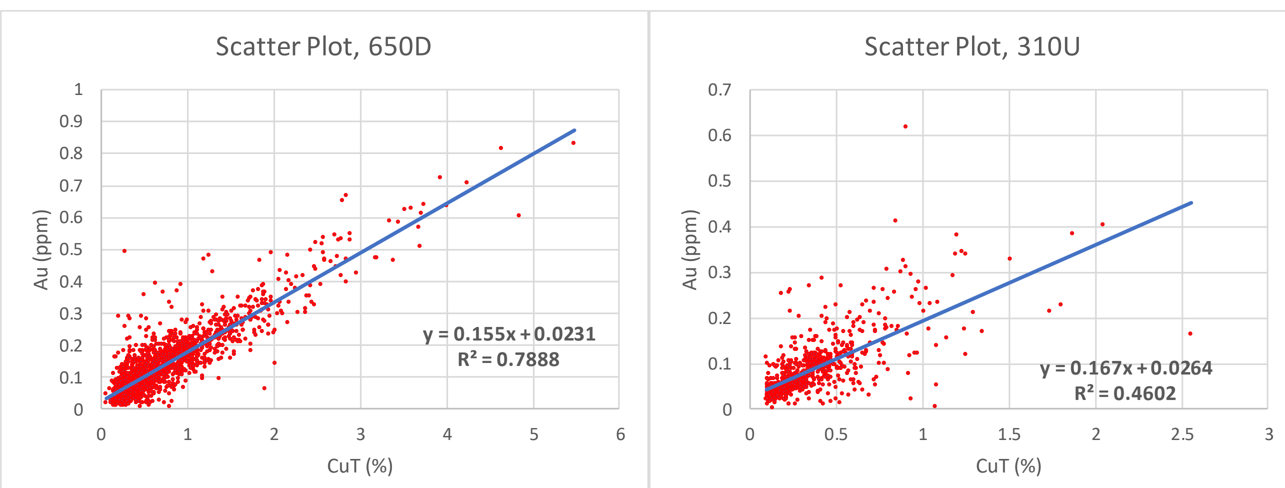
EU	Oxide	Mixed	Sulphide
600Q	7%	67%	82%
650D	10%	64%	73%
650F	7%	65%	82%
650U	12%	40%	84%
700C	12%	50%	80%
700M	6%	94%	100%
700P	15%	82%	93%

14.9.1 TCu vs Au Regression Analysis

A regression analysis between TCu and Au was performed to assess if Au could be regressed from TCu data. Results (examples in Figure 14-8 and Figure 14-9) show that the regression of Au from TCu have adequate fit, particularly within the sulphide zone. Because of this it was decided that those curves could be used to estimate Au in areas with no Au data.

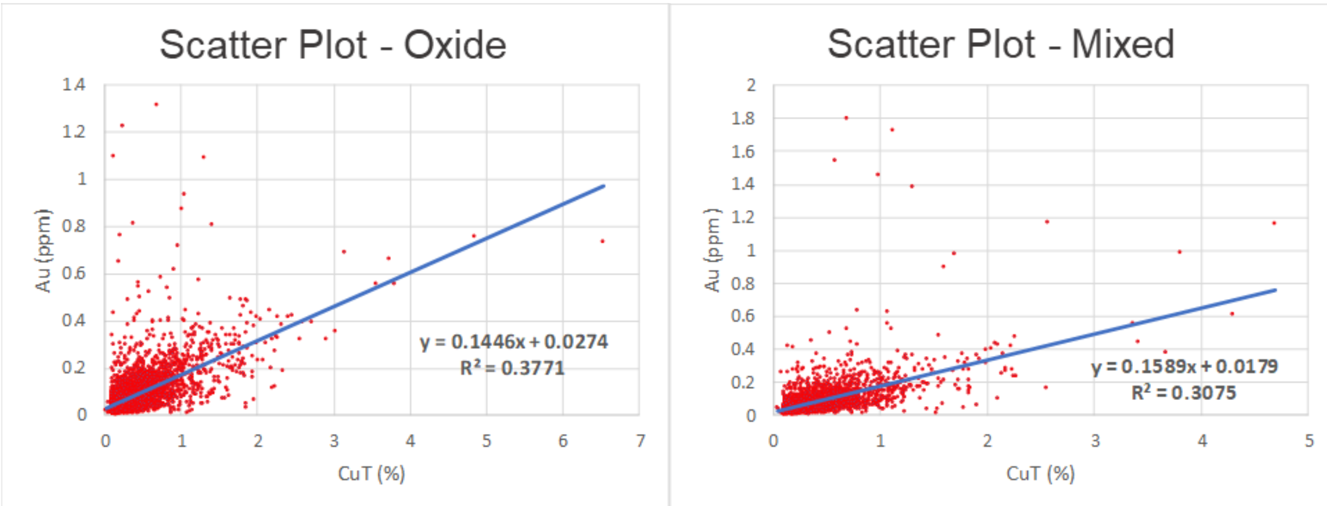
In general, the correlation between TCu v/s Au grades is around 80% (Geoinnova, 2015 Mantoverde Geometallurgical Model) in zones with higher copper grades (MVN and MVS hydrothermal breccias with specularite and magnetite). This correlation decreases as one moves away from the main sulphide mineralized conduit to zones with lower sulphide mineralization, such as Franko. To improve the regression formula of TCu and Au a sample by sample, and conditional means analysis was performed using 0.05% TCu. From these results, the mean relative variance of the samples was calculated and, therefore, the mean relative error. Based on the results obtained, a conservative regression curve was applied, whereby a negative factor equal to half the mean relative error of the series was applied to each Au value calculated.

Figure 14-8: Au-TCu Regression for EU 650D and EU 310U



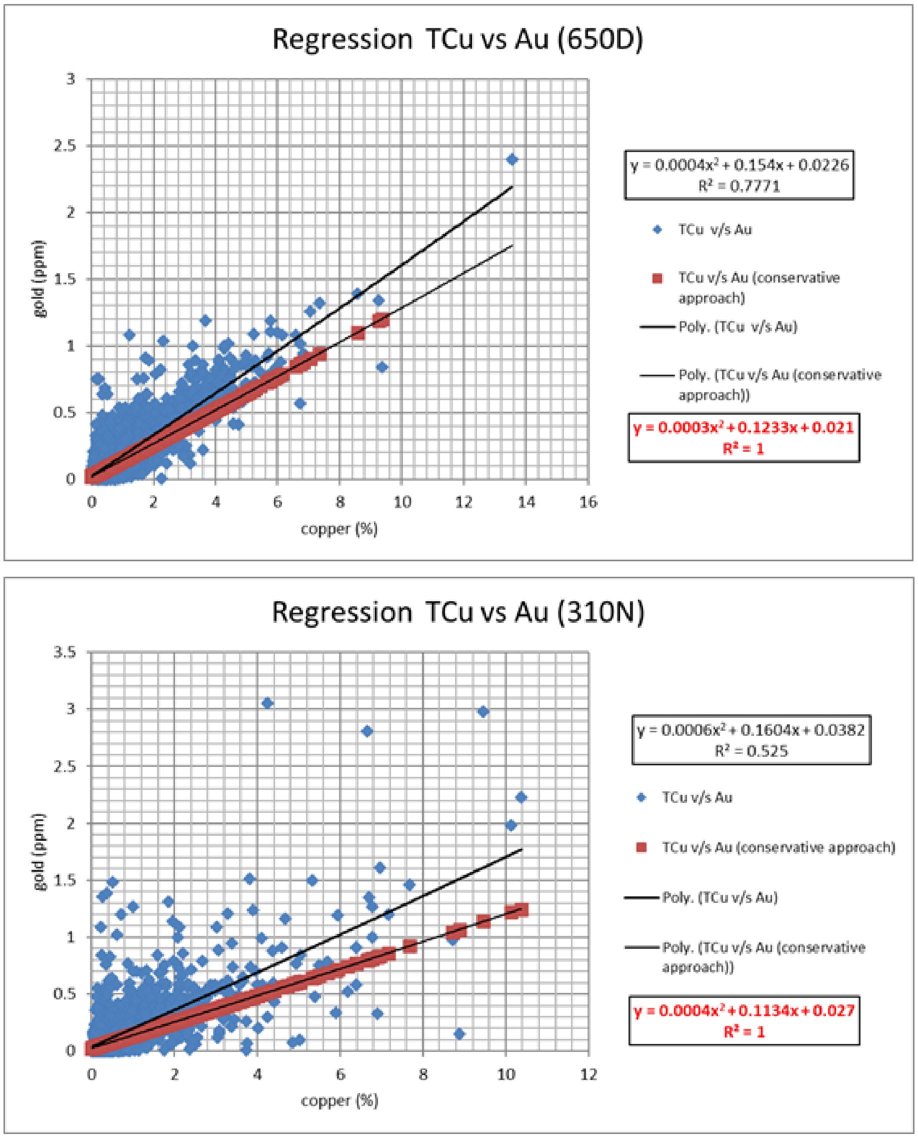
Source: Capstone, 2024.

Figure 14-9: Au-TCu Regression by Mineral Zone



Source: Capstone, 2024.

Figure 14-10: Au-TCu Regression Original and Conservative Approach. EUs 650D and 310N

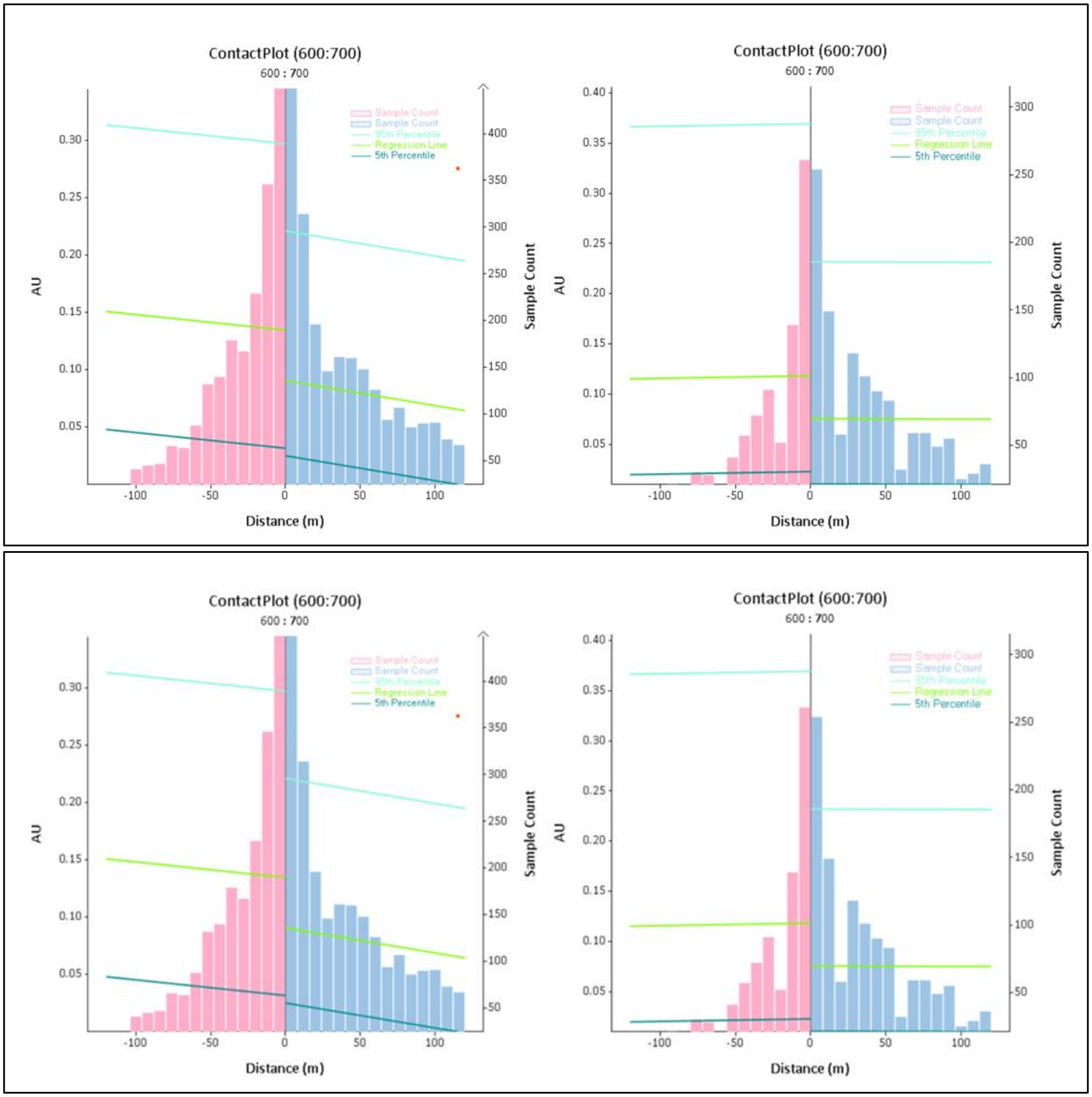


Source: Capstone, 2024.

14.9.2 Au Contact Analysis

Based in the high correlation between Cu and Au, Mantoverde keep the same EUs for both elements. This means the use of hard contacts among all the EUs. This decision was validated with contact analysis in the main units (i.e. 600 vs 700 and 600M vs 700M; Figure 14-11).

Figure 14-11: Contact Analysis of Gold



Source: Capstone, 2024. Note: Left chart use EU 600 and 700 associated to MVF. Right chart use 600m and 700m from Mantoruso area.

14.9.3 Au Grade Capping/Outlier Restrictions

For Gold grade outlier control Mantoverde applied capping; the thresholds used are shown in Table 14-8.

Table 14-8: Gold Capping Values by Estimation Domain

EU	Capping Au (ppm)
600	0.50
700	0.48
310U	0.32
650U	0.45
650D	0.62
310N	0.75
650F	NA
310F	0.14
700P	0.15
600M	0.37
700M	0.50
600C	0.40
700C	0.40
760Q	0.52
310S	0.62
310C	0.38

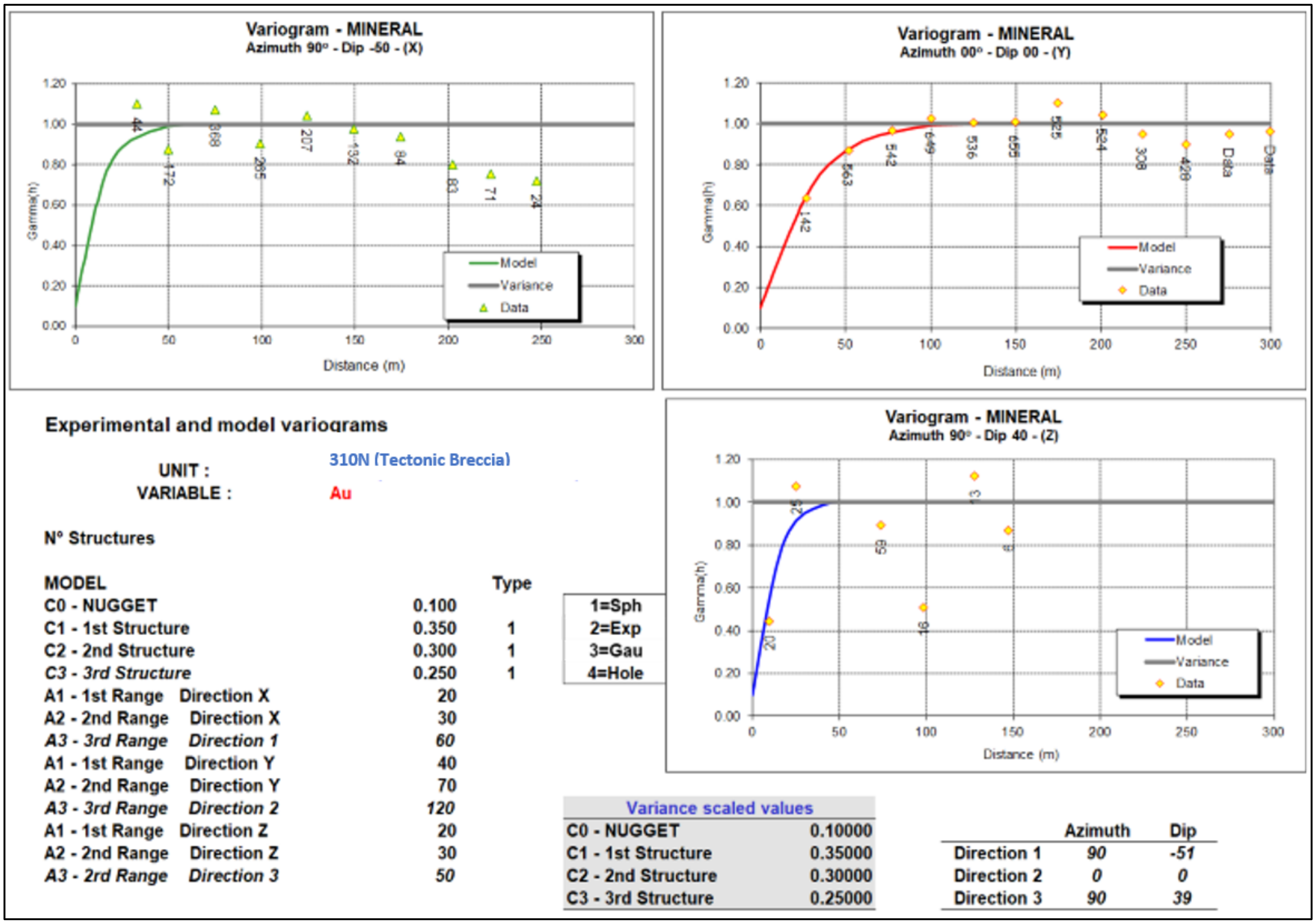
14.9.4 Au Variography

Mantoverde performed gold variography using down the hole and 3D correlograms. Directional correlograms were calculated for each EU using 10 m composites. Table 14-9 shows the modelled correlogram parameters used for gold interpolation. Figure 14-12 shows the variogram for EU 310N.

Table 14-9: Correlograms Parameters for Au

EU	Nugget	Rotation X	Rotation Y	Rotation Z	Type	First Structure				Second Structure				Third Structure			
						Sill	Major Axis	Semi Major Axis	Minor Axis	Sill	Major Axis	Semi Major Axis	Minor Axis	Sill	Major Axis	Semi Major Axis	Minor Axis
600	0.1	0	-51	0	SPH	0.3	20	40	15	0.3	30	80	60	0.3	100	240	80
700	0.1	0	-51	0	SPH	0.4	20	30	25	0.25	50	50	40	0.25	150	300	1000
310N	0.1	0	0	-56	SPH	0.35	20	40	20	0.3	30	70	30	0.25	60	120	50
310U	0.15	0	0	0	SPH	0.4	10	35	15	0.25	15	60	20	0.2	60	100	50
650U	0.2	0	0	0	SPH	0.4	15	40	15	0.25	20	70	20	0.15	30	100	500
310S	0.2	-30	0	-42	SPH	0.4	50	15	20	0.3	80	50	40	0.1	150	200	100
650D	0.15	-0	-39	0	SPH	0.25	20	30	20	0.25	50	60	80	0.25	110	500	100
310C	0.15	0	30	0	SPH	0.4	20	30	15	0.25	35	40	50	0.2	80	150	100
310F	0.15	0	-36	0	SPH	0.4	20	25	10	0.3	35	30	15	0.15	150	100	20
650F	0.2	0	-36	0	SPH	0.4	15	10	10	0.2	20	15	15	0.2	30	30	250
600C	0.1	64	0	0	SPH	0.45	15	40	20	0.3	35	90	40	0.15	80	100	50
700C	0.1	64	0	0	SPH	0.5	15	25	15	0.3	40	60	30	0.1	80	150	150
760Q	0.15	-28	0	0	SPH	0.3	15	40	20	0.4	30	80	60	0.15	80	120	130
600M	0.15	0	0	0	SPH	0.4	40	30	50	0.3	60	70	80	0.15	70	80	500
700M	0.1	0	0	0	SPH	0.45	20	30	15	0.3	30	50	100	0.15	150	70	1,000
700P	0.15	0	0	0	SPH	0.4	50	40	15	0.3	70	60	20	0.15	500	80	30

Figure 14-12: Au Variography EU 310N



Source: Capstone, 2024.

14.9.5 Au Estimation Plan

As mentioned above, not all samples have assayed gold grades. Based on this Mantoverde used the following approach for gold estimation.

For blocks with sufficient nearby gold composites, the estimation of Gold was performed by Ordinary Kriging.

For blocks that were not estimated due to lack of nearby gold data, gold grades were estimated using the block copper grade and the regression equation for the corresponding EU of the blocks.

Table 14-10 shows the tonnage by INDAU for the MVDP Mineral Resource; it shows that the gold grades for ~98% of the blocks classified as Measured + Indicated for sulphides (INDAU=1) were estimated by Ordinary Kriging (that is, less than 2% of those blocks had gold grades assigned using the regression curves). This was considered adequate based on the risk assessment of the gold variable in the MVDP.

Table 14-10: Tonnage by INDAU for the MVDP - Au Resource Table

Resource	INDAU	Mineral Resource Measured + Indicated + Inferred		Mineral Resource Measured + Indicated	
		Tonne	%	Tonne	%
MVDP Sulphide Mixed (Flotation)	1 (OK)	72,619,170	84.7	68,630,340	99.1
	2 (OK manual)	2,919,060	3.4	8,640	0.0
	3 (Assigned)	10,223,415	11.9	638,850	0.9
Total		**85,761,645**	**100.0**	**69,277,830**	**100.0**
MVDP Sulphide (Flotation)	1 (OK)	823,726,104	73.7	522,186,793	99.4
	2 (OK manual)	109,341,068	9.8	792,092	0.2
	3 (Assigned)	184,420,179	16.5	2,469,970	0.5
Total		**1,117,487,351**	**100.0**	**525,448,855**	**100.0**

14.10 Carbonate ($CaCO_3$)

Calcium Carbonate ($CaCO_3$) shows a spatial distribution along the trace of the Mantoverde Fault with a high variability of $CaCO_3$ grades and not correlation with copper. Because of this, $CaCO_3$ estimation was performed independently of the copper estimation units.

14.10.1 Carbonate Exploratory Data Analysis

Based on analysis of the carbonate probability distribution and reconciliation data, it is concluded that there are at least 3 carbonate populations. The first group is below 4% $CaCO_3$, the second between 4% and 10% $CaCO_3$, and the third above 10% $CaCO_3$.

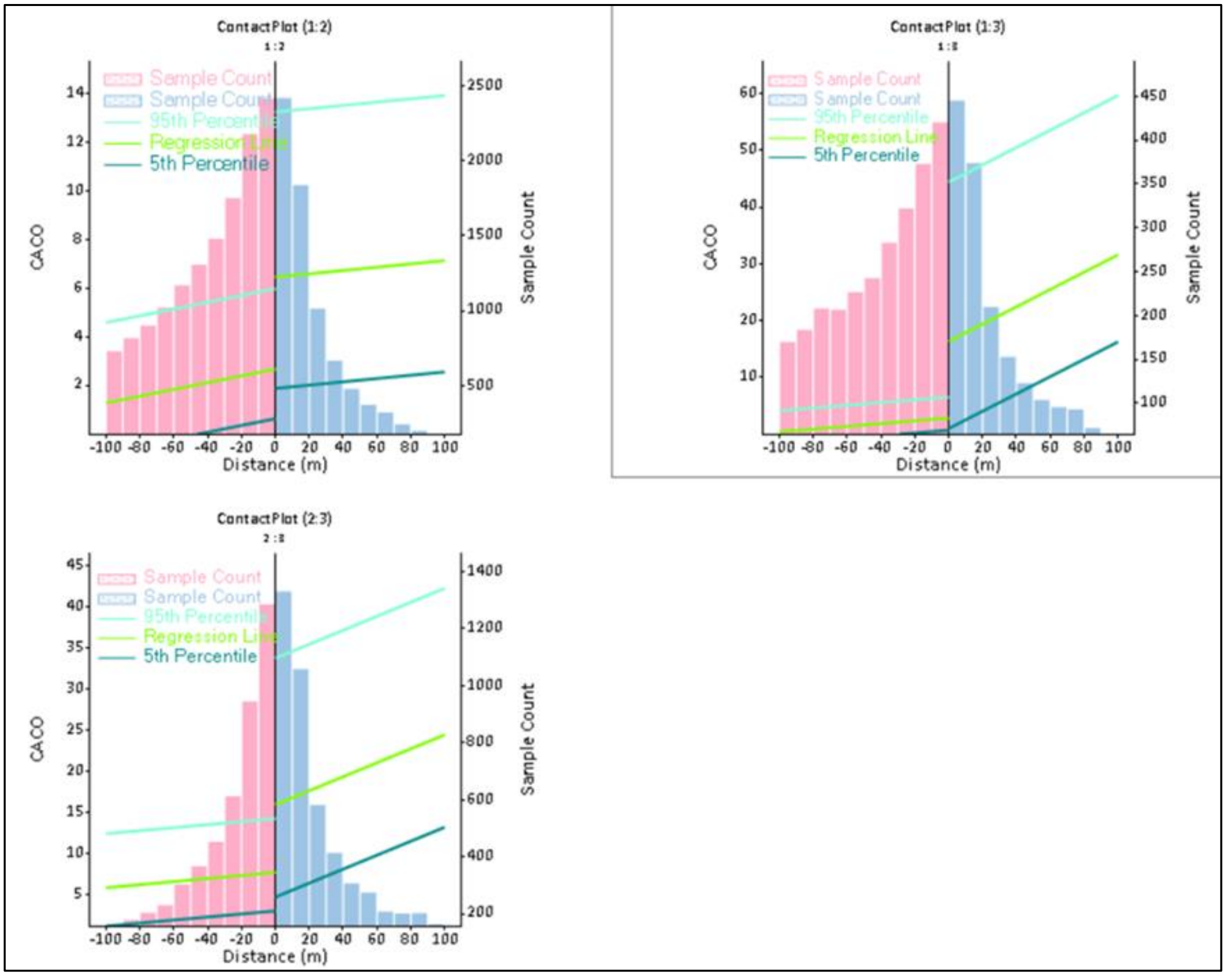
For the modeling of these units an indicator probabilistic model was generated, which was used as the basis for defining the carbonate EUs. For this purpose, two indicators were used: INCACO4 ($CaCO_3$ <=4%) and INCACO10 4 ($CaCO_3$ <=10%). Both indicators were estimated using ordinary kriging within the previously created mineralized blocks.

Once these 3 zones were defined using the two indicators, values for $CaCO_3$ were estimated independently within them using ordinary kriging.

14.10.2 Carbonate Contact Analysis

For $CaCO_3$ estimates Mantoverde used only hard contacts between each estimation domain (Figure 14-13).

Figure 14-13: Contact Analysis for Carbonate EU



Source: Capstone, 2024, Note: code1=low grade, code2=medium grade, code3=high grade.

14.10.3 Carbonate Grade Capping/Outlier Restrictions

Capping was not used in the estimation of $CaCO_3$ since there are not samples that are considered outliers in the grade distribution.

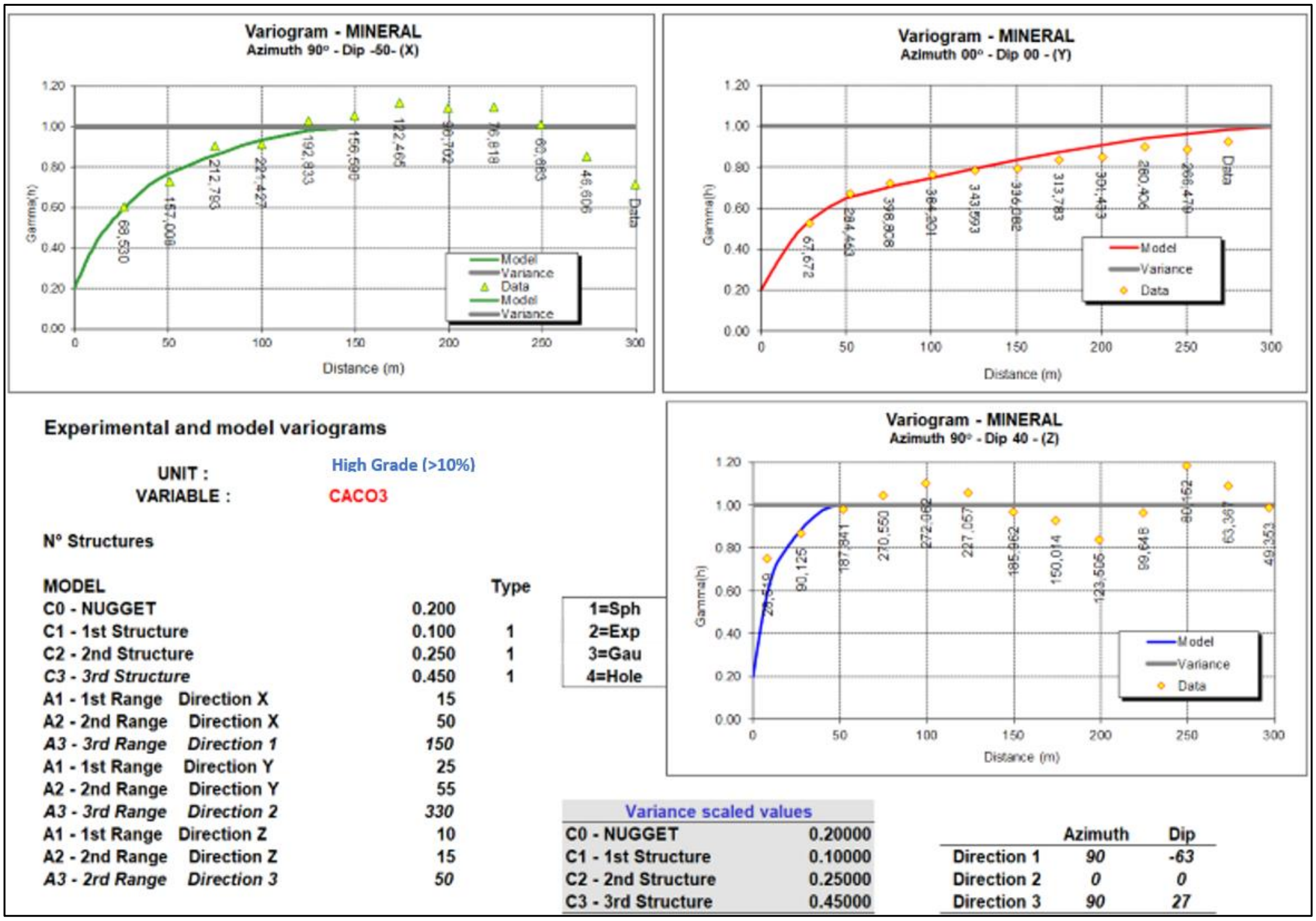
14.10.4 Carbonate Variography

Mantoverde performed variography using down the hole and 3D variograms for $CaCO_3$. Directional correlograms were calculated for each zone. Table 14-11 shows the modelled correlogram parameters used for $CaCO_3$ estimate. Figure 14-14 shows the variogram for the high-grade domain.

Table 14-11: Correlograms Parameters for $CaCO_3$

EU		Low $CaCO_3$	Medium $CaCO_3$	High $CaCO_3$
Nugget		0.3	0.3	0.2
Rotation X		0	0	0
Rotation Y		-39	-51	-63
Rotation Z		0	0	0
Type		SPH	SPH	SPH
First Structure	Sill	0.3	0.5	0.1
	Major Axis	30	35	15
	Semi Major Axis	35	30	25
	Minor Axis	15	10	10
Second Structure	Sill	0.23	0.1	0.25
	Major Axis	110	40	50
	Semi Major Axis	130	35	55
	Minor Axis	70	15	15
Third Structure	Sill	0.17	0.1	0.45
	Major Axis	900	150	150
	Semi Major Axis	3000	150	330
	Minor Axis	600	20	50

Figure 14-14: Variography for the High-Grade Domain of $CaCO_3$



Source: Capstone, 2024.

14.10.5 Carbonate Estimation Plan

The $CaCO_3$ variable was estimated by Ordinary Kriging in 3 estimation passes, in which the search radii increase, and the sample constraints are relaxed in a similar way as used for TCu. The parameters can be summarized as follows:

- Minimum number of samples is 7 in the first pass and 4 samples for the second and third pass.
- Maximum number samples per pass was 16 for the three passes.
- Maximum samples per drillhole was 3.
- No sample per octant restrictions implemented.

- The search radius of the second pass is 2 times that of the first pass, while the search radius of the third pass is 3 times that of the first pass.
- The rotations of the search ellipses are the same as the rotations of the variogram for each estimation domain.

14.11 Cobalt (Co)

Cobalt is an element distributed throughout the entire deposit; however, higher grades are observed in the southern sector, with the boundary for modeling and estimation purposes defined at local coordinate 101,000N. Cobalt exhibits a low correlation with the other estimated elements, thus independent estimation units have been established.

The number of samples assayed for Co is smaller than the number of samples assayed for TCu; however, for the sulphide units, the number of samples assayed for Co is fairly close to number of those assayed for TCu. Table 14-12 shows the proportion (in percentage) of samples by mineral zone assayed for Co relative to those assayed for TCu. It shows that the oxide units are less sampled for Co, with a total average of 19%, while for the sulphide units the proportion is close to 81%.

Table 14-12: Parity in Percentage of Samples with Cobalt Grades with Respect to TCu by Zone - Cobalt

EU	Oxide	Mixed	Sulphide
1	2%	62%	82%
2	15%	60%	78%
3	17%	58%	74%
4	22%	62%	89%
5	20%	59%	79%
6	25%	44%	84%
7	15%	48%	83%

Because of the relatively high proportion of cobalt samples in the sulfide zone and the acceptable QAQC results, the cobalt grades estimated from these samples are considered to have an acceptable level of confidence. However, due to the low proportion of cobalt assays in the oxide zone, only the sulfide zone has been interpolated in a 3D block model and presented as part of the Mineral Resources.

14.11.1 Cobalt Exploratory Data Analysis

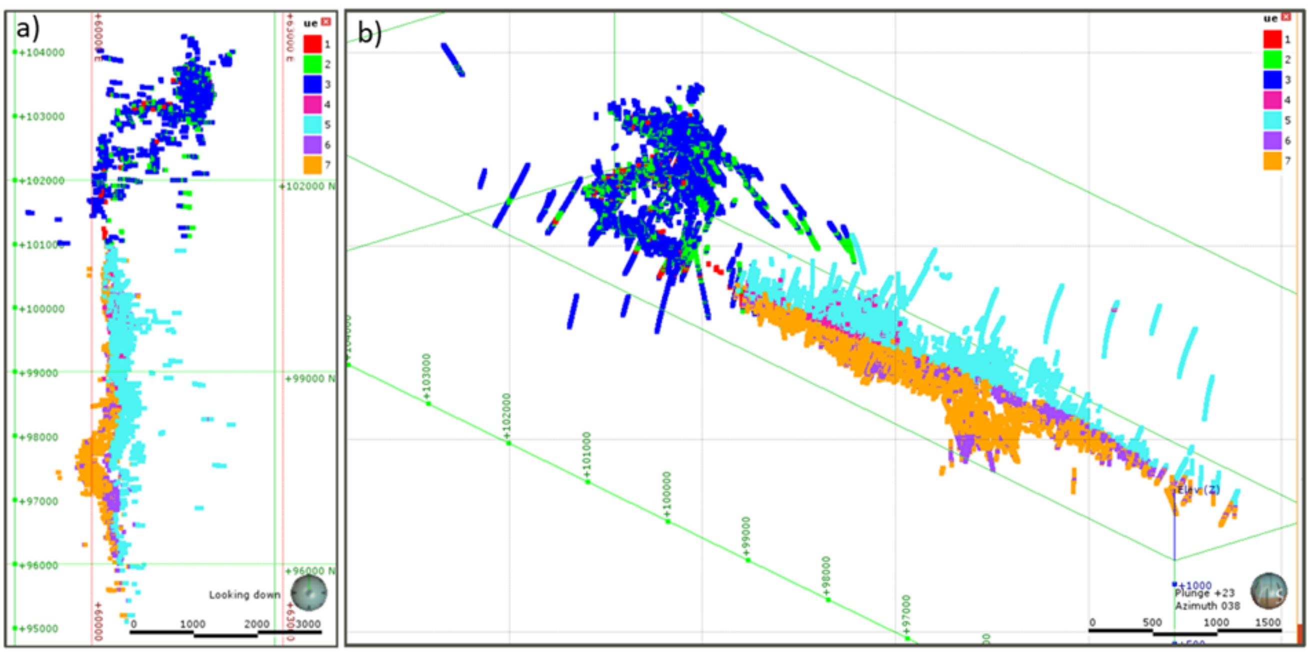
To define the estimation units associated with Cobalt, an exploratory data analysis was conducted, examining the behavior of this element in relation to its distribution across benches and sections, its correlation with mineral zone, lithology, and its position relative to the MVF (Table 14-13). Based on the EDA, seven estimation units were defined; their spatial distribution is shown in Figure 14-15.

Indicator kriging was used to model the mineralized body, with a threshold of 30 ppm Co in the database defined as the mineralization cutoff. The separation of the estimation units is based on a multiple-indicator system, with each unit represented by an indicator that is estimated collectively, allowing the units to be defined according to their probability of occurrence. Once these seven zones were defined using the indicators, values for Co were estimated independently within them using ordinary kriging.

Table 14-13: Estimation Units for Cobalt

Estimation Unit (Eu)	Rock Type	Sector	MVF Position
1	Specularite Hydrothermal Breccia	Celso	Hanging wall
2	Stockwork		
3	Green Breccia		
4	Specularite Hydrothermal Breccia	Mantoverde	
5	Stockwork		
6	Magnetite Hydrothermal Breccia		Foot wall
7	Tectonic Breccia		

Figure 14-15: a) Plan View of Drillholes Colored By Cobalt EU, b) 3D View of Drillholes Colored By Cobalt EU.



Source: Capstone, 2024.

14.11.2 Cobalt Contact Analysis

For Cobalt estimates, Mantoverde applied hard boundaries between each estimation domain, primarily based on the location of each estimation unit and the use of the MVF as a geological hard boundary.

14.11.3 Cobalt Grade Capping/Outlier Restrictions

For cobalt grade outlier control, Mantoverde applied capping; the thresholds used are presented in Table 14-14.

Table 14-14: Capping Threshold Applied to Each Cobalt EU.

EU	Capping Co (ppm)
1	920
2	550
3	360
4	-
5	1,100
6	1,760
7	1,200

14.11.4 Cobalt Variography

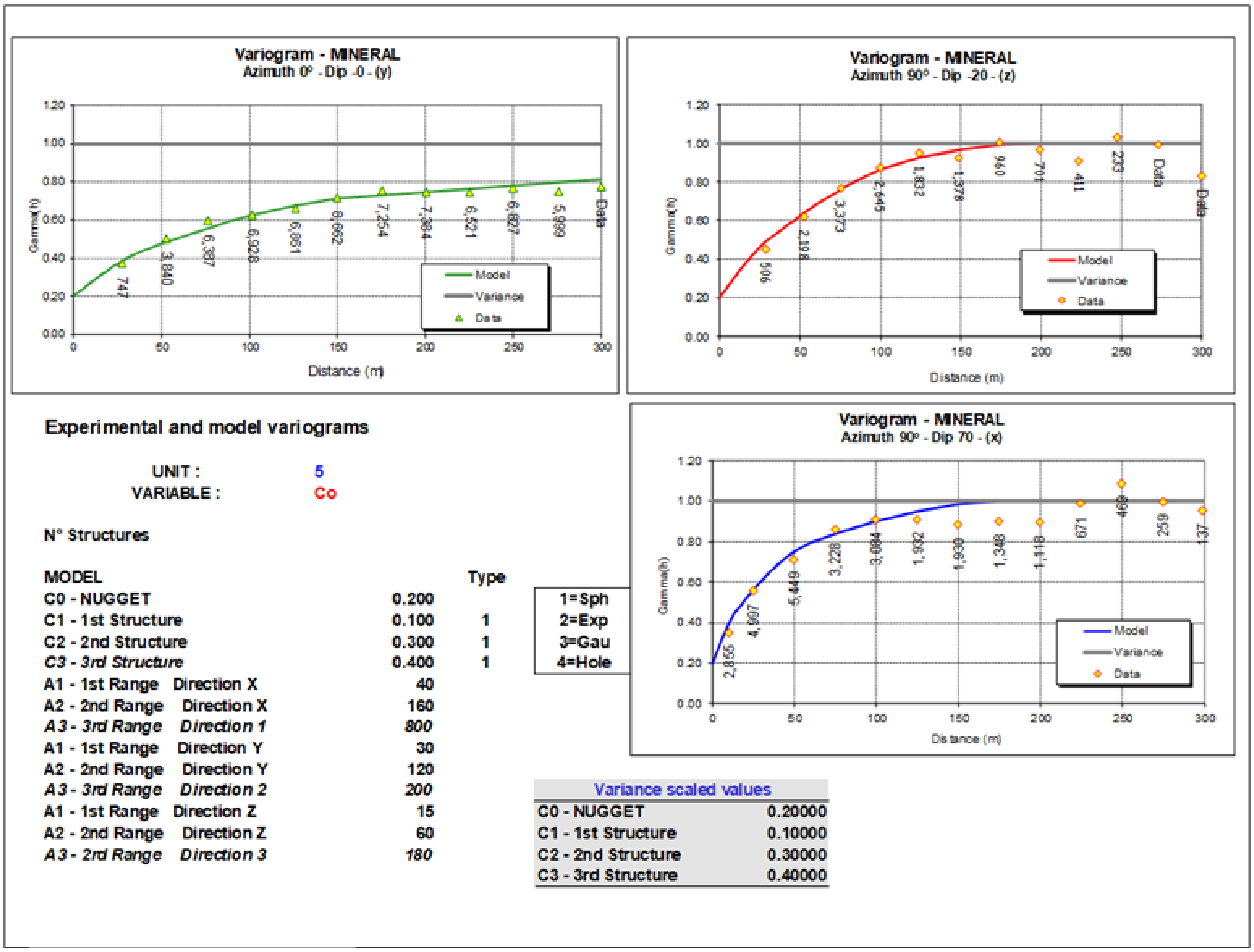
Mantoverde completed cobalt variography using down the hole and 3D variograms. Directional correlograms were calculated for each EU using 10 m composites. Table 14-15 shows the modeled correlogram parameters used for cobalt interpolation. Figure 14-16 shows the variogram for EU 5.

Table 14-15: Correlograms Parameters for Cobalt

EU		1	2	3	4	5	6	7
Nugget		0.2	0.25	0.3	0.15	0.2	0.3	0.15
Rotation X		60	50	0	0	0	0	0
Rotation Y		40	0	0	60	70	20	-30
Rotation Z		0	0	0	0	0	0	0
Type		SPH	SPH	SPH	SPH	SPH	SPH	SPH
First Structure	Sill	0.2	0.25	0.25	0.1	0.25	0.15	0.35
	Major Axis	80	45	30	40	40	60	30
	Semi Major Axis	20	50	30	50	30	80	30
	Minor Axis	15	20	30	15	15	20	40
Second Structure	Sill	0.3	0.25	0.20	0.30	0.30	0.25	0.20
	Major Axis	250	200	30	250	160	90	80
	Semi Major Axis	80	100	30	180	120	160	100
	Minor Axis	45	200	30	50	60	30	60

EU		1	2	3	4	5	6	7
Third Structure	Sill	0.3	0.25	0.25	0.30	0.40	0.30	0.30
	Major Axis	300	700	150	1000	800	500	600
	Semi Major Axis	800	120	150	250	200	300	200
	Minor Axis	800	500	150	180	180	60	90

Figure 14-16: Variography for the Unit 5 of Co



Source: Capstone, 2024.

14.11.5 Cobalt Estimation Plan

The Co variable was estimated by Ordinary Kriging in 3 estimation passes, in which the search radii increase, and the sample constraints are relaxed in each subsequent pass similarly to what is done for TCu. The parameters can be summarized as follows:

- Minimum number of samples is 5 in the first pass, 4 samples for the second and 3 for the third pass.
- Maximum number samples per pass was 16 for the three passes.
- Maximum samples per drillhole was 3.
- No sample per octant restrictions were implemented.
- The search radius first and second pass is the same, while the third pass is 2 times the first pass.
- The rotations of the search ellipses are the same as the rotations of the variogram for each estimation domain.

14.12 Block Model Validation

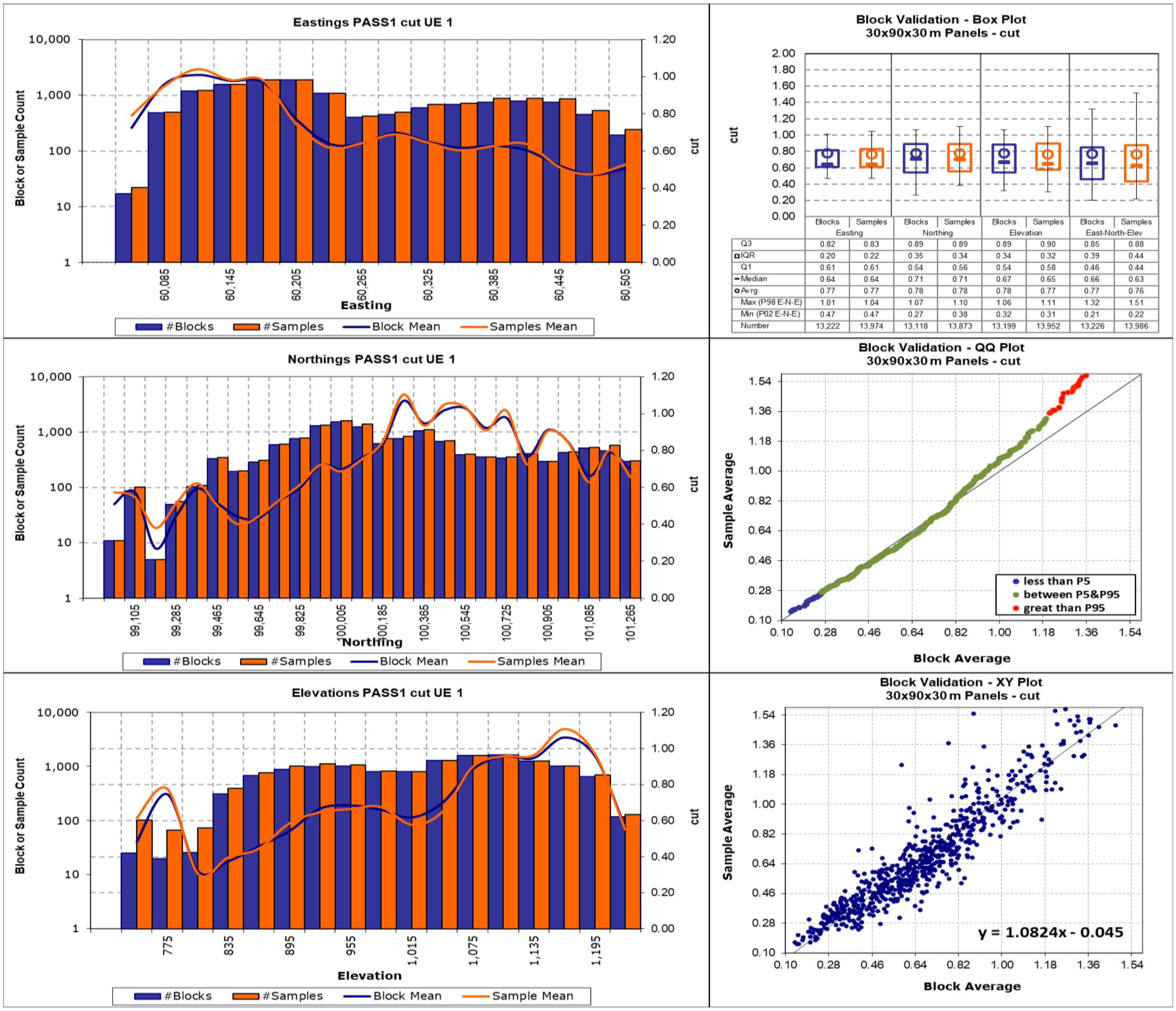
The validation of the model included:

- Swath plots in the X-Y-Z directions for each EU.
- Validation plots using mobile blocks (blocks vs. samples) for each EU.
- Visual validation using vertical and horizontal sections.
- Statistical validation.

14.12.1 Swath Plots

The swath plot validation allows checking the grade correspondence between the composites and the values estimated in the block model. Sample and estimated block grade values were compared every 50 m along north–south direction and east-west direction. Grades were also compared vertically separated every 10 m. Results were concordant in all directions analysed. Figure 14-17 and Figure 14-18 provide examples of the results for the high-grade EU 600 and EU 310N, respectively, in the north–south and vertical directions.

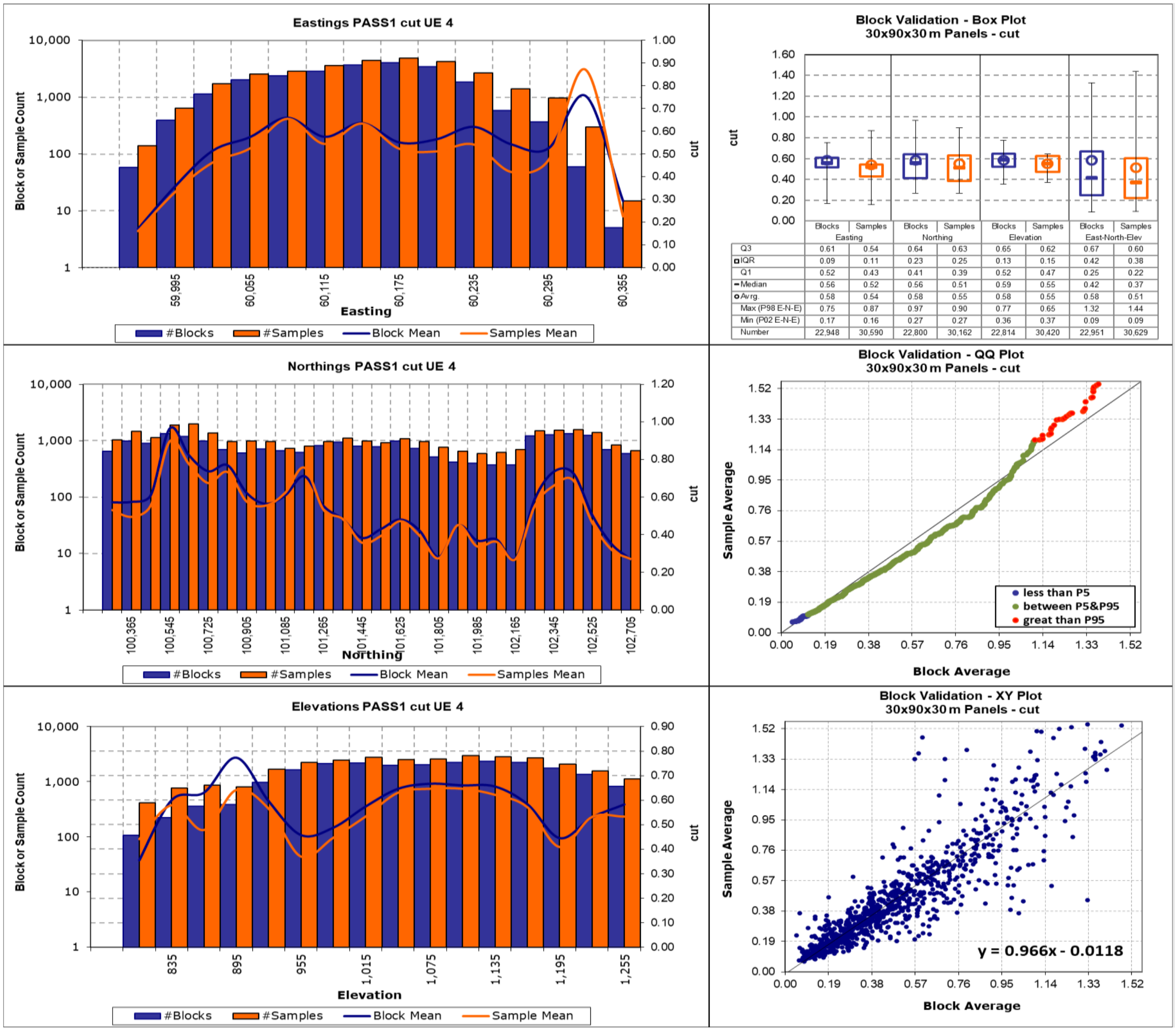
Figure 14-17: Drift Analysis for TCu in EU 600



	Easting Blocks	Easting Samples	Northing Blocks	Northing Samples	Elevation Blocks	Elevation Samples	East-North-Elev Blocks	East-North-Elev Samples
Q3	0.82	0.83	0.89	0.89	0.89	0.90	0.85	0.88
IQR	0.20	0.22	0.35	0.34	0.34	0.32	0.39	0.44
Q1	0.61	0.61	0.54	0.56	0.54	0.58	0.46	0.44
Median	0.64	0.64	0.71	0.71	0.67	0.65	0.66	0.63
Avrg.	0.77	0.77	0.78	0.78	0.78	0.77	0.77	0.76
Max (P98 E-N-E)	1.01	1.04	1.07	1.10	1.06	1.11	1.32	1.51
Min (P02 E-N-E)	0.47	0.47	0.27	0.38	0.32	0.31	0.21	0.22
Number	13,222	13,974	13,118	13,873	13,199	13,952	13,226	13,986

Source: Capstone, 2023.

Figure 14-18: Drift Analysis for TCu in EU 310



Source: Capstone, 2023.

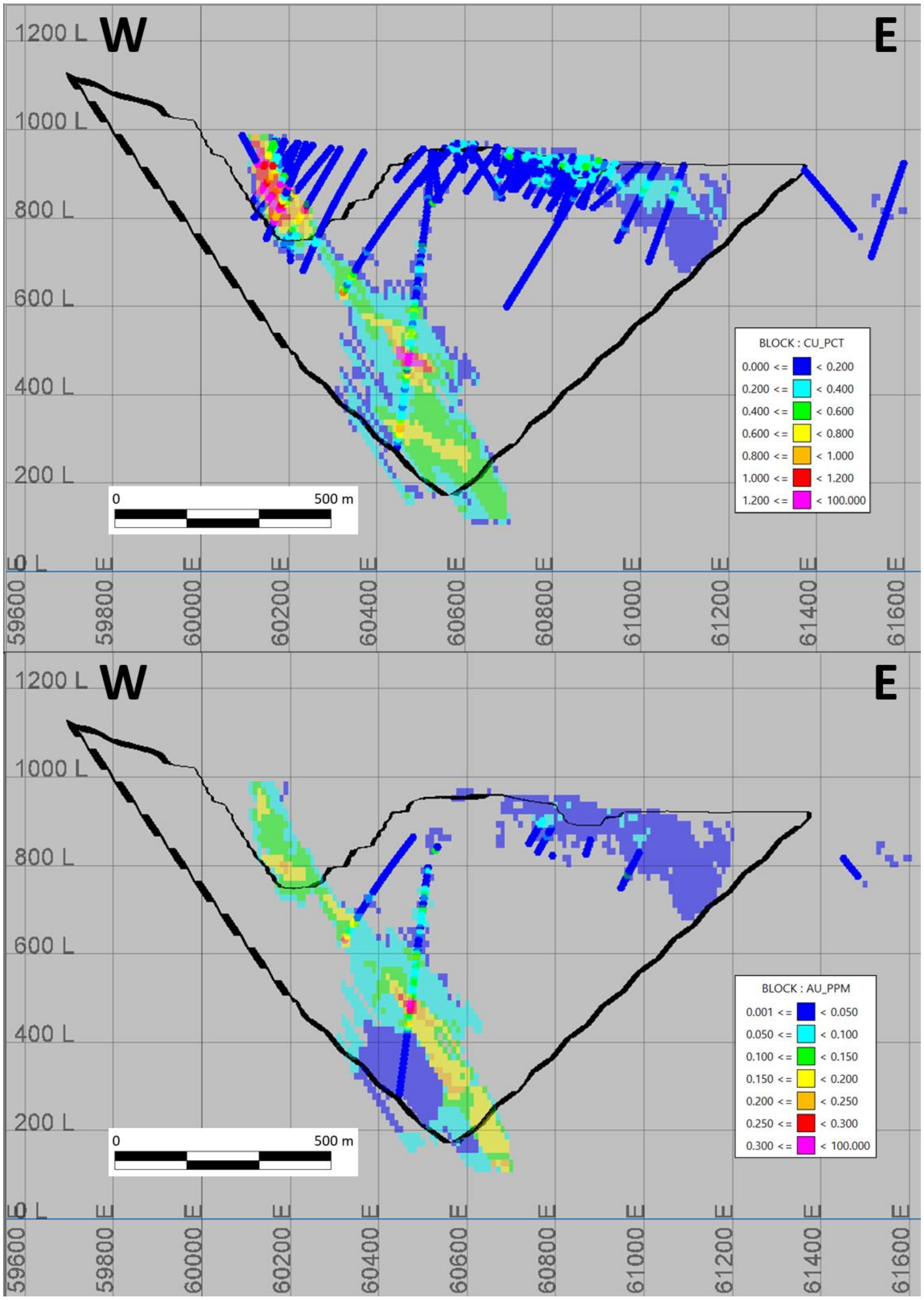
14.12.2 Visual Validation

Visual validation was performed in sections along each coordinate axis to compare blocks and composites. Figure 14-19 and Figure 14-20 show horizontal and vertical sections of the block model and composites. In general, the visual validation for total copper estimates indicates that the composite grades are adequately represented by the block model. High grade zones are adequately represented, high grade samples are adequately controlled, validating the outlier treatment applied. Smoothing levels increase in deeper parts of the deposit due to the reduction in the number of composites available. However, the results show an acceptable level of smoothing.

General sections showing TCu, and Au are provided in Figure 14-21 and Figure 14-22.

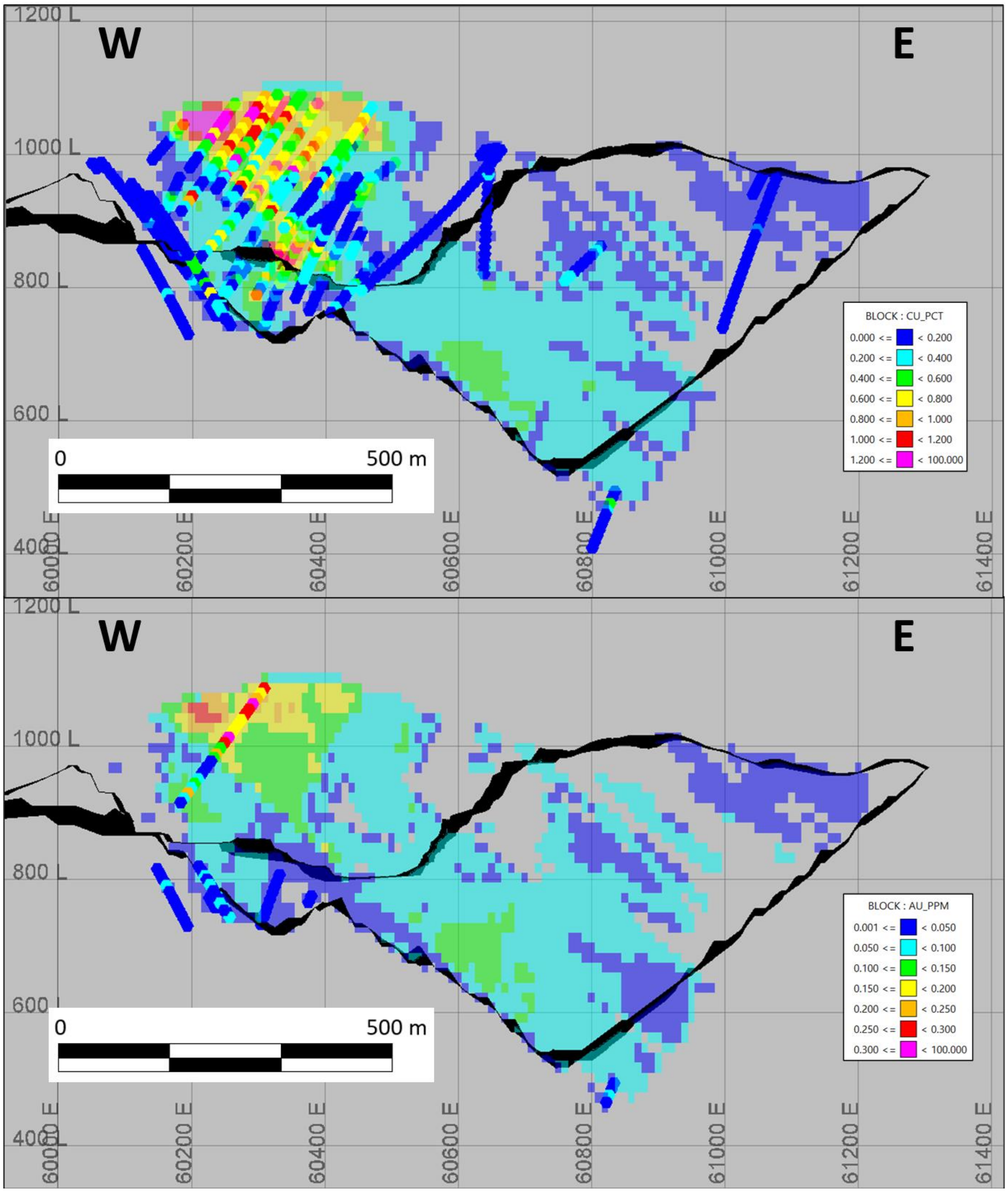
During the review, zones under the Sulphide Top (that is, material classified as sulphide) have been identified with solubility ratios higher than expected. These zones are located immediately below the Sulphide Top and are of low significance. They represent less than 5% of the mine plan, hence they are not considered a material risk.

Figure 14-19: Section 102,390 N showing Block Model and Composites. Top: TCu. Bottom: Au



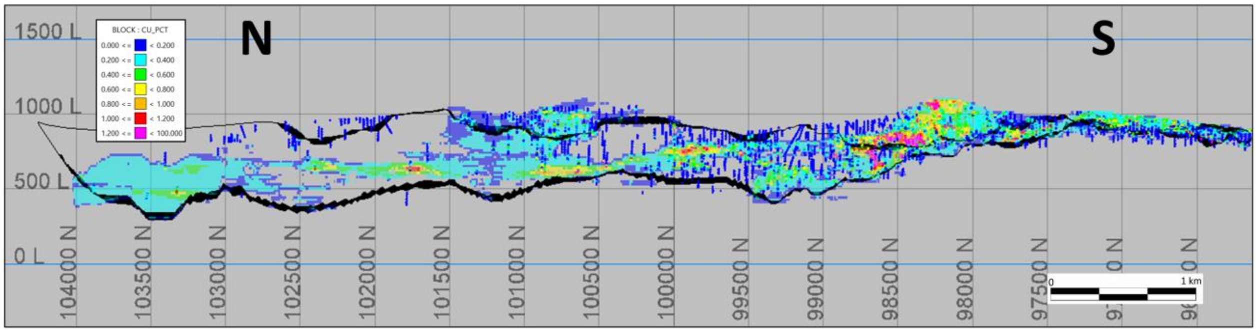
Source: Capstone, 2024. Note: Topography Resource Pit as of June 2024.

Figure 14-20: Section 98,220N Showing Block Model and Composites. Top: TCu. Bottom: Au



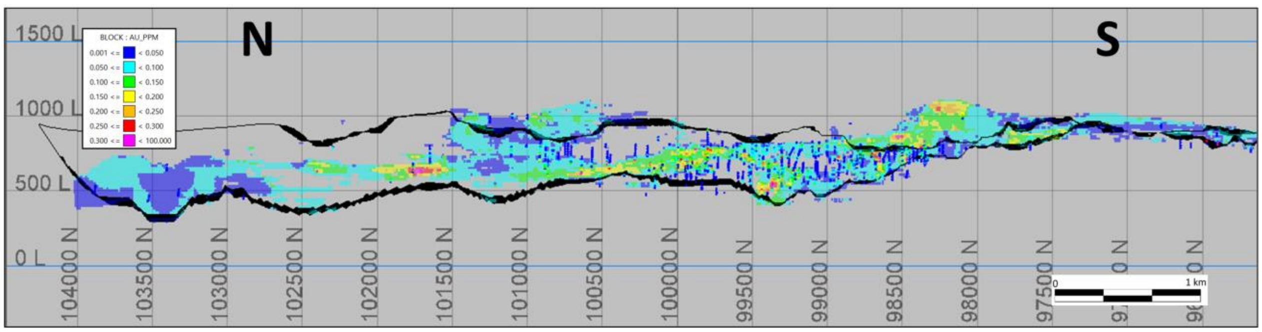
Source: Capstone, 2024. Note: Topography Resource Pit as of June 2024.

Figure 14-21: Section 60,330 E Showing TCu Block Model and Composites



Source: Capstone, 2024.

Figure 14-22: Section 60,330 E Showing Au Block Model and Composites



Source: Capstone, 2024.

14.13 Density

The density database contains 4,345 records (COSG19). Density data were obtained by the water displacement method from intact rock core samples of 20 ±3 cm in length, systematically sampled every 20 m along the drill hole.

Blocks within the oxide zone were assigned average density values per EU as detailed in Table 14-16; density for blocks within sulphide and waste oxide zones were estimated using OK. This was performed this way because most drilling within the oxide zone was performed using RC drilling which does not provide samples suitable for density measurements. On the other hand, drilling within the other zones was mostly performed using core drilling which provided enough samples suitable for density measurements.

Density estimation was performed for two groups of samples, Mantoverde (MVN, MVS, Franko, Montecristo, Kuroki, Punto 62) and Mantoruso (Quisco, Celso and Mantoruso) depending on the proximity of the sample to the FMV.

Table 14-16: Density by Sector and EU for Oxide Material

Sector	Unit	Code	Average (t/m³)
MVN	North Tectonic Breccia	310N	2.49
	South Tectonic Breccia	310S	2.49
	Hydrothermal Breccia	600	3.08
	Transition Zone	700	2.68
MVS	Magnetite Zone above MFV	650U	2.76
	Magnetite Zone below MFV	650D	2.76
	Montecristo Tectonic Breccia	310C	2.55
	Mineralized Green Breccia	310U	2.61
	Magnetite Zone	650F	2.75
	Tectonic Breccia	310F	2.65
Kuroki	Kuroki North Tectonic Breccia	310N	2.73
Franko	Hydrothermal Breccia	600C	2.86
	Transition Zone	700C	2.86
Quisco	Quisco Hydrothermal Breccia	760Q	2.86
Celso	Hydrothermal Breccia	600M	2.86
	Transition Zone	700M	2.86
Punto 62	Punto 62 Transition Zone	700P	2.88

14.14 Mineral Resource Classification

A two-indicator method was used for Mineral Resource classification. The block indicators INDT (tonnage) and INDG (grade) were coded as follows (using a cut-off grade = 0.1%):

- If TCu (%) < cut-off grade; INDT = 0.
- If TCu (%) > cut-off grade; INDT = 1.
- If TCu (%) < cut-off grade; INDG = 0.
- If TCu (%) > cut-off grade; INDG = TCu (%).

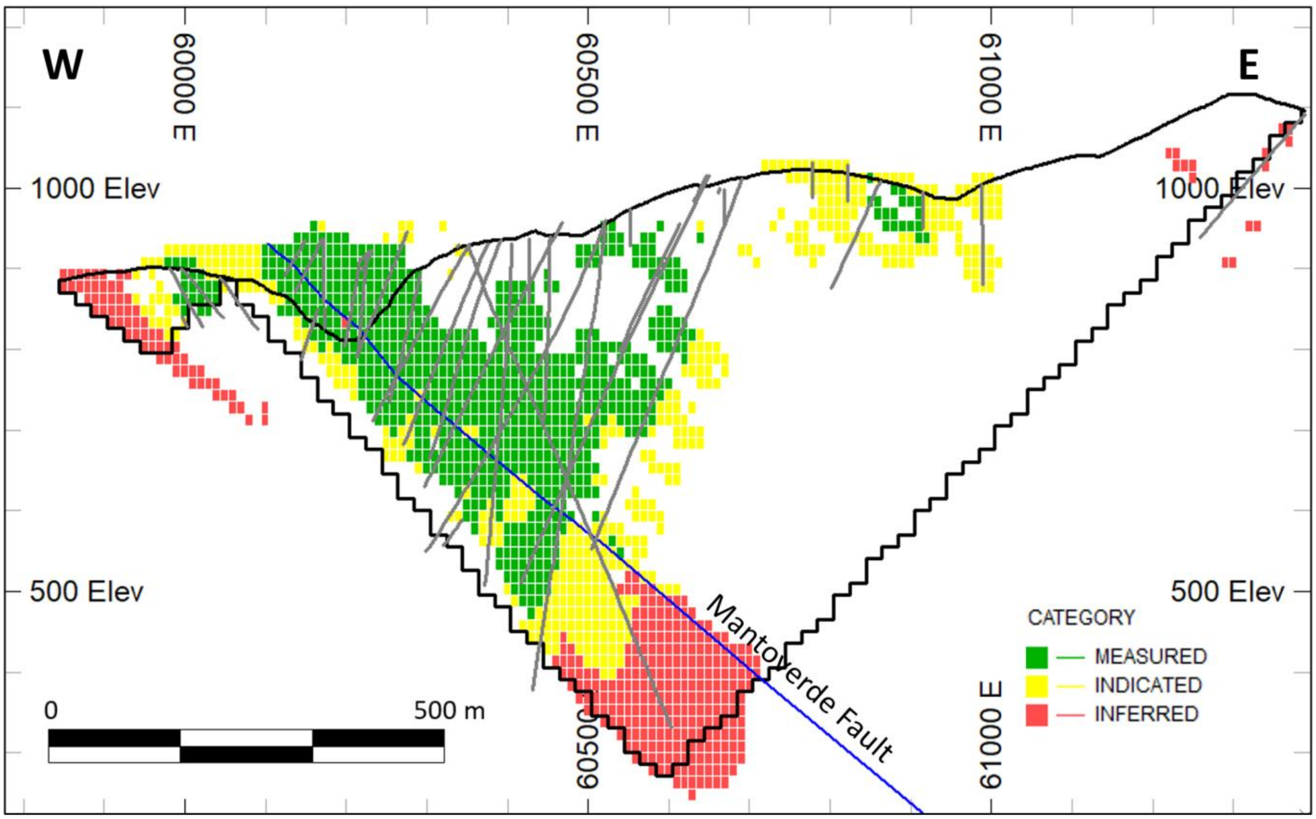
Once the blocks were tagged with the indicators the following steps were taken:

- Review of the spatial variability and continuity of the grade and tonnage indicators.
- Definition of production units equivalent to (i) 1 month and (ii) 1 year of production.
- Design of different sampling grids within the above production units.
- Calculation of error panels for each sampling grid combination at the production unit.

- Calculation of the Kriging variance at the local block size using all sample grid combinations.
- Review of the results of the local Kriging variance versus the production unit estimation error.

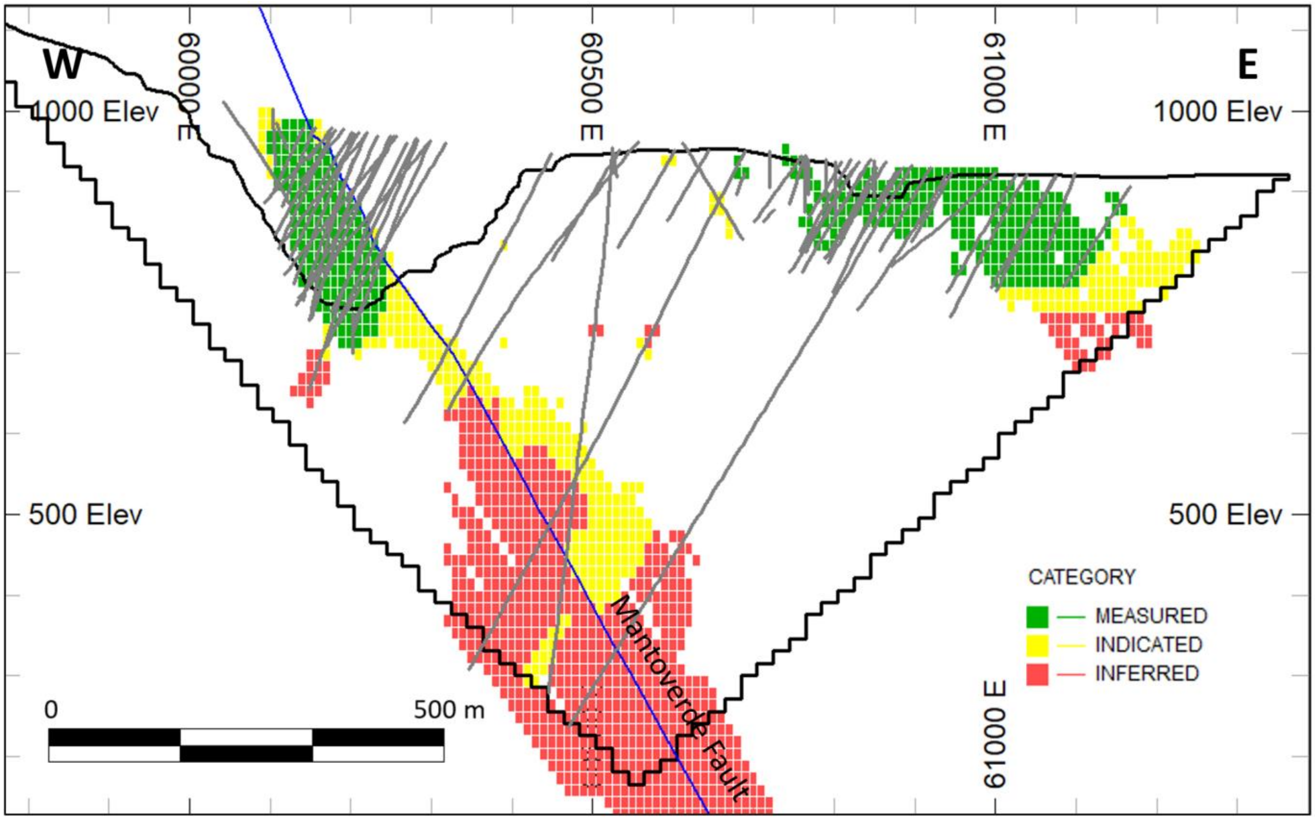
Blocks were classified as Measured if 90% of a monthly production had a grade error of less than 15%. Blocks were classified as Indicated, if 90% of the annual production had a grade error of less than 15%. The remaining estimated blocks were classified as Inferred. Figure 14-23 and Figure 14-24 show vertical sections of the Mineral Resource Classification.

Figure 14-23: Section 98,980N Showing Mineral Resource Classification and Drill Holes



Source: Capstone, 2024. Note: Topography June 1, 2024.

Figure 14-24: Section 102,440 N Showing Mineral Resource Classification and Drill Holes



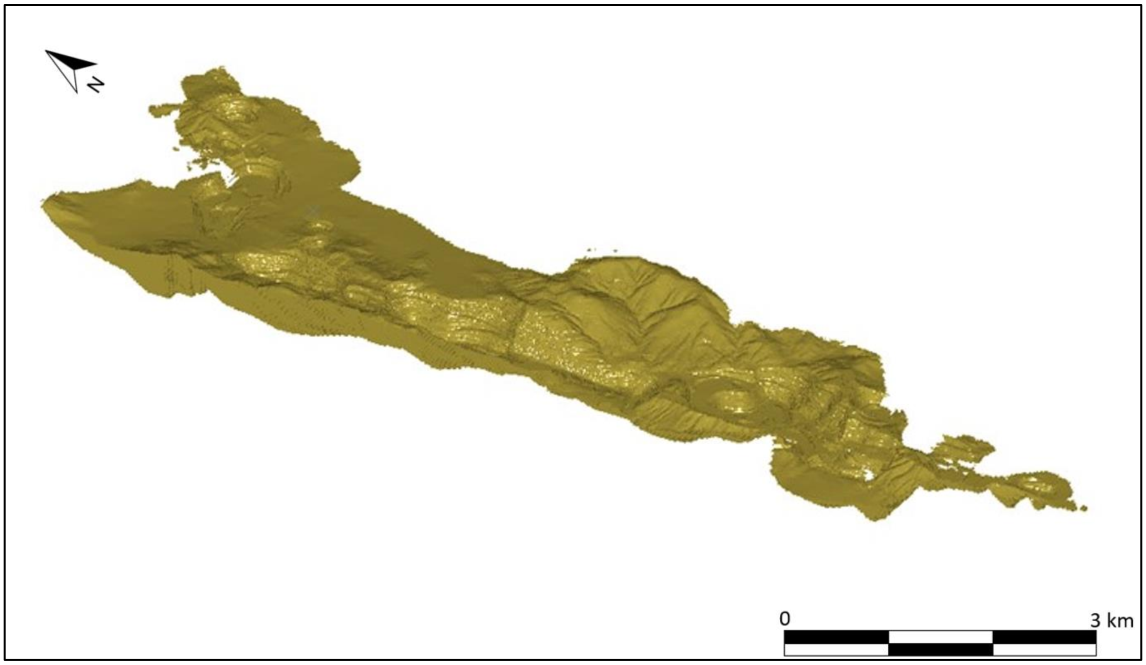
Source: Capstone, 2024. Note: Topography June 1, 2024.

14.15 Reasonable Prospects of Eventual Economic Extraction

To fulfill the requirement of Reasonable Prospects of Eventual Economic Extraction the Mineral Resources were constrained within a Lerchs–Grossmann (LG) pit shell (Figure 14-25) constructed with the Geovia Whittle 4.5.5 software package.

The LG shell input parameter assumptions are shown in Figure 14-13.

Figure 14-25: Mineral Resource Pit



Source: Capstone, 2024.

Table 14-17: LG Shell Input Assumptions

Item	Unit	Value
Metal Price		
Copper	US$/lb	4.00
Gold	US$/oz	1,700
Recoveries (average)		
Copper (Sulphides)	%	90.4
Copper (Mixed)	%	72.8
Heap leach – Recovery of SCu	%	67.6
Heap Leach – Factor for additional bio-oxidation recovery	%	120
Dump leach – Recovery of SCu	%	38.9
Gold (Sulphides)	%	67.9
Gold (Mixed)	%	61.7
Mine cost(average)	US$/t moved	1.87
Process		
Flotation cost (average)	US$/t	9.6
Heap leaching cost(average)	US$/t	10.5
Dump leaching cost (average)	US$/t	2.0

Item	Unit	Value
Selling		
Concentrate (TC/RC)	US$/lb	0.165
Commercialization	US$/lb	0.146
Total TC/RC	**US$/lb**	**0.311**
Cathodes (SW/EX)	US$/lb	0.350
Commercialization	US$/lb	0.047
Total SX/EW	**US$/lb**	**0.397**
Mine	MUS$/year	6.0
Concentrate	MUS$/year	8.4
Oxides	MUS$/year	10.6
Energy	US$/kWh	0.108
Acid	US$/t	113
Copper	%	96
Gold	%	93
Pit slope angles	˚	Variable (26˚ to 60˚)
Grade factor (1-Dilution)	%	100
Mining Recovery	%	100

Note: The mining cost tabulated above corresponds to the average cost. However, the optimization considers mathematical expressions that allow the variable transportation component to be reasonably estimated based on the elevation of each block to be extracted.

The Mineral Resource Estimates are reported inclusive of Mineral Reserves, and follow the definitions set out in the 2014 CIM Definition Standards.

Mineral Resource have an effective date of June 1st, 2024. Table 14-18 and Table 14-19 summarize the Mineral Resource by process.

Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

Table 14-18: Mantoverde Mineral Resource Flotation – Sulphide+Mixed as of June 1, 2024. Inclusive of Mineral Reserves

	Category	Tonnage (Mt)	Grade %TCu	Grade (g/t Au)	Grade (ppm Co)	Contained Cu (kt)	Contained Au (koz)	Contained Co (kt)
Mantoverde Sulphides (Flotation)	Measured	187.5	0.57	0.10	178	1,069	603	33
	Indicated	332.0	0.41	0.10	134	1,369	1,068	45
	Total Measured & Indicated	**519.5**	**0.47**	**0.10**	**150**	**2,438**	**1,671**	**78**
	Total Inferred	553.1	0.37	0.08	62	2,046	1,423	34
Mantoverde Mixed (Flotation)	Measured	38.9	0.47	0.09	85	183	113	3
	Indicated	36.3	0.36	0.09	101	132	106	4
	Total Measured & Indicated	**75.2**	**0.42**	**0.09**	**93**	**315**	**218**	**7**
	Total Inferred	17.8	0.29	0.06	30	52	34	1

	Category	Tonnage (Mt)	Grade %TCu	Grade (g/t Au)	Grade (ppm Co)	Contained Cu (kt)	Contained Au (koz)	Contained Co (kt)
Mantoverde Sulphides + Mixed (Flotation)	Measured	226.4	0.55	0.10	162	1,252	715	37
	Indicated	368.3	0.41	0.10	131	1,501	1,174	48
	Total Measured & Indicated	**594.7**	**0.46**	**0.10**	143	**2,753**	**1,889**	**85**
	Total Inferred	570.9	0.37	0.08	61	2,098	1,457	35

Table 14-19: Mantoverde Mineral Resource Heap and Dump Leach - Oxide+Mix as of June 1, 2024. Inclusive of Mineral Reserves

	Category	Tonnage (Mt)	Grade (%TCu)	Grade (%SCu)	Contained Cu (kt)
Oxides+Mixed (Heap Leach)	Measured	101.8	0.46	0.35	356
	Indicated	63.3	0.40	0.30	190
	Total Measured & Indicated	**165.1**	**0.44**	**0.33**	**546**
	Total Inferred	11.5	0.37	0.28	32
Oxides+Mixed (Dump Leach)	Measured	153.9	0.22	0.15	231
	Indicated	153.3	0.21	0.14	215
	Total Measured & Indicated	**307.2**	**0.22**	**0.15**	**445**
	Total Inferred	59.5	0.22	0.14	83
Oxides+Mixed (Heap + Dump Leach)	Measured	255.7	0.32	0.23	587
	Indicated	216.6	0.27	0.19	405
	Total Measured & Indicated	**472.3**	0.29	**0.21**	**992**
	Total Inferred	71.0	0.24	0.16	116

Notes to accompany Mineral Resource tables:

1. Mineral Resources are reported with an effective date of June 1st, 2024, inclusive of Mineral Reserves.
2. Mineral Resources, including stockpiles and in situ material, are reported in accordance with the 2014 CIM Definition Standards.
3. Mineral Resources are reported on a 100% basis. The attributable percentage to Capstone is 69.993%.
4. Cut-off grade:
    4.1. Dump Leach: Oxide: 0.10% ≤ SCu < 0.20% and mineral zone=1, Mixed 0.10% ≤ SCu < 0.20% and SCu/TCu > 50% and mineral zone=2.
    4.2. Heap Leach: Oxide: SCu ≥ 0.20% and mineral zone=1, Mixed: SCu ≥ 0.20% and SCu/TCu > 50% and mineral zone=2.
    4.3. Flotation: Sulphide: TCu ≥ 0.20% and mineral zone=3, Mixed: TCu ≥ 0.20% and SCu/TCu ≤ 50% and mineral zone=2.
5. The Mineral Resource pit is based on US$4.00/lb Cu and US$1,700/oz Au based on long-term forecast pricing.
6. Tonnes are reported on a dry basis
7. Contained Metal (CM) is calculated using the following formulae:
    7.1. CM = Tonnage (Mt) * TCu (%) *10 for sulphides
    7.2. CM = Tonnage (Mt) * SCu (%) *10 for oxides
    7.3. CM = Tonnage (Mt) * g/t Au*1,000/31.1035 for sulphides and Mixed.
    7.4. CM = Tonnage (Mt) * Co (ppm)/1,000 for sulphides and Mixed.
8. Flotation recovery is based on a geometallurgical model, 90.44%TCu and 67.87% Au average for Sulphides and 72.77% TCu and 61.73% Au average for Mixed. Heap Leach recovery is based on operating data, expressed in algorithms per mineral model zone considering both SCu and $CaCO_3$ grades. The average heap leach recovery is 67.64% SCu, with an additional 50% recovery of ICu achieved through the bioleaching process (where ICu = TCu – SCu). For dump leaching, the recovery averages 38.9% SCu, based on operational data.
9. Tonnage and contained metal have been rounded to reflect the accuracy of the estimate and numbers may not add exactly.
10. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

14.16 Comments On Section 14

Mantoverde is a mature mine considering its oxide production, where the fundamental geological criteria of continuity supporting Resource estimation has been validated in those zones. There is no evidence that these criteria change substantially at depth within the sulphide body where production began in 2024. The procedures and statistical analyses applied in Resource estimation are considered conventional and standard for this type of deposit. The validations conducted by the QP indicate that the block model is an acceptable representation of the Mineral Resource at Mantoverde.

In QP's opinion, there are certain risk factors which could materially impact estimates of Mineral Resources. These risk factors include:

- Metal price assumptions.
- Changes to the assumptions used for the cut-off grade.
- Changes in local interpretations of mineralization, geometry and continuity of mineralized zones.
- Changes in the interpretation and/or definition of the sulphide top surface limit. Currently it uses mineralogy, citric solubility ratio, and geological interpretation.
- Density and domain assignments.
- Geometallurgical and mineral zone assumptions.
- Changes to geotechnical, mining and metallurgical recovery assumptions.
- Changes to input and design parameter assumptions that pertain to the conceptual Whittle pit design constraining the estimate.
- Assumptions as to the continued ability to access the site, retain mineral and surface rights titles, maintain environmental and other regulatory permits, and maintain the social licence to operate.
- The ongoing discussions and alternatives being explored to secure and/or acquire the remaining surface rights may not reach a successful resolution.

There are no other, known environmental, permitting, legal, title, taxation, socio-economic, marketing, political or other relevant factors other than as discussed in this Report that could affect the Mineral Resource estimates.

15 MINERAL RESERVE ESTIMATES

The Mineral Reserves detailed in this Report considers both oxides and sulphides minerals, extracted by Mantoverde Mine and the brownfield project called MV-O.

Mantoverde is an open pit-mining complex with conventional operations using truck-and-shovel technology. Oxide ore is treated through Heap and Dump (ROM) leaching processes and copper cathodes are produced via a conventional SX-EW plant. Mantoverde's concentrator plant, constructed as part of the MVDP, began operation in 2024 with a 32 kt/d milling rate expected in the second half of 2024. MV-O focuses on optimization of concentrator throughput capacity up to 45 kt/d and modification of the heap leaching process to bacterial leaching processing. The mine plan considers ramp-up from 32 kt/d to 45 kt/d by Feb 2026. The plan includes the processing of 7.2 Mt of sulphide ore that had been stockpiled prior to June 1, 2024. The Mineral Reserve was developed by Capstone and is the total of all Proven and Probable category material planned for processing in MV-O.

A Lerchs – Grossmann (LG) optimization process using Whittle software formed the basis of detailed phased pit design. This resulted in six mine phases with oxide material and 15 mine phases with predominantly sulphide material. These phases were designed to prioritize the higher-grade zones within the mineral extraction plan, while maintaining suitable working widths that would enable high productivity mining sequences using large-scale mining equipment. The Mineral Reserves copper price assumption was US$3.5/lb and US$1,500/oz for gold. The LG pit selected to inform detailed phase design used a revenue factor of 0.88. Revenue factor is a variable used to calculate a pit shell by adjusting product prices while keeping costs the same, resulting in smaller pits at lower revenue factors.

The Mineral Resources were converted to Mineral Reserves based upon the following assumptions:

- Only Measured and Indicated Resources could be converted. Inferred Mineral Resources were set to waste at zero grade.
- The Mineral Resource block model was considered as fully diluted. Pit optimization and mine planning processes were performed without introducing any additional factors to account for dilution.
- The mineralized material was economically and technically feasible to extract.
- Mineralization was within Capstone's mining concessions.

15.1 Block Model

The pit optimization was carried out using 2023 Mineral Resource model presented in Section 14. This model consists of blocks 10m E x 10m N x 15m high, with the block height matching the size of the benches in the sulphide pits.

15.2 Supporting Assumptions for Pit Optimization

The mining cost estimate for the pit optimization process is based on actual costs compiled over 2023 and 2024. The estimated average mining cost was separated into various components such as fuel, explosives, tires, parts, salaries and wages. This resulted in an estimated mining cost of $1.57/t which includes the portion of G&A attributable to the

Mine. In addition to that, the capitalized principal component replacement cost was included, resulting in a total mining cost of US$1.87/t. The metal prices, processing costs, refining costs, and processing recoveries were provided by Capstone.

A summary of the initial input parameters used in the constraining LG pit shell is included in Table 15-1.

Table 15-1: Pit Optimization Parameters

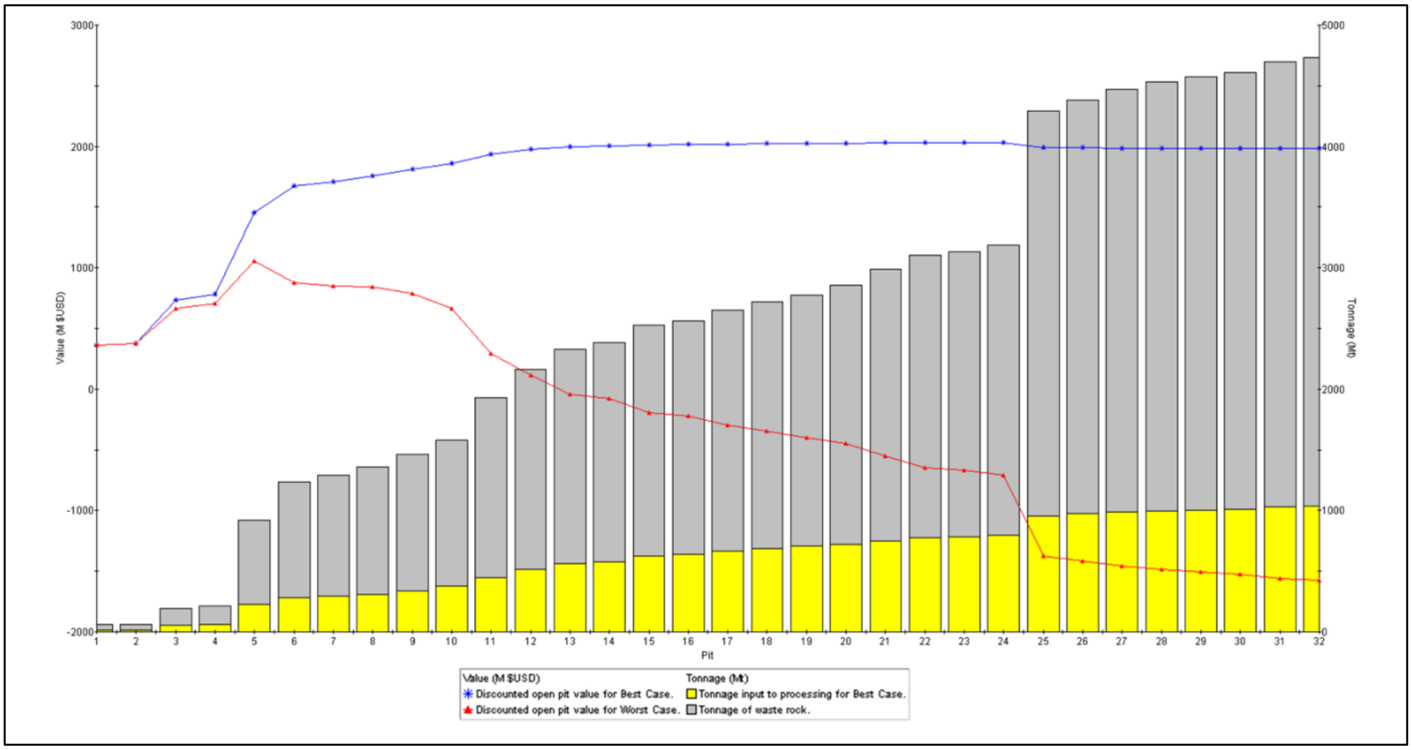
Item	Unit	Value
Metal Price		
Copper	US$/lb	3.50
Gold	US$/oz	1,500
Recoveries (average)		
Copper (Sulphides)	%	91.7
Copper (Mixed)	%	71.0
Heap leach – Recovery of SCu	%	71.5
Heap Leach – Recovery of ICu (where ICu = TCu – SCu)	%	50
Dump leach – Recovery of SCu	%	38.0
Gold (Sulphides)	%	66.8
Gold (Mixed)	%	62.7
Mine cost (average)	US$/t moved	1.87
Process		
Flotation cost (average, incl. tailings)	US$/t	9.6
Heap leaching cost (average)	US$/t	9.73
Dump leaching cost (average)	US$/t	1.78
Selling		
Concentrate (TC/RC)	US$/lb	0.165
Commercialization	US$/lb	0.146
Total TC/RC	**US$/lb**	**0.311**
Cathodes (SW/EX)	US$/lb	0.350
Commercialization	US$/lb	0.047
Total SX/EW	**US$/lb**	**0.397**
G&A – Mine (included within $1.87/t moved)	MUS$/year	6.0
G&A – Flotation	US$/t	0.51
G&A – Heap Leach	US$/t	0.41
Energy	US$/kWh	0.108
Acid	US$/t	113
Smelter payable - Copper	%	96
Smelter payable - Gold	%	93
Inter-ramp angles (rock)	°	Variable (52° to 59°)
Grade factor (1-Dilution)	%	100
Mining Recovery	%	100

Tabulated costs and recoveries in Table 15-1 often represent averages. Individual blocks use block model variables at times (e.g. flotation recovery) and at other times use mathematical expressions that consider other variable components (e.g. depth of block for mine haulage costs; $CaCO_3$ content for heap leach cost, etc.).

Nested pit shells were generated for several revenue factors, with Whittle shell #26 corresponding to the revenue factor (RF) 1 shell and pit 36 corresponding to RF = 1.2. After analyzing the results (including total and incremental values), the Mantoverde optimized pit shell #20 (revenue factor 0.88) was chosen as the guide for the detailed ultimate pit design (discussed further in Section 16). The final Reserve phase designs contain more flotation ore and less waste than pit shell #20, due in part to a design strategy that extends ramping along the northern strike direction of the Mantoverde pits.

The pit shells are summarized in Table 15-2. Figure 15-1 shows the discounted cash flow results for different values of the revenue factor. These Discounted Cash Flow results are used to define the optimal pit, including Sustaining Capital Investment (CapEx) values.

Figure 15-1: Pit by Pit Nested Results



Source: Capstone, 2024.

Table 15-2: Pit Shells Results

Pit	RF	Heap				Dump			Flotation			Waste (Mt)	Total Rock (Mt)
		Tonnage (Mt)	SCu (%)	TCu (%)	CaCo (%)	Tonnage (Mt)	SCu (%)	CaCo (%)	Tonnage (Mt)	TCu (%)	Au (g/t)		
1	0.50	4.3	0.41	0.64	1.25	1.9	0.15	1.39	8.8	0.78	0.09	44.9	59.9
2	0.52	4.7	0.40	0.63	1.25	2.0	0.15	1.36	9.4	0.76	0.09	47.2	63.3
3	0.54	10.5	0.36	0.53	2.07	16.2	0.16	2.71	30.6	0.65	0.08	137.6	194.8
4	0.56	11.5	0.35	0.52	2.16	18.3	0.16	2.61	33.7	0.63	0.08	146.7	210.3
5	0.58	26.1	0.35	0.49	2.86	56.6	0.15	2.09	142.3	0.59	0.11	698.6	923.6
6	0.60	30.0	0.35	0.48	2.87	63.2	0.15	2.06	186.5	0.60	0.11	958.6	1,238.2
7	0.62	33.0	0.35	0.48	2.85	65.8	0.15	2.07	193.5	0.60	0.11	1,000.5	1,292.7
8	0.64	38.0	0.34	0.48	2.73	70.4	0.15	2.07	203.9	0.59	0.10	1,046.3	1,358.6
9	0.66	48.8	0.35	0.48	2.68	77.8	0.15	2.08	211.9	0.58	0.10	1,122.0	1,460.5
10	0.68	63.9	0.34	0.47	2.50	91.1	0.15	2.04	220.7	0.58	0.10	1,203.7	1,579.3
11	0.70	78.5	0.34	0.46	2.83	105.2	0.15	2.07	261.2	0.57	0.11	1,482.8	1,927.7
12	0.72	92.3	0.34	0.45	2.55	135.4	0.15	1.78	287.3	0.55	0.11	1,647.7	2,162.8
13	0.74	103.3	0.34	0.45	2.49	156.8	0.15	1.72	302.2	0.55	0.11	1,767.6	2,329.8
14	0.76	107.1	0.33	0.45	2.45	164.0	0.15	1.70	307.4	0.54	0.10	1,803.0	2,381.5
15	0.78	113.4	0.33	0.45	2.46	185.7	0.15	1.71	325.5	0.53	0.10	1,902.1	2,526.7
16	0.80	114.3	0.33	0.45	2.47	191.1	0.15	1.71	332.9	0.53	0.10	1,923.2	2,561.5
17	0.82	117.3	0.33	0.44	2.45	203.5	0.15	1.68	347.2	0.52	0.10	1,983.4	2,651.3
18	0.84	120.9	0.33	0.44	2.54	209.6	0.15	1.70	355.5	0.52	0.10	2,032.7	2,718.7
19	0.86	122.6	0.33	0.44	2.55	217.7	0.15	1.69	365.0	0.51	0.10	2,069.1	2,774.5
20	0.88	124.9	0.33	0.44	2.52	224.1	0.15	1.68	373.8	0.51	0.10	2,132.2	2,855.0
21	0.90	129.7	0.33	0.44	2.51	234.1	0.15	1.67	386.8	0.50	0.10	2,234.7	2,985.2
22	0.92	134.4	0.33	0.44	2.46	245.9	0.15	1.63	398.5	0.50	0.10	2,325.3	3,104.1
23	0.94	135.2	0.33	0.44	2.46	248.4	0.15	1.63	402.7	0.50	0.10	2,348.0	3,134.3
24	0.96	136.4	0.32	0.44	2.47	252.9	0.15	1.62	410.7	0.50	0.10	2,389.7	3,189.6
25	0.98	162.4	0.33	0.44	3.03	300.4	0.15	1.89	495.2	0.48	0.10	3,336.7	4,294.7
26	1.00	163.3	0.33	0.44	3.03	304.9	0.15	1.90	504.6	0.48	0.10	3,409.5	4,382.2
27	1.02	165.6	0.33	0.44	3.14	310.0	0.15	1.90	511.3	0.48	0.10	3,486.5	4,473.4
28	1.04	166.1	0.33	0.44	3.15	313.1	0.15	1.91	517.1	0.48	0.10	3,539.7	4,536.0
29	1.06	166.6	0.33	0.44	3.15	315.9	0.15	1.91	521.8	0.48	0.10	3,567.7	4,572.0
30	1.08	167.1	0.33	0.44	3.16	318.8	0.15	1.91	527.1	0.48	0.10	3,598.5	4,611.5
31	1.10	167.4	0.33	0.44	3.16	321.0	0.15	1.91	539.6	0.47	0.10	3,671.6	4,699.6
32	1.12	167.8	0.33	0.44	3.17	325.6	0.15	1.90	542.0	0.47	0.10	3,699.2	4,734.5

15.3 Geotechnical Considerations

15.3.1 Geotechnical Units

The rock mass at Mantoverde mine is classified according to the lithology of the deposit. The mineralization is hosted in volcanic rock of andesitic composition corresponding to "La Negra Formation (Middle-Upper Jurassic) ", which are intruded by granitic and granodioritic rocks from the Lower Cretaceous. The Mantoverde district covers an area of 10 km long and 4 km wide over a structural block defined by the Mantoverde fault trace (See Figure 15-2). The rocks of the district are affected by metasomatic potassic and ferric phenomena with varying degrees of alteration of silica, chlorite, feldspar, and sericite. These phenomena, together with tectonic events, generated a series of widely distributed secondary rock units. Copper mineralization occurs in the main trace of the Mantoverde fault, in secondary structural systems and in areas of confluence between the main Mantoverde fault and secondary systems.

Rock mass characterization was completed by mapping in the open pit and drill core loggings using geotechnical indices such as Rock Quality Designation (RQD), Rock Mass Rating (RMR) and Geological Strength Index (GSI). Geotechnical units, shown in the cross section in Figure 15-3, were associated with the following lithologies:

Waste Rock or Andesite: Andesites with a variable texture between aphanitic, porphyritic, and brecciated, grayish green in color. In these rocks, fragments of porphyritic texture are occasionally observed, suggesting alternation of volcaniclastic levels. Moderate alteration is typical, is characterized by strong chloritization and weak to moderate silicification with veins of alkali feldspar and occasional dissemination and veining of specularite or magnetite.

Tectonic Breccia: The Mantoverde body corresponds to a set of strongly tectonized rocks affected by alteration of silica, chlorite, potassium feldspar and with abundant clays and limonites. In general, it is composed of a coarse-grained tectonic breccia and mylonite or fine-grained cataclasite. Both are located on the flank of the Mantoverde fault.

Green Breccia: Strongly altered rock with a brecciated appearance composed of a matrix of chlorite, silica and, in a subordinate form, potassium feldspar. Rock clasts vary in size and composition, and depending on the degree of alteration, range from rock fragments to mineral fragments such as plagioclase.

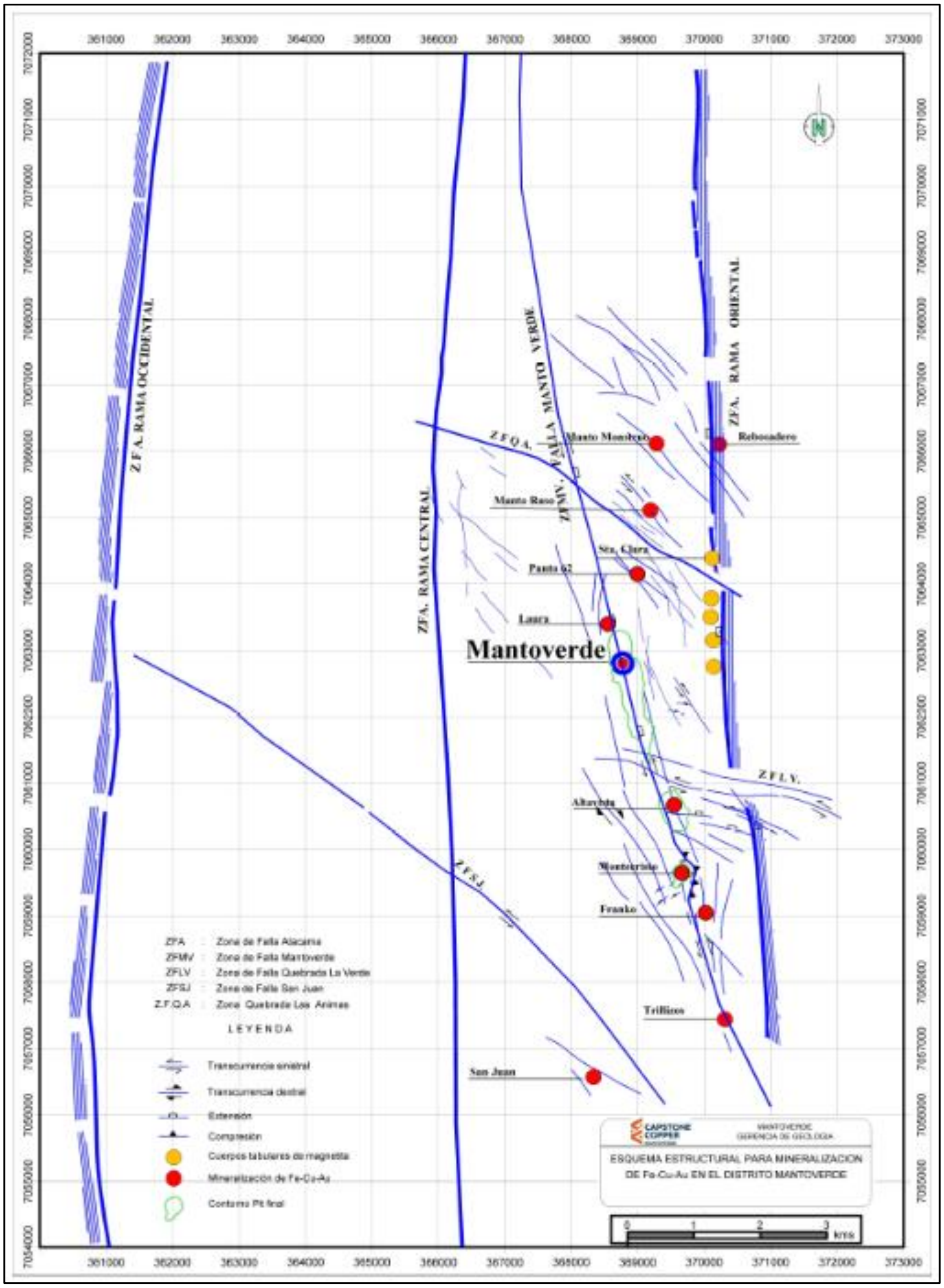
Hydrothermal Breccia: Mantoverde's strongest mineralization is found in the hydrothermal breccia that stands out as a block of positive topographic relief controlled by NW structures. It appears as an elongated body in an East-West direction located in both volcanic and intrusive rocks. The clasts are sub-angular to sub-rounded with variable sizes from centimeter to metre diameters.

Bodies of Magnetite: correspond to rock bodies affected by dissemination and stockwork of magnetite.

Transition Zone: The rock unit that borders the hydrothermal breccia is called the transition zone; it is characterized by an important presence of specularite veining without forming a matrix or close to rock fragments.

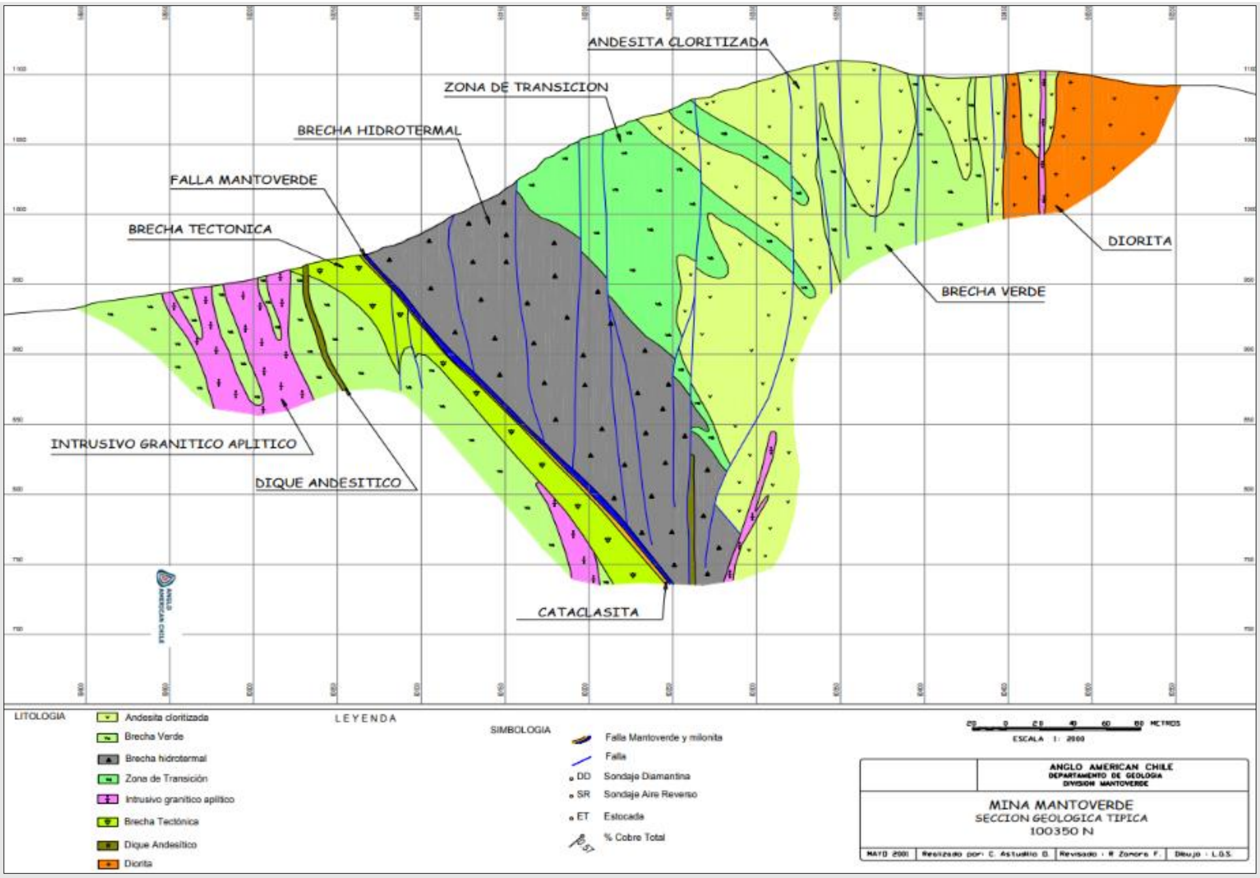
Additionally, each geotechnical unit was subdivided by mineralization environment (oxide, sulphide, transition) (Ingeroc, 2017).

Figure 15-2: Mantoverde Fault Traces



Source: Capstone, 2024.

Figure 15-3: Cross section with Geotechnical Units Mantoverde Ore Body



Source: Capstone, 2024.

15.3.2 Rock Mass Quality

To determine the quality of the rock mass, 27,502 m of validated drill intervals were analyzed. The statistical distributions of RMR were obtained for each geotechnical sub-unit with the following considerations:

- The sub-units correspond to the mineralized zones and according to the specific sector of the pit (Mantoverde or Mantoruso).
- To estimate the weighted average value of RMR, the length of the mapped section was used.
- The estimation of the GSI was carried out using GSI = RMR - 5 (Hoek et al., 1995).

Table 15-3 and Table 15-4 present the average, standard deviation, maximum and minimum values for RMR and GSI respectively. It should be noted that according to the rock mass qualification standard, in Mantoverde the rock mass is rated in a range between regular rock mass (RMR from 40 to 60) and good rock mass (RMR from 60 to 80).

Table 15-3: Summary of RMR for the Geotechnical Units

Geotechnical Unit			RMRB89			
Lithology	Pit	Mineralization environment	Average	Standard Deviation	Minimum Value	Maximum Value
Waste Rock or Andesite	Mantoverde	Oxide	66	11.3	30	87
		Sulphide	66	10.4	45	87
		Transition	62	11.8	25	87
	Celso-Ruso	Oxide	59	12.6	31	81
		Sulphide	67	11.7	42	81
		Transition	61	13.2	33	84
Tectonic Breccia / Green Breccia	Mantoverde	Oxide	57	11.8	28	83
		Sulphide	60	10.2	25	81
		Transition	55	11.5	25	93
Hydrothermal Breccia	Mantoverde	Oxide	67	10.0	55	71
		Sulphide	57	11.7	53	71
		Transition	65	9.5	28	84
	Celso-Ruso	Oxide	64	11.9	44	74
		Sulphide	68	5.7	63	76
		Transition	59	7.1	45	75
Bodies of Magnetite	Mantoverde	Oxide	-	-	-	-
		Sulphide	48	7.8	34	59
		Transition	53	12.3	25	92
Transition Zone	Mantoverde	Oxide	67	9.9	34	84
		Sulphide	68	9.3	45	83
		Transition	66	12.1	28	92
	Celso-Ruso	Oxide	62	11.3	33	84
		Sulphide	62	12.2	23	85
		Transition	64	11.5	25	92

Table 15-4: Summary of GSI Values for the Geotechnical Units

Geotechnical Unit			RMRB89			
Lithology	Pit	Mineralization environment	Average	Standard Deviation	Minimum Value	Maximum Value
Waste Rock or Andesite	Mantoverde	Oxide	61	11.3	25	82
		Sulphide	61	10.4	40	82
		Transition	57	11.8	20	82
	Celso-Ruso	Oxide	54	12.6	26	76
		Sulphide	62	11.7	37	76
		Transition	56	13.2	28	79

Geotechnical Unit			RMRB89			
Lithology	Pit	Mineralization environment	Average	Standard Deviation	Minimum Value	Maximum Value
Tectonic Breccia / Green Breccia	Mantoverde	Oxide	52	11.8	23	78
		Sulphide	55	10.2	20	76
		Transition	50	11.5	20	87
Hydrothermal Breccia	Mantoverde	Oxide	62	10.0	50	66
		Sulphide	52	11.7	48	66
		Transition	60	9.5	23	79
	Celso-Ruso	Oxide	59	11.9	39	69
		Sulphide	63	5.7	58	71
		Transition	54	7.1	40	70
Bodies of Magnetite	Mantoverde	Oxide	-	-	-	-
		Sulphide	43	7.8	29	54
		Transition	48	12.3	20	87
Transition Zone	Mantoverde	Oxide	62	9.9	29	79
		Sulphide	63	9.3	40	78
		Transition	61	12.1	23	87
	Celso-Ruso	Oxide	57	11.3	28	81
		Sulphide	57	12.2	28	80
		Transition	59	11.5	20	87

15.3.3 Intact Rock Strength

An extensive laboratory test campaign was performed by Mecánica de Rocas Ltda" for Mantoverde. In the following tables (Table 15-5, Table 15-6 and Table 15-7) a summary of density, uniaxial compressive strength (UCS) and elastic modulus for each geotechnical unit is presented.

Table 15-5: Summary of Density Test Results for The Geotechnical Units

Geotechnical Unit	Number of tests	Density			
		Average (gr/cm^3)	Maximum Value (gr/cm^3)	Minimum Value (gr/cm^3)	Standard Deviation (gr/cm^3)
Waste Rock or Andesite	5	2.62	2.74	2.39	0.14
Tectonic Breccia / Green Breccia	10	2.65	2.83	2.31	0.15
Hydrothermal Breccia	2	2.99	3.20	2.78	0.29
Bodies of Magnetite	9	2.99	3.56	2.66	0.30
Transition Zone	7	2.93	3.23	2.58	0.22

Table 15-6: Summary of UCS From Simple Uniaxial Strength Test

Geotechnical Unit	Number of tests	UCS			
		Average (gr/cm³)	Maximum Value (gr/cm³)	Minimum Value (gr/cm³)	Standard Deviation (gr/cm³)
Waste Rock or Andesite	24	120.8	150.9	87.6	18.5
Tectonic Breccia / Green Breccia	12	85.9	109.1	56.9	19.3
Hydrothermal Breccia	4	118.4	172.5	54.7	48.4
Bodies of Magnetite	8	92	136.3	62.1	22.8
Transition Zone	10	123	161.7	86.7	23.9

Note: Those tests that showed breakage due to some structure or a mixed plane were discarded to estimate the average value. Anomalous values above the upper or lower limit (15%) were also discarded.

Table 15-7: Elastic Modulus Estimated from Deformation in Uniaxial Test

Geotechnical Unit	Number of tests	Elastic modulus			
		Average (gr/cm³)	Maximum Value (gr/cm³)	Minimum Value (gr/cm³)	Standard Deviation (gr/cm³)
Waste Rock or Andesite	24	50.9	64.6	36.2	8.1
Tectonic Breccia / Green Breccia	12	38.3	49.9	23.8	8.7
Hydrothermal Breccia	4	60	84.9	36.8	19.,7
Bodies of Magnetite	8	42.3	62.1	31.2	9.1
Transition Zone	10	52.4	61.9	39.8	6.0

The estimation of the geomechanical properties of the discontinuities was carried out through direct shear tests on simulated discontinuities, the results of which are summarized in Table 15-8.

Table 15-8: Discontinuities Direct Shear Results

Geotechnical Unit	Test	Friction (°)	Cohesion (kPa)	Friction average (°)	Cohesion average (kPa)
Tectonic Breccia / Green Breccia	1	27.15	13.1	27,33	12,5
	2	27.50	12.0		
Hydrothermal Breccia	1	34.54	38	32,21	24,3
	2	29.89	10.7		
Bodies of Magnetite	1	30.52	25.5	29,22	37,0
	2	27.93	48.5		
Transition Zone	1	30.21	17	30,15	23,6
	2	26.27	11.9		
	3	32.50	20.7		
	4	31.63	44.9		

Finally, the parameter “mi” of the Hoek & Brown criterion was estimated from indirect traction test, uniaxial and triaxial compression tests. Table 15-9 summarizes the estimated “mi” values for each geotechnical unit.

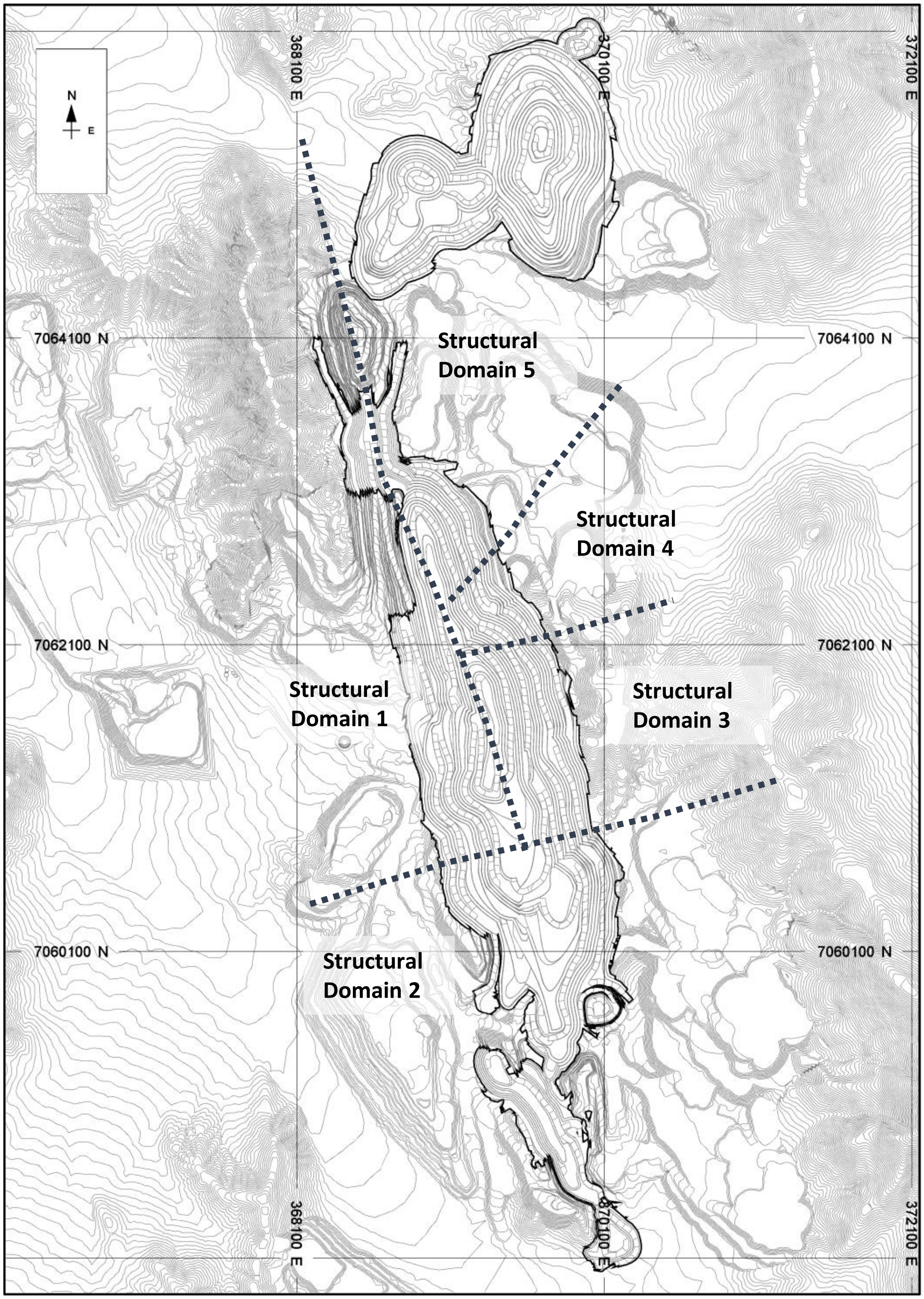
Table 15-9: Estimated mi Values According to Hoek & Brown Criteria

Geotechnical Unit	M*i*
Waste Rock or Andesite	13
Tectonic Breccia / Green Breccia	18
Hydrothermal Breccia	23
Bodies of Magnetite	12
Transition Zone	14

15.4 Structural Domains

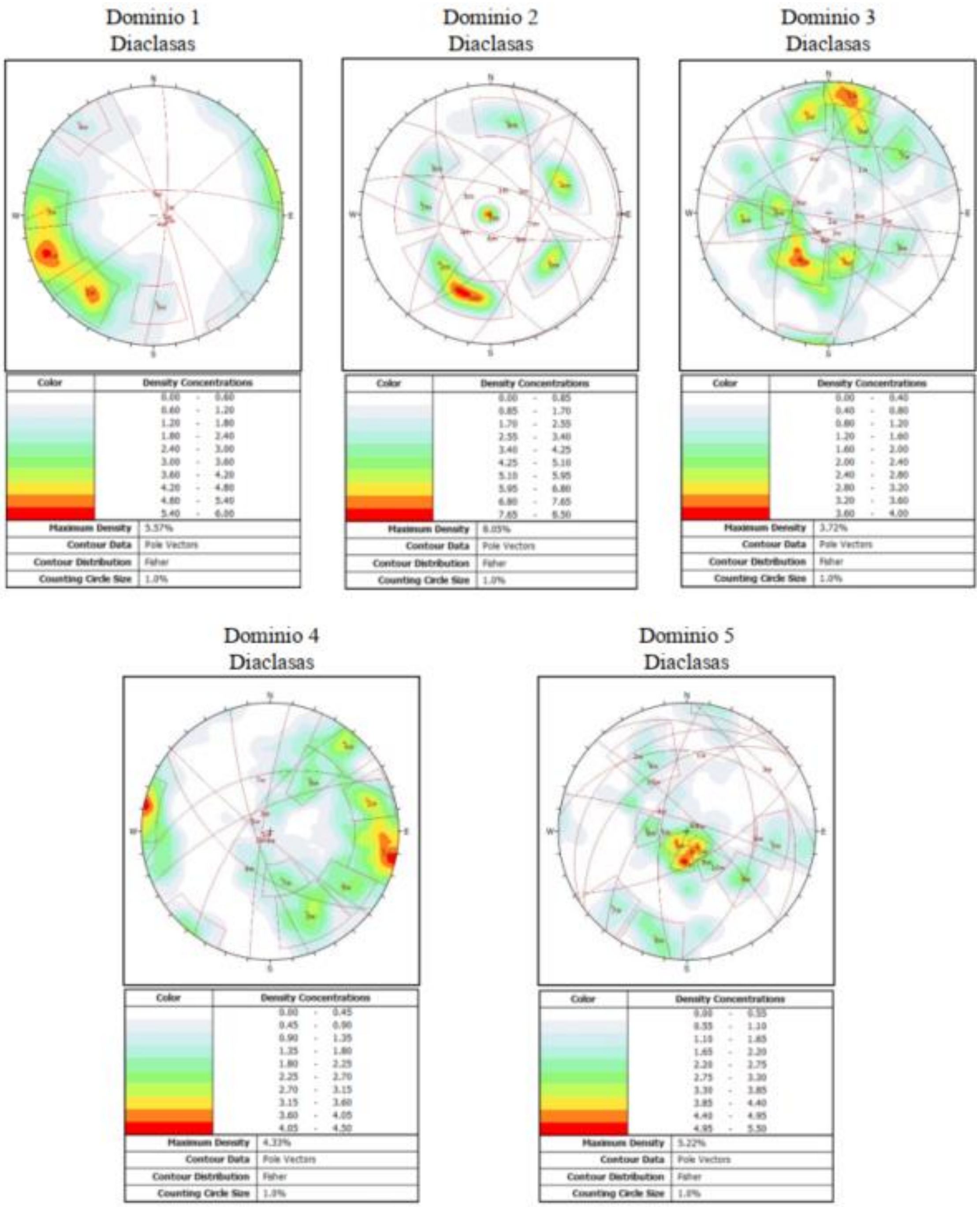
In Mantoverde, at least five structural domains have been identified based on the analysis of discontinuity information obtained from scanning drill holes in 2017. Discontinuities were classified, according to thickness, as either joint type (rank 1 and 2) or minor fault type (rank 3, 4 and 5). Figure 15-4 shows the location of the structural domains within the ultimate pit limits. Figure 15-5 and Figure 15-6 show the stereographic representation of each domain according to the type of discontinuity. A summary of the geotechnical domains is presented in the Table 15-10.

Figure 15-4: Structural Domains within the Pit Limits



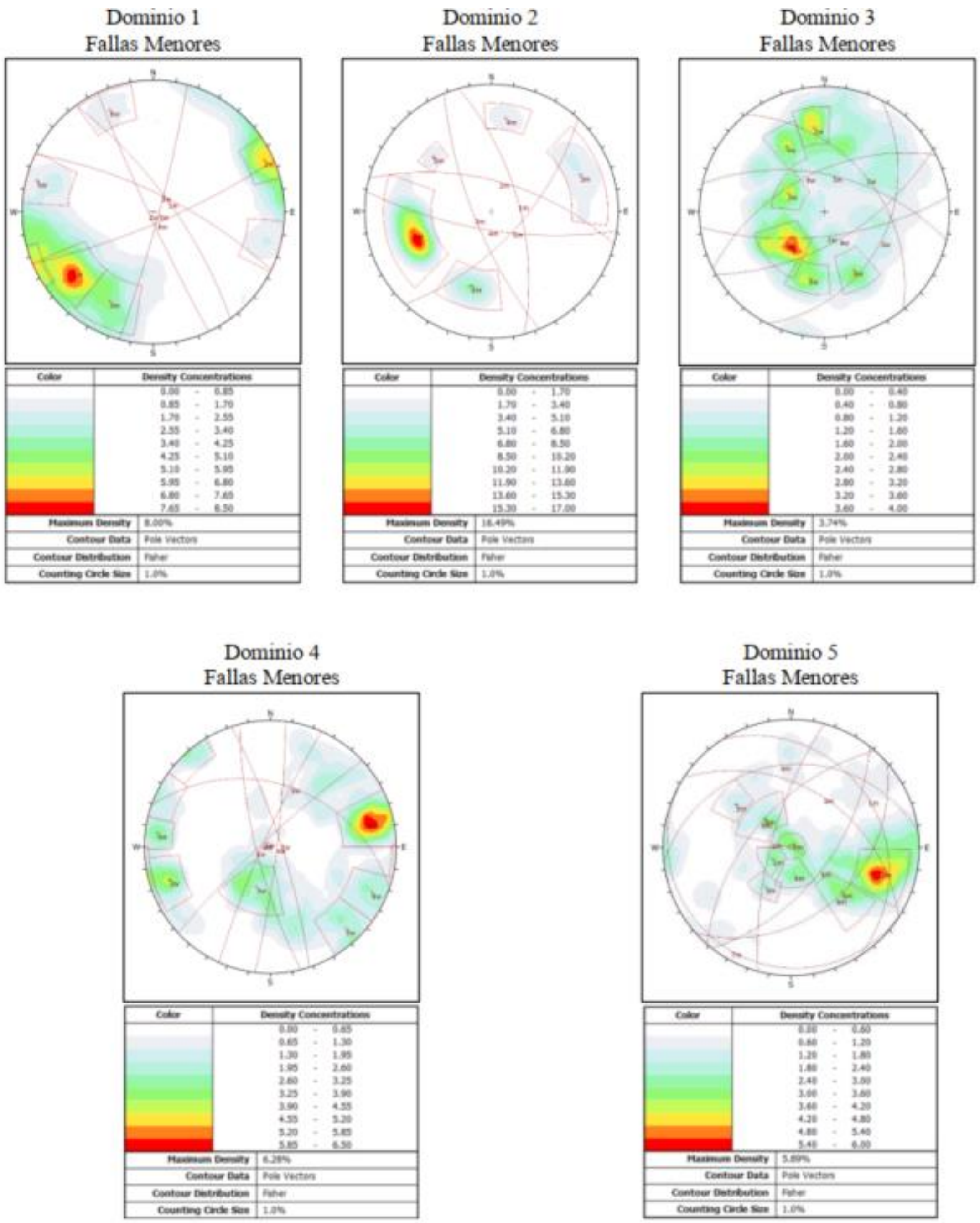
Source: Capstone, 2024. Note: Grid indicates scale. Grid squares are 2 km x 2 km.

Figure 15-5: Stereographic Representation for Joint Sets in Mantoverde Pit Walls Prior to June 2024



Source: Capstone, 2024.

Figure 15-6: Stereographic Representation for Minor Faults



Source: Capstone, 2024.

Table 15-10: Mantoverde Structural Domains

Structural domain	Discontinuity	Set	Dip		Dip Direction		Structural domain	Discontinuity	Set	Dip		Dip Direction	
			Avg.	Std. Dev.	Avg.	Std. Dev.				Avg.	Std. Dev.	Avg.	Std. Dev.
1	Joint	1	81	7.3	71	6.8	4	Joint	1	83	6.4	279	8.4
	Joint	2	75	6.9	43	9.4		Joint	2	77	3.8	252	5.9
	Joint	3	79	6.5	94	5.8		Joint	3	69	7.4	336	10.5
	Joint	4	85	5.1	141	6.5		Joint	4	84	5.4	220	6.8
	Joint	5	68	6.2	358	7.8		Joint	5	69	7.9	306	6.0
	Minor fault	1	74	7.2	54	7.5		Joint	6	54	10.1	217	7.9
	Minor fault	2	86	3.3	245	5.0		Joint	7	42	7.0	346	12.7
	Minor fault	3	74	8.0	26	8.6		Minor fault	1	77	7.7	256	6.0
	Minor fault	5	85	5.7	105	5.7		Minor fault	2	80	2.5	72	3.2
	Minor fault	6	80	4.9	157	6.7		Minor fault	3	37	9.9	19	17.9
2	Joint	1	65	4.2	15	10.3		Minor fault	4	84	2.6	97	2.6
	Joint	2	57	5.3	46	8.4		Minor fault	5	83	6.7	317	4.8
	Joint	3	2	3.3	88	16.3		Minor fault	6	83	5.2	294	4.7
	Joint	4	61	4.3	245	10.8	5	Joint	1	26	5.6	7	8.5
	Joint	5	60	3.2	309	10.9		Joint	2	17	4.2	326	15.4
	Joint	6	72	3.4	190	10.3		Joint	3	14	6.5	49	14.4
	Joint	7	57	4.6	99	9.5		Joint	4	57	5.9	309	8.3
	Joint	8	61	5.5	130	8.4		Joint	5	67	4.6	277	9.2
	Minor fault	1	65	5.4	75	13.1		Joint	6	81	6.1	17	8.4
	Minor fault	2	63	5.5	15	9.1		Joint	7	79	6.9	45	5.6
	Minor fault	3	74	4.9	248	13.8		Joint	8	35	5.4	93	9.6
	Minor fault	4	73	3.5	189	6.4		Joint	9	63	8.5	151	10.0
	Minor fault	5	64	3.0	133	4.9		Joint	10	35	3.5	323	9.0
3	Joint	1	44	9.0	32	16.3		Minor fault	1	19	5.5	58	17.2
	Joint	2	86	2.9	189	6.6		Minor fault	2	72	7.9	285	7.6
	Joint	3	76	4.6	167	5.5		Minor fault	3	40	2.9	33	8.7
	Joint	4	40	6.2	342	10.3		Minor fault	4	24	5.6	353	16.7
	Joint	5	45	6.0	94	9.0		Minor fault	5	57	5.2	128	4.6
	Joint	6	67	3.5	88	4.6		Minor fault	6	56	9.5	311	6.6
	Joint	7	71	6.0	230	4.0		Minor fault	7	4	2.8	210	62.4
	Joint	8	60	5.2	294	7.0		Minor fault	8	34	7.5	138	16.3
	Joint	9	69	6.0	199	6.8	-	-	-	-	-	-	-
	Minor fault	1	43	9.2	51	12.4	-	-	-	-	-	-	-
	Minor fault	2	68	6.1	173	4.8	-	-	-	-	-	-	-
	Minor fault	3	36	6.2	117	13.0	-	-	-	-	-	-	-

Structural domain	Discontinuity	Set	Dip		Dip Direction		Structural domain	Discontinuity	Set	Dip		Dip Direction	
			Avg.	Std. Dev.	Avg.	Std. Dev.				Avg.	Std. Dev.	Avg.	Std. Dev.
	Minor fault	4	62	6.9	150	5.3	-	-	-	-	-	-	-
	Minor fault	5	57	5.6	13	8.6	-	-	-	-	-	-	-
	Minor fault	6	55	8.6	333	7.9	-	-	-	-	-	-	-

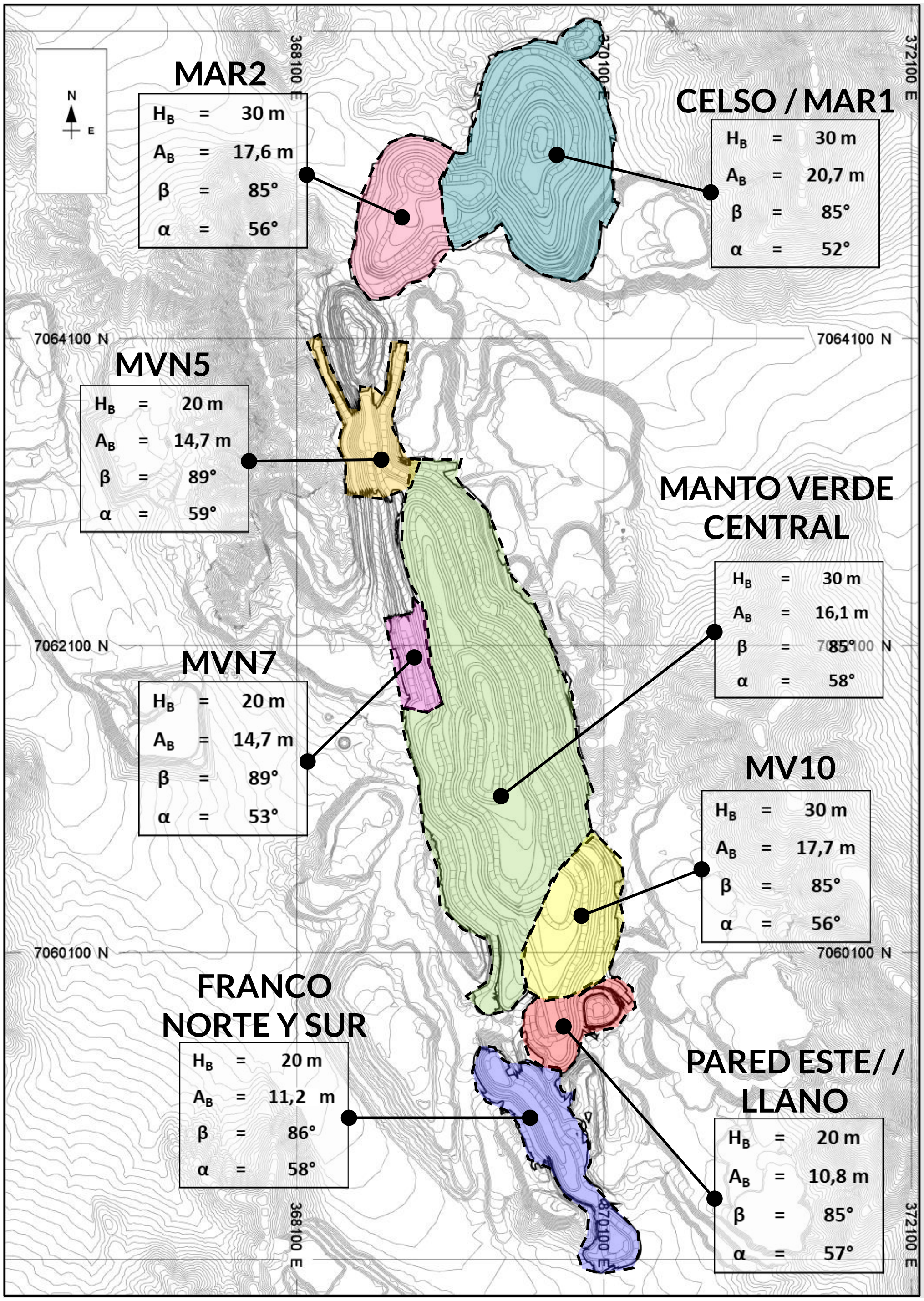
15.5 Hydrogeological Considerations

The Mantoverde pits are expected to be relatively dry because the region is arid. A system of pumping wells is part of the annual budget to manage the drainage of the pit and evolves as the mine sequence progresses to ensure dewatering capacity is adequate and meets the development requirements.

15.6 Geotechnical Recommendations

The design parameters follow the safety (minimum berm width), and stability (minimum safety factor) requirements required in the mining industry. To define the safe berm bench geometry and develop the stability study, Figure 15-7 shows the design zones.

Figure 15-7: Design Zones and Cross Section Analysis Mantoverde Open Pit Project



Source: Capstone, 2024. Note: Grid indicates scale. Grid squares are 2 km x 2 km.

Minimum berm width was established at for 10 m benches and 20 m double benches in the oxide pits, and 15m benches and 30 m double benches for the sulphide pits. The inter-ramp angles vary between 52° and 59° depending on the design zone, equivalent to overall angles between 45° and 54° depending on the configuration of access berms or safety platforms.

The details of the design of each sector are summarized in Table 15-11.

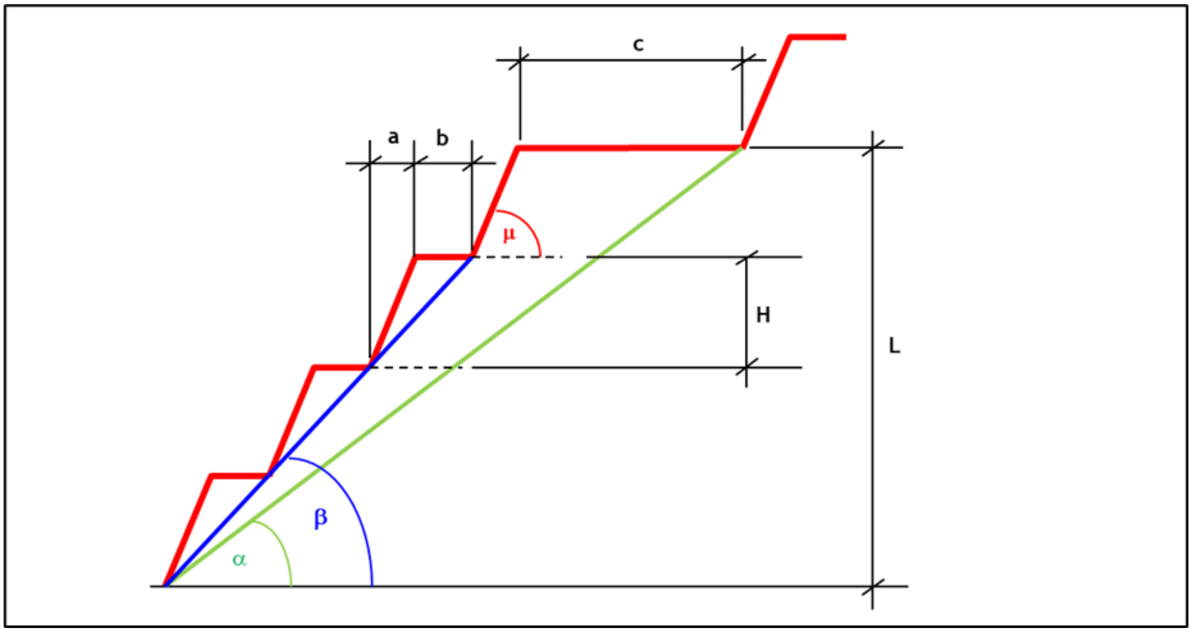
Table 15-11: Slope Angles and Geometric Parameters

Zone	Interramp Slope				Overall Slope		
	IRA β (º)	Bench Face Angle µ (º)	Bench Height H (m)	Berms width b (m)	Catch Berm c (m)	Slope Height Final L (m)	Slope Angle α (º)
CELSO/MAR1	52	85	30	20.7	35	450	45
MAR2	56	85	30	17.6	35	280	50
MVN5	59	89	20	14.7	35	170	51
MVN7	53	89	20	14.7	35	440	47
MV CENTRO	58	85	30	16.1	35	650	51
MV10	56	85	30	17.7	35	375	47
FRANCO	58	86	20	11.2	35	160	54
PARED ESTE/LLANO	57	85	20	10.8	35	210	53

Table 15-12: Geotechnical Parameters

Geotechnical parameter	Description
IRA (β)	Angle measured between the toe of a bench and the toe of the bench immediately above
Face angle (µ)	Angle measured between the horizontal plane and the wall of the bench.
Height (H)	Vertical distance measured between the toe and the crest of the same bench
Backbreak (a)	Horizontal distance measured between the toe and the crest of the same bench
Berm (b)	Horizontal distance measured between the crest of the lower bench and the toe of the upper bank
Catch Berm (c)	Horizontal distance between a set of benches
Slope Height (L)	Vertical distance measured between catch berms
Slope Angle (α)	Angle measured between toe and toe of catch berms

Figure 15-8: Wall Slope Design Parameters



Source: Capstone, 2024.

15.7 Dilution And Mine Losses

Dilution is already included as part of the resource block model. The mine plan for this Report assumes no additional dilution in any direction. When operational factors as spillage or in pit backfilling are affecting the survey, adjustments using original in-situ rock survey is applied to avoid additional dilution in the reserves block model.

15.8 Cut-Off Grades

For mine production schedule purposes cut-off grades for each process were calculated to consider assumptions listed in table 15-1, which result in the recoverable, payable value of copper (and gold for flotation), after deducting off-site costs (transport, smelting and refining).

15.8.1 Heap Leach

The following formula defines the break-even cut-off for the heap leach process:

$$\text{Heap leach cut-off grade} = \frac{Heap\ leach\ cost + Mine\ cost + G\&A\ heap}{(Copper\ price - Cost\ SXEW) * Heap\ leach\ recovery * 2204.62}$$

Where:

- Heap leach cost: US$9.70/t (average of block-based formula)
- Mine cost: US$1.87/t moved
- G&A heap: US$0.41/t ore
- Reserves Copper price: US$3.50/lb
- SXEW cost: US$0.397/lb
- Heap leach metallurgical recovery: 71.5% average (note: based on SCu grade.)

In addition to the stated recovery of SCu, 28% higher copper production is estimated due to the bioleaching process when calculating the breakeven between Heap and Dump. This figure is due to recovery of insoluble copper values and was established using MetSim modeling software calibrated to Mantoverde solution chemistry and column leach tests as described in Sections 13 and 17.

The resulting break-even cut-off grade is 0.20% SCu. An 'internal' or 'marginal' cut-off that excludes mining cost would also be 0.20% SCu, due to a modeled drop in recovery below this grade. During cone optimization, material above a cut-off of 0.20% SCu is attributed to the Heap.

During Mine scheduling, the cut-off grade was dropped as low as 0.16% SCu during periods where the full capacity of the Heap leach process could not be satisfied with the material available above 0.20% SCu. This is economically optimum since certain processing costs can be considered as "fixed" over a given time period, and therefore can be excluded from the cut-off grade calculation in those periods.

15.8.2 Dump Leach

The following formula defines the internal cut-off for the dump leach process:

$$\text{Dump leach cut-off grade} = \frac{Dump\ leach\ cost + leach\ pad\ area\ cost}{(Copper\ price - Cost\ SXEW) * Dump\ leach\ recovery * 2204.62}$$

Where:

- Dump leach cost: US$1.78/t (average of block-based formula)
- Copper price: US$3.50/lb
- SX–EW cost: US$0.397/lb
- Dump leach metallurgical recovery: As defined in Section 13

This formula yields an internal cut-off of 0.08% SCu, whereas the break-even cut-off that included mining cost would be 0.13% SCu. For calculation of Reserves, a cut-off of 0.10% SCu was applied, falling between the break-even and internal cut-off grades.

15.8.3 Flotation

The following formula defines the cut-off used for the flotation process:

$$\text{Flotation Cut-off grade} = \frac{Flotation\ cost + Mine\ cost + G\&A\ concentrator}{(Copper\ price - TCRC\ costs + Au\ credits) * Smelter\ Payable * Flotation\ recovery * 2204.62}$$

Where:

- Flotation cost: US$9.60/t milled
- Mine cost: US$1.87/t moved
- G&A concentrator: US$0.51/t milled
- Copper price: US$3.50/lb
- Treatment and Refining costs: US$0.311/lb
- Au credits: US$0.37/lb payable Cu. (Note: this does not represent a “copper equivalent”, but rather an adjustment to reflect average Au grade. Blocks near the cut-off grade average 0.057ppm Au, and recovery of Au uses a block model attribute)
- Smelter Payable: 96% for Cu and 93% for Au
- Flotation metallurgical recovery: Flotation recovery uses a block model attribute, described in Section 14.

For sulphides, this formula yields a break-even value of 0.17% TCu, whereas an ‘internal’ or ‘marginal’ cut-off that excluded mining cost would be 0.14% TCu. For mixed ore, the internal cut-off would be 0.19% TCu. For calculation of Reserves, a cut-off of 0.20% TCu was applied. Since the mine plan considers sending lower grades to stockpile for much of the mine life, this elevated cut-off reflects considerations such as rehandle costs, recovery impacts of stockpile oxidation, and fluctuations in commodity prices.

Table 15-13: Cut-Off Summary

Process	Cut-off Grade
Flotation - Sulphide	%TCu ≥ 0.20
Flotation - Mixed	%TCu ≥ 0.20 and RS≤50%
Heap Leach - Oxides	%SCu ≥ 0.20
Heap Leach - Mixed	%SCu ≥ 0.20 and RS>50%
Dump Leach - Oxides	0.10 ≤ %SCu <0.20
Dump Leach - Mixed	0.10 ≤ %SCu <0.20 and RS>50%

Table 15-13 describes the cut-off grades used for Mineral Reserves reporting. In addition, an operational cut-off grade is applied to determine ore feed to concentrator plant versus stockpile. The operational cut-off grade is defined through an optimization process developed in Minesight Scheduler Optimizer. The operational cut-off grades are later applied in the detailed mine schedule by bench and mine equipment allocation, which is developed in SP2 software (by David Carkeet Software EIRL). The average operational cut-off grade was 0.40% TCu for the 2026-2035 period. A sensitivity analysis was performed to assess variations in production for an elevated operational cut-off (around 0.47% TCu) and a lower operational cut-off (around 0.30% TCu), with these alternative scenarios resulting in lower production results for the 15yr period.

15.9 Mineral Reserves Statement

Mineral Reserves are summarized in Table 15-14 and have an effective date of June 1, 2024. The Mineral Reserve was developed by tabulating the contained Measured and Indicated Resources (as Proven and Probable Reserves) above the cut-off grades inside of the designed pit (described in Section 16). Leach Reserves are also constrained by the cessation of SX/EW plant operation estimated to occur after 2037.

15.10 Factors That May Affect the Mineral Reserves Estimate

In the opinion of the QP, the main factors that may affect the Mineral Reserves estimate are metal prices, metallurgical recoveries, operating costs (fuel, energy and labour) and block model accuracy. However, the Mineral Reserves are not considered sensitive to moderate changes in these factors, due in part to the use of a 0.88 Revenue Factor LG shell used to guide pit design. Other factors that may impact the Reserves include land tenure or permitting, water supply and geotechnical stability of pit walls and tailings facilities.

Mineral Reserves are reported on a 100% basis using the assumptions stated in Table 15-1. Mineral Reserves are contained within phase designs based upon an optimized pit shell, and includes material stockpiled in “high grade sulphide”, “low grade sulphide” and “mixed ore” inventories accumulated prior to the concentrator plant ramp up. Mining will use conventional open pit methods and equipment and use a strategy to stockpile lower grade ore to be processed near the end of mine life. The life-of-mine strip ratio is 2.67 to 1.

Table 15-14: Mineral Reserve Statement as of June 1, 2024

Mineral Reserves - Flotation	Category	Tonnage (Mt)	Grade		Contained Metal	
			TCu %	Au g/t	Cu (kt)	Au (koz)
Flotation - Sulphide	Proven	181	0.58	0.10	1,044	602
	Probable	160	0.41	0.09	656	474
	Total	341	0.50	0.10	1,700	1,077
Flotation - Mixed	Proven	38	0.49	0.08	187	99
	Probable	19	0.35	0.08	68	47
	Total	58	0.44	0.08	255	146
Flotation - Sulphide + Mixed	Proven	219	0.56	0.10	1,231	702
	Probable	179	0.40	0.09	723	521
	Total Reserves	**398**	**0.49**	**0.10**	**1,954**	**1,223**
Mineral Reserves - Leach	**Category**	**Tonnage (Mt)**	**Grade**		**Contained Metal**	
			TCu %	**SCu%**	**Cu (kt)**	**SCu (kt)**
Heap leach—– Oxide + Mixed	Proven	76	0.40	0.30	300	226
	Probable	37	0.36	0.27	132	101
	Total	113	0.38	0.29	432	327
Dump leach—– Oxide + Mixed	Proven	72	0.18	0.14	131	99
	Probable	51	0.20	0.14	102	69
	Total	123	0.19	0.14	233	168
Heap + Dump Leach—– Oxide + Mixed	Proven	148	0.29	0.07	432	325
	Probable	88	0.27	0.06	234	170
	Total Reserves	**236**	**0.28**	**0.21**	**665**	**495**

Notes to Accompany Mineral Reserves Estimate:

1. Mineral Reserves are reported on a 100% basis as constrained within Measured and Indicated Resources and pit designs included within the mine schedule. The attributable percentage to Capstone Copper is 69.993%. Figures include stockpiles as of June 1 2024 that are scheduled to be processed within the MVO plan. The block model is considered to be fully diluted and no dilution or mining losses are applied.
2. The pit designs and mine plan were optimized using assumed metal prices of $3.50/lb Cu and $1,500/oz Au.
3. Mineral Reserves for flotation are estimated above a 0.20% Total Copper (TCu) cut-off.
4. Mineral Reserves for leach are estimated above a 0.10% Soluble Copper (SCu) cut-off for Dump leach, with a variable Heap cut-off between 0.16% and 0.21% SCu to reflect ore availability. Leach-grade material mined after 2037 was scheduled as waste.
5. LOM feed to flotation averaged 87.7% total copper recovery and 65.3% gold recovery.
6. Average heap leach recovery applied in Mine Planning was 71.5% of SCu and 50% of ICu, where ICu = TCu – SCu. Average dump leach recovery applied in Mine Planning was 38.0% of SCu.
7. Mineral Reserves considered the following average costs: mining cost of $1.87 per tonne moved; $10.11/t flotation processing+tails+G&A; $0.31/lb TC/RC+freight for flotation; $10.14/t heap+G&A; $1.78/t dump leach; $0.35/lb SX/EW costs; and $0.05/lb cathode selling cost. Heap leach Reserve figures include the costs and benefits of bioleaching.
8. Inter-ramp angles in rock vary from 52° to 59°. The LOM strip ratio is 2.7:1.
9. Rounding as required by reporting standards may result in apparent summation differences between tonnes, grade and contained metal content.
10. Grade TCu% refers to total copper grade in percent sent to the mill for metallurgical recovery by flotation. Grade SCu% refers to soluble copper grade in percent sent to the leaching processes. Tonnages are in metric units and contained ounces (oz) are troy ounces.

16 MINING METHODS

Mantoverde is an open pit mine mining copper sulphide and copper oxides. Conventional open-pit mining utilizes the cycle of drilling, blasting, loading, and hauling of material to the respective destinations. Ore is hauled to the primary crusher for processing and waste rock material is hauled to waste dumps.

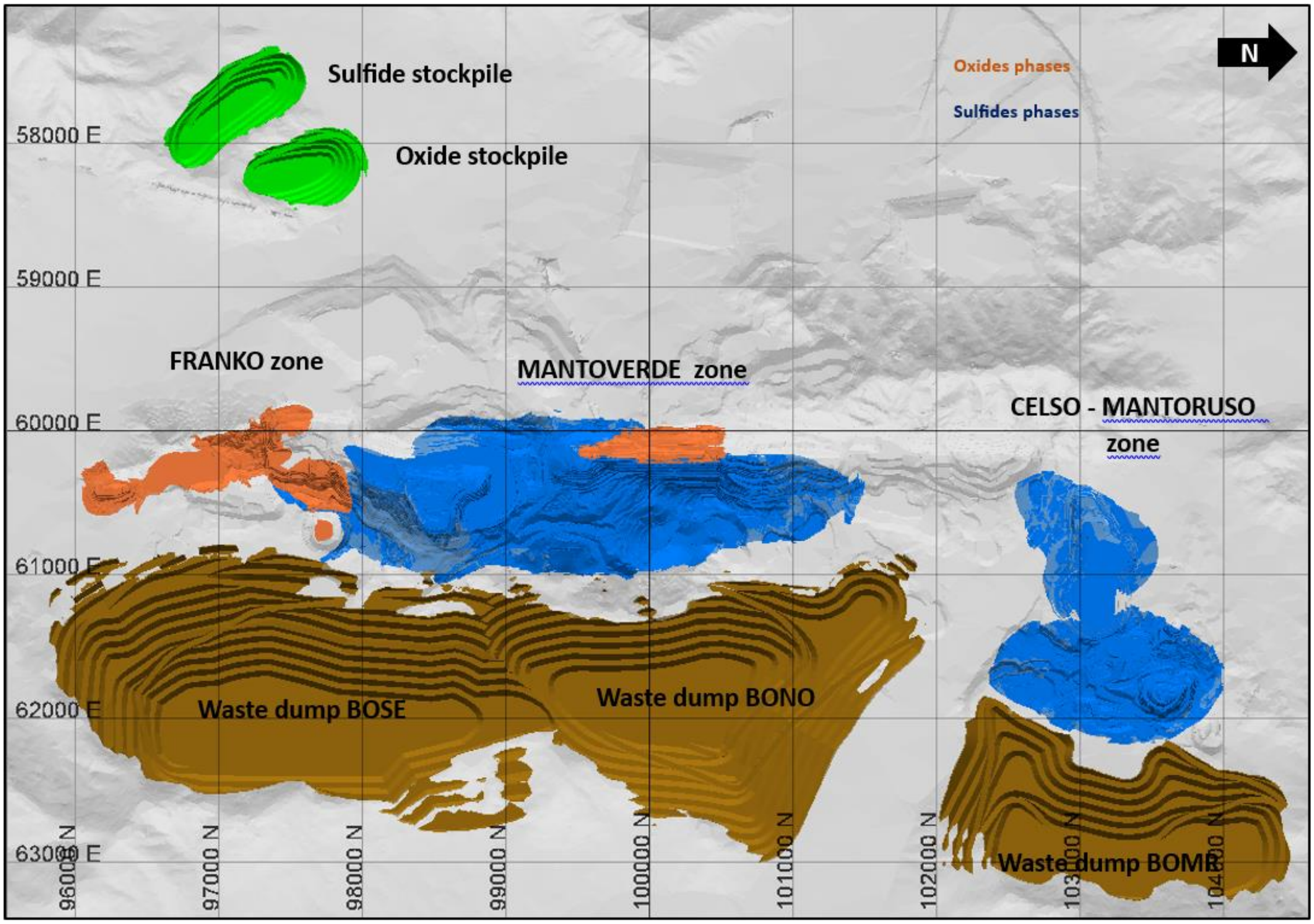
The mine production schedule was developed with the goal of maintaining mill feed and maximizing the mine's net present value (NPV). The LOM schedules total mine movement averaging 432 kt/d (158 Mt/a) from Year 2025 to 2036, with reporting in metric tonnes. From Year 2037 the total material movement start decreasing due to completion of the oxide pit phases as well as progression past the heaviest stripping requirements of the sulphide-dominant phases.

The current mining operating model corresponds to an owned loading and hauling fleet. The MVDP had transitioned from a hydraulic shovel operation to the usage of electric rope shovels to increase the mine capacity, and this strategy is maintained for the MV-O plan.

The mine is scheduled to work on a seven-days-a-week, two 12-hour shift basis, for 365 days per year. The operation will include normal drilling, blasting, loading and hauling activities over a 15m bench height (double bench of 30 m) in sulphide-dominant phases, and 10 m bench height (double bench of 20 m) in oxide phases. Mining will include supporting functions such as dewatering, grade control, and equipment maintenance.

The current general mine layout is shown in Figure 16-1.

Figure 16-1: MV-O General Layout



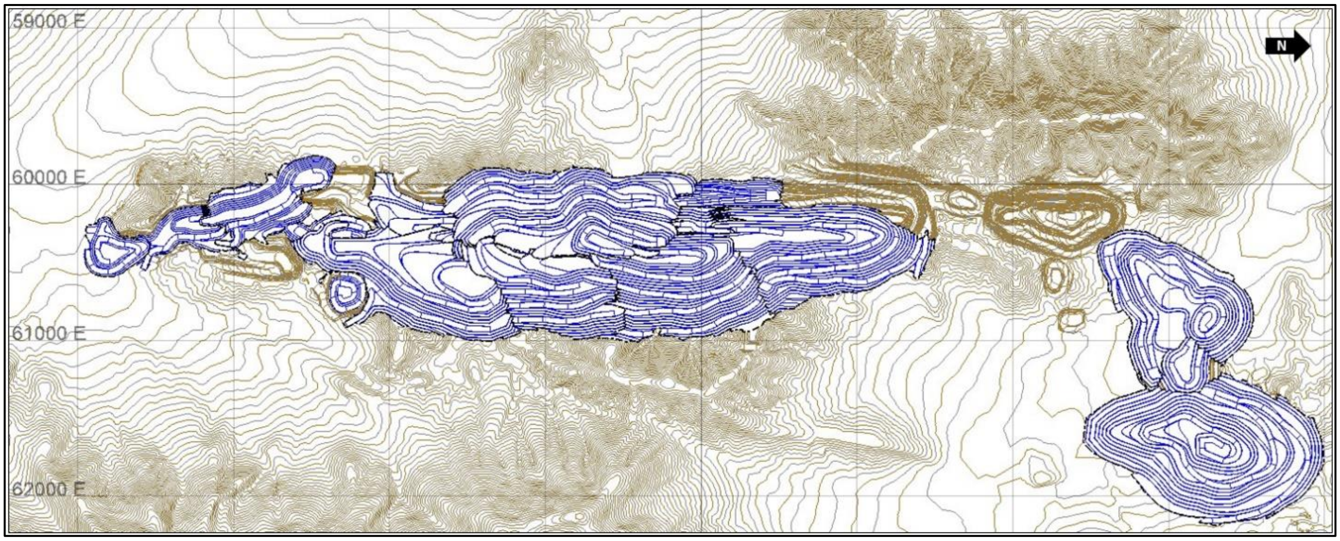
Source: Capstone, 2024. Note: Grid indicates scale. Grid squares are 1 km x 1 km.

16.1 Pit Design

The following criteria were established for the pit designs:

- Minimum expansion width design: 80 m which is sufficient for the XPC 4100 electric rope shovels and Komatsu 830E model 240 t haul trucks that are planned to constitute the primary mining fleet in the sulphide area, and PC 5500 hydraulic shovels and 994 front-end loaders in the oxide areas. The minimum pit bottom width of 60 m.
- Haul roads: 35 m wide and 10% gradient to accommodate the proposed 240 t haul trucks.
- Geotechnical and hydrological considerations as discussed in Section 15.

Figure 16-2: Mantoverde Final Pit Layout



Source: Capstone, 2024. Note: Grid indicates scale. Grid squares are 1 km x 1 km.

16.2 Pit Phases and Production Schedule

Nineteen pit phases are planned: six oxide phases and fifteen sulphide-dominant phases.

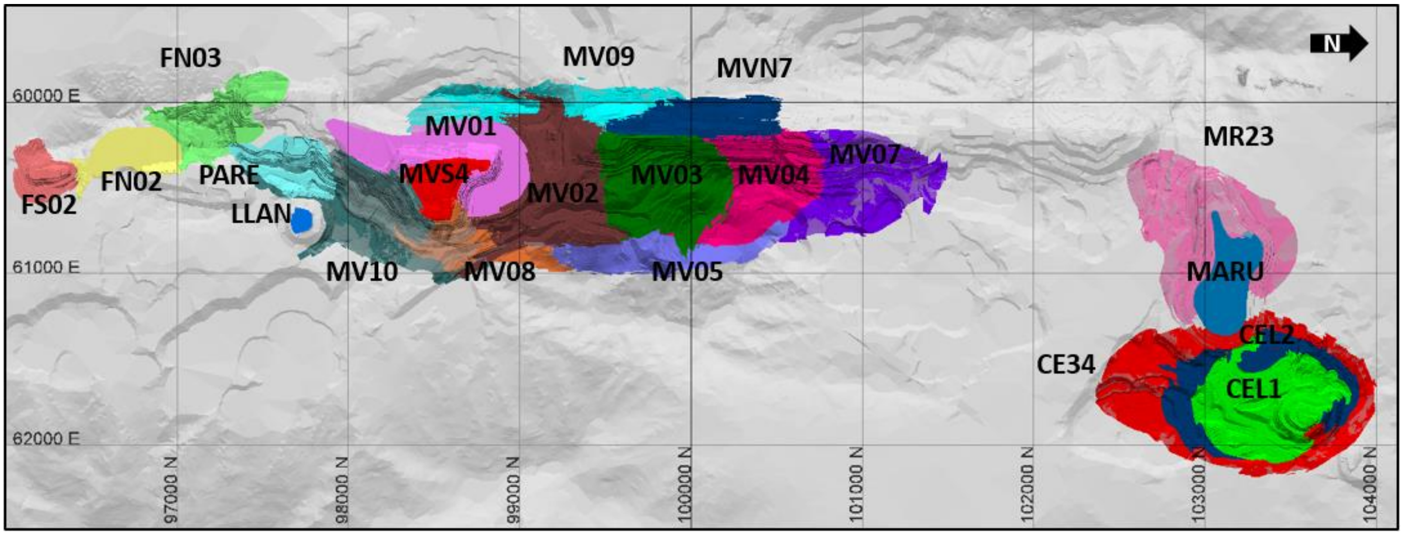
The mine plan was developed by Capstone staff in 2024. The plan focuses on two main areas, Celso–Mantoruso, and Mantoverde. The MV-O flotation throughput considers expansion of the MVDP plant capacity, resulting in an average throughput of 16.4 Mt/a of flotation ore (45 kt/d) from Q1 2026 to 2049, with a ramp-up period that assumes a production rate of 4.8Mt in 2024 and 12.3Mt in 2025.

The mine plan considers the continuity of the leach mineral processing as part of sulphides pits until 2037. Ore treatment in the Heap process considers an average annual treatment of 10.9Mt between 2025 and 2030, while the Dump process will process up to 15.0 Mt/a.

The mining schedule requires an average mine extraction of 155 Mt moved per year from 2025 to 2037. This includes heap leach feed requiring rehandle. The mine movement decreases after 2037 until the mining operations are completed in 2043. The process plant continues to operate through to 2049, treating low-grade stockpile material.

The ore and waste statistics for the Mantoverde Optimized pits are summarised in Tables 16-1 and 16-2. These tables include all leach material falling above cut-off grade, and do not reflect the scheduled cessation of leach operations after 2037.

Figure 16-3: Mining Phases



Source: Capstone, 2024 Note: Grid indicates scale. Grid squares are 1 km x 1 km.

Table 16-1: Sulphide-dominant Phase Summary

Phase	Heap Leach Ore (Mt)	SCu (%)	$CaCO_3$ (ppm)	Dump Ore (Mt)	SCu (%)	$CaCO_3$ (ppm)	Sulphide Ore (Mt)	TCu (%)	Au (g/t)	Waste (Mt)	Strip ratio	Total Rock (Mt)
Mvs4	0.3	0.31	1.64	0.0	0.17	0.81	8.2	0.64	0.11	1.3	0.2	9.8
Mv01	3.8	0.29	2.04	4.1	0.14	2.76	24.2	0.64	0.10	42.6	1.3	74.7
Mv02	1.8	0.24	3.08	3.9	0.13	3.95	20.0	0.64	0.11	101.0	3.9	126.8
Mv03	7.6	0.30	7.03	11.9	0.13	2.99	42.8	0.55	0.12	125.9	2.0	188.3
Mv04	10.7	0.30	7.53	7.5	0.13	4.56	44.3	0.52	0.12	142.8	2.3	205.3
Mv05	1.5	0.25	0.90	7.1	0.13	1.68	51.1	0.56	0.12	235.3	3.9	295.1
Mv07	11.0	0.26	3.60	10.5	0.14	2.48	32.7	0.44	0.11	150.3	2.8	204.4
Mv08	2.0	0.25	0.37	4.2	0.14	0.41	20.8	0.42	0.08	99.6	3.7	126.7
Mv09	5.1	0.31	1.36	7.0	0.14	2.32	28.7	0.37	0.10	145.7	3.6	186.6
Mv10	18.5	0.24	0.86	41.4	0.14	0.87	19.6	0.34	0.08	70.0	0.9	149.6
Maru	0.0	0.23	1.92	0.1	0.13	4.93	14.3	0.55	0.08	15.3	1.1	29.7
Mr23	3.2	0.28	2.66	6.7	0.13	2.22	23.0	0.33	0.07	106.5	3.2	139.5
Cel1	12.7	0.25	3.21	17.2	0.14	2.88	23.0	0.57	0.07	72.3	1.4	125.3
Cel2	15.6	0.25	2.48	12.2	0.14	2.44	13.3	0.45	0.06	49.4	1.2	90.5
Cel34	15.9	0.29	1.78	16.5	0.14	2.11	24.5	0.32	0.05	203.4	3.6	260.2
Total	**109.8**	**0.27**	**2.99**	**150.5**	**0.14**	**2.12**	**390.6**	**0.49**	**0.10**	**1,561.5**	**2.4**	**2,212.3**

Table 16-2: Oxide Phase Summary

Phase	Heap Leach Ore (Mt)	SCu (%)	$CaCO_3$ (ppm)	Dump Ore (Mt)	SCu (%)	$CaCO_3$ (ppm)	Sulphide Ore (Mt)	TCu (%)	Au (g/t)	Waste (Mt)	Strip ratio	Total Rock (Mt)
Fn02	6.0	0.38	3.05	3.0	0.14	2.95	0.0	0.21	0.05	10.4	1.2	19.4
Pare	5.8	0.31	1.65	7.6	0.13	1.01	0.0	0.24	0.08	17.6	1.3	31.0
Llan	0.2	0.67	0.50	0.1	0.14	0.68	0.0	0.00	0.00	0.3	1.3	0.5
Fs02	2.7	0.27	1.98	3.4	0.14	1.83	0.0	0.35	0.08	3.6	0.6	9.8
Fn03	10.7	0.34	1.10	4.6	0.14	1.48	0.5	0.38	0.05	32.0	2.0	47.9
Mvn7	6.7	0.30	2.51	3.5	0.14	2.26	0.1	0.46	0.08	7.7	0.7	18.0
Total	**32.2**	**0.33**	**1.93**	**22.2**	**0.14**	**1.69**	**0.6**	**0.38**	**0.05**	**71.7**	**1.3**	**126.7**

MV-O used a traditional Whittle process to guide final pit limits, and mine sequence was optimized using Simshed from Mining Math Software Ltda. to get the macro sequence guidance for phase design. Phase design was done within Maptek Vulcan software, with flotation ore tonnage increasing and waste tonnes decreasing in the final designs relative to the Whittle pit #20. This is due in part to extending ramps to the north side of the Mantoverde pits along the strike of the orebody, with this geometric advantage being difficult to model within Whittle. Sensitivity analysis on total annual mine movement was performed using Minesight Scheduler Optimizer to assess cut-off grade, stockpiling and rehandle strategies, considering the restrictions of maximum mill throughput. Final detailed scheduling was performed in SP2 and Minehaul software by David Carkeet Software EIRL.

Table 16-3: Mine Production Schedule Summary

Period	Ore Mined			Stockpile Rehandle to Process		Waste	Total Moved
	Heap (kt)	Dump (kt)	Flotation (kt)	Heap (kt)	Flotation (kt)	Tonnage (kt)	Tonnage (kt)
H2-2024	5,639	8,158	6,468	6,382	2,267	39,313	68,227
2025	12,334	13,488	20,200	11,000	2,263	86,393	145,677
2026	12,034	16,065	24,599	11,000	4,376	93,846	161,921
2027	8,093	10,419	22,835	10,995	2,081	105,384	159,806
2028	14,726	11,582	20,820	11,000	6,114	99,486	163,728
2029	6,614	5,885	29,830	11,000	2,081	104,205	159,615
2030	17,923	15,389	19,866	11,000	10,174	94,864	169,216
2031	2,466	1,867	32,388	10,076	3,144	110,194	160,135
2032	411	961	16,941	1,386	9,680	128,392	157,772
2033	1,577	3,325	22,041	1,577	3,689	119,691	151,899
2034	11,506	10,853	12,365	11,000	7,231	108,099	161,054
2035	8,925	8,422	22,265	9,431	8,137	97,073	154,253
2036	7,782	8,866	29,918	7,782	0	95,328	149,675
2037	6,339	10,094	16,994	-	8,061	83,540	125,028
2038	585	2,403	25,389	-	10,729	69,305	108,411

Period	Ore Mined			Stockpile Rehandle to Process		Waste	Total Moved
	Heap (kt)	Dump (kt)	Flotation (kt)	Heap (kt)	Flotation (kt)	Tonnage (kt)	Tonnage (kt)
2039	115	157	29,807	-	4,728	52,476	87,282
2040	2,232	9,821	11,819	-	16,470	36,020	76,361
2041	5,536	13,297	803	-	15,936	34,273	69,845
2042	8,757	17,282	6,667	-	15,551	16,439	64,695
2043	2,035	1,122	12,963	-	11,995	10,846	38,962
2044	-	-	-	-	16,470	-	16,470
2045	-	-	-	-	16,425	-	16,425
2046	-	-	-	-	16,425	-	16,425
2047	-	-	-	-	16,425	-	16,425
2048	-	-	-	-	16,470	-	16,470
2049	-	-	-	-	3,603	-	3,603
Total	**135,627**	**169,455**	**384,977**	**113,627**	**230,525**	**1,585,167**	**2,619,378**

Table Note: 2024 figures are from June 1, 2024.

Optimization processes were developed to define the total material movement rate for an adequate production schedule strategy, maximizing NPV for the project while maintaining ore exposure inventory. This employed an elevated cut-off grade and stockpiling strategy during years of surplus production, as described in section 15. Subsequent operational adjustments were made in different software packages to guarantee a feasible and achievable mine sequence in conjunction with the plant requirements. The production schedule was limited by a maximum sinking rate of 8 benches per year in each phase. The total mined waste considers three main waste dumps for the material: BOMR, BOSE, BONO.

The mine plan includes 2,619 Mt of total material movement, including 1,585 Mt waste, 398 Mt of flotation ore and 236 Mt of leach ore.

Table 16-4: Plant Feed Schedule

Period	Heap						Dump					Concentrator						
	Tonnage (kt)	TCu (%)	SCu (%)	$CaCO_3$ (%)	Rec (% of TCu)	Cont. Cu (kt)	Tonnage (kt)	SCu (%)	$CaCO_3$ (%)	Rec (% of SCu)	Cont. Cu (kt)	Tonnage (kt)	TCu (%)	Rec (% of TCu)	Cont. Cu (kt)	Au (%)	Rec Au (%)	Cont. Au (kOz)
*2024	5,406	0.43	0.35	2.04	64.36	14.96	7,088	0.15	2.12	46.58	4.91	4,498	0.78	82.1	28.8	-	-	-
2025	11,000	0.37	0.28	2.12	55.08	22.48	13,488	0.14	2.28	42.50	7.97	12,358	0.73	91.3	82.5	0.11	65.7	27.9
2026	11,000	0.38	0.28	3.53	73.60	30.36	15,065	0.13	3.11	42.50	8.52	16,066	0.71	88.0	100.0	0.10	62.8	31.8
2027	10,995	0.43	0.32	1.65	70.98	33.24	10,419	0.13	1.30	42.50	5.89	16,399	0.75	88.8	109.4	0.09	68.1	33.7
2028	11,000	0.48	0.33	4.20	61.11	32.47	11,582	0.13	2.80	42.50	6.50	16,469	0.66	88.8	97.0	0.11	67.2	37.7
2029	11,000	0.39	0.29	2.57	67.46	28.64	5,885	0.13	2.09	42.50	3.23	16,399	0.73	87.5	104.0	0.14	70.8	52.6
2030	11,000	0.42	0.32	6.56	75.95	34.84	15,089	0.13	3.36	42.50	8.59	16,425	0.59	87.8	85.4	0.11	63.1	35.3
2031	10,076	0.28	0.21	3.60	56.90	16.05	1,867	0.14	4.02	42.50	1.12	16,425	0.72	87.8	103.7	0.15	71.3	54.9
2032	1,386	0.37	0.28	3.61	72.63	3.72	961	0.12	1.19	42.50	0.48	16,470	0.51	88.5	74.4	0.09	66.0	31.4
2033	1,577	0.34	0.28	2.12	77.33	4.15	3,325	0.13	1.48	42.50	1.89	16,425	0.69	87.8	99.1	0.13	69.3	48.3
2034	11,000	0.33	0.27	1.98	77.27	27.62	10,853	0.14	1.45	42.50	6.41	16,425	0.62	87.5	89.0	0.12	67.9	43.7
2035	9,431	0.37	0.29	2.82	72.29	25.16	8,422	0.14	2.26	42.50	5.12	16,425	0.53	83.2	72.8	0.11	64.9	36.3
2036	7,782	0.38	0.29	2.20	71.34	21.21	8,866	0.14	2.47	42.50	5.28	16,470	0.56	89.0	82.4	0.11	67.2	38.4
2037	-	-	-	-	-	-	10,094	0.14	2.32	43	6	16,425	0.49	88.3	70.6	0.11	64.1	35.9
2038	-	-	-	-	-	-	-	-	-	-	-	16,425	0.37	88.0	52.7	0.08	64.2	26.4
2039	-	-	-	-	-	-	-	-	-	-	-	16,425	0.46	87.9	66.6	0.10	68.6	35.1
2040	-	-	-	-	-	-	-	-	-	-	-	16,470	0.39	90.3	58.0	0.08	62.2	26.4
2041	-	-	-	-	-	-	-	-	-	-	-	16,425	0.28	88.1	40.5	0.07	60.9	22.5
2042	-	-	-	-	-	-	-	-	-	-	-	16,425	0.28	88.0	40.2	0.07	60.9	22.8
2043	-	-	-	-	-	-	-	-	-	-	-	16,425	0.34	88.6	49.0	0.08	63.1	27.6
2044	-	-	-	-	-	-	-	-	-	-	-	16,470	0.32	90.5	47.7	0.09	63.2	28.5
2045	-	-	-	-	-	-	-	-	-	-	-	16,425	0.27	88.0	38.9	0.07	59.7	21.8
2046	-	-	-	-	-	-	-	-	-	-	-	16,425	0.27	88.0	38.9	0.07	59.7	21.8
2047	-	-	-	-	-	-	-	-	-	-	-	16,425	0.27	88.0	38.9	0.07	59.7	21.8
2048	-	-	-	-	-	-	-	-	-	-	-	16,470	0.28	75.6	34.5	0.07	58.6	20.8
2049	-	-	-	-	-	-	-	-	-	-	-	3,603	0.33	71.3	8.4	0.07	57.5	4.9
Total	**112,651**	**0.38**	**0.29**	**3.09**	**68.17**	**295**	**123,005**	**0.14**	**2.40**	**42.76**	**72**	**398,094**	**0.49**	**87.68**	**1,713**	**0.09**	**65.3**	**789**

Table Note: 2024 figures are onwards from June 1, 2024.

16.3 Blasting And Explosives

The drilling equipment will consist of diesel units capable of drilling 9⅞" diameter holes for ore and 12¼" diameter holes for waste. Additionally, support units capable of drilling 6½" diameter holes for pre-splitting are included. From Year 1 through Year 8 five production drills will be required. One support drill will be required during pre-production and LOM.

A blasting powder factor between 131 g/t and 311 g/t is estimated as a function of rock type.

16.4 Mining Equipment

Mine equipment requirements were calculated based on annual mine production schedule, mine work schedule and annual equipment production capacity.

The mining equipment fleet was selected by taking the following into account:

- Equipment fleet which forms part of the currently operating mine
- Proposed mine design
- Bench height
- Operating widths
- Proposed mining schedule:
    - Number of simultaneously operating phases
    - Total movement per phase per year
    - Sinking rate
- Operational issues
- Mining selectivity and dilution
- Sustaining capital schedule considers mine equipment replacement according to operating hours.

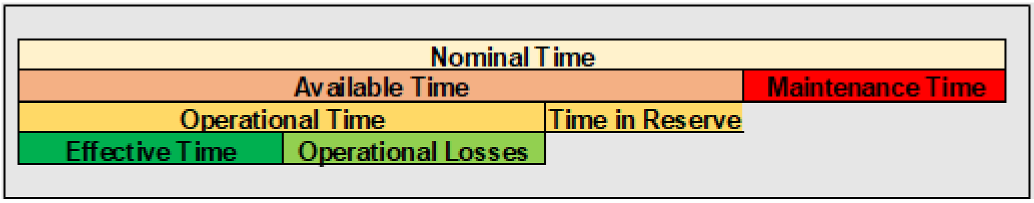
The loading fleet consists of 994K 22 m^3 front-end loaders, XPC4100 44 m^3 electric cable shovels, and PC5500 26 m^3 hydraulic shovels.

Hauling fleet consists mainly of Komatsu 830E trucks, and a fleet of CAT 785 to re-handle oxide material. A peak of 65 trucks will be required between 2032 and 2037.

Oxide phases use Atlas Copco DM50 and Cat MD6310 drills. The sulphide-dominant phases use taller benches and larger drills are required.

For auxiliary fleet, bulldozer and wheeldozer requirements will increase as the number of work fronts increase, and water truck and motor grader requirements will increase as the expanding pits increase the length of hauling profile.

Figure 16-4: Operational Time



Source: Capstone, 2024.

The mining plan considers operating 24 hours a day, 365 days a year. The Operational Time (Figure 16-4, below) is the result of the Available Time and the Time in Reserves, which considers the available time in which the equipment is not being used due to scheduled delays, including: Waiting for blasting, shift changes, and fueling, among others. Effective time is derived by also considering operational losses such as preparation of loading fronts, road repair, and blast oversize. Certain operational delays such as 'queue to dump' and 'queue at crusher' are considered as part of a truck's cycle time.

16.5 Mine Rotation Schedule

The mine is scheduled to work seven days per week, 365 days per year. Each day will consist of two 12-hour shifts. Four mining crews will rotate to cover the operation.

Table 16-5: Fleet Requirements by Year

Name	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049
PC 5500	2	2	3	3	3	3	3	3	3	3	3	3	3	1												
CAT 994 k	2	2	2	2	2	2	2	2	2	2	2	2	1	1	2	2	2	2	2	2	2	2	2	2	2	2
WA900	3	3	3	3	2	2	3	2	1	1	2	2	2													
XPC 4100	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	3	2	2	1						
CAT 994 F	1	1	1	1	1																					
MD6380 DIESEL	5	5	5	5	5	5	5	5	5	5	5	5	5	4	4	4	2	2	2	2						
MD6240	3	3	3	3	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1						
DM50 + DMM2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1						
ROC L8	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3						
K 830	42	45	55	55	55	55	60	60	65	65	65	65	65	65	56	50	16	15	15	10	9	6	6	6	6	1
C 785	6	6	6	6	6	6	6	3	2	2	6	6	5													
BULLDOZER D10T	10	10	10	10	10	10	10	10	10	10	10	10	10	9	8	7	6	5	5	3	2	2	2	2	2	1
WHEELDOZER 834G	5	5	5	5	5	5	5	5	5	5	5	5	5	5	4	3	3	3	3	2	1	1	1	1	1	1
MOTONIVELADORA 16M	4	4	4	5	5	5	5	5	5	5	5	5	5	4	4	3	3	2	2	2	1	1	1	1	1	1
ALJIBE 773E	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	2	2	1	1	1	1	1	1	1

17 RECOVERY METHODS

17.1 Leach Operations

17.1.1 Conventional Oxide Leach Flowsheet

Mantoverde currently has four active leach systems but only two are currently accepting ore, the other two have reached their capacity. The dynamic leach pad (DLP) is an on/off pad measuring 700 m x 900 m and capable of treating 11 million tonnes per year of crushed ore under the current leach conditions. The South Dump II (SDII) leach pad is a run-of-mine leach system with the capability of expansion as needed.

Ore is delivered to one of the two leaching operations based on copper and carbonate grades. Typically, higher copper and lower carbonate grade ores are sent to the dynamic leach pad and the balance to South Dump II.

DLP ore is delivered from the pit to a primary crusher and then conveyed to a coarse ore stockpile. The ore is then fed by conveyor to a vibrating screen, with the oversize reporting to a secondary standard cone crusher. The crusher product is then conveyed to five surge bins, which feed five tertiary screens. The screen oversize feeds the five tertiary crushers. The final crushed ore product is stored in two bins that feed the two parallel agglomeration drums. Agglomerated ore is transported by a system of overland conveyors, grasshopper and tripper conveyors to a stacker which places the ore on the dynamic leach pads in a 7 m high lift. Sulphuric acid and raffinate are added at the agglomeration drum. The spent leach residue is unloaded and placed in a dedicated leached waste dump via bucket wheel and overland conveyor. The unloading is augmented by shovel and truck as required.

Leaching is accomplished by irrigating the ore with a dilute sulphuric acid solution using either intermediate leach solution (ILS) or raffinate. The use of intermediate leach solutions allows for the pregnant leach solution grade to be maximized. Solution leaving the DLP flows into a PLS or ILS pond based on the copper grade. The PLS pond feeds the SX circuit, and the ILS pond is used for irrigation.

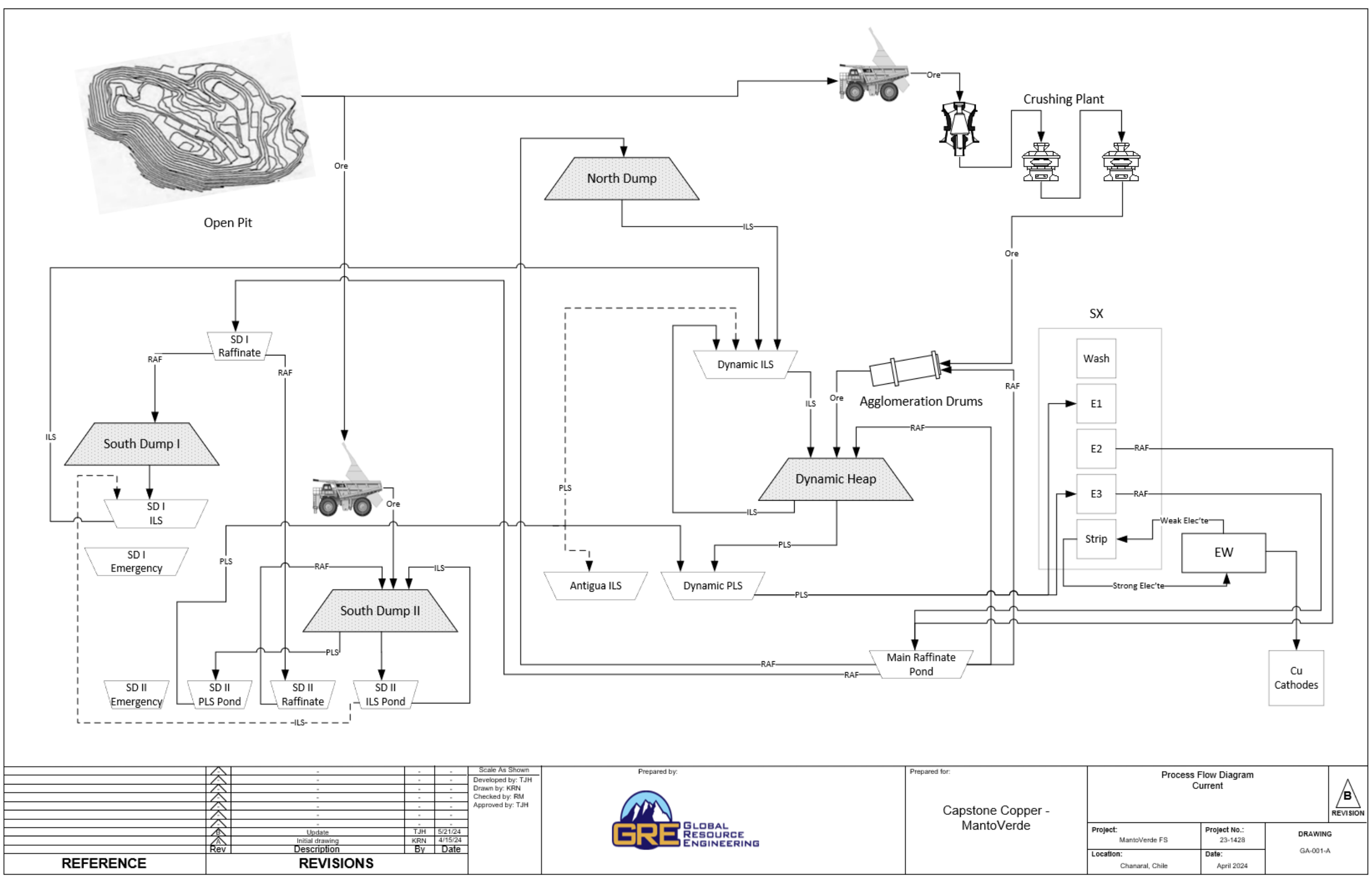
The dynamic heap leach pad operation is complemented by a run-of-mine dump leaching process. Material for dump leaching is deposited directly on the pad via truck dumping without crushing. Lift heights of 20 m are employed. The ore is initially exposed to a high acid cure followed by a leach cycle consisting of intermediate leach solution (ILS) and raffinate. Like the DLP, the SDII uses an ILS solution to maximize the PLS grade. The PLS from SDII PLS pond reports to a common PLS pond close to the solvent extraction (SX) plant.

The common PLS solution flows to the solvent extraction circuit where it is contacted with an organic reagent and diluent to adsorb the copper. Mantoverde utilizes a split SX circuit with two parallel lines: one with two mixers/settlers in series (E1/E2) and one with only one mixer/settler (E3). The solution flows are split with 1,000 m^3/h going to E1/E2 and 550 m^3/hr flowing to E3. The organic flows counter current to the incoming PLS starting from E3 to E1. The barren copper solution, raffinate, flows to the common raffinate pond. The loaded organic is then subjected to a wash stage to remove entrained PLS solution prior to proceeding to the stripping phase. MV employs a single strip mixer/settler.

The organic is stripped into the strong electrolyte solution using a high acid solution. The copper-rich solution is sent to the electrowinning process (EW) which consists of 168 cells containing 1 m^2 stainless steel plate cathodes. Cathodes are harvested daily and are 95% LME Grade A quality. The resulting weak electrolyte is recycled back to the organic stripping stage.

Figure 17-1 shows a simplified process flowsheet for the leaching process. Figure 17-2 shows the locations of the hydrometallurgical facilities currently in use.

Figure 17-1: Mantoverde's Oxide Process Flowsheet



Source: Global Resource Engineering, 2024.

Figure 17-2: Heap and Dump Leach Areas

Source: Base imagery from Google Earth, 2024.

17.1.2 Oxide Leach Base Case Production

An updated mine plan, to reflect the production of copper from the oxide leach facility and sulphide concentrator, has resulted in an adjustment to the deportment of tonnes to the various leach systems. To accurately predict the future copper production and acid consumption from the oxide leach facility a MetSim model has been developed. The model was calibrated using the historic production as a guide. A short description of how the MetSim model works is below.

MetSim is a process simulation modeling software and has been employed for modeling the heap leach systems at the Monteverde site. The model is capable of employing dynamic simulations, where the ore is fed to the various heap leach facilities (HLF) according to the mine plan on a daily basis over the life of mine. The mine plan includes all of the mineral grades including the copper species and the gangue. The heap facilities are sized according to the existing operations at MV and utilize the same irrigation rates. The HLF's in the model include a dynamic leach (on/off pad), and three static dump leaches – North Dump, South Dump I and South Dump II. The system also includes weather data employed for rain, temperatures, evaporation impacts. The balance of the unit operations in the model mirror those employed on site including crushing, agglomeration, solution collection ponds and SX/EW.

The foundation of the leach chemistry is based upon laboratory column tests. The base case simulation, with no flowsheet modifications, is first developed to calibrate the model using ore mineralogy, extraction data and solution chemistry from the site.

The chemical reactions in the model can be summarized as:

1. Acid copper leaching,

2. Sulfide oxidation – copper, iron and cobalt minerals primarily,

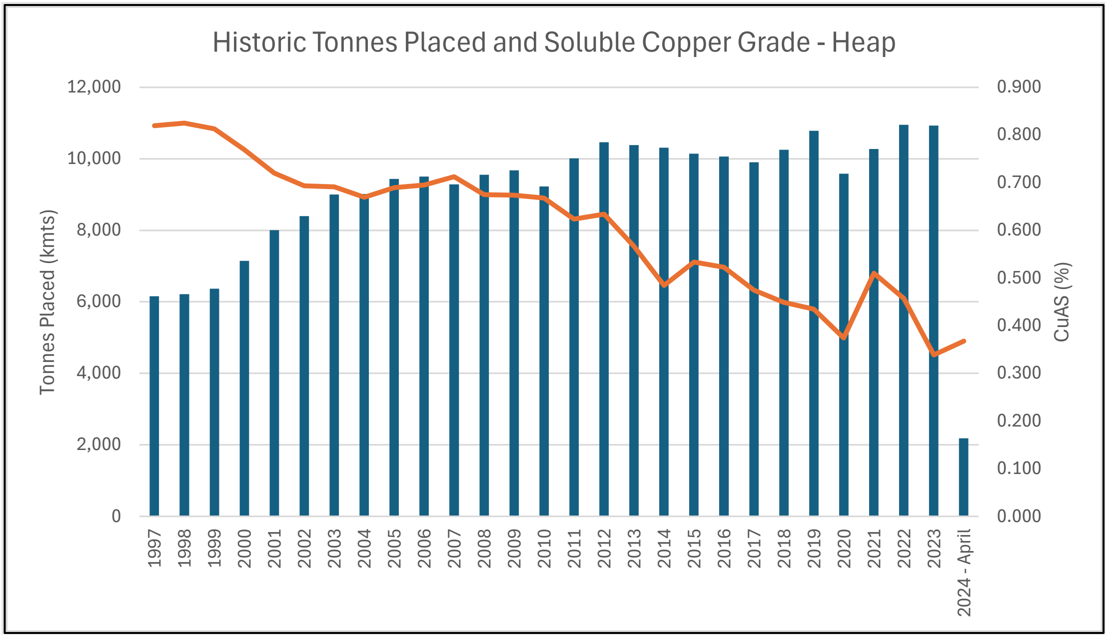
3. Carbonate digestion, and

4. Gangue reactions – Al, Mn, Mg primarily.

Solution reactions – based on column data and site solution calibration – these include, as required, the conversion of ferrous iron to ferric iron by bacterial oxidation and iron precipitation as a variety of species. The storage of the current leach residue waste dump is limited and will reach capacity in 2032. The current plan is to establish a new waste dump south of the existing leach waste dump with a capacity of 90 million tonnes. Originally the dynamic leach pad was going to be converted to a static leach pad once the waste dump capacity was met. However, this plan has been placed on hold pending the review of the pyrite agglomeration project. The dynamic leach pad configuration offers several advantages for pyrite agglomeration, the most important of which is the ability to provide improved bioleaching conditions.

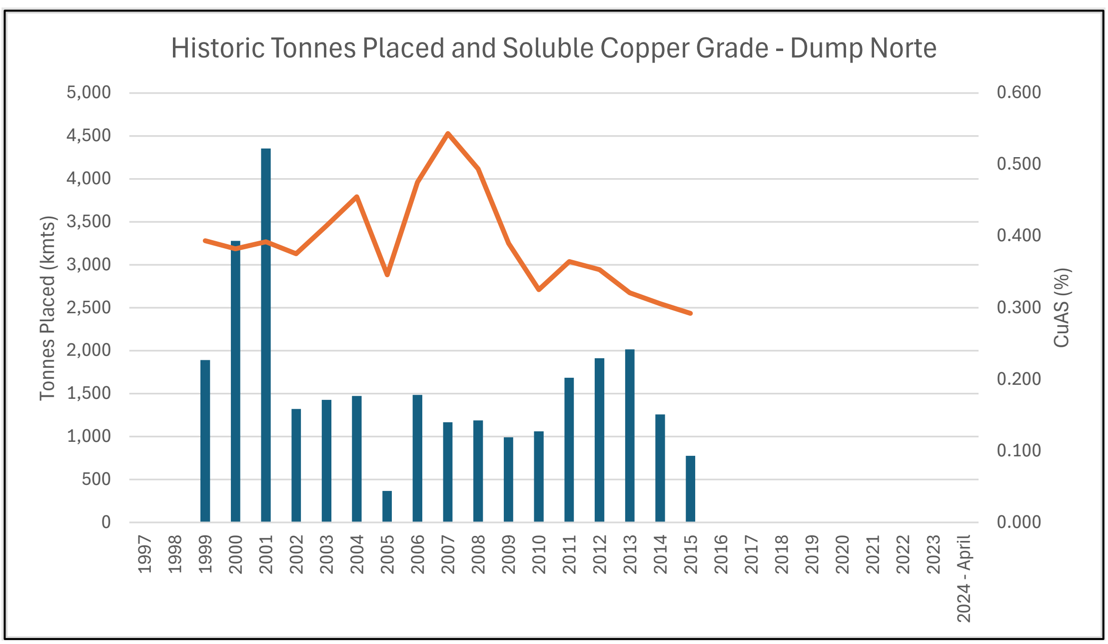
Figure 17-3 through Figure 17-5 present the historical tonnes placed and acid soluble copper grades of DLP and the North and South Dumps.

Figure 17-3: Historical DLP Production



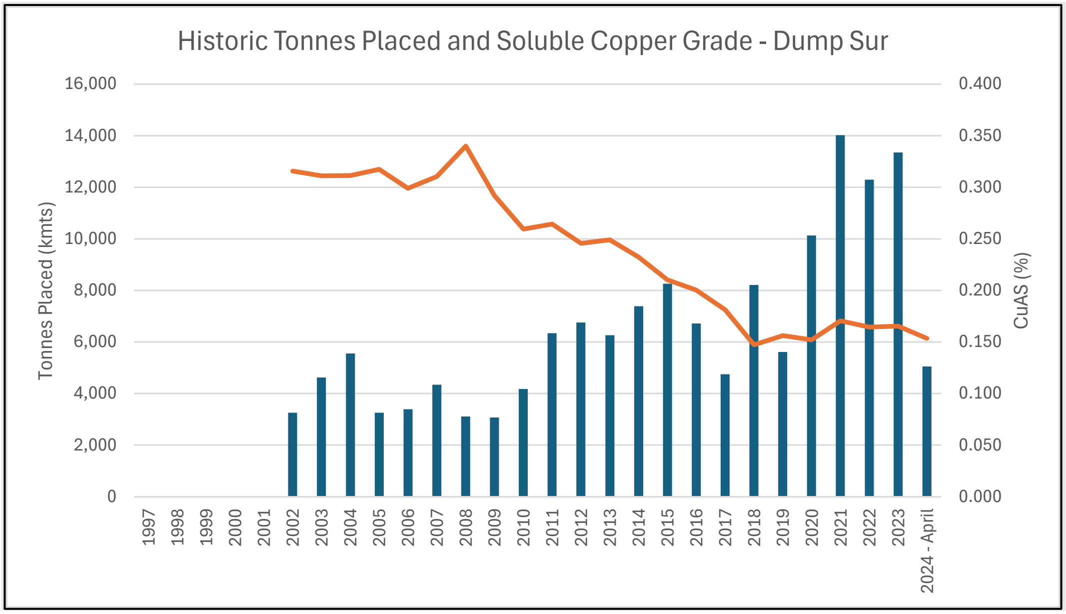
Source: Capstone, 2024.

Figure 17-4: Historical North Dump Production



Source: Capstone, 2024.

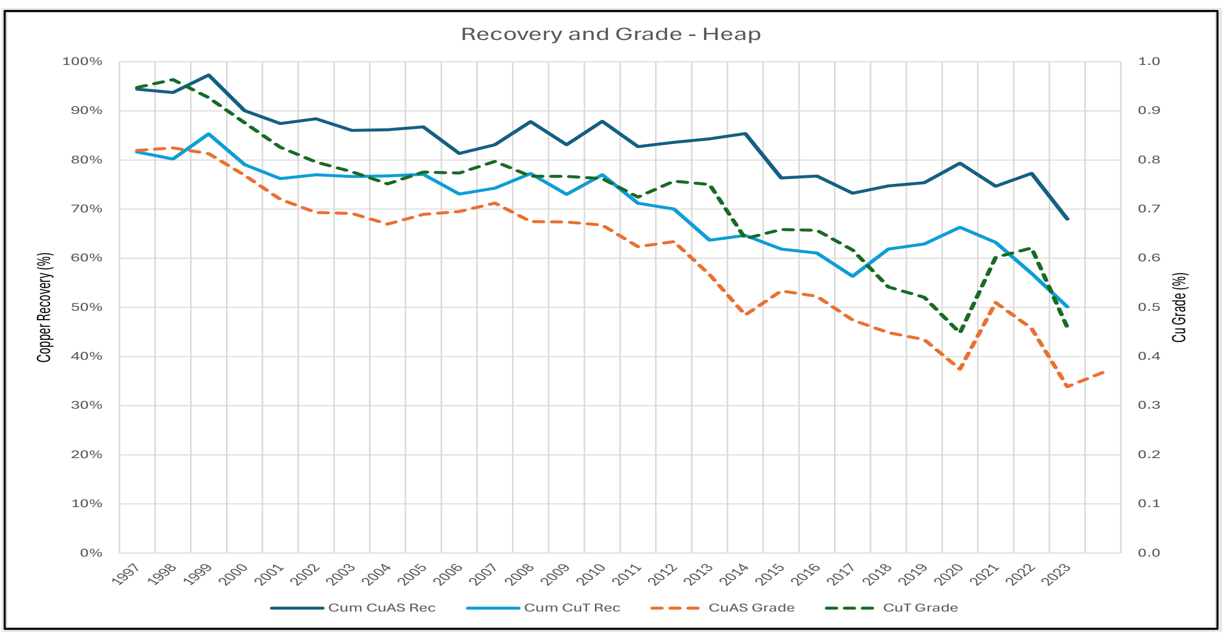
Figure 17-5: Historical South Dump Production



Source: Capstone, 2024.

The historical copper recovery and the feed grades for the heap are shown in Figure 17-6.

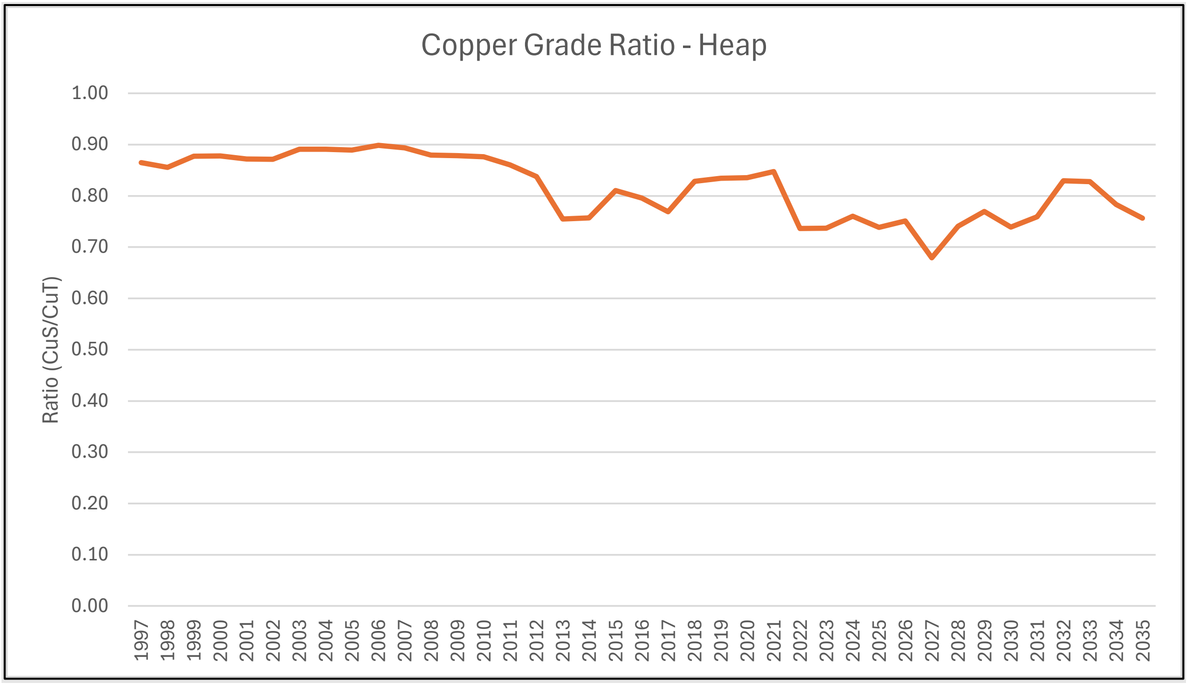
Figure 17-6: Historical Heap Recovery and Grades



Source: Capstone, 2024.

Acid soluble copper recovery has trended downward over the last few years, and this has been in alignment with a decreasing soluble grade. A regression analysis reveals that the copper grade has a statistically significant impact on recovery and the carbonate grade does not with an R2 of 0.895. Further, there is a general upward trend in the proportion of primary sulphide minerals present as the ore is sourced from deeper areas within the pit and the sulphides tend to be more pronounced in the lower grade materials (Figure 17-7).

Figure 17-7: Historical/Future Copper Grade Ratio



Source: Capstone, 2024.

The overall grade has been decreasing and the proportion of soluble copper is also decreasing leading to reduced copper production. As a means of increasing the copper production an optimization program was undertaken to enhance the recovery of primary sulphide minerals.

17.1.3 Bio-oxidative Heap Leach

With the revised LOM Plan 240 Mt of oxide material will be processed through the heap and dump leach facilities in the Mantoverde Development Project – Optimization (MV-O). The oxide operation will continue to utilize the existing heap and dump leach pads (Figure 18-1). As mentioned above, an expansion of the leach waste dump will be required and the SDII dump leach will require an expansion of the leach pad area as part of normal operations. The oxide plan assumes the continued operation of existing equipment and facilities until 2037/38.

During the last eighteen months Capstone embarked on a plan to facilitate the development of a cobalt resource at MV. Cobalt occurs in both the oxide and sulphide ore but predominates in the iron sulphides. The study envisioned that cobalt will be captured in the rougher flotation concentrate produced by the concentrator but rejected into the cleaner tailings, where it will be recovered via (new) froth flotation equipment. This potential cobalt resource prompted Capstone to undertake a series of investigations examining various methods of treatment including bioleaching. Currently, the cobalt project is still under evaluation, but the first phase of the program involves converting the dynamic heap to a bioleach facility. The original analysis indicated that the bioleach conversion is economic on it's own (without the cobalt addition), given the increase in copper recovery from the primary sulphides in the leach ore (historically 20-30% of the leach circuit feed). More details on the cobalt project can be found in the Opportunities section.

Capstone undertook a column leach program aimed at showing the benefit of bioleaching the existing ore to extract an increased portion of the sulphide copper minerals. The column tests indicate that total copper recoveries of upwards of 70% can be achieved in contrast to the present total copper recovery closer to 55%.

The oxide project involves a relatively minor investment and effort for the conversion to a bioleach system. In this case only the dynamic pad will be targeted with development of an inoculum system and an aeration system under the leach overliner material. A few additional flowsheet changes have also been included that simplify the transition to the pyrite augmentation (cobalt) project including splitting the SX circuit into leach and dump feeds and separating the resulting raffinate streams. The revised flowsheet is shown in Figure 17-10 with changes indicated in red.

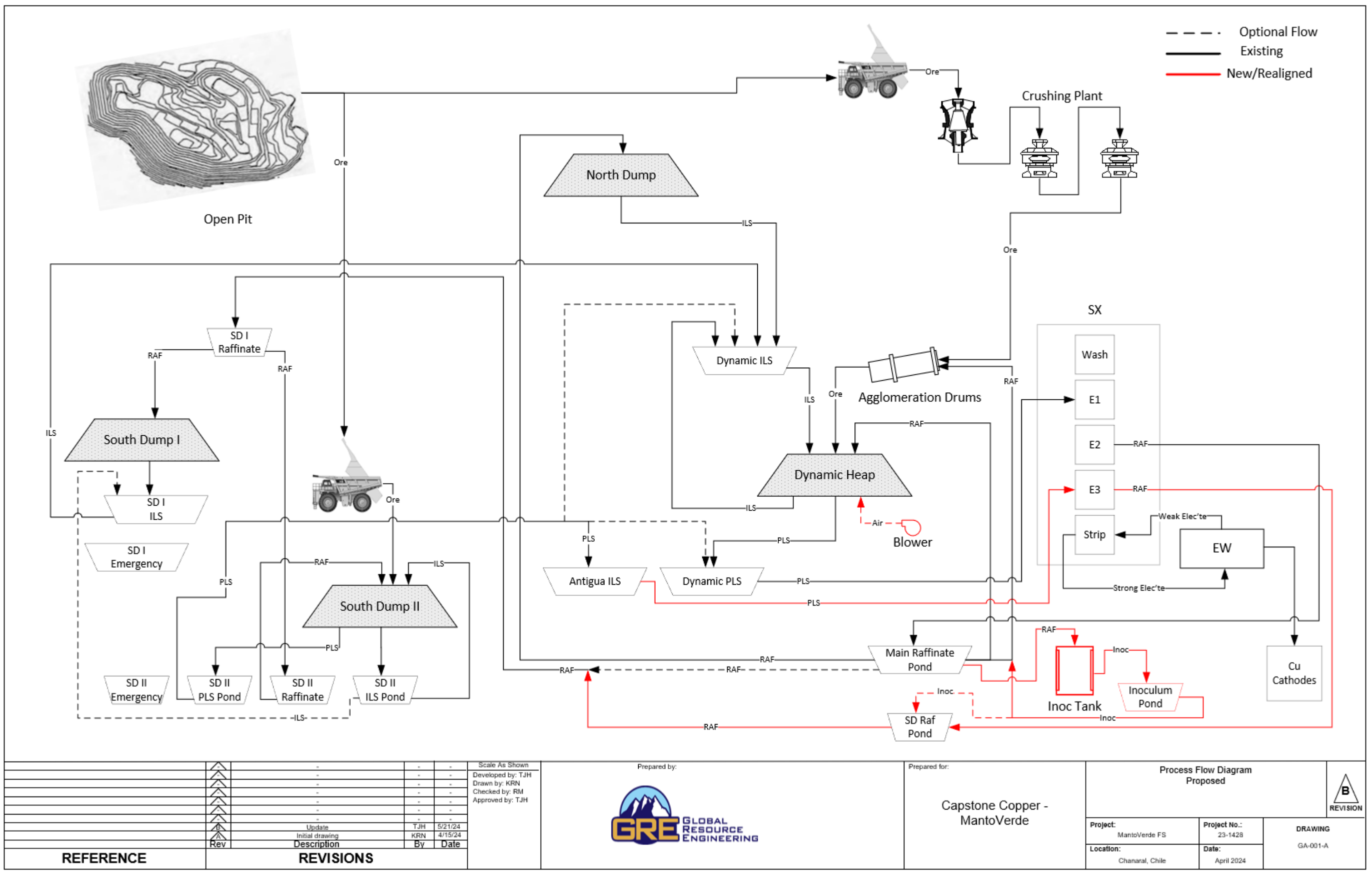
The optimized flowsheet involves adding a series of blowers to supply oxygen to the heap through an installed aeration network. Existing biological populations will be cultured to produce an active and tolerant inoculum for addition to the agglomeration circuit. A raffinate pipeline to the agglomeration circuit already exists. The inoculum will be grown in combined tank/pond system and added to the agglomeration circuit. The primary tank is heated to ensure rapid growth and acts as a nutrient addition point. The pond is serpentine in nature providing up to six days of retention time for inoculum growth. The inoculum is fed low dosage of N, P, and K as nutrients. Biological adaptation to the mature raffinate is already underway.

The existing PLS flows will be separated with the SDII PLS diverted to the existing Antigua ILS Pond (new local SDII PLS pond) and a new pipeline and pumping station established to transfer the SDII PLS to the SX circuit. The DLP PLS will report to the existing PLS pond. The SX extraction circuit is already separated into E1/E2 in series and E3 in parallel. The difference will be that instead of splitting a comingled PLS stream between E1 and E3, each extraction phase will be fed a separate PLS solution (dump and heap). The raffinate from E2 and E3 currently reports by gravity to the raffinate pond. The E3 raffinate will instead be diverted to a new SDII raffinate pond located near the existing raffinate pond. Raffinate from SDII will be pumped a short distance to the existing raffinate pumps that deliver the solution to the south dumps. No new major pumps or pipelines are necessary for this change.

To determine the potential benefits of the optimized oxide flowsheet the baseline MetSim model was adapted for bioleaching employing air injection into the dynamic heap. Air distribution was added to mirror the design envisioned for the industrial application i.e. air is distributed via lengthwise panels and subdivided into leach cells. Control of each cell is applied to maintain a minimum oxygen content in the heap. The separation of the solution streams between dump and heap were also simulated. A complete mass balance was produced for each of the leach systems including metal production (extraction, oxidation), gangue digestion, air flows, acid balance, and water balance. This data is compiled on a daily basis and aggregated into yearly leach performance inside a companion spreadsheet.

Under the revised mine model, the DLP is fed a maximum of 11 million tonnes of ore with periods of low production in 2032 and 2033. An additional mine plan is actively being investigated that would move a portion of the SDII ore to the DLP during these low production years (2032 and 2033).

Figure 17-8: Oxide Process Flowsheet – Optimized



Source: Global Resource Engineering, 2024.

The separation of the PLS and SX circuit is necessary for the cobalt circuit but does add value to the standalone oxide case as well. In the cobalt case, the cobalt grade in the raffinate will be very high (>1.5 gpl) as only a portion of the leached cobalt is removed in a small bleed stream. Since the dump material is leached with a common raffinate, this would result in very high cobalt losses due to dump leach entrainment. With the PLS and raffinates separated, the cobalt can be limited to the DLP where rinse water can be employed to reduce the cobalt losses to the leach waste.

Separating the PLS solutions also allows for a reduction in the overall raffinate grade. Currently a comingled PLS results in raffinate copper grades in the 0.3 gpl range. By separating the higher-grade leach PLS into the two-stage extraction system, the DLP raffinate grade is expected to reduce to <0.1 gpl and the dump raffinate grade to 0.15 gpl. The net impact is a higher copper extraction which brings production forward and a reduced solution loss to the heap and dump leach. It is estimated that the aqueous losses to the heap leach are reduced to <1.0% by splitting the SX circuit.

The aqueous losses have already been reduced by increasing the heap leach lift height. By increasing the lift height from 5 m to 7 m the retention time on the pad increases; greater tons per unit area of pad. This allows for flexibility in the drainage and offload cycle of the dynamic pad. Increasing the lift height creates the potential to add an extra 10 days of drainage to the leach cycle reducing the moisture content from 14% to 10%. Couple this with a lower copper grade in the raffinate solution and the overall solution losses are expected to be reduced to <1% from the historical 3 to 4%.

The conversion to bioleach will also result in the oxidation of more pyrite, which will produce acid. This acid will help offset the high acid demand currently found in the heap leach system. Also, the presence of localized acid production from pyrite should enhance the oxide copper extraction as well. Test work and modeling have shown that the acid consumption can be reduced by 11 kg/t.

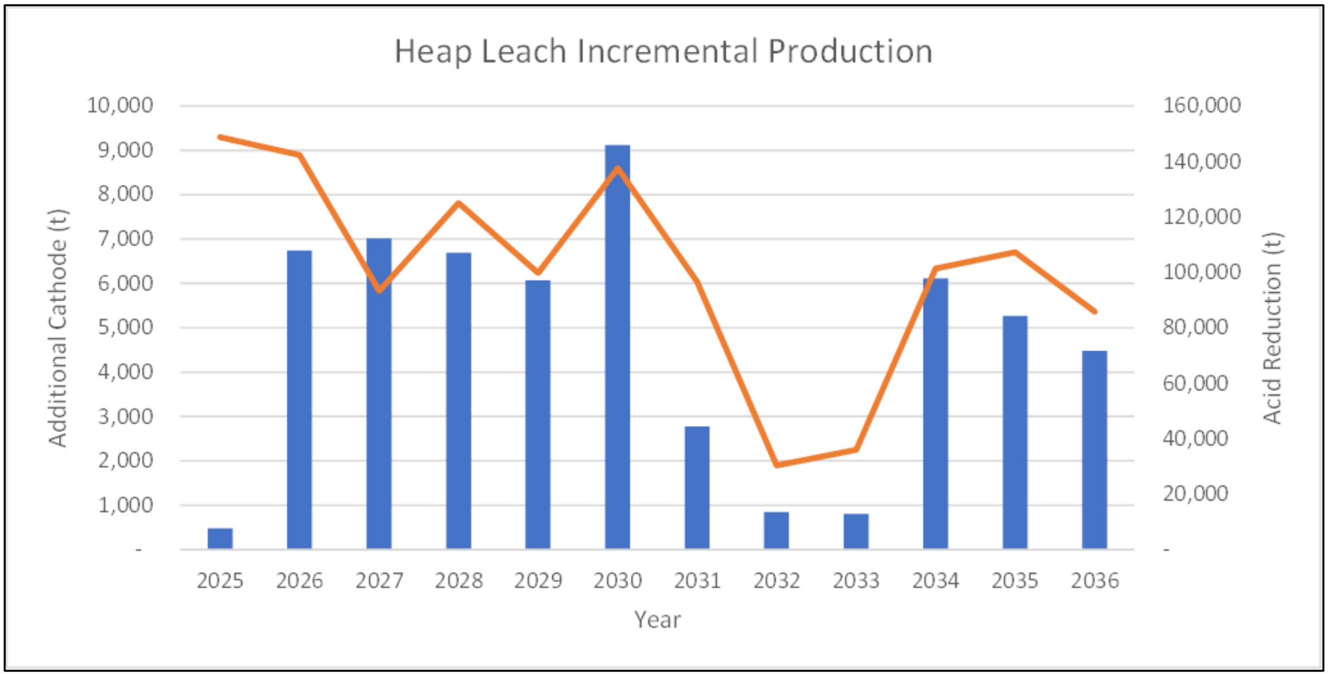
The overall incremental benefit in copper production and acid consumption resulting from the conversion to bio-oxidative heap leaching is shown in Table 17-3.

Table 17-1: DLP Production Uplift and Acid Consumption Due to Bioleaching

HEAP LEACH	Unit	Total	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Production Improvement	avg/yr	**4,109**														
Cathode Production (Cu)	t	**57,527**	1,126	481	6,742	7,018	6,695	6,073	9,122	2,775	849	803	6,119	5,269	4,484	(28)
Recovery Uplift	%	**12.6**														
Acid Consumption Improvement	kt	**1,366**	147.1	148.7	142.3	93.4	125.0	99.8	137.6	96.6	30.3	36.0	101.4	107.3	85.8	15.2
	kg/t	**11.7**														
Copper Aqueous (TCu) Improvement	t	**9,180**	752	610	687	877	974	862	1,219	899	189	65	610	739	538	159
	avg/yr	**656**														

The copper production from the DLP is anticipated to increase on average by 4,110 tonnes per year with the optimized project. A small portion of this is due to reduced aqueous losses and the balance due to enhanced sulphide leaching and augmented oxide leaching. The total forecast increase in copper production is >57,000 tonnes over the LOM. The year-on-year incremental benefit for copper production and acid consumption is presented graphically in Figure 17-9.

Figure 17-9: Optimized Forecast DLP Production and Acid Consumption



Source: Capstone, 2024.

At this time no economic improvement has been applied to the SDII but there are areas where further investigation is warranted including a trade off study examining blast fragmentation vs acid consumption and copper recovery, reduced lift heights to improve leach kinetics, and optimized acid curing to reduce acid consumption. Further, splitting the SX circuit will reduce the raffinate grade to the dump resulting in reduced solution losses. It is estimated that up to 1,500 tonnes of copper could be brought forward each year due to reduced lift heights and that reduced aqueous losses would increase production by 180 tonner per year.

The estimated capital cost for the development of the MV-O bioleach conversion project is US$17.6M contingency, relevant taxes, insurance, and freight as well as an estimated US$1M of Owner's costs. More details on the cost estimate can be found in Section 21.

A review of the power demand for this project has indicated that sufficient power is currently available for the equipment. Upgrades to existing MCC have been budgeted for and a new MCC included for the aeration blowers.

The operating cost for the project is based on the addition of 8 operators, inoculum nutrients, equipment power, and incremental SX reagents and EW power. The estimated average cost is US$3.6M per year or US$756 per tonne of copper. More details on the cost estimate can be found in Section 21.

17.2 Mantoverde Sulphide Concentrator Operation

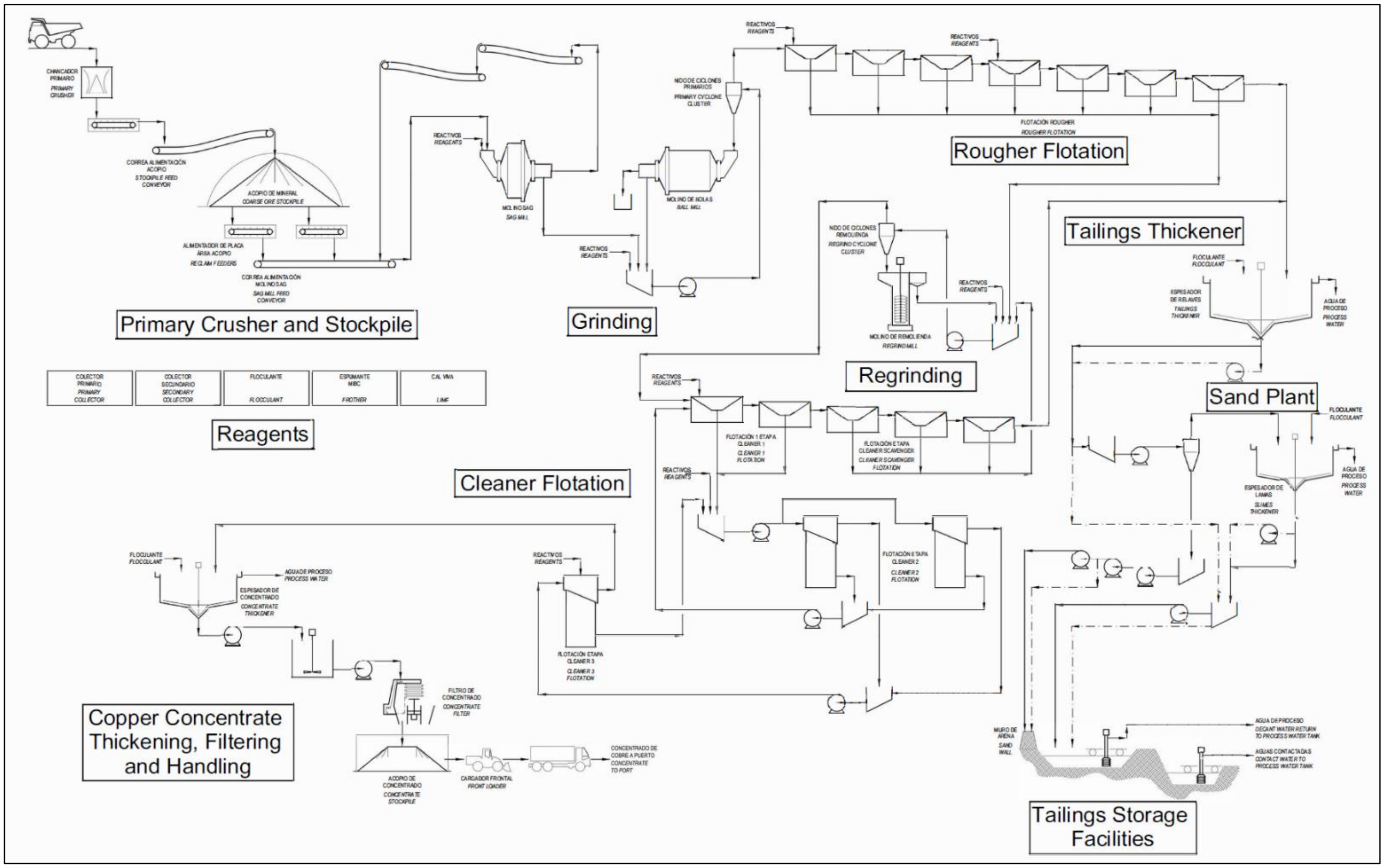
17.2.1 Mantoverde Sulphide Concentrator Flowsheet

The plant has the following areas (see Figure 17-12):

- Primary crushing area:
  - Gyratory crusher,
  - Coarse ore stockpile.
- Milling area:
  - SAG mill,
  - Ball mill and Classification.
- Flotation area:
  - Rougher flotation,
  - Regrind mill and Classification,
  - First cleaner flotation (agitated cells),
  - Scavenger flotation (agitated cells),
  - Second cleaner flotation (column),
  - Third cleaner flotation (column).
- Concentrate:
  - Thickening,
  - Filtration,
  - Storage.
- Tailings:
  - Thickening and tailings transport.
- Sand Plant:
  - Hydrocyclone cluster,
  - Slimes Thickening,

- Tailings storage facility (TSF).

Figure 17-10: Mantoverde Sulphide Concentrator Process Flowsheet



Source: Capstone, 2024.

17.2.2 Mantoverde Sulphide Concentrator Plant Design

The Mantoverde concentrator was originally designed to process 11.6 Mt/a of sulphide feed, equivalent to 31,781 t/d. The existing process flowsheet is described below.

Run of mine material is crushed in the primary crushing facility, with two 240 t trucks able to dump alternately.

The primary crusher (1400 x 2100 TS) has a feed hopper with a capacity of 330 t, equivalent to 1.7 trucks. The product discharges into a 330-t capacity intermediate hopper. An apron feeder is located under this hopper to transfer the material to a conveyor and then to the coarse ore stockpile.

The coarse ore stockpile has a live capacity of 16,150 t (dry), allowing 12 hours of operation without new feed for MVDP throughput. Two apron feeders are located under the coarse ore stockpile, these discharge into the SAG mill feed conveyor.

The milling process begins with a semi-autogenous grinding (SAG) mill. The SAG mill, 34’ x 20’ EGL with 14 MW and variable frequency drives (VFD) to regulate the rotation speed, discharges to a trommel.

The oversize from the trommel (pebbles) is recycled to the SAG mill by two conveyors. The undersize from the trommel discharges into the mill discharge box, which is connected to two horizontal centrifugal pumps with variable speeds, one operating and one stand-by. The pumps send the slurry to the secondary milling stage.

The secondary milling stage of the MVDP concentrator comprises of a hydrocyclone cluster (with 7 operating and 2 stand-by) and a ball mill, 24’ x 42’ EGL powered by 14 MW with VFDs. The slurry is pumped to a hydrocyclone cluster where it is separated in two streams by size. The underflow (coarse) feeds the ball mill, which produces a finer ore that is discharged via a launder back into the mill discharge box. The overflow flows by gravity through a pipe to the flotation process. For the MVDP concentrator, the slurry targeted a P_{80} of 180 µm to be the final mill product.

A sump is used to contain spillage and mill drainage due to blackouts or planned shutdowns. This sump ends in a sump pump that returns the slurry to the mill discharge box.

The flotation circuit comprises a first stage of rougher flotation with seven conventional cells (300 m^3 each). The concentrate produced in the rougher flotation feeds a transfer hopper, which has one operating pump. This pumps the concentrate to the regrind stage. The regrind area has a vertical mill, 14,9’ x 45’ with a 932-kW motor and works in an inverse closed circuit with a hydrocyclone cluster.

The overflow from the regrind hydrocyclone cluster, with a P_{80} of 38 µm, discharges gravitationally to a feed box that feeds the first cleaning stage consisting of two conventional cells (130 m^3 each). The tailings from the first cleaner stage feeds directly to the scavenger circuit. The scavenger circuit consists of three conventional cells (130 m^3 each) and produces a concentrate that joins the rougher concentrate in the regrind circuit. The rougher and scavenger tailings are sent to the tailings thickener.

Concentrate produced in the first cleaning stage is discharged to a transfer hopper, which has one operating pump. This pump feeds the second cleaning stage (two 4.75 m diameter flotation column cell). The tailings from the second cleaning stage discharges to a transfer box, which has one operating pump. This pump feeds back the first cleaning stage. The concentrate from the second cleaning flows by gravity to a transfer hopper, which has one operating pump. This pumps the concentrate to the third cleaning stage (one 4.57 m diameter column flotation cell), where the final concentrate is produced. The tailings from the third cleaning stage discharges by gravity to the second cleaning stage feed transfer hopper.

The copper concentrate from the flotation process feeds a 20 m diameter high rate concentrate thickener. From the thickener, two peristaltic pumps, one operating and one stand-by, transfer the thickened concentrate to an agitated tank. This tank has one centrifugal pump with variable speeds, which feeds the 108 m^2 filter press. The water (filtrate) from the filter discharges into a transfer box, from where it is pumped back to the concentrate thickener.

Process water is recovered from the concentrate thickener overflow. This water is sent to the recovered process water tank and from there returned to process plant by three pumps, two operating in parallel and one stand-by.

The filter discharges the concentrate (9% moisture) into the floor where it is moved by mobile equipment. The filtration facility has areas for concentrate blending. The total storage capacity is 3,200 t.

Concentrate is loaded by a front-end loader into trucks which transports the concentrate from the plant to a port for shipment.

The overall tailings, formed by the rougher tailings and the scavenger tailings, flows by gravity to a transfer box which feeds a 55 m diameter high-rate tailings thickener. From this thickener is considered that the thickened underflow principally flows by gravity but considers one stand-by pump in case it is required.

The water recovered from the tailing thickener is sent to the recovered process water tank and from there returned to process plant.

The thickened tailings are sent 3.3 km to a Sand Plant consisting of a hydrocyclone cluster and a slimes thickener. The hydrocyclone is fed by the tailings and classifies the coarse particles (sand) through the underflow, which make up 42% of the tailings. The sands are sent to the tailings storage facility (TSF) and used to build the dam wall. In parallel, the hydrocyclone overflow (58% of the tailings) is sent to a 55 m diameter high-rate slimes thickener for water recovery. The thickened underflow is pumped and deposited in the TSF.

The water recovered from the slime thickener (overflow) flows by gravity to a return water tank.

This tank also receives the recovered water from the TSF. Then the water is sent to the recovered process water tank and from there returned to process plant as recirculated water, thus reducing freshwater consumption.

17.2.3 Mantoverde Sulphide Concentrator Process Design Criteria

The design parameters for the main equipment for the concentrator and related plant infrastructure are listed in Table 17-2 below.

Table 17-2: Mantoverde Sulphide Concentrator Process Design Criteria

Parameter	Unit	Value
Main Design Criteria		
MVDP annual throughput	Mt/a	11.6
Daily throughput	kt/d	31.8
Operating Time		
Days per year	d/y	365
Hours per day	h/d	24
Specific Gravity – feed	-	3.08
Moisture content	%	2.0

Parameter	Unit	Value
Copper head grade, design	%	0.72
Copper Global Recovery	%	88.4
Area Runtime		
Crushing Plant	%	70.0
Grinding	%	94.0
Flotation and Regrind	%	94.0
Concentrate Thickening	%	94.0
Concentrate Filtration	%	80.0
Tailings Thickening and Sand Plant	%	94.0
Comminution Characteristics		
Crushing BWi, design (75th Percentile)	kWh/t	23.5
Axb, design (75th Percentile)	-	46
Rod Mill BWi (75th Percentile)	kWh/t	21.9
Ball Mill BWi (75th Percentile)	kWh/t	16.5
SPI, design (75th Percentile)	min	53
Abrasion Index (75th Percentile)	g	0.23
Primary Crushing and Stockpile		
Type of Crusher	-	Gyratory
Size of Crusher	-	1400 x 2100 TS
Capacity Coarse Ore Stockpile	live tons	16,150
SAG Mill		
Sag Mill Type	-	Dual Pinon
Diameter EGL	Ft	34
Length EGL	ft	20
Discharge	-	Grate
Pebble Classification	-	Trommel
Installed Power	MW	2 x 7.0
Pebble Circulation Load, Design	%	30
Total Filling, normal operating	%	26
Steel Ball Filling, normal operating	%	15
Steel Ball Filling, design	%	20
Steel Ball Consumption	$kg/t_{plant\text{-}feed}$	0.37
Ball Mill and Classification		
Discharge	-	Overflow
Number of Units	-	1
Mill Diameter EGL	Ft	24
Mill Length EGL	Ft	42
Mill Installed Power	MW	2 x 7.0

Parameter	Unit	Value
Steel Ball Consumption	$kg/t_{plant-feed}$	0.51
Circuit Circulating Load, Design	%	350
Product Size (P80)	µm	180
Regrind Mill and Classification		
Type of Mill	-	Vertical
Number of Units	-	1
Mill Installed Power	kW	932
Circuit Circulating Load, Design	%	200
Product Size (P80)	µm	38
Rougher Flotation		
Type	-	Conventional
Laboratory Flotation Time	min	14
Design Flotation Time	min	30
Number of Units	-	7
Cell Size	m^3	300
Froth Carrying Capacity	$t/h/m^2$	1,5
First Cleaning Cells		
Type	-	Conventional
Design Flotation Time	Min	10
Number of Units	-	2
Cell Volume	m^3	130
Froth Carrying Capacity	$t/h/m^2$	2,0
Scavenger Cells		
Type	-	Conventional
Design Flotation Time	min	20
Number of Units	-	3
Cell Volume	m^3	130
Froth Carrying Capacity	$t/h/m^2$	1,5
Second Cleaning Column		
Type	-	Column
Cell Diameter	m^2	4.75
Number of Units	-	2
Raise Capacity	$t/h/m^2$	2.0
Third Cleaning Column		
Type	-	Column
Cell Diameter	m^2	4.75
Number of Units	-	1
Raise Capacity	$t/h/m^2$	2.1

Parameter	Unit	Value
Concentrate Thickener		
Type	-	High Rate
Diameter	m	2
Quantity	-	1
Unit Area Thickening Rate	$t/h/m^2$	0.14
Solids Discharging	% w/w	60
Flocculant Addition	g/t_{conc}	15
Concentrate Filter and Storage		
Type	-	Filter Press
Quantity	-	1
Filtration Rate	$kg/h/m^2$	480
Required Area	m^2	108
Concentrate Storage Capacity	t	3.2
Tailings Thickener		
Type	-	High Rate
Diameter	m	55
Quantity	-	1
Unit Area Thickening Rate	$t/h/m^2$	0.59
Solids Discharging	% w/w	60
Flocculant Addition	$g/t_{tailings}$	20
Sand Plant Cyclones		
Circuit Configuration	-	Open
Mass Split to Cyclone Underflow (Sands)	%	42
Sand Plant Slime Thickener		
Type	-	High Rate
Diameter	m	55
Quantity	-	1
Unit Area Thickening Rate	$t/h/m^2$	0.59
Solids Discharging	% w/w	50
Flocculant Addition	$g/t_{tailings}$	35

17.2.4 Mantoverde Sulphide Concentrator Equipment Sizing

Table 17-4 summarizes the sizes for the main process plant equipment that are considered to Mantoverde sulphide plant.

Table 17-3: Main Equipment Sizes for MVDP

Equipment	Number	Type	Size	Power
Primary crusher	1	Gyratory	1400 x 2100 TS	600 kW
SAG mill	1	Dual pinion (D Eff x EGL)	34' x 20'	2 x 7.0 MW
Ball mill	1	Dual pinion (D Eff x EGL)	24' x 42'	2 x 7.0 MW
Hydrocyclone	7 operating, 2 stand-by	Conical	33"	-
Rougher	7	Mechanical	300 m^3	-
First cleaner	2	Mechanical	130 m^3	-
Scavenger	3	Mechanical	130 m^3	-
Second cleaner	2	Column	4.75 m x 14.1 m (D x L)	-
Third cleaner	1	Column	4.75 m x 14.1 m (D x L)	-
Regrind mill	1	Vertical	-	932 kW
Hydrocyclone (regrinding)	5 operating, 2 stand-by	Conical	15"	-
Concentrate thickener	1	High rate	D = 20 m	-
Concentrate filter	1	Press	108 m^2,(expandable to 120 m^2)	-
Tailings thickener	1	High rate	D = 55 m	-
Tailings hydrocyclone	11 operating, 1 stand-by	Conical	20"	-
Slimes thickener	1	High rate	D = 55 m	-

Note: D Eff = effective diameter, EGL = effective grinding length, D = diameter, L = length

17.2.5 Mantoverde Sulphide Energy, Water and Process Reagents Requirements

17.2.5.1 Energy

The power supply required to support the process operation is discussed in Section 18.

17.2.5.2 Fresh Water Supply

Fresh water is supplied from a sea water desalination plant at a rate of 380 L/s that is located close to Bahía Flamenco (40 km from the mine site). Fresh water discharges into the existing pond on site which has a capacity of 23,000 m^3. From this pond, four pumps (three operating and one stand-by) pumps water to a header tank located at a higher elevation. The header tank has a system of pipes and valves to feed the process plant.

17.2.5.3 Reagents

17.2.5.3.1 Lime

Quick lime is supplied by trucks. The trucks have their own discharge system to discharge the lime into the storage silo. The silo feeds a slaker reactor where the lime is mixed with water, generating milk of lime. The slaked product is a slurry that flows by gravity to an agitated transfer tank.

The milk of lime is transferred from the transfer tank to an agitated storage and distribution tank. From this tank, using two pumps (one in operation and one stand-by), the milk-of-lime is pumped to the closed-circuit distribution system (recirculation system) serving the milling, flotation and regrinding areas.

17.2.5.3.2 Flotation Reagents

The reagents used in the flotation process consists of two collectors and one frother. The primary collector and the frother are supplied in liquid form in ISO tanks delivered to site by trucks, and the ISO tanks discharges by gravity into the reagent storage tanks. A short-term storage area adjacent to the plant is used for reagent storage.

The primary collector and the frother storage tanks have a reagent dosing pump for each destination, counting a total of six pumps per reagent, five operating and one stand-by.

The secondary collector is supplied in solid form in bags that are discharged into an agitated tank, and subsequently into a distribution tank that with storage capacity for storage. In total seven pumps are needed for secondary collector dosage, six operating and one stand-by.

17.2.5.3.3 Flocculant Plant

Flocculant will be required for the concentrate, tailings thickeners and slimes thickener. The flocculant will be supplied from compact plants, one dedicated to the process plant (concentrate and tailings thickener) and other to the sand plant (slimes thickener). These plants are fed with flocculant in bags. The flocculant will be prepared on a daily basis and then diluted and dosed.

17.2.5.3.4 Compressed Air System

The compressed air supply for the process plant and other instrumentation will be provided by three compressor rooms. One compressor room will be located in the primary crushing building, another will be located next to the flotation and milling area (these are the main compressors). The third room will be located in the filter building.

17.3 Mantoverde Optimized – Sulphide Concentrator

The MV-O considers further development to the project through a gradual increase of sulphide concentrator plant production to a throughput of 16.4 Mt/a of ore processing.

This section consists of updates to the main circuits and changes to meet the requirements of the optimization project.

17.3.1 MV-O Plant Design

The project considers a similar design that were described on the 18.4.2 section. The following design description only includes the main updates and changes.

The concentrator design is updated to process a nominal 16.4 Mt/a of sulphide feed (maximum considered 17 Mt/a), equivalent to 45,000 t/d. All mass and volumetric constraints for this throughput have been addressed from MV-O design, considering this new plant capacity. To achieve the desired throughput rates there are changes related to increasing the motor capacity of conveyor belts and feeders in the crushing and stockpile area, while ball milling must grind coarser than the original project design. For this reason, the metallurgical recovery of the rougher flotation decreases to acceptable levels for the optimization project.

As for rougher flotation the volumetric restriction is released by increasing the valve opening size between cells. It should be noted that metallurgical recovery decreases with increasing particle size from grinding.

As for the sulphide concentrator, the ROM material is crushed in the primary crushing facility, which maintains the same design of the MVDP primary crusher (1400 x 2100 TS), including its feed and discharge hopper and all material transfer system to the coarse ore stockpile.

The coarse ore stockpile maintains the live capacity of 16,150 t (dry), which allows 9 hours of operation without new feed, considering the MV-O throughput.

The SAG milling will remain unchanged under MV-O compared to the existing process facility. Throughput modeling was performed to confirm that the MVDP SAG design can support a milling circuit of the MV-O throughput, when considering average ore hardness in the mine plan and considering that comminution and hardness data was updated since the original MVDP project presented in the 2022 Technical Report (further information in Section 13).

The ball mill circuit of MV-O considers the use of the two operating horizontal centrifugal pumps with variable speeds to feed slurry to the secondary milling stage. This is necessary to allow greater volumetric flow to classification without changing of pumps, as consequence of the higher MV-O throughput.

The secondary milling stage maintains the equipment, however, the hydrocyclone cluster is upgraded and now presents a configuration of 9 operational and 1 stand by. Due the increase in plant capacity and use of the same MV-O Ball Mill, the target milling product size has been increased to a P_{80} of 212 µm.

For rougher flotation, and according to the tonnage increase for MV-O, the opening of the valves between each cell must be increased to release the volumetric restriction. In parallel, the metallurgical recovery of this stage is decreased to acceptable levels according to the increase in particle size fed from grinding.

Due to the increase in plant capacity and maintaining the same cleaning cells and columns, there has been circuit modifications introduced to allow better management of higher throughput through the original Mantoverde cleaner circuit. Specifically, two operational flexibilities have been included in MV-O to allow handling probable increases in recirculating loads when high grades and higher MV-O throughputs are processed by the MVDP cleaner circuit. These flexibilities are listed below:

- Redirection of concentrate from the first cleaner scavenger cell as cleaner 1 concentrate, i.e., from having two first cleaner cells and three cleaner scavenger cells, to having three first cleaner cells and two cleaner scavenger cells.
- Feed all three columns, in parallel, first cleaner concentrate and revert to two stage cleaning, i.e., concentrate from second cleaning stage goes directly to the concentrate thickener as final concentrate. The regrind milling maintains its design as is described for MVDP. It has been verified that the existing mill can manage the increased throughput by making use of spare capacity of the regrind mill.

The concentrate thickening maintains its design as is described for MVDP. However, due the increase in plant capacity, it has been necessary to increase the press filter area to 120 m^2, which is allowed by the equipment. This only requires an increase of the filter plates in use, since the original MVDP unit is based on a 108 m^2 frame and no equipment change is needed to achieve this area increase.

The tailings thickener has required changes its discharge design, to allow the MV-O throughput. MV-O operating conditions must now consider that the underflow discharges by use of two centrifugal pumps, one operating and one stand-by, and an additional one that can be used in series to support the pumping of the other two pumps. Also, there are changes on the feed system, including changes on the feed well, E-Duc system and feed pipe.

The sand plant maintains the main equipment that was considered for MVDP, however, due the coarser milling product (P_{80}) it is considered a larger sand production for the dam wall, using the same hydrocyclones configuration.

Additionally, auxiliary equipment is changed, such as the replacement of the metallurgical samplers (corresponding to the rougher flotation feed, concentrate thickener feed and tailings thickener feed) to be able to handle the higher throughput of MV-O. Other minor changes are related to repowering of pumps and changes in the residence times of boxes and tanks.

17.3.2 MV-O Process Design Criteria

The design parameters for the main equipment for the concentrator and related plant infrastructure are listed in Table 17-4 below.

Table 17-4: Parameters for The Main Equipment for The Concentrator and Related Plant Infrastructure

Parameter	Unit	Value
Main Design Criteria		
Annual throughput	Mt/a	17.0
Daily throughput	kt/d	45.0
Operating Time		
Days per year	d/y	365
Hours per day	h/d	24
Specific Gravity – feed	-	3.08
Moisture content	%	2.0
Copper head grade, design	%	0.65
Copper Global Recovery	%	87.0
Area Runtime		
Crushing Plant	%	70.0
Grinding	%	94.0
Flotation and Regrind	%	94.0
Concentrate Thickening	%	94.0
Concentrate Filtration	%	80.0
Tailings Thickening and Sand Plant	%	94.0
Comminution Characteristics		

Parameter	Unit	Value
Crushing BWi, (Average)	kWh/t	16.9
Axb, (Average)	-	59
Rod Mill BWi (Average)	kWh/t	19.0
Ball Mill BWi (Average)	kWh/t	14.8
SPI, (Average)	min	55
Abrasion Index (Average)	g	0.17
Primary Crushing and Stockpile		
Type of Crusher	-	Gyratory
Size of Crusher	-	1400 x 2100 TS
Capacity Coarse Ore Stockpile	live tons	16,150
SAG Mill		
Sag Mill Type	-	Dual Pinon
Diameter EGL	Ft	34
Length EGL	ft	20
Discharge	-	Grate
Pebble Classification	-	Trommel
Installed Power	MW	2 x 7.0
Pebble Circulation Load, Design	%	30
Total Filling, normal operating	%	30
Steel Ball Filling, normal operating	%	15
Steel Ball Filling, design	%	20
Steel Ball Consumption	$kg/t_{plant\text{-}feed}$	0.37
Ball Mill and Classification		
Discharge	-	Overflow
Number of Units	-	1
Mill Diameter EGL	Ft	24
Mill Length EGL	Ft	42
Mill Installed Power	MW	2 x 7.0
Steel Ball Consumption	$kg/t_{plant\text{-}feed}$	0.51
Circuit Circulating Load, Design	%	300
Product Size (P_{80})	µm	212
Regrind Mill and Classification		
Type of Mill	-	Vertical
Number of Units	-	1
Mill Installed Power	kW	932
Circuit Circulating Load, Design	%	200
Product Size (P80)	µm	38
Rougher Flotation		
Type	-	Conventional
Design Flotation Time (for MVDP)	min	30
Flotation Time, Calculated	min	23.8
Number of Units	-	7

Parameter	Unit	Value
Cell Size	m^3	300
Froth Carrying Capacity	$t/h/m^2$	1.5
First Cleaning Cells		
Type	-	Conventional
Design Flotation Time (for MVDP)	min	10
Flotation Time, Calculated	min	151
Number of Units	-	2 / 3
Cell Volume	m^3	130
Froth Carrying Capacity	$t/h/m^2$	2.0
Scavenger Cells		
Type	-	Conventional
Design Flotation Time (for MVDP)	min	20
Flotation Time, Calculated	min	13
Number of Units	-	3 / 2
Cell Volume	m^3	130
Froth Carrying Capacity	$t/h/m^2$	1.8
Second Cleaning Column		
Type	-	Column
Cell Diameter	m^2	4.75
Number of Units	-	2
Raise Capacity	$t/h/m^2$	2.0
Third Cleaning Column		
Type	-	Column
Cell Diameter	m^2	4.75
Number of Units	-	2
Raise Capacity	$t/h/m^2$	2.1
Concentrate Thickener		
Type	-	High Rate
Diameter	m	20
Quantity	-	1
Unit Area Thickening Rate	$t/h/m^2$	0.13
Solids Discharging	% w/w	60
Flocculant Addition	g/t_{conc}	15
Concentrate Filter and Storage		
Type	-	Filter Press
Quantity	-	1
Filtration Rate	$kg/h/m^2$	480
Required Area	m^2	120
Concentrate Storage Capacity	t	3.2
Tailings Thickener		
Type	-	High Rate
Diameter	m	55

Parameter	Unit	Value
Quantity	-	1
Unit Area Thickening Rate	t/h/m²	0.85
Solids Discharging	% w/w	60
Flocculant Addition	$g/t_{tailings}$	20
Sand Plant Cyclones		
Circuit Configuration	-	Open
Mass Split to Cyclone Underflow (Sands)	%	47.6
Slimes Thickener		
Type	-	High Rate
Diameter	m	55
Quantity	-	1
Unit Area Thickening Rate (for MVDP)	t/h/m²	0.46
Unit Area Thickening Rate, Calculated	t/h/m²	0.43
Solids Discharging	% w/w	50
Flocculant Addition	$g/t_{tailings}$	35

17.3.3 MV-O Equipment Sizing

Table 17-5 summarizes the sizes for the main process plant equipment that are considered for the Mantoverde sulphide plant.

Table 17-5: Main Equipment Sizes for MV-O

Equipment	Number	Type	Size	Power
Primary crusher	1	Gyratory	1400 x 2100 TS	600 kW
SAG mill	1	Dual pinion, Grate, Discharge	34' x 20' (inside shell x EGL)	2 x 7.0 MW
Ball mill	1	Dual pinion, Overflow	24' x 42.5' (inside shell x EGL)	2 x 7.0 MW
Hydrocyclone	9 operating,1 stand-by	Conical	33"	-
Rougher	7	Mechanical	300 m³	-
First cleaner	2 / 3	Mechanical	130 m³	-
Scavenger	3 / 2	Mechanical	130 m³	-
Second cleaner	2	Column	4.75 m x 14.1 m (D x L)	-
Third cleaner	1	Column	4.75 m x 14.1 m (D x L)	-
Regrind mill	1	Vertical	-	932 kW
Hydrocyclone (regrinding)	5 operating 2 stand-by	Conical	15"	-
Concentrate thickener	1	High rate	D = 20 m	-
Concentrate filter	1	Press	120 m²	-
Tailings thickener	1	High rate	D = 55 m	-
Tailings hydrocyclone	11 operating 1 stand-by	Conical	20"	-
Slimes thickener	1	High rate	D = 55 m	-

Note: D Eff = effective diameter, EGL = effective grinding length, D = diameter, L = length

17.3.4 MV-O Energy, Water and Process Reagents Requirements

17.3.4.1 Energy

The power supply required to support the process operation including the comminution circuit, flotation and regrind circuits is supplied to the site from the Diego de Almagro substation via a 110 kV transmission line, including a substation built adjacent to the 110 kV Mantoverde substation. The current contract with Guacolda Energía S.A is valid until 31 December 2034. The power supply is further discussed in Section 18.

17.3.4.2 Fresh Water Supply

Fresh water will continue to be supplied from a sea water desalination plant near Bahía Flamenco, 40 km from the mine site, discharging into the existing 23,000 m^3 pond on site. Four pumps (three operating and one on stand-by) pump water to a header tank located at a higher elevation. The process plant is fed by a system of pipes and values from the header tank.

The 45 kt/d scenario requires modification to water desalination and storage systems for optimal performance:

- Laguna water pumps need to be modified, as well as pipeline systems adapted for higher water recovery. Pipeline review has defined necessary changes and dedicated section define specific changes.
- Water recovery pump and pipeline that sends water to concentrator needs modifications to allow higher water recovery. Pipeline review has defined necessary changes and dedicated section define specific changes.

17.3.4.3 Reagents

17.3.4.3.1 Grinding Media

The SAG mill consumes between 50 and 100 g/kWh of 4.5” to 5.5” steel grinding balls and between 2 and 4 g/kWh of liners and pulp lifters. Similarly, the ball mill consumes between 50 and 80 g/kWh of steel balls, between 2.5” to 3.5” in diameter. The vertical regrind mill consumes steel grinding balls between 0.75” and 1.5” of grinding media. The unit consumption rates remain the same between MVDP and MV-O.

17.3.4.3.2 Lime

The quick lime plant design for MV-O remains largely unchanged since the 2022 Technical Report, as described for MVDP. Quick lime is supplied by trucks set up with discharge systems to fill the storage silo. From the silo, lime is mixed with water in a slaker reactor to form milk of lime. The milk of lime is a slurry that flows by gravity to an agitated transfer tank, then to an agitated storage and distribution tank. The milling, flotation and regrinding areas are served by this tank using two pumps. The main update is located in the dosing pump system, which considers a second recirculation system in parallel.

17.3.4.3.3 Flotation Reagents

The flotation reagent plant maintains its design as is described for MVDP in the 2022 Technical Report. Reagents used in the flotation process consist of two collectors and one frother. The primary collector and the frother are in liquid form in isotanks delivered to site by truck, discharged by gravity into the reagent storage tanks. Reagents are stored for short period in a storage area adjacent to the plant.

The primary collector and the frother storage tanks have a 2 day capacity. Reagent dosing assumes a pump for each destination with a stand-by pump per reagent.

The secondary collector is supplied in solid form in bags discharged to an agitated tank, then held for 1 day in a distribution tank. In total six pumps are needed for secondary collector dosage, five operating and one stand-by. No equipment changes required for the upgrade to 45 kt/d.

17.3.4.3.4 Flocculant Plant

The design for the flocculant plant for the process plant and the sand plant is the same as that described for MVDP in the 2022 Technical Report. Flocculant for the concentrate and tailings thickeners is supplied from compact plants, one dedicated to each thickener. These plants are fed flocculant in 25 kg bags that is prepared daily then diluted and dosed. No equipment changes required for the upgrade to 45 kt/d.

17.3.4.3.5 Compressed Air System

The compressed air supply maintains its design as is described for MVDP in the 2022 Technical Report, via three compressor rooms. The main compressors are located adjacent to the flotation and milling area, with the others located in the primary crusher and filter buildings.

18 PROJECT INFRASTRUCTURE

18.1 Introduction

Mantoverde is an open pit mine located in the province of Chañaral, Atacama Region, 56 kilometers southeast of the city of Chañaral and 100 km north of the city of Copiapó, at an altitude of 900 masl.

Mantoverde currently operates heap and dump run of mine (“ROM”) leaching and conventional SX-EW to treat oxide ore to produce high-purity LME Grade “A” copper cathodes. The mine consists of four pits situated along the Mantoverde fault, each of which contains both sulphide and oxide ores.

The mine owns a desalination plant, located 40 km west of the mine that supplies water required by the operation with a capacity of 380 L/s.

The new concentrator plant part of Mantoverde Development Project (MVDP) will treat sulphide material to produce copper concentrate, while oxide ores will continue to be treated in the existing SX-EW plant. Mining assumes conventional open pit operations using truck-and-shovel technology.

Capstone has identified that the desalination plant capacity and main components of the comminution and flotation circuits of MVDP are able to sustain an increase from 32 kt/d to an average of up to 45 kt/d. This increase can be achieved by debottlenecking minor components of the plant with minor capital equipment upgrades, to meet the potential throughput target.

18.2 Summary

The current process infrastructure of the Mantoverde Development Project can sustain up to 45,000 tonnes per day by debottlenecking minor components of the plant. Main changes consider the following:

- Primary crushing, conveying system and stockpile:
  - Power increase in the drive system discharge chute and foundations of the stockpile feeding conveyor.
  - Modifications on feeding and discharge chutes of the stockpile reclaiming apron feeders.
  - Modifications in the associated electrical room.
- Grinding:
  - Power increase in the drive system of the SAG mil feeding conveyor.
  - Additional discharge launder for the ball mill and changes on the existing launder.
  - Addition of a new cyclone in the primary cyclone cluster.
  - Replacement of the metallurgical sampler.
  - Replacement of piping at different locations.

- Upgrade of equipment inside of unit substation 4100-US-001 and other modifications in the grinding area electrical room.
- Flotation:
  - Modification of the dart valve assembly, including actuators for all rougher cells and discharge box.
  - Replacement of piping due to diameter increase.
  - By-pass of the third column cell in the flotation cleaning circuit.
- Concentrate thickener and filtration:
  - Replacement of the concentrate metallurgical sampler.
  - Change of the filter feeding pump motor.
  - Additional plates in the concentrate filter.
- Tailings thickener and pumping system:
  - Replacement of the final tailings sampler and discharge box.
  - Modifications in the thickener feed well, overflow launder and thickener feeding system.
  - Addition of 2 pumps in the tailings pumping system and changes in the suction and discharge piping system.
  - Addition of a new electrical room for the tailings area.
- Tailings classification plant:
  - Replacement of the thickener underflow piping due to diameter increase.
  - Replacement of the cyclone cluster feeding pump.
  - Replacement of the sands distributor box and modifications to the support structure.
  - Addition of a new thickened slimes distribution pump.
  - Addition of 2 pumps to the recovered water pumping system and new pipeline to the concentrator plant.
  - Modifications of the associated electrical room.
- Tailings storage facility:
  - Increase in capacity to 496.51 million tonnes.
  - Replacement of the contact water pumps.
  - New contact water pipeline to the tailings classification plant.
  - New water vertical pump in the tailings pond.
  - New diversion channel to capture non-contact water upstream of the impoundment.
  - Increased number of geotechnical monitoring instrumentation.

Additionally, changes to the original MVDP Tailings Storage Facility design will be required to process the new mine LOM. The sand dam wall will require a regrow to an elevation of 828 masl maintaining the geometric parameters, ratio of sands, slimes, and deposit slopes of the existing TSF, as per the Tailings Management Plan developed by Ausenco. Due to this growth, the drainage system will be affected by having a greater contribution area. Due to interference during the TSF operation, modifications to the contour channel, pumping wells, existing electrical line, SIAD line (Sistema Impulsión Agua Desalada), SRA line (Sistema Recuperación Agua) and relocation of the tailings classification plant will be required in the future.

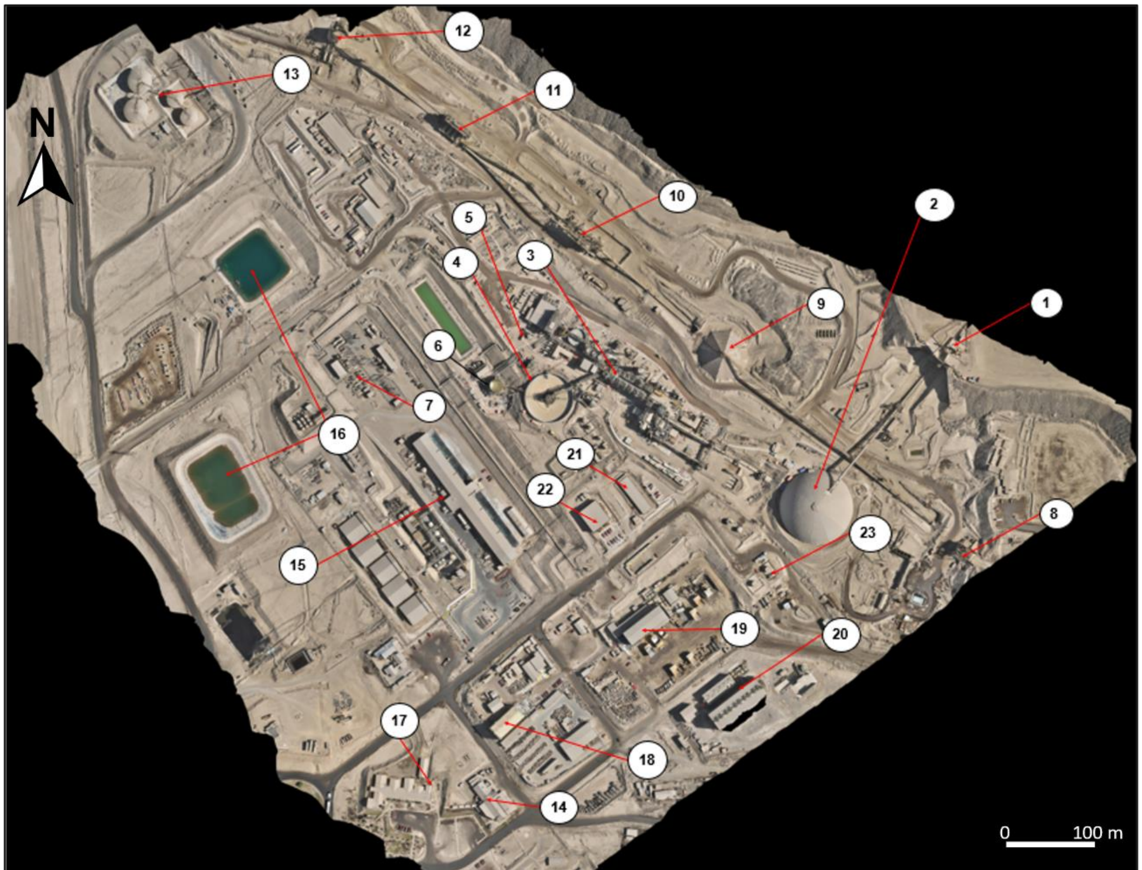
The total tonnage increase will be from 235 million tonnes to 496.51 million tonnes.

18.3 Existing Infrastructure

The existing infrastructure considers infrastructure that was constructed for the operation of the copper oxide plant and infrastructure that is part of the MVDP.

Figure 18-1 shows the current plant area layout at the Property.

Figure 18-1: Existing Infrastructure Layout



1	Primary Crusher (Sulphides)	7	Power Substation	13	Sulphuric Acid Tanks	19	Truck Shop
2	Stockpile (Sulphides)	8	Primary Crusher (Oxides)	14	Dining Room	20	Truck Shop
3	Concentrator Plant (Sulphides)	9	Stockpile (Oxides)	15	SX-EW Plant	21	Change Room
4	Tailings Thickener	10	Secondary Crusher (Oxides)	16	Water Storage Pond	22	Control Room and Offices
5	Potable Water Tank	11	Tertiary Crusher (Oxides)	17	Administration Offices	23	Fuel Tank
6	Process Water Tank	12	Agglomeration (Oxides)	18	Workshop		

Source: Capstone, 2023.

18.3.1 Roads And Logistics

Copper cathodes will continue to be shipped to Antofagasta. Copper concentrate will be delivered by truck to Puerto Angamos located in Chile's Region II, 475 km by highway from Mantoverde.

Concentrate will be transported by rotainers of an average capacity of 28.5 tonnes, on a 360 day per year basis, with an average of 25 trips per day.

Puerto Angamos, seaport name CLPAG, is a commercial port located near Mejillones in Chile, 65km north of Antofagasta. The port is equipped for rotainers, the sealed transport container that reduces loss during transport and conforms to Chile's regulations on transportation, loading and unloading of mineral concentrates (Ley No. 21.425). Puerto Angamos has four berths for vessels with drafts from 10.7 m to 13.7 m, up to 155,000 tonnes displacement and 366 m long, plus ample storage for containers and copper cargos. The natural setting of the Mejillones Bay is ideal for port services, with down time related to poor weather conditions averaging less than 1% annually.

Access to the existing desalination plant is by coast road C-260, crossing Route 5 North at kilometer 946. The existing desalinated water pipeline supplying water to Mantoverde and the existing power line supplying energy to the desalination plant from Mantoverde run parallel to the Bahía Flamenco– Mantoverde road.

18.3.2 General Infrastructure

The total area for the on-site infrastructure (camp, access road, guardhouse and process plants) covers 20 ha.

18.3.2.1 Truck Shop

A closed building for truck maintenance operates with five maintenance bays and space for future expansion of two additional bays. The building includes a tool shop, oil storage, compressor room, wash bay, tire replacement bay, electrical room and offices.

18.3.2.2 Camp And Other

The existing camp was expanded for the MVDP and will be used as the operations camp in the future. A new office and change house facility were constructed.

18.3.2.3 Communications

Communications use optical fiber cables to support the process control systems, security, telephony, information technology and data uses.

18.3.2.4 Power And Electrical

Power is supplied to the site from the Diego de Almagro substation via a 110 kV transmission line. A new substation was built adjacent to the existing 110 kV Mantoverde substation to provide power to the comminution circuit, flotation and regrind circuits, truck shop, fresh water supply and the mine shovel operations. The current contract with Guacolda Energía S.A is valid until 31 December 2034.

18.3.2.5 Water Management

The fresh water supply for the Mantoverde mining complex (Oxide Plant and Sulphide Plant) is obtained from a desalination plant with a capacity of 380 L/s, connected via a 41 km pipeline with two pumping stations along the route. The desalination plant is located north of Flamenco Bay and 30 km south of Chañaral.

The water management strategy allocates 320 L/s as the make-up required for the Oxide Plant, Concentrator processes, mine, roads, and site buildings.

For the 45 kt/d (MV-O) operation, a new water balance has been developed, indicating that the water demand is close to 380 L/s, with a 60% solid density in the plant thickener underflow as the process design criteria.

A task force has been working to diagnose and implement actions to ensure a stable flow of 380 L/s from the desalination plant. The main action plan includes, among other initiatives:

- Upgrading pumping stations equipment
- Upgrading osmosis rack feeding pumps
- Upgrading valves and instrumentation materials (improving steel quality)

A potable water plant was constructed to provide the drinking water supply for the accommodation camp, using water from the desalination plant; a second potable water plant was constructed in the mine–process area.

18.3.3 Oxide Processing Plant

Current infrastructure on site includes:

- Mine and process support buildings,
- Truck shop, and
- Low-grade and high-grade heap leach pads (static and dynamic heaps, respectively) Waste rock and leached waste storage facilities.

The current facilities located inside the mine–plant area include:

- Access guard house,
- Change house,
- General offices (engineering and maintenance/operations),
- Polyclinic,
- Gym, sports facilities and recreation room,
- Contractor yard area,
- Parking area,
- Warehouse,
- Camp and canteen, and

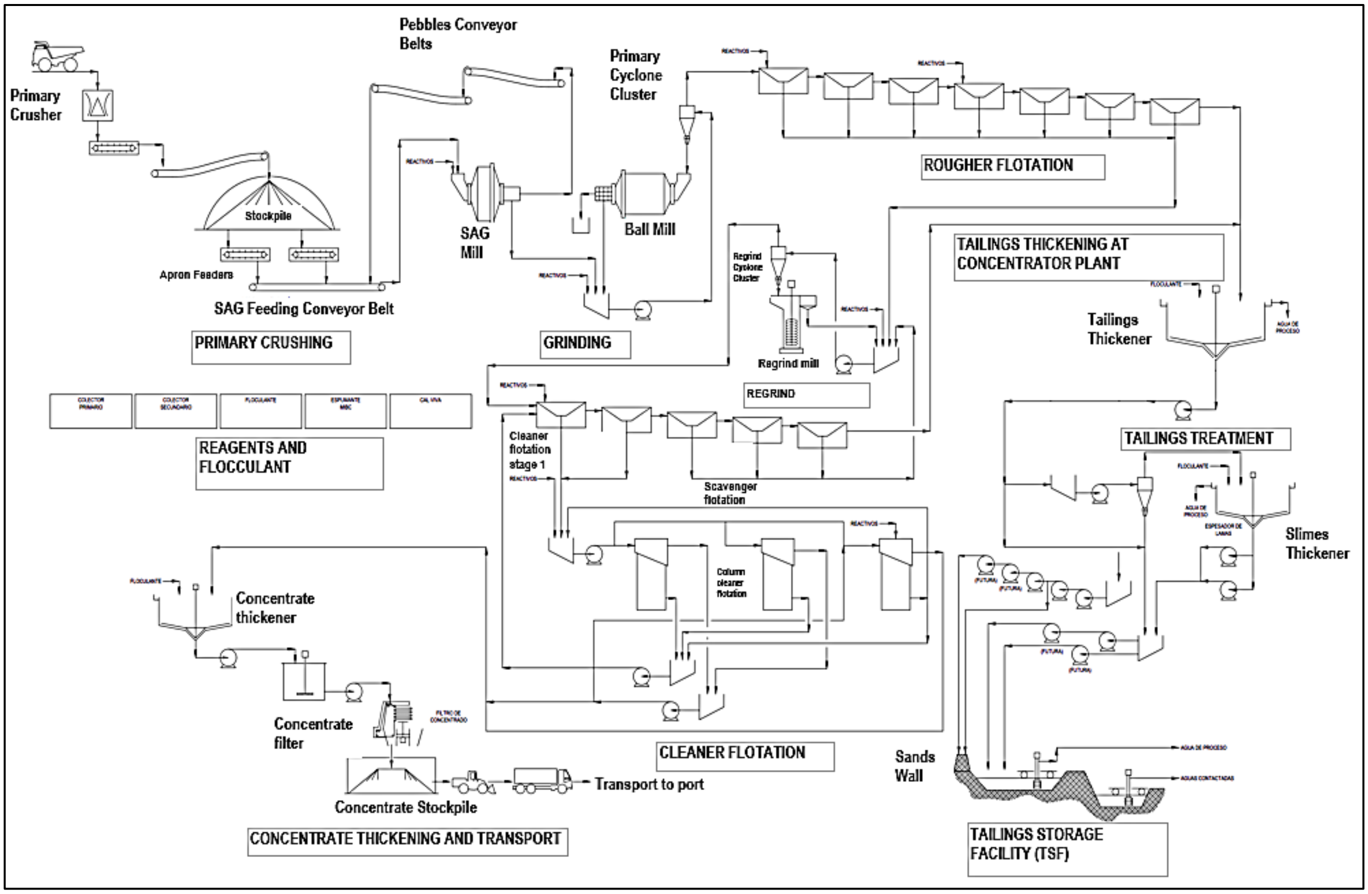
- Sewage treatment facility.

18.3.4 MVDP Sulphide Concentrator Plant

The infrastructure that is part of the MVDP operation includes:

- Additional truck maintenance shop,
- Building for a new crushing station and conveyor belts,
- Closed building for a new stockpile,
- Open building for the SAG/ball mill,
- Open building for the flotation and regrind circuits,
- Open building for the thickening and filtration circuits,
- Potable water storage and potable water plants,
- Storage area for lime, reagents, and flocculants,
- Compressed air supply,
- Permanent accommodation camp,
- Additional offices and change house,
- Services (water, air, instrumentation),
- Process (water, copper concentrate, flotation, tailings, slurries),
- Tailing treatment and sand plant,
- Electrical substation,
- Different electrical rooms at different process areas, and
- Tailings (tailings, water).

Figure 18-2: MVDP Concentrator Plant



Source: Capstone, 2023.

18.3.5 Tailings Storage Facility (TSF)

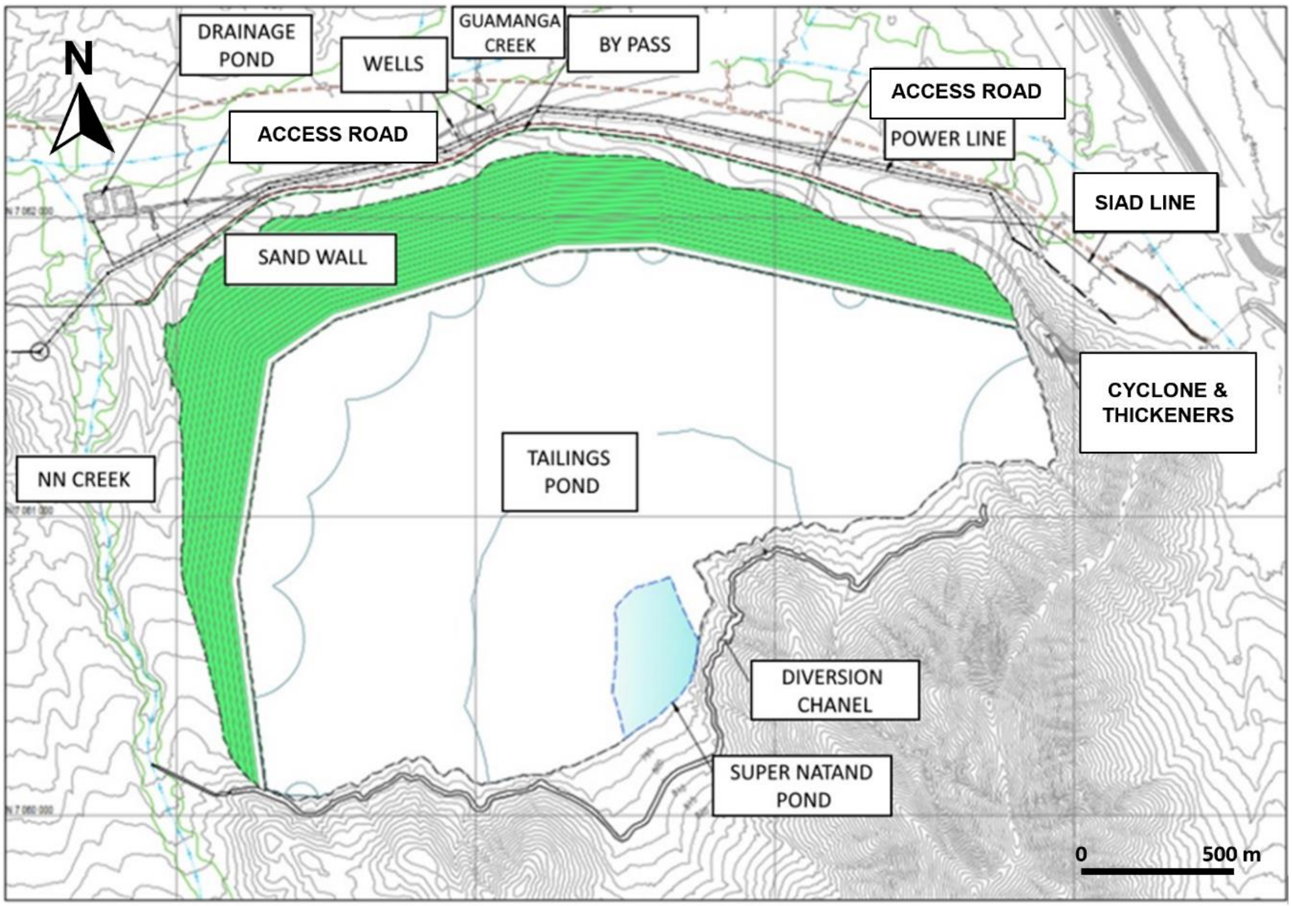
The TSF considered as part of the MVDP is currently in its first stage of operation. Tailings are thickened to 55% prior to transportation 3.5 km from the plant to the TSF on the south side of Quebrada Guamanga, in a very narrow sub-basin.

The MVDP TSF design is conventional, consisting of a starter dam followed by construction of the main dam using the centerline method. The main dam wall at the end of the operations will be 4 km long, with a maximum top elevation of 794.5 masl, a maximum height of 77 m at the dam axis and an overall area of 320 ha. The dam design has provision for drainage (collectors, foot and blanket drains) and drainage collection ponds.

The MVDP tailings are transported at a nominal rate of 31,000 t/d (11.3 Mt/a) for a storage capacity of 235 Mt over a period of 20 years.

The MVDP TSF dam will be constructed using the centerline method with a 2:1 upstream slope and 4:1 downstream slope. The upstream wall will be protected by impermeable liner to prevent seepage through the wall. Figure 18-3 shows the TSF layout and its components.

Figure 18-3: MVDP Tailings Storage Facility Layout



Source: Figure prepared by Ausenco 2022.

18.3.5.1 Design Considerations of MVDP TSF

The general objective of the TSF design is to provide storage for the planned tailings materials in a safe and environmentally responsible manner. The MVDP TSF includes:

- Tailings transport system,
- Classification, thickening and tailings distribution,
- Containment system (starter dam and sand dam),

- Seepage control system (cutoff trench, impermeabilization and drainage systems),
- Contact water recovery system,
- Non-contact water management system, and
- Instrumentation and monitoring.

Rougher and scavenger tailings will be sent to the in-plant tailings thickener. The water recovered from the thickener will be sent to the process water tank and the thickened tailings will be pumped to the Tailings Classification Plant located at the TSF. At this plant, the tailings will be pumped by a hydrocyclone system. Overflow will be sent to a tailings thickener, where water will be recovered, and the thickened underflow will report to the TSF. The design factor (nominal) is 40% sand and 60% slimes. Water recovered from the TSF impoundment, and the thickener overflow will be returned to the plant as reclaimed water.

The starter dam is constructed with borrow material obtained from excavations of the adjacent cutoff trench. This dam has a crest width of 10 m, a maximum elevation of 738 masl, a length of 2 km and downstream/upstream slopes of 2H:1V, using 1.1 Mm^3 of borrow material for its construction. This started dam is presently constructed.

The sand dam will be built in stages as the tailings are stored in the TSF impoundment. This sand dam is intended to contain 62 Mt of coarse tailings that will be produced during the lifecycle of the facility. The ultimate dam design considers a crest width of 15m, a crest elevation of 794.5 masl, and slopes of 2H:1V upstream and 4H:1V downstream. For its construction, 36 Mm^3 of sand produced by the cyclone plant will be required.

To control seepage from the impoundment, MVDP considered lining the entire upstream slope of the TSF with an impervious system consisting of an HDPE geomembrane and a geotextile for the wall and an additional layer of GCL in the cut-off trench. In total covering a total area of 0.36 Mm^2.

The TSF drainage system was built to capture seepage coming from the construction sand of the wall and part of the impounded tailings, with the objective of controlling the phreatic levels within the dam and consequently favouring the physical TSF stability. The drainage system is mainly designed with drainage ditches, which are filled with coarse granular materials that facilitate the gravitational conduction of the collected seepage water towards a drainage collection pond. From there, the seepage water is pumped to a pond at the sand plant, from where it can be reused in the sand plant or redirected to the process plant.

18.3.5.2 Tailings Water Management

The TSF design has provision for drainage (collectors, foot and blanket drains) and drainage collection ponds:

- Water recovered from the TSF: Water will be recovered using two pumps installed on a barge and sent to a recovered water tank adjacent to the tailings thickener.
- Drainage collection ponds: Two HDPE-lined ponds will be situated downstream of the TSF wall, and the ponds will collect seepage water from the main dam as well as from the monitoring and pumping wells. Each pond will have a capacity of 11,200 m^3. One pond will be in active use and the second will provide emergency capacity.

- Monitoring and pumping wells: Any potential water infiltrations from the TSF will be recovered using submersible pumps located in a series of deep wells. These will be located downstream of the TSF dam along the entire northeast dam wall perimeter. Wells will range in depth from 30 m to 85 m, depending on the alluvium/colluvium thickness. Water will report to the drainage collection ponds.
- Water recovery. The water recovery system will consist of four water reclaim systems within the TSF area:
  - Water recovered from the tailings reclaim pond.
  - Water recovered from underground seepage from the TSF.
  - Water recovered downstream of the dam wall.
  - Water recirculated from the water reclaim tank (located at the cyclone station) to the process plant.
- Non-contact water management: Non-contact water will be diverted around the TSF to the western creek using a 4 km long contour channel. The contour channel will also intercept and divert run-off from the adjacent hill slopes. The channel is designed for a design storm with a 50-year return period and verified for a 100-year return period. Under normal operating conditions, the contour channel and associated rainwater diversion infrastructure will only require routine inspections and maintenance.

18.3.5.3 Monitoring

The TSF instrumentation and monitoring system is designed to measure and record key performance indicators and critical controls, such as displacements, settlements, pore pressures, water levels, and accelerations, during the entire lifecycle of the facility to monitor the performance of the TSF. Planned monitoring instrumentation during the life of the TSF includes:

- 26 fibre optics piezometers in the TSF dam wall.
- 10 large-scale piezometers and inclinometers downstream of the wall,
- 101 stations for topographic monitoring, 2 accelerators, including data-loggers and solar panels,
- 6 pressure cells (fibre optic transducers), and
- 4 settlement cells (fibre optic transducers).

18.4 Modifications to the Existing Infrastructure

18.4.1 Modifications to the MVDP Concentrator Plant

To achieve the capacity increase from 32 kt/d to 45 kt/d the plant will require modifications in different areas, as discussed in Section 17.3.1. Below is a non-exhaustive list these modifications:

- Primary crushing, conveying system and stockpile:
  - Power increase in the drive system discharge chute and foundations of the stockpile feeding conveyor.

- Modifications on feeding and discharge chutes of the stockpile reclaiming apron feeders.
- Modifications in the associated electrical room.

- Grinding:
  - Power increase in the drive system of the SAG mil feeding conveyor.
  - Additional discharge launder for the ball mill and changes on the existing launder.
  - Addition of a new cyclone in the primary cyclone cluster.
  - Replacement of the metallurgical sampler.
  - Replacement of piping at different locations.
- Upgrade of equipment inside of unitary electrical substation and other modifications in the grinding area electrical room.
- Flotation:
  - Modification of the dart valve assembly, including actuators for all rougher cells and discharge box.
  - Replacement of piping due to diameter increase.
  - By-pass of the third column cell in the flotation cleaning circuit, and/or reconfiguration of same as another 2nd cleaner.
  - Concentrate thickener and filtration:
  - Replacement of the concentrate metallurgical sampler.
  - Change of the filter feeding pump motor.
  - Additional plates in the concentrate filter.
  - Tailings thickener and pumping system:
  - Replacement of the final tailings sampler and discharge box.
  - Modifications in the thickener feed well, overflow launder and thickener feeding system.
  - Addition of 2 pumps in the tailings pumping system and changes in the suction and discharge piping system.
  - Addition of a new electrical room for the tailings area.
- Tailings classification plant:
  - Replacement of the thickener underflow piping due to diameter increase.
  - Replacement of the cyclone cluster feeding pump.
  - Replacement of the sands distributor box and modifications to the support structure.
  - Addition of a new thickened slimes distribution pump.
  - Addition of 2 pumps to the recovered water pumping system and new pipeline to the concentrator plant.

- Modifications of the associated electrical room.

18.4.2 Modifications to the Desalination Plant and Pipeline

Allowance has been given for various equipment upgrades that will be undertaken in the desalination plant and pumping infrastructure. The capacity of the system will not change, but these upgrades are required to increase the reliability and availability of the overall water supply system. These may include installation of online backup pumps, upgrades or repairs to the antifouling and/or anticorrosion systems, purchasing of critical spares, and increasing the capacity of various surge management tanks or ponds.

18.4.3 Modifications to the Existing Tailings Storage Facility (TSF)

18.4.3.1 Need for TSF Extension

The MV-O project will extend copper concentrate production capacity by processing to 16.4 Mt/a, which in turn will increase the tailings to be handled by the same proportion. As part of this increase in plant throughput, it is required to increase the TSF storage capacity to cover the projected production of 496.5 Mt of tailings at the end of the operation. To increase the capacity of the TSF, it is planned to raise the sand dam while maintaining the main geometrical parameters and design criteria used for the MVDP TSF (currently in operation), Ausenco 2024.

18.4.3.2 Evaluation of TSF Extension Alternatives

During the recently completed feasibility engineering, the size of the facility was evaluated, opting for an option that would maximize the capacity of the facility, meeting the tailings storage demand of the MV-O project and providing additional capacity to absorb future increases in processing capacity.

The preferred alternative increases the height of the sand dam by 33 m by raising the crest of the wall to 828 masl. This requires the construction of a borrow dam at the base of the slope, as well as another dam on the northern side of the impoundment to close a saddle that separates the basin of the impoundment from the adjacent watershed. In addition to other works such as the channeling of the waters of the Guamanga creek (derived from the consideration of the effects of climate change in the design), the extension of the drainage systems and the management of some interferences. The results associated with the TSF growth simulation according to the updated LOM are shown in Table 18-1.

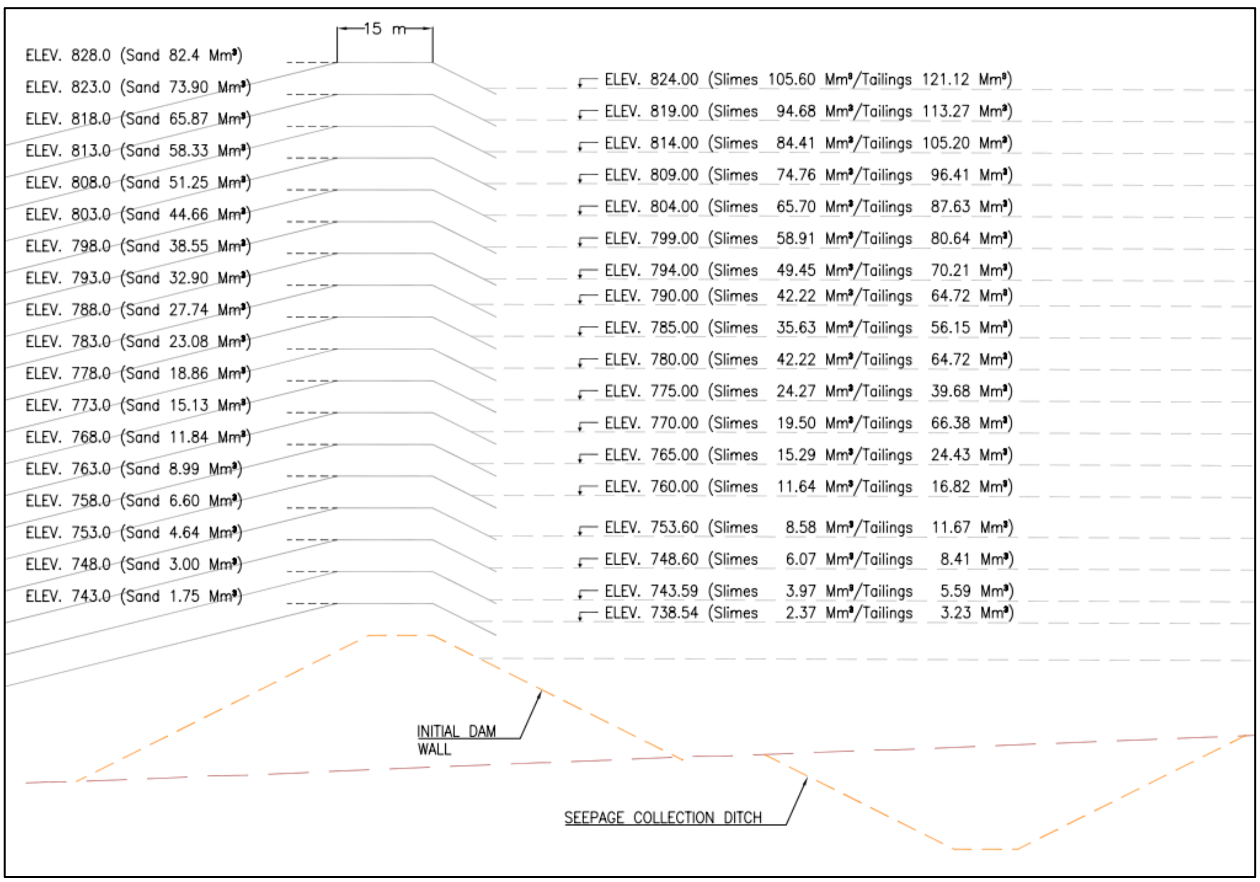
Figure 18-4 shows the series of re-growths proposed following the central axis method up to 828 masl, in accordance with the requirements of the updated LOM.

Figure 18-5 shows the general arrangement of the final stage of the MV-O TSF at the elevation 828 masl.

Table 18-1: Tailing Storage Facility Capacities

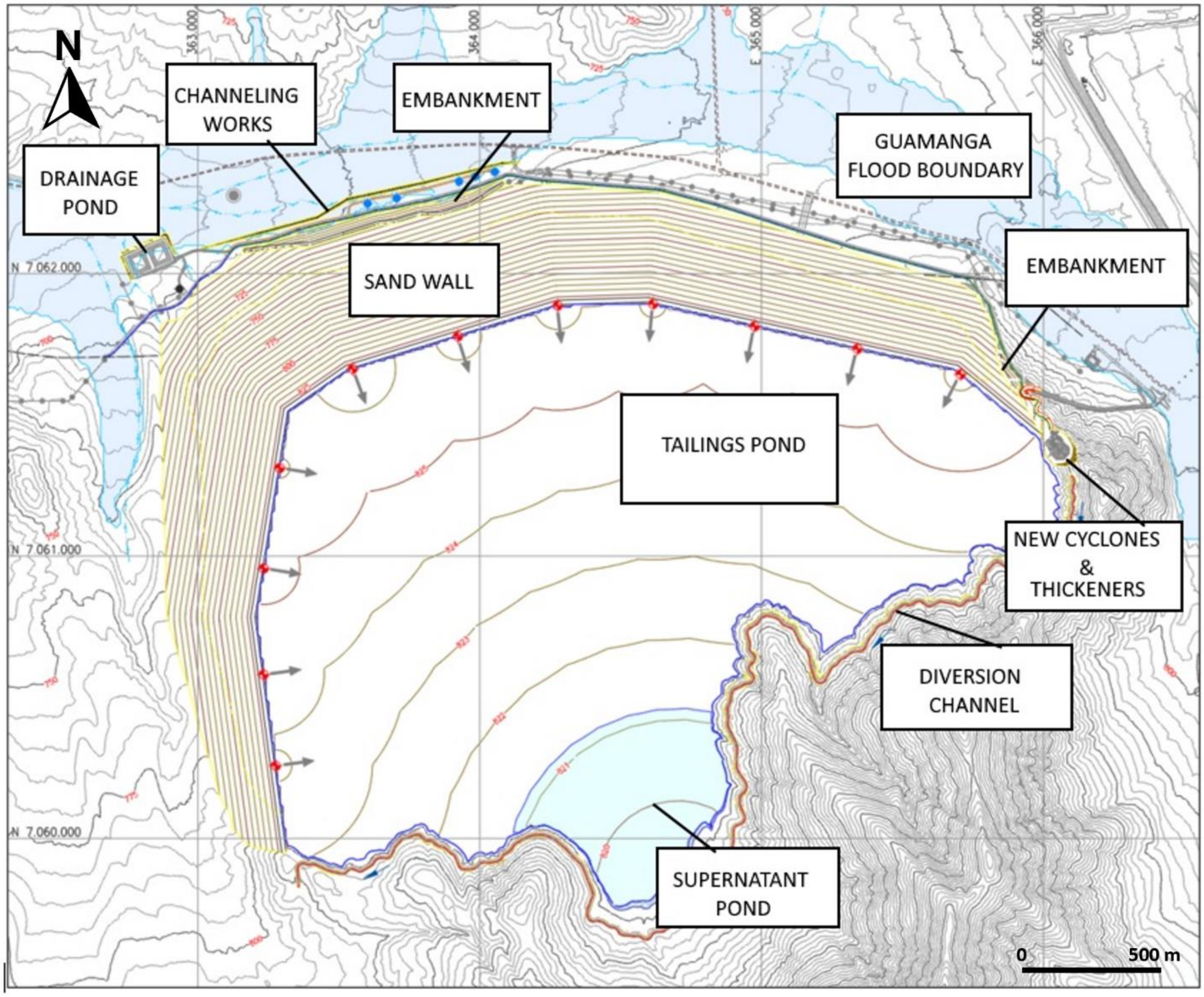
Item	Description	Unit	MVDP Case	MV-O Case	Variation
1.0	**Volumes**				
1.1	Sands dam wall – total volume	Mm³	36,03	82,43	46,4
1.2	Impounded tailings in TSF – total volume	Mm³	114,4	226,72	112,33
2.0	**Tonnages**				
2.1	Sand dam wall – total tonnage	Mt	62	141,79	82,34
2.2	Impounded tailings in TSF - total tonnage	Mt	168,90	354,72	185,82
2.3	Total capacity increase	Mt	230,90	496,51	265,61
3.0	**Elevations**				
3.1	Final elevation of sands dam wall	masl	794,50	828	33,5 m
3.2	Final elevation of tailings impoundment	masl	792	824	32 m
3.3	Total sand dam raise (above starter dam)	m	56,5	90	33,5

Figure 18-4: Tailings Storage Facility Re-growths



Source: Ausenco, 2024.

Figure 18-5: MV-O TSF – Final Stage - Elevation 828 masl



Source: Figure prepared by Ausenco, 2024.

18.4.3.3 Modifications to the MVDP TSF design

The design criteria for the extension of the wall to 828 masl follow the same guidelines as for the current facility. However, due to the increased capacity of the TSF, some adjustments must be made to account for the effect of climate change, the increased deposition rates, and the knowledge gained during the construction of the MVPD TSF.

18.4.3.3.1 Containment System

- Sand Dam

In addition to the elevation increase of the sand dam, to prevent its raise from encroaching into the neighboring basin, a bend will need to be introduced at the north section of the dam. This change in the axis must be implemented when the dam reaches an elevation of 768 masl. For the same reason, before the dam reaches 828 masl, a dam must be constructed at the pass separating the deposit basin from the adjacent basin.

Likewise, to prevent the new footprint of the facility from entering the flood zone (this study takes into account the effects of climate change on the Guamanga creek), a borrow dam will need to be constructed at the toe of the sand dam, along with minor works to channelize the creek. These works must begin before the dam reaches 803 masl. The crest width, slopes, and central axis construction will remain unchanged.

Based on subsequent geotechnical campaigns following the deposit design, a new study identified the need for updated deformation models to rule out the necessity of ground improvement beneath the sand dam of the TSF.

18.4.3.3.2 Seepage Management Systems

The seepage management system will follow the guidelines proposed in the MVDP, with necessary adjustments due to the increased area and height of the sand dam.

- Impermeabilization system

As part of the feasibility engineering of the TSF raise, a preliminary impermeabilization study recommends evaluating the use of LLDPE in place of the HDPE geomembrane and increasing the geotextile thickness to better withstand the additional loads imposed by the increased height of the deposit.

- Drainage system

Due to the increase in the dam footprint and the rise in sand deposition rates, a progressive update of the drainage system will be necessary from an elevation of 773 masl the primary drainage system will need to be enhanced over a total length of 8.7 km, with the addition of secondary drains totaling 3.1 km.

- Drainage ponds

Considering the effects of climate change on peak flow estimates for the Guamanga creek, some additional river defenses will need to be added to the existing ones in the drainage system collection pond. Additionally, the increased rate of sand deposition will reduce the water residence time in the ponds, necessitating a study on either increasing the pond capacity or enhancing the resilience of the associated pumping system.

18.4.3.3.3 Wells

When the dam reaches 812 masl, the well curtain will need to be relocated, requiring the repositioning of existing 9 wells.

18.4.3.3.4 Non-Contact Water Management System

The existing diversion channel, designed for the MVDP TSF, will remain operational until an elevation of 797 masl. After that, a new diversion channel will come into operation, allowing the management of non-contact water until the end of operations. The new diversion channel is designed to collect maximum precipitation for a 50-year return period and has been verified for a 100-year return period, considering climate change effects. The new diversion canal will have a length of 5 km and will feature linings similar to those used in MVDP.

18.4.3.3.5 Instrumentation and Monitoring

During the feasibility study for the TSF expansion, modifications to the geotechnical instrumentation were reviewed, concluding that two additional instrumentation sections, similar to the existing ones, should be incorporated at the north and south ends of the dam. It was also noted that some additional instrumentation would need to be replaced in the future to ensure continuous measurements until the end of the facility's lifecycle.

18.4.4 Modifications to the Waste Dump

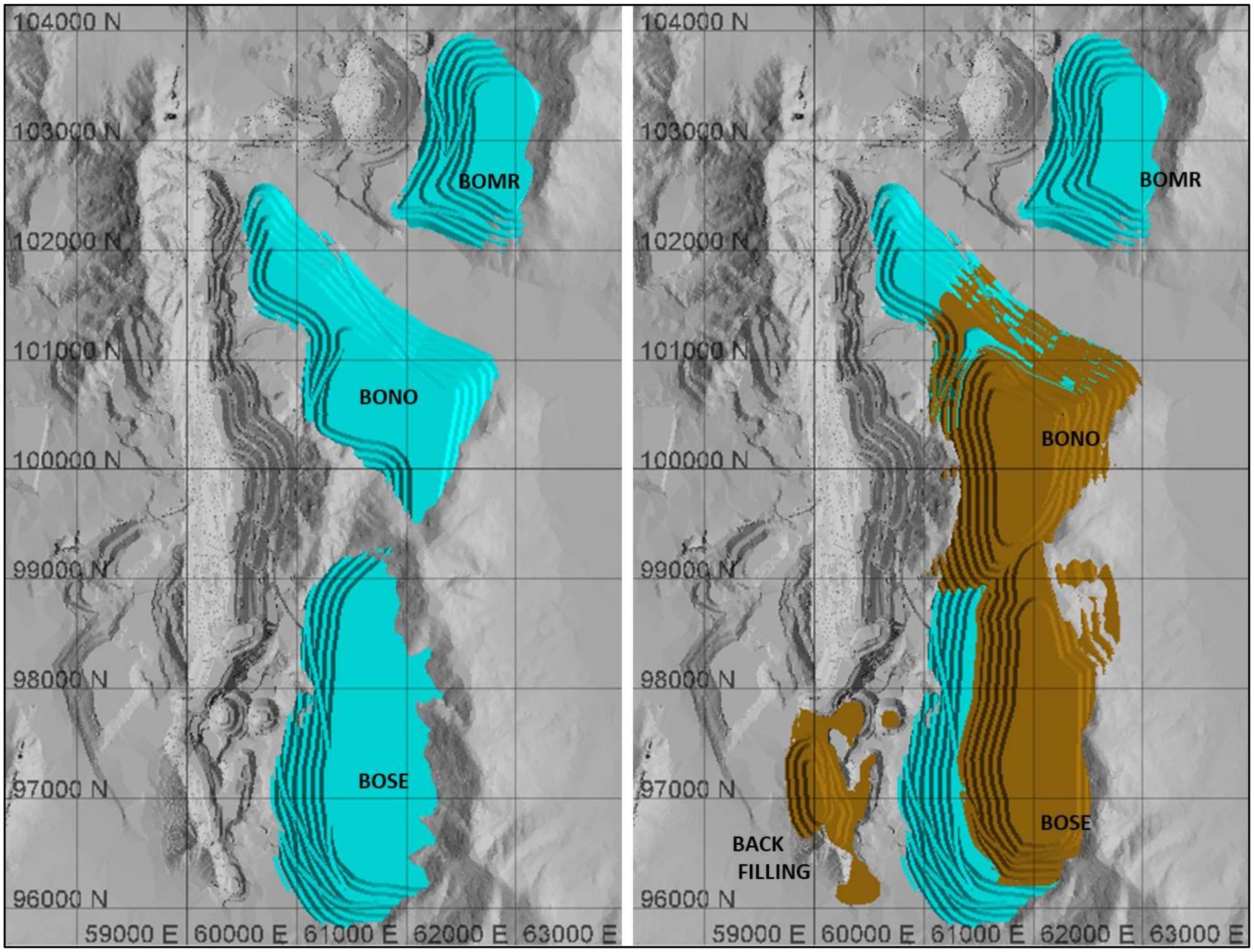
The existing disposal sites for MVDP have a total capacity of 1000 Mt. With the inclusion of new phases for the MV-O plan, the capacity needs to be expanded to 1600 Mt, which will not impact the permits in place nor require additional geotechnical studies. A comparison of the waste dumps over the life of mine under MV-O and MVDP is shown in Figure 18-6.

Table 18-2: Waste Dump Capacity

Item	Description	Unit	MVDP Case	MV-O Case	Variation
1.0	**Area - Footprint**				
1.1	BOMR Waste Dump	m^2	1,774,733	2,258,591	483,858
1.2	BONO Waste Dump	m^2	3,233,969	4,356,944	1,122,975
1.3	BOSE Waste Dump	m^2	3,692,110	4,491,698	799,588
1.4	Waste Dump – total footprint area	m^2	8,700,812	11,107,233	2,406,421
2.0	**Tonnages**				
2.1	BOMR Waste Dump	Mt	248,330	268,330	20,000
2.2	BONO Waste Dump	Mt	499,623	812,997	313,374
2.3	BOSE Waste Dump	Mt	499,754	728,647	228,893
2.4	Waste Dump – total tonnage	Mt	1,247,707	1,809,974	562,267
3.0	**Elevations**				
3.1	BOMR Waste Dump	#	1,150	1,150	0
3.2	BONO Waste Dump	#	1,130	1,250	120
3.3	BOSE Waste Dump	#	1,110	1,260	150

Total waste dumps design capacity exceeds mined waste requirement. This also considers backfilling the depleted oxides pits with 150Mt in the later years of the LOM to reduce haul cycle times.

Figure 18-6: Plan View of the LOM Waste Dumps for MVDP Versus the MV-O Waste Dumps



Source: Capstone, 2024. Note: Grid indicates scale. Grid squares are 1 km x 1 km. MVDP (left) and MV-O (right).

18.5 Comment on Section 18

MV-O considers minimum modifications to the existing MVDP infrastructure to allow the plant to meet a potential throughput target of up to 45 kt/d. All modifications will be carried out in parallel with operation during and between major shutdowns of the plant.

The TSF maximum capacity is 496.51 million tonnes, which exceeds the capacity required by the MV-O LOM, which corresponds to 400.20 million tonnes.

Finally, it is important to mention that technical analyses were performed to determine that the increase in tailings deposition rate, due to the increased throughput rate, will not significantly change the water balance. Most importantly, no impact on the recirculation rate from the TSF pond is expected, ensuring no impact on production.

19 MARKET STUDIES AND CONTRACTS

19.1 Cathode Marketing

Mantoverde currently produces copper cathode from oxide ore, the cathodes are transported 400 km to the Antofagasta International Terminal Port (ATI) in the city of Antofagasta or to the Angamos Port located 75 km north of Antofagasta, at a cost of US$28.73/t plus VAT (IVA in Chile). The cathodes are 99.99% Cu, they are certified under ISO 9001 and are London Metal Exchange Grade A (with the symbol MV). The cathodes are exported to China, Korea, Taiwan, USA and Europe.

Mantoverde entered into offtake agreements relating to cathode production with Anglo American, along with Capstone's Mantos Blancos operation, which were amended and re-stated on August 31, 2019. Under the agreements, Mantoverde and Mantos Blancos were required to sell, and Anglo American was required to buy, all of the production of copper cathodes, until the aggregate sum of cathodes delivered from Mantoverde and Mantos Blancos reaches 275,000 t, which was achieved mid-September 2024. New cathode off-take agreements will be tendered under spot, annual or multi-year contracts. The price for cathodes is determined based on the monthly average LME copper price plus a premium.

19.2 Market Capabilities

Capstone currently markets copper concentrate from its four mining operations and has established a reputation as a reliable supplier of high-quality concentrates and copper cathodes. Capstone has existing commercial sales contracts covering all production of varying quantities and tenors. Current production is currently delivered to counter parties in Mexico and Chile, as well as exported to Asian and European destinations. During 2023, Capstone generated gross revenue of $1,422.4 million primarily from the sale of over 450,000 dmt of concentrate and 50,000 t of cathode from all its operations. MV-O's production is expected to average of 91,000 Mt (contained copper during the first 12 full years of operation) starting at the end of June 2024.

19.3 Copper Concentrate Market

Since 2000, China has played a leading role in the global copper market, both as a significant importer of raw material in the form of copper concentrate and as the world's leading consumer of refined copper. The volume of copper concentrate imported by China has surged from virtually nothing in 2000 to 27.5 Mt in 2023, and it now accounts for more than half of the global refined copper consumption.

In 2023, global refined copper production reached 25.8 Mt, with a steady average growth rate of 1.9% per annum projected until 2033. The peak of this growth is expected between 2024 and 2025, coinciding with substantial capacity expansions in Asia.

China's smelting and refining capacity is projected to expand by 3.3 Mt to 13.8 Mt by 2025, and further increase to 14.8 Mt by 2033. This growth trend is mirrored in other parts of Asia, where new refined production facilities in India and Indonesia will contribute to an average regional growth rate of 3.1% per annum, leading to a total capacity of q 4.6 Mt by 2033.

Global refined and total copper consumption is forecast to grow at a Compound Annual Growth Rate (CAGR) of 2.2% (copper cathodes) and 2.7% (total of all copper consumption) for an overall average growth of 1.9%, between 2023 and 2033. These projections reflect a strong demand outlook for copper, particularly in emerging markets, and highlight the need for sustained investments in production and refining capacity to meet future demand.

The demand for refined copper is a pivotal indicator of growth for developed and developing nations. While copper smelters are dispersed across various regions, the bulk of these facilities are concentrated in Asia. However, the ultimate choice of smelter location hinges on logistical considerations, as this can significantly influence long-term offtake arrangements and financial returns. Secondary factors include the potential to link offtake agreements with financing arrangements and strategic diversification goals.

A range of potential smelter counterparts are available for direct sales contracts:

Domestic:

- Smelters within Chile, such as Codelco's Potrerillos and Glencore's Altonorte.

Export:

- Brazil (Caraiba).
- Germany, Sweden, Bulgaria, Spain (Aurubis, Hamburg; Aurubis, Pirdop; Boliden, Ronnskar; Freeport, Huelva).
- China (Jiangxi, Tongling, Jinlong, Daye, XGC, Jinchuan, Yunnan).
- Japan (Sagaoseki, Naoshima, Onahama, Niihama, Hibi) .
- Korea (LS MnM).
- Philippines (PASAR).
- India (Hindalco, Birla, Vedanta, Sterlite (if it resumes operations); Adani, Kutch Copper, Gujarat).

Geographical diversification serves as a risk mitigation strategy in marketing, albeit with attention also on factors like credit risk and performance risk. The preference for direct sales agreements will likely focus on Asian smelters unless finance-linked contracts offer a compelling alternative.

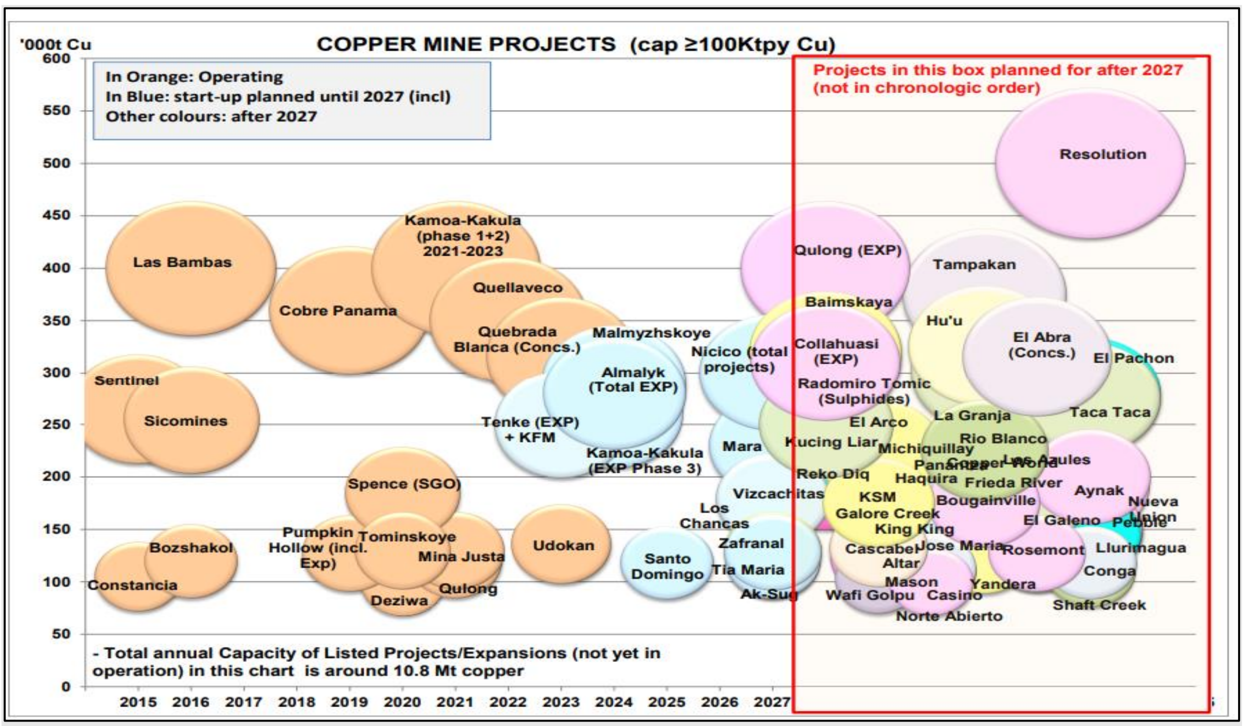
19.4 Supply

The current level of mine supply is expected to be insufficient to meet demand beyond 2026, especially after the peak in production at 26 Mt. In the subsequent forecast period to 2033, mine output is expected to dwindle by 4.6 Mt to 21.4 Mt. This decline in mine production is primarily attributed to the declining ore grades at existing mines, coupled with insufficient capital investment to offset these production reductions.

While a few new mines are projected to begin production before 2026, most capital expenditures are allocated towards maintaining the production levels of existing mines. This underinvestment relative to the projected demand has been primarily driven by depressed copper prices that have fallen below project hurdle rates. These economic challenges are further compounded by escalating risks such as water scarcity, more stringent environmental regulations, increased energy costs, political instability, and resource nationalism.

Despite the existence of numerous copper resource projects worldwide, shown in Figure 19-1, it is estimated that only 9 Mt of potential annual supply is considered economically viable. This quantity barely offsets the decline in baseline copper supply over the period up to 2033, underlining the precarious balance between supply and demand in the global copper market.

Figure 19-1: Copper Mine Projects



Source: International Copper Study Group, 2023. Note: The planned start-up date for Capstone's Santo Domingo Project shown in the figure is an interpretation by International Copper Study Group presented in "The World Copper Factbook 2023". Capstone has not sanctioned a construction decision as of the date of this Technical Report.

19.5 Demand

China remains the primary catalyst for the expected rise in global copper consumption, with industrial production (IP) forecast to grow at a steady 2.7% annually until 2030, shown in Table 19-1. This projection, based on a 2022 baseline, implies a corresponding 2.7% annual increase in copper demand during the same period, with China contributing around 40% of this overall growth. By this estimation, copper demand is poised to grow by a substantial 6.3 Mt by 2030, compared to the 2022 levels.

A key driver of this growth is the burgeoning renewable energy infrastructure sector, which is expected to emerge as the primary engine of global copper demand expansion. The imperative to integrate numerous small-scale electricity generation units into the power grid is set to significantly boost copper demand. This trend is exemplified by China's installation of 216 gigawatts (GW) of new solar generation capacity in 2023, surpassing any other nation's historical total, and a remarkable 20.7% increase in wind generation capacity (75.9 GW) in the same year.

Furthermore, the transition to offshore generation, alongside the proliferation of electric vehicles (EVs) and their charging infrastructure, will also drive significant demand for copper. While EV growth, particularly in China, is currently modest, manufacturers in the Western world are gearing up for substantial production escalations. The combined global increase in passenger EV production is projected to boost copper demand by an additional 1.5 Mt by 2030 (see Table 19-1).

This forecast underscores the critical role of China and the renewable energy and EV sectors in the global copper market's future growth trajectory. The sector's evolution is poised to fundamentally reshape copper demand dynamics, underscoring the pivotal role that innovation and sustainable energy solutions will play in shaping the future of the industry.

Table 19-1: Copper Consumption by Components through 2030

Base Copper end use Summary (kt)	2019	2020	2021	2022	2023f	2024f	2025f	2026f	2027f	2028f	2029f	2030f	CAGR%	
													'22-'25	'22-'30
Global total consumption	24,944	24,436	26,010	26,324	27,114	27,727	29,041	29,904	30,507	31,208	31,913	32,651	3.3	2.7
(semis consumption excluding fabrication losses) (%)	1.1	-2.0	6.4	1.2	3.0	2.3	4.7	3.0	2.0	2.3	2.3	2.3	-	-
Decarbonization (Power gen, EV, batteries, decarb grid)	1,410	1,739	2,262	2,813	3,850	4,461	5,370	5,902	6,366	6,911	7,456	8,043	24.1	14.0
y/y (%)	2.9	23.4	30.1	24.4	36.9	15.9	20.4	9.9	7.9	8.69	7.9	7.9	-	-
Global share (%)	5.7	7.1	8.7	10.7	14.2	16.1	18.5	19.7	20.9	22.1	23.4	24.6	-	-
Power generation	1,037	1,217	1,463	1,544	2,241	2,542	2,980	3,166	3,307	3,503	3,668	3,823	24.5	12.
Wind	268	392	462	320	450	470	595	617	595	641	709	742	22.9	11.1
Solar	495	543	704	919	1,471	1,764	1,978	2,147	2,310	2,469	2,569	2,700	29.1	14.4
Battery grid storage (BESS)	17	34	58	183	237	250	297	295	323	358	395	432	29.7	11.4
Cu battery content	12	23	37	151	153	136	154	139	146	158	163	163	17.7	1.0
Cu in battery installation infrastructure	6	11	21	32	85	114	143	155	177	200	232	269	0.7	30.6
Renewables related grid expansion	177	226	267	312	500	594	680	742	796	860	916	973	65.4	15.3
Core grid expansion	2,677	2,425	2,323	2,604	2,625	2,642	2,671	2,690	2,702	2,713	2,724	2,735	29.7	0.6
Ex-China grid ex-power gen	537	491	304	267	270	268	275	282	285	288	292	295	0.9	1.2
China grid ex-power gen	2,140	1,934	2,018	2,336	2,355	2,374	2,396	2,408	2,417	2,425	2,432	2,440	1.0	0.5
China core grid development	1,070	967	1,009	1,168	1,156	1,145	1,133	1,122	1,111	1,100	1,089	1,078	0.8	-1.0
China grid on a cyclical trend	1,070	967	1,009	1,168	1,198	1,229	1,263	1,286	1,306	1,325	1,344	1,362	-1.0	1.9

Base Copper end use Summary (kt)	2019	2020	2021	2022	2023f	2024f	2025f	2026f	2027f	2028f	2029f	2030f	CAGR%	
													'22-'25	'22-'30
Electric vehicles and charging	179	262	474	774	871	1,076	1,413	1,699	1,939	2,190	2,478	2,816	2.6	1.5
Passenger vehicles	130	178	362	573	722	839	1,069	1,287	1,471	1,641	1,822	2,054	22.2	17.5
Commercial vehicles and buses	31	28	38	64	69	86	133	197	235	285	333	392	23.1	17.3
Supply-chain stock adjustments	9	45	49	97	27	82	116	80	64	60	76	76	27.9	25.5
E-bikes and E-trikes	2	3	4	4	4	5	7	9	11	12	14	17	27.1	21.5
EV charging infrastructure	6	8	23	37	50	64	86	127	158	192	232	277	33.2	28.8
Other automative	2,300	1,996	2,000	2,060	2,190	2,257	2,174	2,016	1,921	1,849	1,778	1,696	1.8	-2.4
ICE (PV+CV)	2,384	1,990	1,954	1,891	1,909	1,907	1,822	1,743	1,693	1,631	1,551	1,477	-1.2	-3.0
Hybrid	96	105	132	188	193	243	239	247	239	231	235	247	8.4	3.5
Supply-chain stock adjustments	-189	-126	-142	-24	38	111	105	343,	-3	-17	-20	-20	-	-
All other/cyclical	18,557	18,276	19,425	18,848	18,449	18,366	18,825	19,296	19,518	19,735	19,955	20,177	0.0	0.9
y/y (%)	2.2	-1.5	6.3	-3.0	-2.1	-0.4	2.5	2.5	1.1	1.1	1.1	1.1		
Building and Construction	6,964	7,007	7,236	6,726	6,442	6,403	-	-	-	-	-	-	-	-
Consumer goods	4,163	4,118	4,416	4,121	4,4033	3,926	-	-	-	-	-	-	-	-
Machinery and Capital Goods	2,935	2,759	3,083	3,272	3,337	3,337	-	-	-	-	-	-	-	-
Other	4,496	4,392	4,690	4,728	4,686	4,700	-	-	-	-	-	-	-	-

Source: Citi Research, ICA, Bloomberg, BNEF, 2023-2024

19.6 Supply/Demand Gap

A shortage of copper is likely over the period 2026 to 2030. Potential mine expansions will only cover the loss in production from maturing mines.

Growth in demand could subside for a while, as occurred during the global COVID pandemic. Substitution could also occur to some degree, e.g., aluminum for medium voltage wiring if price differentials become large.

The supply/demand gap will naturally rise over time. Over the period 2026 to 2030, an average annual supply gap of just over 5 Mt/a is predicted. Given that deficits of this level do not (and cannot) occur in commodity markets, prices will rise to incentivize projects to fill the gap.

19.7 Price Projections

According to various industry sources, to incentivize sufficient copper supply, it is expected copper prices, at a minimum, will need to remain over $8,280/t or $3.75/lb. in the long-term. The average consensus estimates from 24 analysts around the world expect copper prices to average $3.94 (revised to $4.07 as of June 2024 as per CIBC) per pound in the long-term. This increased over the past 12 months as analysts factor in higher capital and operating costs amongst other factors including geopolitical, environmental, and skilled labour tightness concerns.

Predicting prices as far out as 2033 poses challenges. Projections must factor in several key considerations:

- Return on Investment for Miners: For the long-term stability of the industry, miners must see a reasonable return on their investments, ensuring their ability to replace depleting resources with new production. Thus, price growth needs to outpace marginal cost growth.
- Inventory Adjustments: A drawdown in inventories, whether due to changes in market demand or industry practices, can impact price dynamics.
- Long-Term Price Levels: Prices must remain high enough over the next decade to fill the gap from 2026 to 2033.

In terms of supply, analysis of recent projects such as Quebrada Blanca 2, Mantoverde, and Reko Diq, alongside projections for existing mines, helps estimate total copper concentrate supply. The addition of solvent extraction/electro-winning (SX/EW) copper production provides a complete picture of the copper units available for the market. Historical production forecasts often have a 5% margin of error due to unforeseen factors like labour strikes, natural disasters, or equipment failures.

On the demand side, smelter production forecasts rely on historical operating rates. The difference between supply and demand indicates the market's state – whether it's in surplus or deficit. This approach offers insight into the market's trajectory and potential influences on future prices, despite the inherent uncertainty of long-term forecasting.

19.8 Treatment and Refining Charges

The pricing structure for the treatment and refining of copper concentrates (TC/RCs) is a key indicator of the broader supply-demand balance. Traditionally, the yearly benchmarks have been pivotal in guiding producers and smelters in negotiations. More often now, producers and smelters are forming unique agreements, tailored to individual value propositions. This shift allows for greater flexibility and can lead to arrangements that capitalize more effectively on added value.

For smelters, the stability of a fixed-term agreement spanning a year is often preferable. Many miners are willing to operate under such terms as well. However, this approach does not always align with the pursuit of more lucrative terms based on value propositions, thereby complicating the prediction of TC/RCs over a longer term.

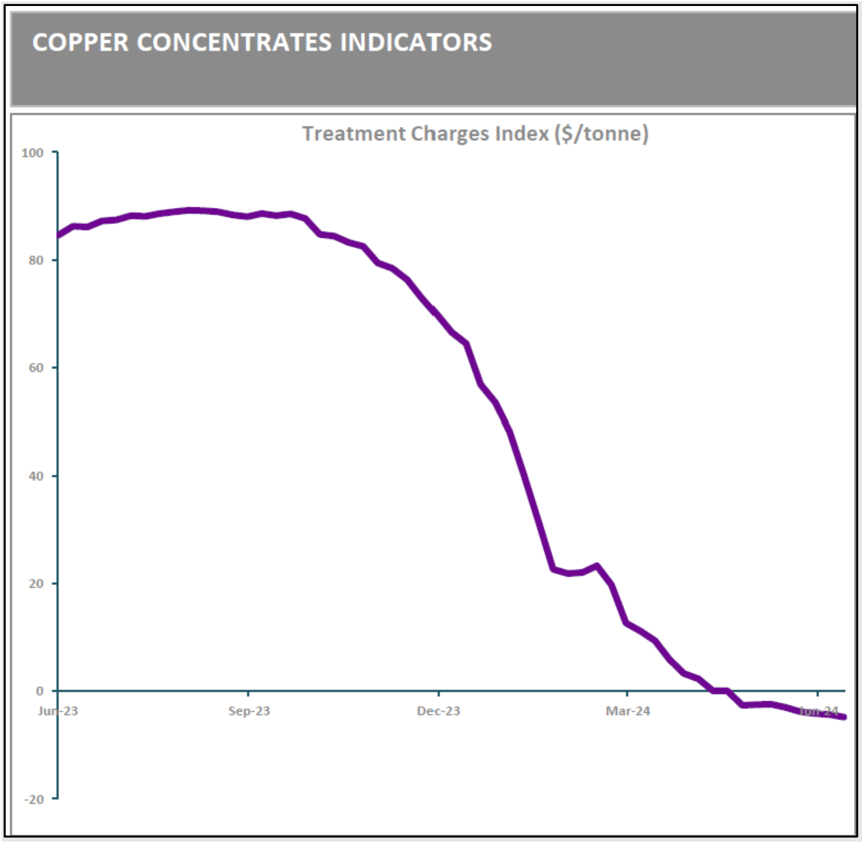
Currently, it is estimated the average Chinese copper smelter requires a TC/RC of $65/6.5 cents to reach a breakeven point. Beyond this, by-product credits and currency exchange rates can influence profitability.

Considering the expected shortage of concentrate in the future, a reasonable expectation is a decrease in TC/RCs. This projection is significant given that, despite the relatively balanced market of 2017 and 2018, where benchmark TC/RCs were agreed at $92.50/9.250 cents and $82.25/8.225 cents respectively, the 2024 benchmark terms settled at $80.00/8.00 cents (Han, 2023), very close to 2019's benchmark number $80.80/8.08 cents. This decision, made considering the expected deficit in concentrate supply, suggests that even a relatively small deficit could considerably reduce TC/RCs, potentially pushing them below smelter breakeven points. The possibility of this deficit persisting could lead to the closure of some high-cost smelters, subsequently driving up copper prices and TC/RCs as the market seeks equilibrium.

Longer-term TC/RCs of $75/7.5 cents are perceived as reasonable, offering smelters an operating margin while still acknowledging a market likely to be in deficit for an extended period.

Following the forced closure of the Cobre Panama mine in October 2023, market TC/RCs started to decline precipitously. By May 2024, Traders and some Chinese smelters were purchasing copper concentrates at negative TC/RCs.

Figure 19-2: Copper Concentrate Treatment Charges Index ($/tonne), June 2023 to June 2024



Source: Fastmarkets, June 2024.

While negative TC/RCs are not sustainable longer term, Traders have concluded terms with mines through 2027 at TC/RCs below the equivalent of $25/2.5 cents, indicating they see a deficit market continuing. As both Mantos Blancos and Mantoverde sales are predominantly direct with smelters, TC/RCs are expected to follow annual benchmark terms. While benchmark terms have averaged near $75/7.5 cents over the last 10 years, it is expected this will be lower over the next 3 years as the market is expected to remain in deficit and then only rise to the smelter breakeven level for the period after 2027. Estimated benchmark TC/RC for years 2025 to 2027 are:

- 2025 - $30/3.0 cents.
- 2026 - $45/$4.5 cents.
- 2027 - $60/$6.0 cents.

19.9 Copper Concentrate

19.9.1 Mantoverde Likely Product Specifications

Capstone’s copper concentrate analysis of various industry sources was used to purposes of assess marketability, including the impact of deleterious elements and penalties for the copper concentrate.

China has imposed strict regulations on the importation of copper concentrates. Specifically, importing materials that exceed limits for certain deleterious elements is prohibited. Copper concentrate must contain less than 0.5% arsenic, 6% lead, 1,000 ppm fluorine, 500 ppm cadmium, or 100 ppm mercury for any one element, by weight, per dmt of concentrate.

As the world's leading consumer of seaborne copper concentrates in terms of tonnage, China's regulations significantly impact the marketability of copper concentrates. Any concentrate surpassing the specified limits is likely to face substantial discounts compared to 'clean' copper concentrates in the market.

In this context, the Mantoverde concentrate is considered a clean quality, expected to have an average copper content of 31.3% (min. 25.1% – max. 34.0 %) while containing negligible levels of deleterious elements, particularly low in arsenic and antimony (for further detail, refer to Section 13, Table 13-7) (Table 19-2).

Table 19-2: Copper Concentrate Specification (from Metallurgical Test Work)

Element	Unit	Expected	Minimum	Maximum
Copper(Cu)	%	31.3	25.1	34.0
Iron(Fe)	%	30.4	19.9	33.0
Sulphur(S)	%	32.9	26.8	36.0
Gold(Au)	g/t	3.5	2.7	5.0
Cobalt(Co)	g/t	1,512	588	1,783
Zinc(Zn)	ppm	26	74	120
Lead(Pb)	ppm	476	194	675
Cadmium(Cd)	ppm	0.50	0.50	1.00
Mercury(Hg)	ppm	1.98	0.38	3.00
Silicon(Si)	%	0.061	0.002	0.100
Arsenic(As)	ppm	38.3	0.63	45.0
Chlorides(Cl)	%	0.05	0.05	0.1
Antimony(Sb)	ppm	5.5	2.50	8.0
Molybdenum(Mo)	ppm	19.1	1.00	32.0
Fluorine(F)	ppm	100	0.00	200

Regarding chlorine, these elements are typically below the penalty thresholds, and even if they occasionally exceed these limits, only nominal penalties are expected.

The global copper concentrate market also features a sizable secondary market, with commodity traders facilitating the trade of over 17 Mt annually. These traders often offer more favorable net terms compared to smelters, along with increased flexibility in terms of delivery locations.

In summary, the copper concentrate market is governed by stringent regulations set by leading consumers like China. For suppliers, adhering to these standards is crucial for maintaining market access and optimizing pricing. The Mantoverde concentrate is particularly well-positioned due to its quality, but attention must be paid to ensure compliance with evolving regulatory requirements.

The marketing strategy for Mantoverde is expected to target both the premium and conventional markets. Capstone's marketing group has been proactively engaging with various parties from both segments, and there have been encouraging expressions of interest.

Given the expected clean composition of the Mantoverde concentrate, Capstone foresees substantial demand from trading companies that specialize in blending complex materials with cleaner concentrates. These companies typically prefer clean concentrates like Mantoverde's due to their compatibility with blending processes and enhanced value proposition.

Moreover, the inherent appeal of high-quality concentrates also makes it highly coveted by both smelters and traders alike. This further supports the expected strong demand for Mantoverde's copper concentrate in the market.

19.10 Marketing Strategy

Copper concentrates can be sold under several different agreements, including long-term offtake agreements or frame contracts, mid-term agreements or mid-terms, evergreen and spot contracts and trader offtake agreements.

Copper concentrates when delivered to end users are sold based on a payment which is the sum of the addition of all the component 'payable' metals (copper, gold, silver and sometimes platinum and palladium) less the sum of the TCs, less the sum of the RCs for copper, silver, and gold, less the sum of any penalties and discounts. The amount of payable metal and TC/RCs vary from contract to contract.

Copper content is paid for at 96.5% of the full and final assayed quantity (after final assays are agreed), but this would typically be subject to a minimum deduction of one unit of copper. For all practical purposes if the copper content drops below 28.6% in the concentrate, the payable copper will be the copper content less one unit (e.g., if the copper content is 28% the amount payable would be 27% (i.e., 28 - 1)). The price paid for the copper content is usually a monthly average price based on a quotational period of the London Metal Exchange (LME) quoted cash copper settlement price (i.e., the seller's price of copper at the midday close on the LME) on each day during the average period.

For precious metal payments there are two different methods commonly used to determine the payable quantities:

- Asian-style pricing: Gold is payable on a percentage based on a sliding scale of the full and final assayed quantity, provided that there is a minimum of 1 g per dmt of gold contained. Below this threshold, gold is not payable.

- European style pricing is Gold is payable on the full and final assayed quantity of gold less a deduction of 1 g per dmt. In concentrate containing less than 1 g per dmt there would be no payment.

Another variation on the actual price paid for each metal (copper and gold) occurs when copper concentrates are exported to the United States. Prices paid for the payable metals are based on the Comex (the New York Mercantile Exchange's Commodity Exchange division) traded first position (essentially the spot month). This is only used for concentrate delivered from overseas to, or internally within, the United States.

Copper concentrate long-term frame contracts are typically highly sought after by smelters. Smelters, especially in China, have been operating at well below capacity. Over the last decade spot TC/RCs for concentrate supply have been running at a discount of $15 - $20 on the long-term contract rates. There is a worldwide trend for concentrates to have a higher average arsenic content. The trend is partly a result of general trends in large orebodies currently being mined but is also due to higher commodity prices for contained copper, gold and silver in concentrates. This results in many high arsenic mines (e.g., in Peru, Mexico, the Philippines and Bulgaria) continuing production, despite very high penalties for the arsenic content of the concentrates produced compared to the clean concentrate market.

19.11 Concentrate Marketing Assessment

It is expected that the copper concentrate produced will have a low gold content (around 3-6 g per dmt) and a low silver content (around 8 g per dmt). As a result, there will be considerable value to pricing the material on an Asian-style basis as opposed to a European-style pricing. If this percentage is payable using European terms the payment will be very low, but with Asian terms over 89% would be payable.

Several factors must be taken into consideration when assessing the best contract partners for Capstone on a long-term basis. Factors such as freight, assay bias, geographic location and contractual party reliability must be considered. The normal contract split for mines the size of Mantoverde are:

- 60% to 70% on long-term frame contracts with four or five major smelters
- 10% to 20% to traders on 3–5-year fixed TC/RCs or TC/RCs to be negotiated annually
- 20% to 30% spot contracts for up to 1 year with traders at fixed terms.

Consideration must be given to the terms and timing of the contract renewals so that renewals do not all occur at the same time.

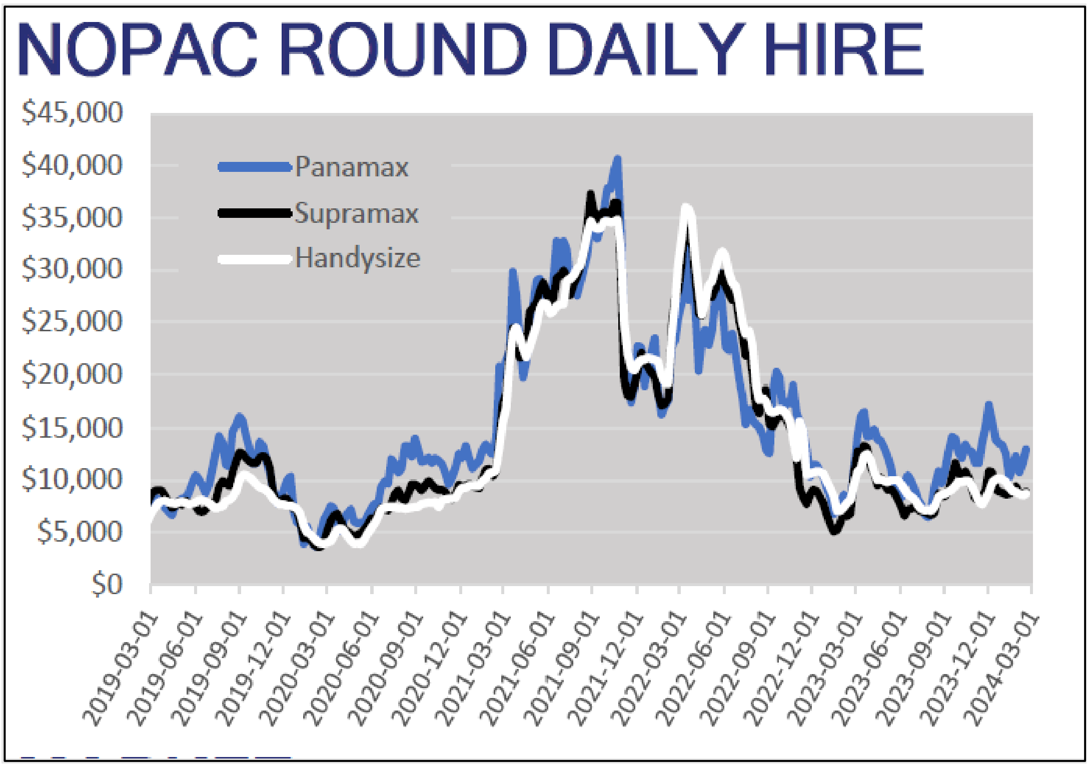
19.12 Logistics

It is planned to ship the copper concentrate from the Angamos port for at least years 2024, 2025 and 2026. However, alternate ports such as Barquito and Punto Padrones are being investigated which would result in lower logistics costs. Revisions or new applications for DIA permitting may be required. However, due to the low monthly shipment tonnages (20,000 to 25,000 t per month), most of the shipments will be made using Handymax vessels (<40,000 DWT to 45,000 wmt carrying capacity) or Supramax vessels (up to 60,000 DWT).

Ocean freight rates are primarily driven by two factors: energy (fuel) costs and the supply/demand of vessels. The International Maritime Organization (IMO) requirement that vessels reduce emissions is expected to contribute to higher freight rates as higher cost low sulphur fuel are being used. Other alternative fuels are being considered but are also likely to come with a higher cost.

For the period January 2019 to January 2024, indicative time charter rates for Panamax/Supramax/Handymax vessels, shown in Figure 19-3 (the primary type of vessels used in transporting copper concentrate) have been volatile but are currently $11,000 per day.

Figure 19-3: Indicative Time Charter Rates



Source: World Wide Shipping & Chartering, 2024.

Currently there is an adequate supply of vessels and new builds are effectively replacing scrapped vessels. The dry bulk market is expanding at 3% per year. However, current order books are thin as current freight rates do not provide an incentive for owners to expand their fleets beyond replacement. If this scenario continues, an annual increase of 5% in freight rates is expected. A price of $40 /dmt was used in the economic analysis in this Report.

19.13 Opportunities for Synergies with Mantoverde Mine Santo Domingo Logistics

The close proximity of the Mantoverde Mine and Capstone's Santo Domingo project (pending construction and production decisions) provides economies of scale and shared use of logistic resources that will provide reduced logistics costs for both operations. Land transport, using trucks with containers, can be deployed to either site under a single service agreement that would reduce the unit costs. Port storage facilities would be shared with the product from each mine segregated but could be blended or substituted depending on grades. The increased volume of exports also provides for lower marine freight rates by combining cargos on the same vessel which is attractive to vessel owners and provides some leverage in negotiating lower freight rates in Contracts of Affreightment.

19.14 Contracts

Contracts are based on bids where three or more bidders were invited. The proposals are evaluated considering the price, technical quality, health and safety requirements and reliability, based on an evaluation matrix.

Decreases in energy costs (electricity and diesel) and the devaluation of the CLP have allowed Mantoverde to re-negotiate some contracts with key suppliers.

Electrical power is provided under contract by Guacolda Energia S.A. For the purpose of the Project financial analysis, the electric power consultant to Mantos Copper, Electroconsultores, has recommended the power price projections shown in Table 19-3 with a long-term value of US$107.6 /MWh. The current contract with Guacolda Energía S.A is valid until the end of 2034.

Table 19-3: Electric Power Price Projection

Item	Unit	2024	2025	2026	2027	2028	LT
Power Price	US$/MWh	201.2	108.2	110.6	110.8	107.6	107.6

Acid is supplied through annual contracts with a diversified supplier base comprising nearby acid producers (Potrerillos, Paipote), smelters in the Antofagasta Region (Altonorte), direct supply from international suppliers (Peru, Republic of Korea, China) and traders. Annual contracts are normally secured for 90% and the balance is supplied through spot purchases during the course of the year. Forward looking assumptions for sulphuric acid supply, demand and price included in this report were obtained from independent expert reports (CRU, Cochilco and INCOMARE Ltda.).

Fuel is provided by COPEC based on a contract that ends in November 2025.

Explosives are supplied by MAXAM Chile S.A. based on a contract that ends in December of 2028.

The total contractor workforce (for operations) considered in the LOM plan for Mantoverde varies from 400 to 450. These contractors operate under a number of contract terms.

It is envisaged that similar-style contracts would be negotiated with the main contract suppliers when the current contract periods end.

19.15 Comments on Section 19

The QP has reviewed the marketing studies and metal price forecasts. The information supports the assumptions in the Technical Report and are acceptable for use in the economic analysis in Section 22.

20 ENVIRONMENTAL STUDIES, PERMITTING, AND SOCIAL OR COMMUNITY IMPACT

20.1 Introduction

Capstone Copper Mantoverde Development Project case (MVDP) has an environmental impact assessment study (EIA) approved by the Chilean environmental authority as environmentally favorable through Exempt Resolution No. N° 16/2018 of the Atacama Region Evaluation Commission (environmental qualification resolution, RCA). It covers the combined sulphide and oxide mining plan up to 2035, mining oxide material, and up to 2040, mining sulphide material.

Several Projects were environmentally approved through an environmental impact declaration (DIA) along with the MVDP, as described in the next table, including Resolution 16/2018 and subsequently Resolution 132/2021, which expanded the oxide process.

Table 20-1: Mantoverde Operation Projects with Environmental Permits (RCAs)

RCA	Name of the Project	Description	Approved facilities
Ordinary Environ-mental Report 3542/1993	EIA Manto Verde Project	The Project consists of the open-pit exploitation of the Manto Verde mine for the extraction of 5,400,000 (tonnes / year) of mineral and its processing through heap leaching, solvent extraction, and production of 42,000 (tonnes / year) of fine copper, through an electrowinning process.	- Manto Verde open pit.
			- Waste dumps: North Dump, South Dump and East Dump.
			- Dump Norte Marginal Ore Leach Pond.
			- Crushing and Classification Plant
			- Agglomeration
			- Leach Piles (Static)
			- SX Plant
			- EW Plant
			- Acid Supply.
RCA 83/1998	DIA Modification Manto Verde Electro-winning warehouse	Project involves adding 12 electrolytic cells to the west side of the nave, representing 7.7% growth over the current facility.	- EW (a) Plant Expansion
RCA 79/2000	DIA Project Construction of heap leaching Pads.	The Project contemplates the construction of a 100 ha field for the leaching of marginal minerals in the area of the former South Dump, which is part of the original design of the Manto Verde project.	-Marginal mineral leaching pad (South Dump Phases I, II and III)
			- Ponds
RCA 18/2002	DIA Mantoruso Open Pit Mining Project at the Mantoverde Mine.	The project corresponds to the northern extension of the Mantoverde exploitation and involves the exploitation of a mineralized body located 2 km north of the Mantoverde deposit.	- Mantoruso Pit
			-Mantoruso waste rock dump
			- Internal road between Mantoruso and Mantoverde
RCA 110/2002	DIA Leaching Process Optimization Project.	The purpose of the project is to incorporate technological improvements in equipment and operations at the mineral processing plant at the Mantoverde mine, to improve the overall performance of Operation Mantoverde.	- Crushing plant improvement (a) - EW plant improvement (b) - Conversion of permanent heap leaching system to dynamic heap leaching (a) - Gravel dump facility

RCA	Name of the Project	Description	Approved facilities
RCA 209/2008 DIA	Project Installation of Backup Generators Mantoverde Division.	The purpose of the project is to install, through three generators, a power of 3.75 MW as a backup This power is equivalent to 15% of the total power of the operation	- Electric generation units
RCA 163/2009 DIA	Project Exploitation of Oxidized Minerals Pit Celso, Kuroki, Franko.	The project consists of the exploitation of the Celso, Kuroki and Franko 3 pits	- Celso Pit - Kuroki Pit - Franko Pit-1 - Franko Pit-2 - Access roads - BOSU, BOSE, BONO and BOMR waste dumps)
RCA 088/2011	DIA Mantoverde Desalinated Water Supply Project	The project consists of the installation of a Desalination Plant, located in the Flamenco sector, for current and future production plans.	- Desalination plant - 40 km of power lines - 2 pumping stations - Desalinated water discharge pipe - Sea water collection system
RCA 50/2012	DIA Project for the Exploitation of Pit Point 62 and Expansion of the Kuroki and Franko Norte-Sur Pit.	The project consists of the exploitation of new phases of the Kuroki and Franko Norte-Sur pits and the exploitation of a new deposit of oxidized minerals called Point 62.	- Expansion of the Kuroki Pit (new phase) - Franko Norte Pit - Franko Sur Pit - Pit Point 62 - Access roads
RCA 114/2014	DIA Mantoverde Operational Continuity Project (2).	The Project consists of the incorporation to the existing Operation at the Mantoverde mine, the exploitation of the Kuroki phase 3, Celso and Antena pits (or Mantoverde Expansion). In addition, it includes phase IV of the South Dump, expansion of the leached rubble dump and expansion of minor works.	- Kuroki Pit Phase 3 - Celso Pit - Antena Pit - Phase 4 of the South Dump (a) - Extension of rubble dump stage 3 - Remodeling and Expansion of Mine Offices - New Mine Operators Modules - New Gym Camp DMVE - Remodeling and Expansion of Maintenance Offices - Choquera (casino) Mine Expansion - Mine Workshop Expansion - Module K Extension - New Parking - Casino - Access improvements - Recreation Room and Pub - Served Water Treatment Plant - Landfill. - Disposal of waste materials from pits in BONO, BOSE and BOMR dumps.
RCA No. 202/2016	DIA Mantoverde Oxidized Minerals Exploitation	The Project considers the modification of the pits in the following areas: Celso Zone, Kuroki Zone, Mantoverde Zone and Franko Zone Including the expansion of the current sterile dumps (BONO, BOSE; BOMR), as well as the expansion of the	-Ripios Dump -Sanitary Landfill Expansion -Expansion Mantoruso Dump (BOMR) -Expansion of the North Dump (BONO)

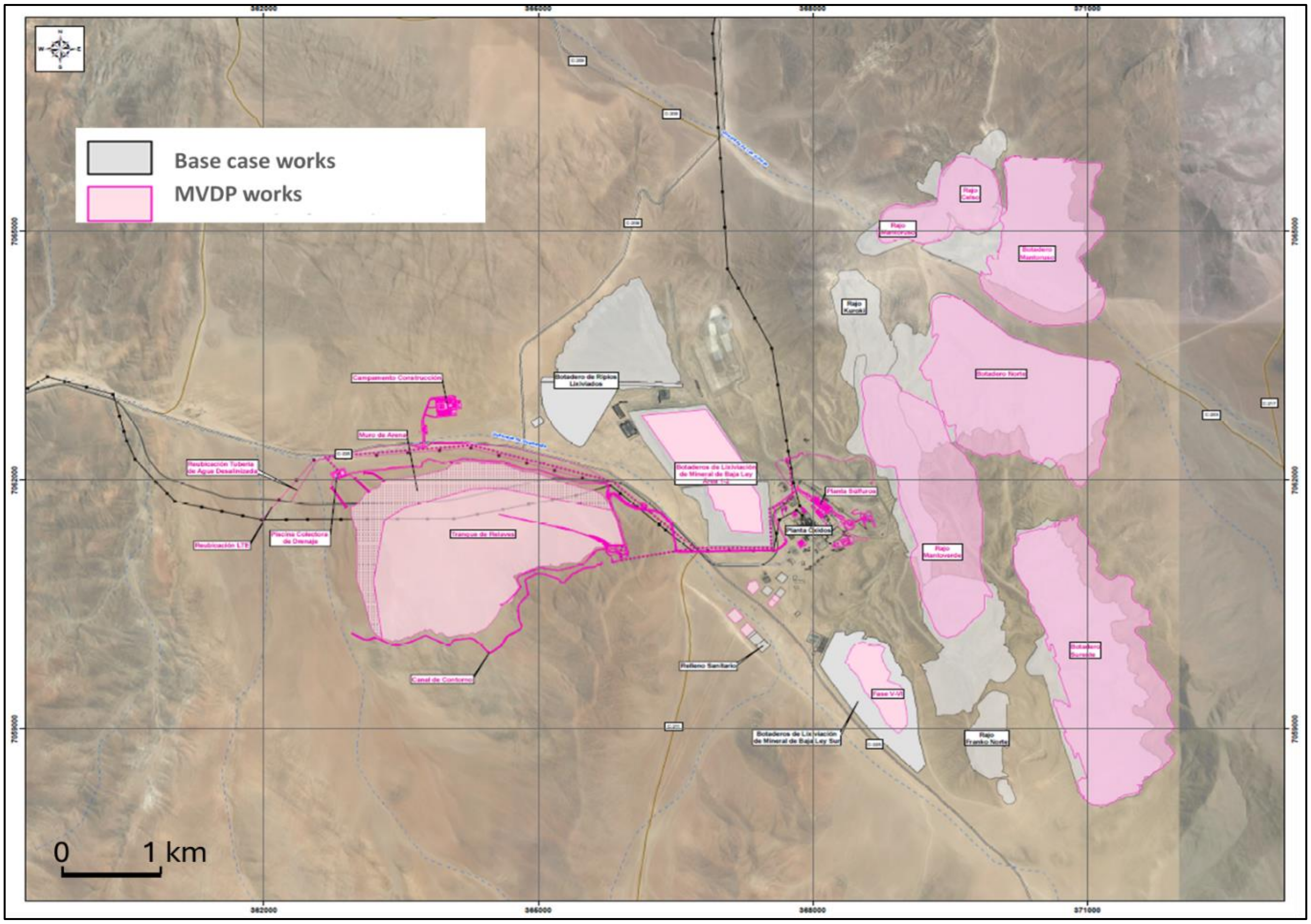
RCA	Name of the Project	Description	Approved facilities
		waste dump, Gravel/borrow pit and the Sanitary Landfill. This project extends the useful life until 2024.	-South-East Dump Extension (BOSE) - Celso Pit Zone - Kuroki Pit Zone - Mantoverde Pit Zone
RCA 119/2018	DIA Supply Autonomy Optimization Project, Oxide Line, Mantoverde Facility.	The project includes the construction of two acid tanks of 10,000 tonnes each	- (2) 10,000 tonne Acid Tanks
RCA N° 16/2018	EIA Mantoverde Development Project	The project consists of the exploitation and processing of sulphide minerals, whose reserves are estimated at a total of 230 Mt, to obtain copper concentrate with gold content. Considers the construction and operation of a new concentrator plant; Likewise, the expansion of pits and the expansion of dumps is required. In addition, the construction and operation of a tailings dam is contemplated, using the construction methodology with a sand wall and thickened slats. On the other hand, the additional electrical energy required will be obtained through the repowering of the existing 110 kV electrical transmission line; and the demand for water will be supplied through an increase in the water treatment capacity of the current desalination plant from 120 L/s to 380 L/s.	-Tailings Dam -Waste dumps -Desalination Plant -Electric line repowering -Camp Construction -Sewage El Salado Camp -Mantoverde, Mantoruso and Celso Pits -Concentrator Plant -Waste Yard
RCA N° 132/2021	DIA Oxide Optimization Mantoverde	The Project corresponds to an operational optimization of the Mantoverde mining site, mainly in its oxide processing line. The proposed optimizations consider updating the mining plan and increasing processing capacity	Dump Sur II - Sulphide stockpile - Stockpiles for Oxidos Sur and Oxidos Norte - Expansion of personnel accommodation - LOM extension - Tails Dump East increase- StaticPad to Tails Dump transformation

20.2 Mantoverde Development Project Case (MVDP)

The general objective of MVDP was to give operational continuity to Mantoverde, diversifying its operations through the exploitation and processing of sulphide minerals, which correspond to hypogenous mineral associated with the oxide ore currently in exploitation, to obtain copper concentrate, maintaining the production of oxidized ore, which will be processed using the existing facilities of the oxide treatment process.

After the MVDP EIA, Mantoverde submitted an Environmental Impact Statement (DIA) "Optimization supply autonomy of oxides line" (RCA N° 119/2018) and the DIA, "Mantoverde Oxides Optimization Project," which is already approved (RCA 132/2021).

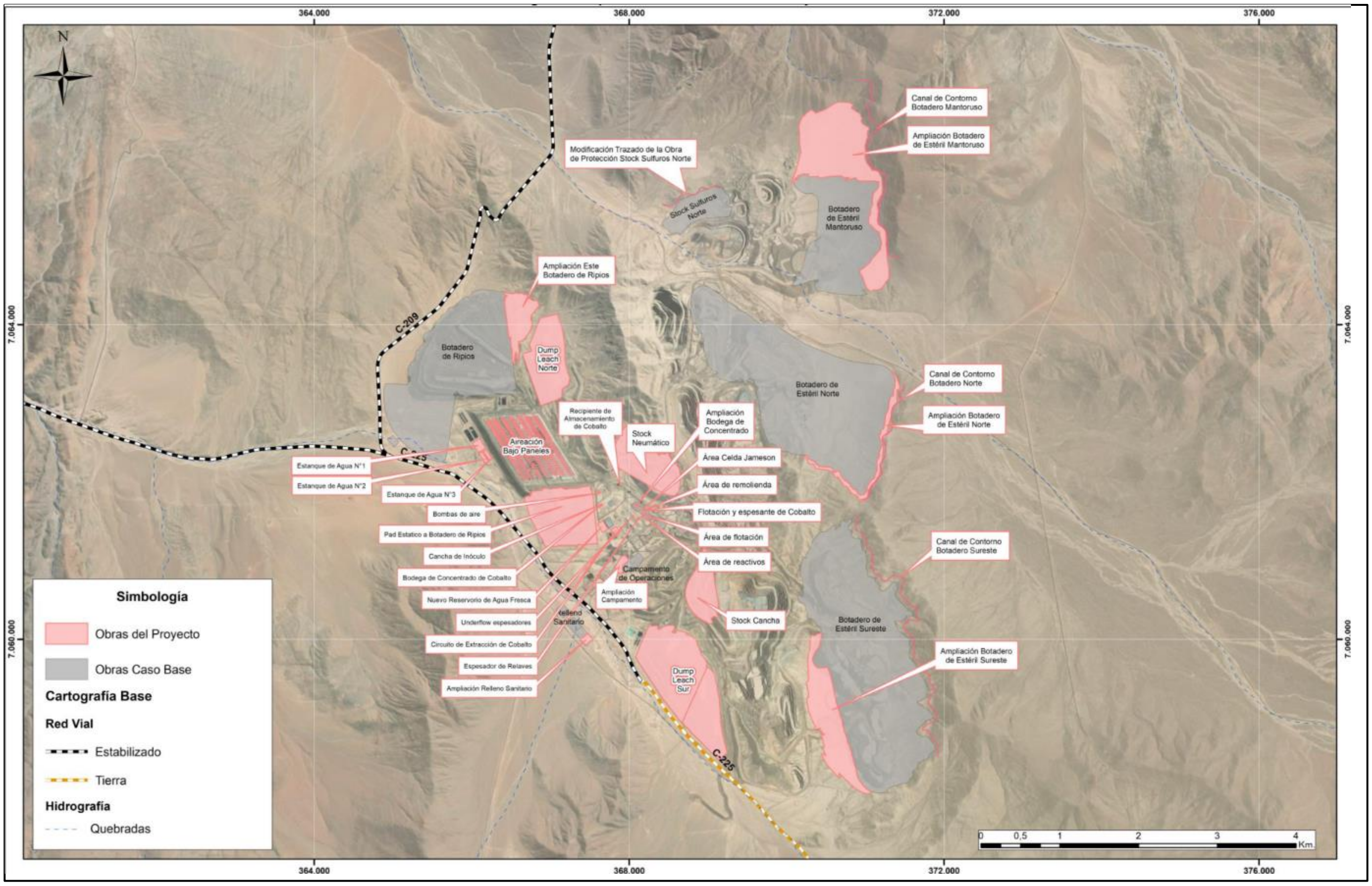
Figure 20-1: MVDP EIA Project Works (adapted from EIA)



Source: Capstone, 2018.

Within 2024 Capstone Copper has a new permit under environmental assessment process called “Modification and optimization of the Mantoverde mining facility in Chañaral commune and transportation of concentrates to ports in the Mejillones area", which corresponds to an optimization of the sulphide mineral operations and processes at the Mantoverde mining site, whose objective is to increase the processing capacity of this mineral in the concentrator plant line. This rate increase will be implemented on the current sulphide capacity generated from the “Mantoverde Development Project”.

Figure 20-2: Optimization Mantoverde Project Works (MV-O)



Source: Capstone, 2024.

20.2.1 MVDP Major Modifications to the Base Case

Table 20-2 presents a summary of the works, parts and actions that are considered as modifications to the base case.

Table 20-2: MVDP Modifications to the Base Case

Parts / Actions / Physical Works	Base Case	Modification associated with MVDP
Mine and Plant Area		
Exploitation pits	Mantoverde Zone Area: 185 ha	Mantoverde Zone:
	Start Elevation: 1,010 masl	Final Area: 296 ha
	Final Height: 750 masl	Start Level: 1,130 masl Final Height: 520 masl
	Estimated total pit depth: 260 m	Estimated pit depth: 610 m
	Celso- Mantoruso Zone Area: 102 ha	Celso-Mantoruso Zone Final area: 107 ha
	Start elevation: 1,020 masl	Start elevation: 1,030 masl

Parts / Actions / Physical Works	Base Case	Modification associated with MVDP
	Final elevation: 810 masl	Final elevation: 660 masl
	Estimated total pit depth: 210 m	Estimated total pit depth: 370 m
Waste rock dumps	Mantoruso dump (BOMR) Area: 197 ha BOMR Capacity: 140 Mtonne Starting point: 950 masl Final height: 1,015 masl Height: 65 m	Mantoruso dumps (BOMR) Final area: 252 ha Total capacity: 302 Mton Start elevation: 930 masl Final Level: 1,120 masl Height: 190 m
	North dump (BONO) Area: 311 ha BONO Capacity: 140 Mtonne Starting point: 942 masl Final height: 1,030 masl Height: 88 m	North sterile dump (BONO) Final area: 349 ha Total capacity: 462 Mtonne Starting point: 930 masl Final Elevation: 1,130 masl Height: 200 m
	Southeast waste dump (BOSE) Area: 282 ha Capacity: 194 Mtonne Starting point: 945 masl Final level: 1.075 masl Height: 130 m	Southeast waste dump (BOSE) Final area: 363 ha Total capacity: 458 Mtonne Starting point: 920 masl Final Elevation: 1,150 masl Height: 230 m
Leach dumps (Low grade mineral)	South (Dump Leach South): Capacity: 100 Mtonne. Final elevation: 925 masl Area: 100 ha	MVDP capacity: phase VI: 12 Mtonne. Total capacity Phase I, II, III, IV, V and VI: 112 Mton
Leached rubble dumps	Leached rubble dumps Area: 158 ha Capacity: 194 Mtonne	Final elevation: 945 masl Area: 100 ha No modification for MVDP or MV-O
High grade mineral leaching heap	Dynamic Leaching Heap Leaching area: 85 ha Characteristics Piles: Length: 1,100 m Width: 90 m Height: 7 m	Conversion Dynamic heap to Permanent at the end of the high-grade oxide process, to begin processing low-grade oxide minerals on permanent heaps. Area: 98 ha Capacity: 45 Mton
Process plant (Sulphides)	Non-existent	Sulphide plant: - Processes: Crushing, grinding, flotation, thickening and filtering of concentrate, conduction, and tailings disposal. - Estimated area: 12.7 ha. - Average ore processing capacity: 12 Mt /a, (Max. 13 Mt /a Nominal 11.6 Mt/a) - Average copper concentrate production capacity of 264 kt /a, and a maximum of 310 ktpy
Auxiliary Facilities	Base case facilities	Base case facilities will be preserved, and the following facilities will be added: - Civic Neighborhood - Drinking water treatment plant - Mine-Sulfur Line Plant Area - Expansion of the new Sanitary Landfill Area - Truck Maintenance Workshop - Waste Transfer Yard - Construction Yard

Parts / Actions / Physical Works	Base Case	Modification associated with MVDP
Tailing Dam Area		
Tailings dam	Non-existent	Design capacity: 230 Mton. Area: 420 ha
Main wall of tailings dam	Non-existent	Sand wall, central axis method, downstream
		Average final height: 80 m
		Final length: 4 km approx.
Relocation of LTE Desalination Plant and piping of Impulsion System	Existing works	Modification due to interference with the Tailings dam works.
Auxiliary Facilities	Non-existent	- Tailings Dam Area Camp
		- Drinking water treatment plant (Tailings Dam Area Camp).
		- Sewage Treatment Plant (Tailings Dam Area Camp).
Tailings dam related works	Non-existent	- Tailings Dam with Earthfill starter dam - Foundation drainage system - Cut-off trench - Contour canal
		- Drainage collector pond.
		- Box platform and sand pumps - Thickener platform.
		- Fixed cyclone station platform - Water tank platform and box and thickened slat pumps
		- Complete tailings pumping system platform
		- Platform for the transport and distribution of tailings
		- Projected emergency discharge platform
		- Water recovery platform
		- Emergency pond
		- Contact water recovery pipe - Groundwater Pumping wells and groundwater monitoring wells - Geotechnical Instrumentation
Desalination Plant and Impulse System		
Desalination Plant	Suction flow Operating flow of 1,344 m^3 / h	Increase in suction operational flow to 3,000 m^3 / h
	Discharge flow 1,988 m^3 / h.	Discharge flow: 1,632m^3 / h
	Discharge salinity: 58,126 PSU	Discharge Salinity: Increase in salinity to 68,012 PSU
	Reverse Osmosis: 2 racks of membranes	Reverse Osmosis: addition of 3 racks of reverse osmosis membranes. (Total of 5).
	Produced water: 120 l / s	Produced water: 380 l / s

Parts / Actions / Physical Works	Base Case	Modification associated with MVDP
	Reagents: pH adjustment, corrosion, and scale	Proportional increase in the number of reagents.
Desalinated water supply line	Pumping stations: - Number: 2 (Desalination plant and intermediate). - Number of Pumps per station: 3 units (2 operation and 1 in reserve).	Pumping stations Number: No modifications Number of pumps per station: 3 units are added for a total of 6 (5 in operation and 1 in reserve).
Electric Transmission Line		
Electric Transmission Line (LTE) 110 kV	Power 47.3 MW	Repowering of the LTE Power: 81 MW Reversal of crossings, earthworks and retensioning works

20.2.2 Tailings Storage Facility (TSF) Monitoring

Monitoring of the TSF is discussed in Section 18.3.5.3 and Section 18.4.3.3.

20.3 Modifications After the MDVP RCA

As previously stated, after the Mantos Copper Mantoverde Development Project EIA, Mantoverde submitted an Environmental Impact Statement (DIA) “Optimization supply autonomy of oxides line”, to expand the autonomy of availability of sulphuric acid that ensures the operation of the mining operations, through the incorporation of two storage tanks of 10,000 tons each. This corresponds to RCA N° 119/2018.

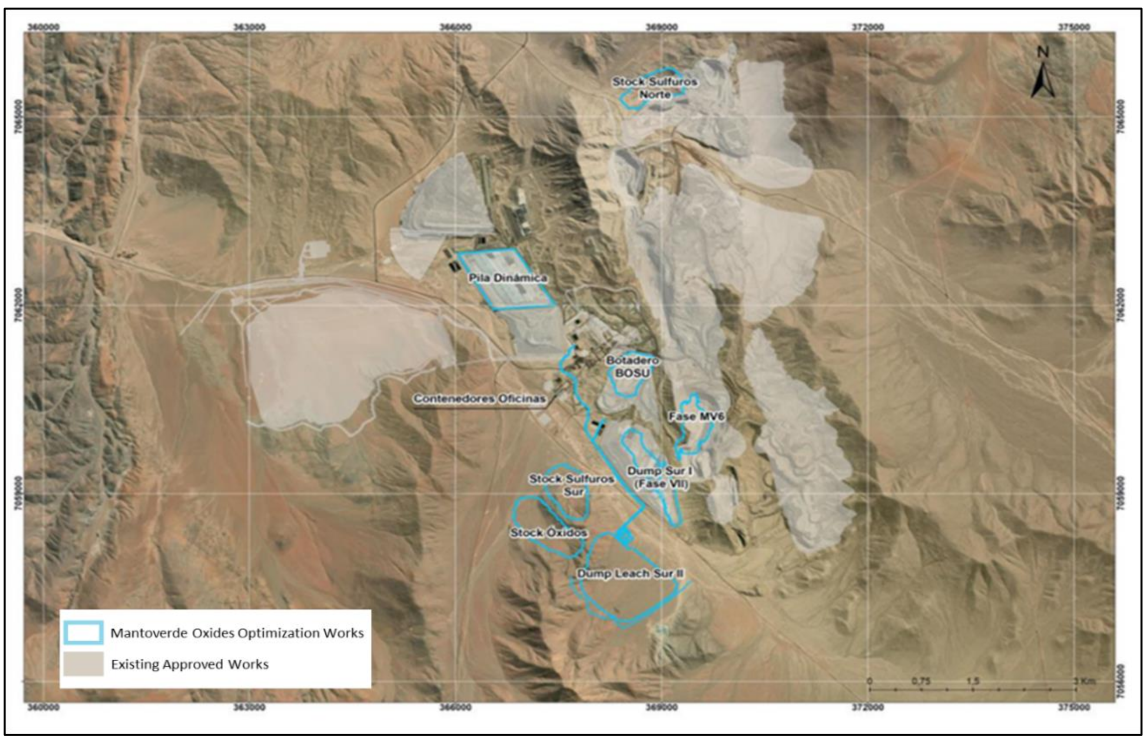
Later, another DIA was presented and approved “Mantoverde Oxides Optimization Project”, to grant the continuity to the operation of oxides, allowing to maintain the production of high purity copper cathodes, authorized at 60,000 t/year by RCA N° 110/2002, during the useful life of the oxide line (until 2036). This considers increasing the extraction rate of oxidized ore by 18 Mt /a or 1.5 Mt /month and increasing the total capacity of the low-grade ore leach dumps by 197 Mt. This DIA modifies the Mantoverde Development Project, and the Project for Exploitation of Oxidized Minerals Pit Celso, Kuroki and Franko, approved by RCA No. 163/2009.

Table 20-3: Oxides Optimization Project Modifications to the MVDP & Base Case

Aspect	Reference	Condition Approved	Condition Modified
Mine Exploitation	RCA N° 16/2018	• Total High-grade Mineral (Heap): 5,757 kt	• The extraction of high-grade ore (Heap) of the project is modified from 5,757 kt to 109,214 kt
		• Total Low-grade Mineral (Dump): 98,149 kt.	• The extraction of low-grade ore (Dump) of the project is modified from 98,149 kt to 144,852 kt.
		• Total Sterile: 926,850 kt	• The total waste extraction of the project is modified from 926,850 kt to 1,064,986 kt.
	RCA N° 16/2018	• Celso - Mantoruso Zone	• Expansion of the Mantoverde exploitation area, specifically the expansion called phase VI.

Aspect	Reference	Condition Approved	Condition Modified
		• Mantoverde Zone	• This expansion incorporates 29 additional hectares of mine exploitation.
		• Kuroki Zone	• The rest of the Mantoverde Operation pits will maintain the approved design criteria, not increasing either the approved surfaces or depths, with the exception of the incorporation of the Mantoverde South Phase 6.
		• Franko North Zone	
Low-grade leaching	RCA N° 16/2018	• Dump Leach Sur I (phase V and VI).	• Incorporates Phase VII to Dump Leach South
		• Conversion from dynamic heap to low-grade leach dump	• Incorporates Dump Leach South II
		-	• Conversion from dynamic heap to low-grade leach dump is delayed until 2031.
		-	• Phase VII of Dump Leach South and the new Dump Leach II add an additional 197 Mt of low-grade ore leaching capacity.
Waste rock dumps	RCA No. 163/2009	Dump BOSU:	• Reprocessing of all BOSU material deposited to date.
		• approved area of 45.6 ha.	• The quantity of low-grade minerals to be reprocessed from the BOSU dump (previously considered sterile) is 26 Mt.
		• Approximate approved capacity of 105 Mt	-

Figure 20-3: Mantoverde Oxides Optimization Works (Blue) And Existing Approved Works



Source: Capstone, 2024.

20.4 Baseline Studies

Baseline studies for the MVDP EIA were carried out during 2015 and 2016. Additionally, complementary baselines studies have been submitted in support of 2018 DIA "Optimization supply autonomy of oxides line", and 2020 DIA "Mantoverde Oxides Optimization Project."

The following baseline surveys has been completed:

- Physical media.
- Climate and meteorology.
- Air quality.
- Noise.
- Luminosity.
- Electromagnetic fields.
- Geology, geomorphology and geological risks.
- Soils.
- Vibrations.
- Water.
- Hydrology.
- Hydrogeology.
- Underground water quality.
- Terrestrial ecosystems.
- Flora.
- Fauna.
- Fungi, lichens and bryophytes.
- Marine ecosystems.
- Marine biota – biological communities.
- Hydrological resources.
- Cultural heritage.
- Landscape.

- Protected areas and priority sites for conservation.
- Natural and cultural attractions.
- Land use and its relationships with land planning.
- Human environment.
- Environmental Considerations/Monitoring Programs.

In its submissions, Mantos Copper has believed that the Oxide Case and the Mantoverde Development Project Case do not:

- Present health risks due to the quantity and quality of effluents, emissions, or residues.
- Generate significant alteration with respect to resettlement, displacement, relocation of human communities, and will not significantly alter life systems and customs of human groups.
- Have a significant impact on the location of populations, resources and protected areas, priority sites for conservation, protected wetlands, and glaciers, or affect the environmental value of the territory in which the operations will be sited.
- Generate a significant alteration in the relation to the landscape or tourist value of the area.
- Generate any significant alterations in relation to cultural heritage.

Potential impacts on flora and fauna habitats and a modification of groundwater levels were identified. Correspondingly, the MVDP Project RCA stablished Mitigation, Restitution and Compensation Measures, of which eight correspond to mitigation and eight to compensation. Among other control plans, a groundwater monitoring and control plan will be developed for the TSF. Several additional voluntary measures offered by Mantoverde were integrated in the MVDP RCA.

The Project considers a network of 18 level monitoring and pumping wells, which will be located in the Guamanga creek downstream of the tailings dam, which together will have a pumping capacity of 50 L/s, capacity above the infiltration flow rate estimated by the infiltration model of the reservoir. (16 L/s).

20.5 Permitting

Chilean mining projects require sectorial and environmental permits to be granted prior to mine construction and operation. Mantoverde will require additional sectorial and environmental permits beyond those already granted for the operating mine.

20.5.1 Environmental Permits

The latest approved EIA is for the Mantoverde Development Project Case. It covers the combined sulphide and oxide mining plan that would run to 2035, mining oxide material, and 2040, mining sulphide material.

A list of the approved RCAs-environmental permits is provided in Table 20-5.

Table 20-4: List of Approved Environmental Qualification Resolutions

Project		Resolution/Year
Manto Verde Project	EIA	Ord. 3542/1993
Modification Manto Verde Electro-winning warehouse	DIA	RCA N° 83/1998
Project Construction of heap leaching Pads.	DIA	RCA N° 79/2000
Mantoruso Open Pit Mining Project at the Mantoverde Mine	DIA	RCA N° 18/2002
Leaching Process Optimization Project.	DIA	RCA N° 110/2002
Project Installation of Backup Generators Mantoverde Division.	DIA	RCA N° 209/2008 DIA
Project Exploitation of Oxidized Minerals Pit Celso, Kuroki, Franko.	DIA	RCA N° 163/2009 DIA
Mantoverde Desalinated Water Supply Project	DIA	RCA N ° 088/2011
Project for the Exploitation of Pit Point 62 and Expansion of the Kuroki and Franko Norte-Sur Pit.	DIA	RCA N° 50/2012
Mantoverde Operational Continuity Project (2).	DIA	RCA N° 114/2014
DIA Mantoverde Oxidized Minerals Exploitation	DIA	RCA N° 202/2016
Mantos Copper Mantoverde Development Project	EIA	RCA N° 16/2018
Optimization supply autonomy of oxides line	DIA	RCA N° 119/2018
Mantoverde Oxides Optimization Project	DIA	RCA N° 132/2021

EIA: Environmental Impact Assessment. DIA: Environmental Impact Declaration

Capstone began a new permit in 2024 under environmental assessment process called "Modification and optimization of the Mantoverde mining facility in Chañaral commune and transportation of concentrates to ports in the Mejillones area", which corresponds to an optimization of the sulphide mineral operations and processes at the Mantoverde mining site, whose objective is to increase the processing capacity of this mineral in the concentrator plant line. This rate increase will be implemented on the current sulphide capacity generated from the "Mantoverde Development Project". This DIA was submitted in July 2024, with approval anticipated mid-2025.

In addition to the DIA, Mantoverde will require an approved EIA submission in order to increase the permitted capacity of the TSF, which would occur sometime during 2038 at the project plant throughputs. Additional waste storage capacity is also required. As such, the approved EIA would be required no later than 2035, although it may be advantageous to Capstone to process this earlier, pending future exploration and expansion plans.

20.5.2 Sectoral Permits

Mantoverde has developed a Master Plan for Sectoral Permits for the Operation, the Mantoverde Development, Project and for the Optimization supply autonomy of oxides line Project, to ensure that the applicable supporting documentation is appropriately provided to the regulatory authorities such that the correct permits are granted. This plan covers the following actions:

- Identify the permits that are required.
- Identify the technical and administrative requirements before requesting the permit.
- Prepare applications and send documentation to the authority.

- Receipt of approvals and authorizations.
- Establish documentation and administrative phases for approvals granted.

The sectorial permits that have been granted cover potable water, sewage and sanitation, landfill, and closure planning. Specific sectorial permits have also been granted for open pit mining activities.

Table 20-5: Environmental Sectoral Permits by RCA 16/2018 and RCA 132/2021

Permit	RCA	Description
PAS 115	RCA 16/2018	Permission to introduce or discharge harmful or dangerous materials, energy or substances of any kind into the waters subject to national jurisdiction
PAS 119	RCA 16/2018	Permit to carry out research fishing
PAS 132	RCA 16/2018	Permission to make archaeological, anthropological and paleontological excavations
PAS 135	RCA 16/2018	Permit for the construction and operation of tailings deposits since it is necessary to modify the deposit of fine tailings.
PAS 136	RCA 16/2018	Permission to Establish a Waste Dump or Mineral Accumulation
PAS 137	RCA 16/2018	Permit for the new Closure Plan, due to modifications in the mine site.
PAS 138	RCA 16/2018	Permit required for the construction of four Sewage Treatment Plants
PAS 139	RCA 16/2018	Permit for the construction, repair, modification and expansion of any public or private work for the evacuation, treatment or final disposal of industrial or mining waste
PAS 140	RCA 16/2018	Permit for the construction, repair, modification and expansion of any garbage and waste treatment plant of any kind or for the installation of any place intended for the accumulation, selection, industrialization, trade or final disposal of garbage and waste of any kind
PAS 141	RCA 16/2018	Permit for the construction, repair, modification, and expansion of the sanitary landfill
PAS 142	RCA 16/2018	Permit for any site destined to the storage of hazardous waste
PAS 146	RCA 16/2018	Permission to hunt or capture specimens of animals of protected species for research purposes, for the establishment of breeding centers or hatcheries and for the sustainable use of the resource
PAS 151	RCA 16/2018	Permission to cut, destroy or remove xerophytic formations
PAS 155	RCA 16/2018	Permit for the construction of certain hydraulic works
PAS 156	RCA 16/2018	Permission to make channel modifications
PAS 157	RCA 16/2018	Permission to carry out regularization or defense works of natural channels
PAS 160	RCA 16/2018	Permission to build outside the urban limits
PAS 136	RCA 132/2021	Permission to Establish a Waste Dump or Mineral Accumulation
PAS 137	RCA 132/2021	Permit for the new Closure Plan, due to modifications in the mine site.
PAS 156	RCA 132/2021	Permission to make channel modifications
PAS 157	RCA 132/2021	Permission to carry out regularization or defense works of natural channels
PAS 160	RCA 132/2021	Permission to build outside the urban limits

The main sectoral permits considered in the current environmental submission of the MV-O are:

Table 20-6: Main Sectoral Permits Considered in DIA

Permit	Description	Facility/Action involved in this permit
PAS 136	Permission to Establish a Waste Dump or Mineral Accumulation	Waste Dumps BONO, BOSE y BOMR re-design. Gravel dump extension. Static pad transform to gravel dump. “Cancha” and “Neumático” stocks
PAS 137	Permit for the new Closure Plan, due to modifications in the mine site.	Mine Closure Plan update.
PAS 141	Permit for the construction, repair, modification, and expansion of the sanitary landfill	Landfill extension.
PAS 156	Permission to make channel modifications	Waste Dump BOMR contour channel. Waste Dump BOSE contour channel.
PAS 157	Permission to carry out regularization or defense works of natural channels	Waste Dump BONO contour channel.
PAS 160	Permission to build outside the urban limits	Concentrator Plant new buildings. Mantoverde Camp extension. Cobalt Plant buildings.

Note: “Modification and optimization of the Mantoverde mining facility in Chañaral commune and transportation of concentrates to ports in the Mejillones area”

20.5.3 Permit Applications

The approved EIA is for the Mantoverde Development Project case. It covers the combined sulphide and oxide mining plan that would run to 2035, mining oxide material, and to 2040, mining sulphide material.

Mantoverde has developed a Master Plan for Sectorial Permits for Mantoverde, to ensure that the applicable supporting documentation is appropriately provided to the regulatory authorities such that the correct permits are granted. This plan covers the following actions:

- Identify the permits that are required.
- Identify the technical and administrative requirements before requesting the permit.
- Prepare applications and send documentation to the authority.
- Receipt of approvals and authorizations.
- Establish documentation and administrative phases for approvals granted.

At this stage, at least 350 separate permits were considered under the Mantoverde Development Project construction stage, remaining a few of them regarding the final construction, notice of start of operation and the final receptions of the works, since the MVDP is currently under ramp-up stage, planning the start of operation within 2024.

The previous permit strategy Master Plan gave the Capstone team sufficient time to process all the permits and to have in place all the required authorizations without delays to construction.

20.6 Closure Plan

The Mine Closure Plan was approved by SERNAGEOMIN on August 9, 2022, according to the Exempt Resolution N° 1384/2022. The plan was prepared using the requirements and guidelines of the Chilean mining safety standard, Supreme Decree No. 72/1985 of the Ministry of Mining, which was amended by Supreme Decree No. 132/2002. Law No. 20,551/2011, which regulates the closure of mining operations and Supreme Decree No. 41/2015.

The closure plan follows the provisions of the different Environmental Qualification Resolutions for the Mantoverde operation and describes the measures that must be undertaken for closure and reclamation. However, it does not include RCAs for Mantoverde Oxides Optimization Project, RCA132/2021.

The update of the closure plan, considering the Mantoverde Oxide Optimization Project (RCA N°132), was submitted on March 07th, 2023 and is still under the revision of SERNAGEOMIN.

The existing closure plan for Mantoverde has an estimated closure and post-closure cost of 1.460.102 UF for the existing installations, following the measures described as determined per the evaluation of the Mantos Copper Mantoverde Development Project, RCA 16/2018.

20.6.1 Physical And Chemical Stability

Closure measures regarding the physical stability consider the occurrence of seismic events of great magnitude and intense rainfall. Closure measures aim at stabilization if necessary, profiling part of the slope areas. For the physical stabilization of pits, dumps, and piles, it is considered to maintain the final slopes that result from their operation, and their evaluation and control as the mining activity ends. For the tailings dam, the integrity of the slopes will be monitored. At the request of SERNAGEOMIN, these safety measures Monitoring of physical and chemical stability will be carried out during the useful life of the mining site.

It is also considered the closing of access for each of the pits, dumps, and heaps, through the construction of a berm or parapet, in order to prevent the entry of vehicles and people. In the case of the camp and offices, where conditions are appropriate for the growth of vegetation, all disturbed and exposed surfaces will be covered with at least 0.15 m of soil and the area will be allowed to revegetate naturally.

In the closure stage, the Mine and Plant roads that will not be used during post-closure monitoring, will be blocked.

20.6.2 Closure Actions for Dismantling or Securing Stability

The closure measures that will be required to dismantle or secure the stability of the infrastructure used for the project are summarized in the following sub-sections. Prior to dismantling and demolition, the plan assumes removal of all power infrastructure. All equipment, wiring and in general all the elements installed in each of the areas will be dismantled and removed.

Buried elements (such as wiring and ducts) will be kept in their places, except for tanks and ducts used for fuel, acid and process solutions, which will be removed or dismantled prior to recovering the fluids, washing and/or cleaning accordingly.

There will be no facilities, structures, or equipment within sight, with exception of the facilities, structures or equipment that will be used for post-closure activities.

20.6.3 Contaminated Soil Management

For this case, the identification of soils contaminated with hazardous substances is initially considered, which will be removed and managed as hazardous waste in accordance with current waste management plans.

20.6.4 Non-Contact Water Management

For non-contact water management, the median, ditches and/or gutters will be maintained for the diversion of runoff water at the dumps. In the case of the contour channel of the Tailings Dam, its natural restitution through erosion and sediment accumulation phenomena is considered.

20.6.5 TSF

Based on the information collected during the operational monitoring of groundwater in the TSF area, progressive updates will be made to the developed hydrogeological studies to improve the level of certainty and detail of the actions to be undertaken for the closure and post-closure stage of the Mantoverde Development Project Case.

For the control of emissions from the tailings dam, it is considered of a coverage of granular material with a minimum thickness of 15 cm on the surface of the wall, the construction of parapets or windbreak parapets of granular material and evenly spaced is considered. in the basin, the application of saline solutions or another effective measure for the control of emissions. For the wall, the application of a layer of granular material is considered, even at the crown.

20.6.6 Contact Water Management

Facilities and closure measures have been designed for the management of contact waters, to intercept contact waters and to prevent them from altering the quality of the waters. For the particular case of low-grade mineral leaching dumps, it is contemplated to enable a waterproofed gutter, for the conduction of eventual flows to the existing solution ponds which will remain until the end of the closing phase. By request of SERNAGEOMIN, these pools cannot be “active” during the post-closure, so their elimination is considered in the last year of the closure phase.

In the case of contact waters in the Tailings Dam, its control through evaporation is considered. In the case of contact waters in the Tailings Dam, its control through evaporation is considered. In the case of drainage from the wall and foundations, they will be captured through the drains and directed to the collecting pool for evaporation or back pumped to the basin for evaporation. In the case of the tailing’s waters of the basin, the wells located downstream of the reservoir will be monitored, and in case of changes in the quality of the groundwater, these will be pumped and returned to the basin for evaporation.

At the request of SERNAGEOMIN, there will be no pools available to obtain drainage after closure, therefore, for the last year of the closure phase, the accumulation pool must be covered with “evaporation surface of any remaining flows, without the need of recirculation pumps to the tank” (during post-closing). The “evaporation surface” includes the following measurements:

- Surface profiling: A profiling of the surface on which the accumulation pool is located will be carried out, with which the aim is to reconstruct the original conditions of the topography of the sector. A profiling of 13,730 m^2 of surface is considered.
- Placement of filling material: After surface profiling, the pool will be filled with sterile material from the sector. A volume to be filled of 11,220 m^3 is considered.
- Installation of geomembrane on the filled pool surface: An HDPE geomembrane (waterproofing system) will be placed on the filled surface of the accumulation pool. A surface area of 13,730 m^2 to be waterproofed is contemplated with a perimeter parapet also waterproofed.
- Placement of final coverage: On top of the HDPE geomembrane, a layer of thick granular material 1 m thick will be placed in the interstices of which water can be contained and promote its evaporation, without the need to operate pumping or other types of systems (passive closure). The objective of this coverage is to avoid the presence of a reflecting pool. A final coverage volume of 13,730 m^3 is considered.

20.6.7 Post-Closure

A series of monitoring and activities once the activities of the closure of the mining site are completed, groundwater quality monitoring and PM10, inspection and maintenance of the dam and quality monitoring of leaks and infiltrations. Monitoring of physical and chemical stability will be carried out during the useful life of the mining operation.

20.7 Considerations of Social and Community Impacts

The closest town is the town of El Salado, Chañaral commune, 19 km from the Mine-Plant and Tailings Dam Area. Other settlements of interest correspond to those located in the coastal area, such as Barquito, Flamenco, Portofino and Las Piscinas, which are located near the common use routes and the Desalination Plant and Impulsion System Area. In all these, communities belonging to Indigenous peoples recognized in Chile’s Law No. 19,253 or Indigenous Law were not identified in these areas within the EIA assessment, and impacts on the population were ruled out on the MVDP EIA evaluation.

Mantoverde committed to transfer a fraction of the desalinated water produced by the reverse osmosis plant located in Bahía Corral de Los Chanchos, equivalent to an average monthly flow of 2 L/s, which will increase to 3 L/s in the summer months (December to February). This water resource will be transferred to the Empresa Concesionaria de Servicios Sanitarios S.A. (Econssa Chile S.A.), who will be responsible for delivering it to the communities. To allow that, and to fulfill the RCA commitment, Mantoverde signed an agreement with Econssa and the Atacama Regional Government on December 2023 and all the facilities inside the Desalination Plant are finished.

21 CAPITAL AND OPERATING COSTS

21.1 Introduction

Capital and operating costs presented in this section are for MV-O, covering the extension of the oxide operations (to 2037) and extending mining and treatment of the sulphides through a flotation plant to 2049. All capital and operating costs were estimated by Capstone for the operation.

The estimates include the initial capital costs and sustaining costs of the following major areas of the project:

- Sulphide plant expansion,
- Heap bioleach optimization,
- Desalination plant improvements and reliability upgrades, and
- Mine fleet equipment additions.

The estimate conforms to Class 3 guidelines of the Association for the Advancement of Cost Engineering International (AACE International) under the cost estimate recommended practices "47r-11: Cost Estimate Classification system – AS applied in engineering, procurement, and construction for the mining and mineral processing industries", with an accuracy of 10% to 15% at the 85% confidence level.

21.2 Capital Cost Estimate

The total initial capital cost is US$ 146.1M, detailed in Table 21-1. The sulphide plant expansion capital estimate of US$83.7M is based on Class 3 AACE International guidelines with an accuracy of 10% to 15% at the 85% confidence level using Q1 2024 US dollars. Heap bioleach optimization capital cost is estimated at $US17.0M, consistent with a feasibility study level (Class 3 AACE International), -15% + 20%. Most of the equipment for the heap bioleach optimization was quoted by vendors or sourced from Mantoverde cost schedules; installation and other associated indirect costs were estimated from first principles using Mantoverde rates where available and the balance estimated based on experience from other similar installations, or CostMine cost estimation guides. The heap bioleach optimization costs were quoted in Q3 2023 US dollars. Desalination plant reliability upgrades were estimated at US$7.0M, at two study levels, Class 4 AACE International for storage improvements and Class 1 AACE International for electrical upgrades, using Q1 2024 US dollars. The mine fleet capital cost was estimated to be US$38.4M, based on formal manufacturer quotations received by Q2 2024, adding a 5-10% contingency, a Class 2 AACE International level.

Table 21-1: Initial Capital Cost Estimate (by Area)

Area	Cost ($M)	% of Total
Sulphide plant expansion	83.7	57.3
Heap bioleach optimization	17.0	11.6
Desalination plant reliability upgrades	7.0	4.8
Mine fleet equipment additions	38.4	26.3
Total Capital Costs	**146.1**	**100.0**

Note: Costs in this table are distributed and summarized by major area and include costs from consultants, Ausenco, Capstone, or other parties.

Over the LOM, the sustaining capital cost is estimated to be US$2,306.7M. Table 21-2 summarizes the sustaining capital by year divided into Mine Equipment and Other Fixed Assets (mining projects, desalination plant, oxide plant, leached waste dump (ripios) expansion, smaller projects, oxides SIB, sulphides SIB and long-term SIB).

Table 21-2: Summary of Sustaining Capital by Year

Year	Mine Equipment (US$M)	Other Fixed Assets (US$M)	Total SIB (US$M)	Cumulative Total SIB (US$M)
2024	-	35.4	35.4	35.4
2025	-	146.3	146.3	181.7
2026	-	139.8	139.8	321.4
2027	20.6	153.5	174.1	495.5
2028	-	159.7	159.7	655.3
2029	9.6	148.7	158.4	813.7
2030	57.8	105.0	162.8	976.5
2031	11.1	174.9	186.0	1,162.4
2032	-	201.0	201.0	1,363.4
2033	48.7	172.5	221.2	1,584.7
2034	22.0	155.6	177.6	1,762.3
2035	11.1	86.2	97.3	1,859.6
2036	-	79.8	79.8	1,939.3
2037	20.1	73.1	93.3	2,032.6
2038	-	47.8	47.8	2,080.4
2039	-	38.8	38.8	2,119.1
2040	9.2	31.6	40.8	2,160.0
2041	-	68.8	68.8	2,228.7
2042	-	44.0	44.0	2,272.7
2043	3.6	23.7	27.3	2,300.1
2044	-	6.6	6.6	2,306.7
2045	-	5.2	5.2	2,311.9
2046	-	6.4	6.4	2,318.3
2047	-	5.6	5.6	2,324.0

Year	Mine Equipment (US$M)	Other Fixed Assets (US$M)	Total SIB (US$M)	Cumulative Total SIB (US$M)
2048	-	5.2	5.2	2,329.2
2049	-	1.1	1.1	2,330.4
Total Sustaining Capital	**214.0**	**2,092.7**	**2,306.7**	**2,306.7**

Expansion capital is estimated to be US$146.1M between 2025 and 2026 and is divided in Mine Equipment and Land and Buildings. The total expansion capital for mine equipment is US$38.4M over the mine life. The expansion capital by year is summarized in Table 21-3.

Table 21-3: Expansionary Capital by Year

Year	Land and Buildings			Mine Equipment	Total Expansionary	Cumulative
2025	102.7			-	102.7	102.7
2026	5.0	38.4	43.4	146.1		

21.3 Operating Cost Estimate

Mantoverde has been in operation for over 30 years. Most of the information and assumptions for the operating cost estimates are derived from information from the past 24 months of operation. The input parameters for supplies that were used during estimation are listed in Table 21-4.

Table 21-4: Input Parameters for the Financial Evaluation

Item	Unit	2025				2026	2027	2028	LT
Acid	US$/t	175.00	117.89	112.89	112.89	112.89			
Diesel	US$/L	0.76				0.71	0.66	0.66	0.66
Power	US$/MWh	109.10	110.60	110.80	107.60	107.60			

21.3.1 Mining Costs

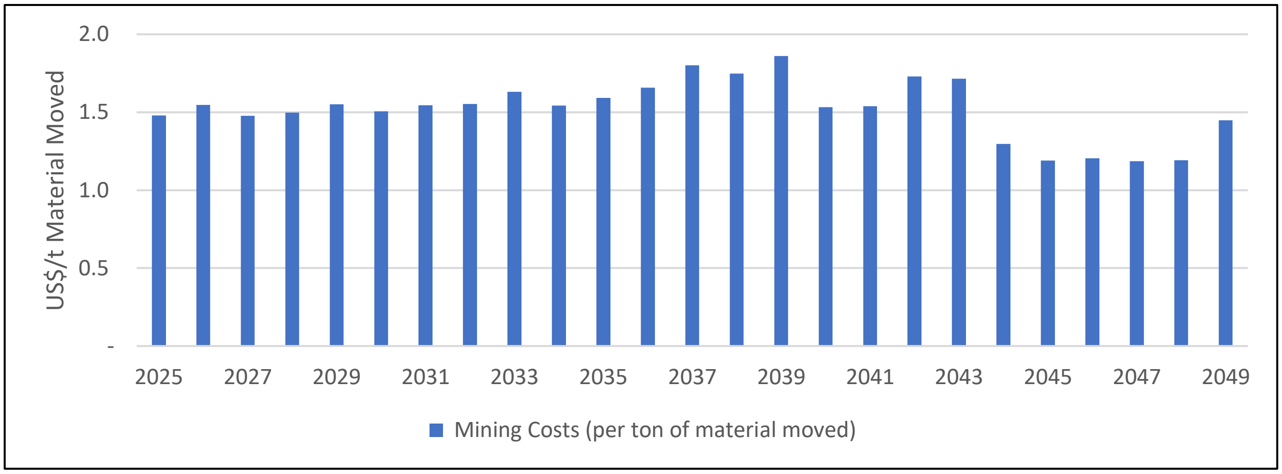
The basis of the estimate is that the open pit operation will be a combined owner and contractor operated mine. The average estimated mining cost is US$1.57 /t for the LOM. The mine operating cost forecast is shown in Table 21-5. Mining costs by year are shown in Figure 21-1.

Table 21-5: Mining Costs

Item	Unit	LOM
Labour	US$M	791.9
Diesel	US$M	960.4
Explosives	US$M	522.1
Spares & Tires	US$M	770.5
Variable Services Contract	US$M	124.8
Deferred stripping & Stripping	US$M	(964.8)

Item	Unit	LOM
Other Variable Costs	US$M	847.3
Mining Costs (OPEX)	US$M	3,052.1
Total Mine Cash Cost (OPEX + CAPEX)	**US$M**	**4,016.9**
Mining Cost	US$ /t Material Moved	1.57

Figure 21-1: Mining Costs by Year



Source: Capstone Copper, 2024.

21.3.2 Oxide and Sulphide Processing Costs

The total processing cost is estimated to be US$5,325.3M. The average oxide plant cost is estimated to be US$2.02 /lb of cathode produced and average sulphide plant cost is estimated to be US$9.60 /t processed. The process operating cost forecast by material is summarized in Table 21-6 and Table 21-7.

Table 21-6: Oxide Plant Processing Costs

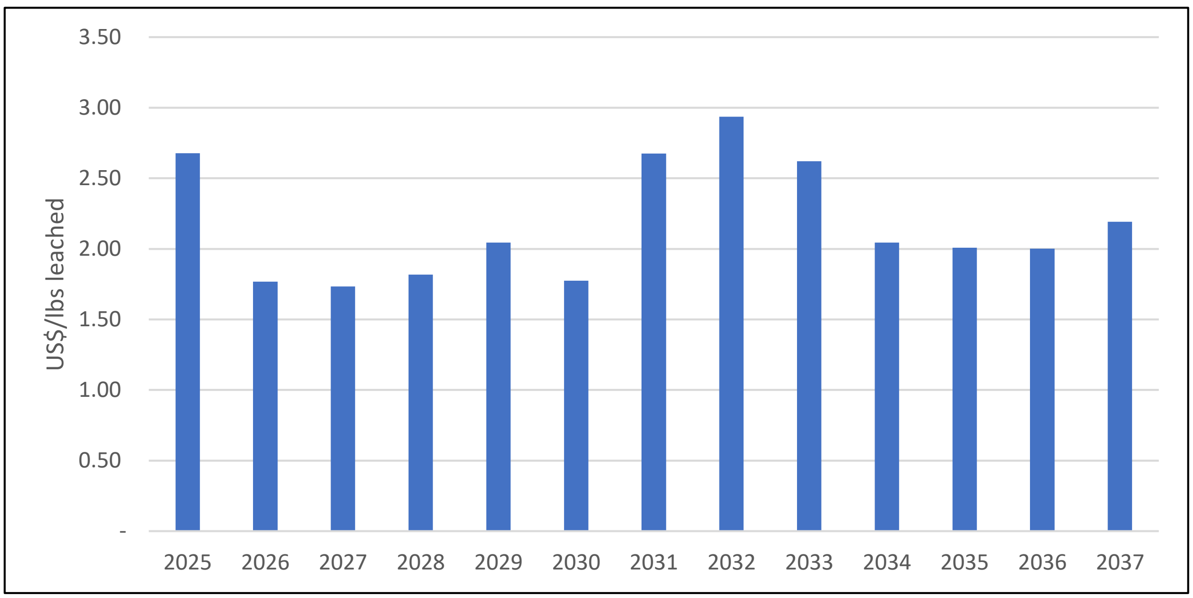
Item	Unit	LOM Total
Labour	US$M	155.0
Power	US$M	170.1
Acid	US$M	531.9
Water	US$M	52.9
Other Variable Costs	US$M	441.3
Other Fixed Costs	US$M	195.7
Oxide Plant Processing Costs	**US$M**	**1,546.9**
Oxide Plant (per pound of cathodes)	US$/lbs leached	2.02

Table 21-7: Sulphide Plant Processing Costs

Item	Unit	LOM Total
Labour	US$M	249.0
Power	US$M	1,177.3
Grinding Media	US$M	414.7
Liners	US$M	120.8
Lime	US$M	94.5
Reagents	US$M	168.9
Water	US$M	387.3
Other Variable Costs	US$M	977.4
Other Fixed Costs	US$M	188.5
Sulphide Plant Processing Costs	**US$M**	**3,778.4**
Sulphide Plant (per tonne of ore processed)	US$/t milled	9.60

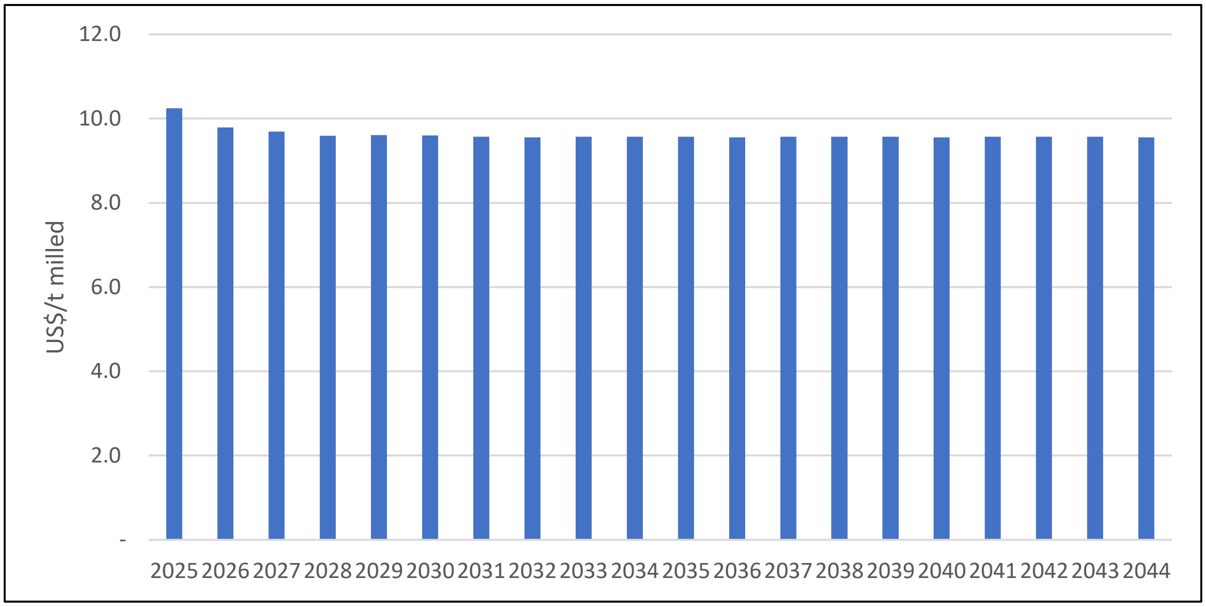
The estimated oxide and sulphide plant operating costs by year are shown in Figure 21-2 and Figure 21-3, respectively.

Figure 21-2: Oxide Plant Processing Costs by Year



Source: Capstone Copper, 2024.

Figure 21-3: Sulphide Plant Processing Costs by Year



Source: Capstone Copper, 2024.

21.3.3 G&A Cost

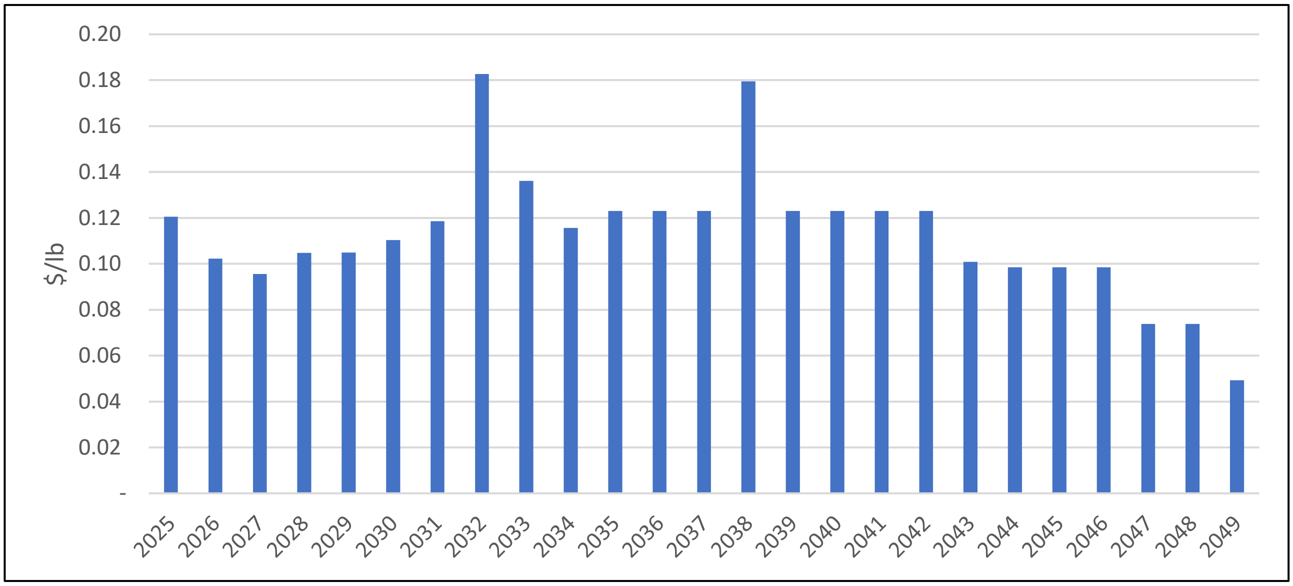
The G&A cost forecast is provided in Table 21-8. The estimated average cost is US$ 0.11/lb of Cu.

Table 21-8: G&A Costs

Year	Unit	LOM Total
Labour Costs	US$M	113.9
Other Fixed Costs	US$M	389.0
RCA Costs	US$M	-
G&A Costs	**US$M**	**502.8**
G&A (per pound of Cu)	$/lb	0.11

The detail of the estimated G&A costs by year are shown in Figure 21-4.

Figure 21-4: G&A Costs by Year



Source: Capstone Copper, 2024.

21.4 Closure Cost Estimate

US$79.2M allowed for closure cost. This closure cost figure is incorporated into the Economic Analysis in Section 22.

21.5 Comments on Capital and Operating Cost

There are no further comments on the Capital and Operating Costs.

22 ECONOMIC ANALYSIS

22.1 Forward Looking Language

Certain information and statements contained in this section are "forward-looking" in nature. Forward-looking statements include, but are not limited to, statements with respect to the economic and feasibility-level parameters discussed for the Mantoverde Optimization; Mineral Reserve estimates; the cost and timing of any development of the Mantoverde Optimization; the proposed mine plan and the mining method; dilution and mining recoveries; processing method and rates, and production rates; projected metallurgical recoveries; infrastructure requirements; capital, operating and sustaining cost estimates; the projected life of mine and other expected attributes of the Mantoverde Optimization; the net present value (NPV), internal rate of return (IRR), and payback period of capital; capital; future metal prices; the timing of the environmental assessment process; changes to the configuration that may be requested as a result of stakeholder or government input to the environmental assessment process; government regulations and permitting timelines; estimates of reclamation obligations; requirements for additional capital; environmental risks; and general business and economic conditions.

All forward-looking statements in this Report are necessarily based on opinions and estimates made as of the date such statements are made and are subject to important risk factors and uncertainties, many of which cannot be controlled or predicted. Material assumptions regarding forward-looking statements are discussed in this section, where applicable. In addition to, and subject to, such specific assumptions discussed in more detail elsewhere in this Report, the forward-looking statements in this section are subject to the following assumptions:

- There being no signification disruptions affecting the development and operation of the Mantoverde Optimization.
- Exchange rates being consistent with the assumptions in the financial analysis.
- The availability of certain consumables and services and the prices for power and other key supplies being consistent with assumptions in the financial analysis.
- Labour and materials costs being consistent with assumptions in the financial analysis.
- Permitting and arrangements with stakeholders being consistent with current expectations.
- All environmental approvals, required permits, licences and authorizations will be obtained from the relevant governments and other relevant stakeholders within the expected timelines.
- Certain tax rates, including the allocation of certain tax attributes.
- The availability of financing for Capstone Copper's planned development activities and success in arrangements with non-controlling shareholders and associates.
- The timelines for development activities for the Project. The production schedule and financial analysis annualized cash flow tables are presented with conceptual years. Years shown in these tables are for illustrative purposes only and are based on the anticipated project schedule.

22.2 Methodology Used

The Project was evaluated using an 8% discounted cash flow (DCF) analysis on a non-inflated, after-tax basis. Cash inflows consist of annual revenue projections for the mine. Cash outflows include capital costs, operating costs, royalties, and taxes, which are subtracted from the inflows to arrive at the annual cash flow projections.

To reflect the time value of money, annual net cash flow (NCF) projections are discounted back to the present study valuation date of December 2024 using an 8% discount rate. The discount rate was determined using several factors, including the type of commodity and the level of risks (market risk, technical risk and political risk). The discounted present values of the cash flows are summed to arrive at the net present value (NPV).

An NPV sensitivity analysis to discount rates was completed using discount rates of 4%, 6%, 8% (selected rate), 10% and 12%. Cash flows are assumed to occur on an average mid-year basis of each annual period.

The capital and operating cost estimates are presented in Section 21 of this Report in Q1 2024 US dollars. The economic analysis was run on a constant dollar basis with no inflation.

22.3 Financial Model Parameters

22.3.1 Assumptions

The financial model is based on the Mineral Reserves outlined in Section 15, the mining rates and assumptions discussed in Section 16 and the recovery and processing rates and assumptions discussed in Section 13 and Section 17 respectively.

Initial capital costs are estimated to be $146M. Over the LOM sustaining capital is estimated to be $1,366M.

LOM operating costs are estimated to be $8,916M.

Closure and reclamation costs are estimated to be $79.2M.

Smelting and refining terms considered in the evaluation are listed in Figure 22-1.

Transport and insurance charges for copper concentrate are provided in Figure 22-2. Life of mine refining treatment and transport costs are estimated to be $1,271M.

Table 22-1: Smelter Terms

Item	Unit	Value
Concentrate Cu grade	%	27.10
Cu concentrate moisture	%	9.00
Cu land freight	$/wmt	13.25
Cu ocean freight	$/wmt	50.41
Insurance Rate	$/wt	15.95

Item	Unit	Value
Port Handling	$/wt	2.50
Cu treatment charge	$/dmt	68.50
Cu pay factor	%	96.33
Cu refining charge	$/lb Cu	0.07
Au pay factor	%	0.90

Table 22-2: Copper Concentrate Transport and Port Charges

Item	Unit	Value
Cu concentrate land freight	$/wmt	13.25
Cu concentrate ocean freight	$/wmt	50.41
Cu concentrate port rate and other fees	$/wmt	15.95
Cu concentrate weighing sampling and moisture determination	$/wmt	2.50

22.3.2 Taxes

The project has been evaluated on an after-tax basis to provide an approximate value of the potential economics. The calculations are based on the tax regime as of the date of the feasibility study. At the effective date of the cashflow, the project was assumed to be subject to the following tax regime:

- The Chilean corporate income tax system consists of 27%
- The average mining tax rate applicable for large scale mining is 7.7%.

22.3.3 Closure Costs

Closure costs are applied at the end of the life of mine. Closure costs were estimated to be US$79.2M at the end of the LOM as detailed in Section 20.

22.3.4 Financial Considerations

The economic analysis is based on 100% owner equity financing.

22.4 Results of the Economic Analysis

The pre-tax NPV discounted at 8% is US$3,773.3M; and on a post-tax basis, the NPV discounted at 8% is US$2,892.9M.

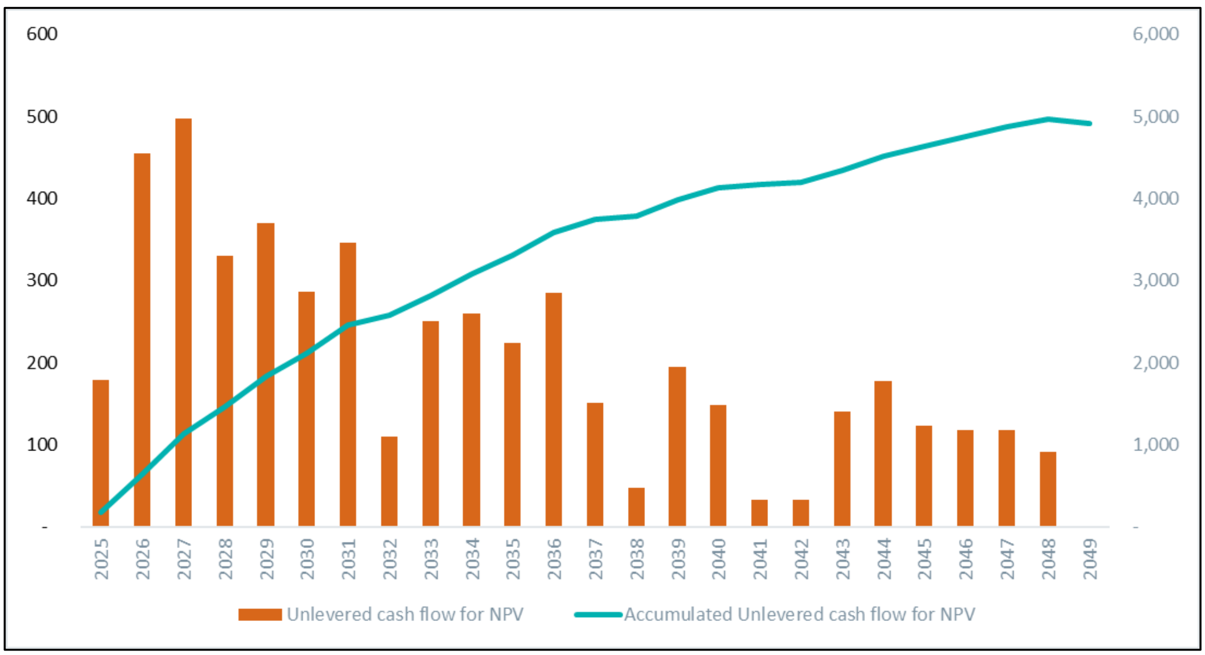
A summary of Project economics is shown in Table 22- and shown graphically in Figure 22-1.

Table 22-3: Results of Economic Analysis

Summary of Cash Flow	Unit	Pre-tax	After Tax
Cumulative net cash flow			
Undiscounted	$M	6,194.1	4,921.8
Net present value			
Discounted at 4%	$M	4,674.2	3,591.2
Discounted at 6%	$M	4,093.3	3,141.6
Discounted at 8%	**$M**	**3,773.3**	**2,892.9**
Discounted at 10%	$M	3,257.1	2,496.0
Discounted at 12%	$M	2,949.5	2,259.2

Note: Base case is bold.

Figure 22-1: After Tax Cash Flow Summary



Source: Capstone Copper, 2024.

Table 22-4: Summary of Cash Flow

General	Unit	Value
Copper Price	US$/lb	4.13
Gold Price	US$/oz	1,834
Mine Life	years	25
Production		**LOM Total / Avg.**
Total Mill Feed Tonnes	Kt	393,596
Mill Head Grade Cu	%	0.49
Mill Head Grade Au	g/t	0.10
Mill Recovery Rate Cu	%	87.8
Mill Recovery Rate Au	%	65.2
Total Copper Pounds Recovered	M lb	3,714
Total Gold Ounces Recovered	Koz	805
Total Average Annual Copper Production	M lb	149
Average Year 1 to 10 Annual Copper Production	M lb	189
Total Average Annual Gold Production	Koz	32
Average Year 1 to 10 Annual Gold Production	Koz	36
Operating Costs		**LOM Total / Avg.**
Mining Cost	US$/t Mined	1.57
Oxide Plant	US$/lb Cu	2.02
Processing Cost	US$/t Milled	9.60
G&A Cost	US$/lb Cu	0.11
C1	US$/lb Cu Eq.	2.04
Capital Costs		**LOM Total / Avg.**
Initial Capital	US$M	146.1
Sustaining Capital	US$M	1,365.6
Exploration (Brownfields)	US$M	56.7
Deferred Stripping	US$M	929.5
ROU Asset	US$M	35.0
Closure Costs	US$M	79.2
OPEX	US$M	8,915.6
Financials - Pre-Tax		**LOM Total / Avg.**
Revenue	US$M	19,364.2
Royalty	US$M	168.0
NPV (8%)	US$M	3,773.3
Financials - Post Tax		**LOM Total / Avg.**
Tax	US$M	1,272.3
NPV (8%)	US$M	2,892.9

Note: Totals may not sum due to rounding

Table 22-5: Cash Flow on Annualized Basis

	Unit	LOM	1	2	3	4	5	6	7	8	9	10	11	12
			2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Production Summary														
Mineral Reserve mined	kt	669,794	46,022	52,699	41,347	47,128	42,330	53,178	36,721	18,313	26,942	34,724	39,612	46,566
Waste Mined	kt	1,545,854	86,393	93,846	105,384	99,486	104,205	94,864	110,194	128,392	119,691	108,099	97,073	95,328
Rehandle	kt	335,502	13,263	15,376	13,075	17,114	13,081	21,174	13,220	11,066	5,266	18,231	17,568	7,782
Total Tonnes Moved	kt	2,551,151	145,677	161,921	159,806	163,728	159,615	169,216	160,135	157,772	151,899	161,054	154,253	149,675
Reserve Sent to Mill	kt	393,596	12,358	16,066	16,399	16,469	16,399	16,425	16,425	16,470	16,425	16,425	16,425	16,470
Cu Head Grade	%	0.49	0.73	0.71	0.75	0.66	0.73	0.59	0.72	0.51	0.69	0.62	0.53	0.56
Cu Recovery	%	88	91	88	89	89	87	88	88	89	88	88	83	89
Cu Recovered	kt	1,684	83	100	109	97	104	85	104	74	99	89	73	82
Cu Payable	Mlb	3,577	176	213	233	206	221	181	220	158	211	189	155	175
Oxide Ore to Heap Leach	kt	107,245	11,000	11,000	10,995	11,000	11,000	11,000	10,076	1,386	1,577	11,000	9,431	7,782
SCu Head Grade	%	0.29	0.28	0.28	0.32	0.33	0.29	0.32	0.21	0.28	0.28	0.27	0.29	0.29
TCu Head Grade	%	0.38	0.37	0.38	0.43	0.48	0.39	0.42	0.28	0.37	0.34	0.33	0.37	0.38
SCu Recovery	%	71	72	71	74	70	70	72	63	71	74	73	72	73
TCu	%	68	55	74	71	61	67	76	57	73	77	77	72	71
Heap Leach Soluble Copper Production	kt	219	22	22	26	25	22	25	13	3	3	21	20	16
Heap Leach Copper Production	kt	280	22	30	33	32	29	35	16	4	4	28	25	21
Oxide Ore to Dump Leach	kt	115,917	13,488	15,065	10,419	11,582	5,885	15,089	1,867	961	3,325	10,853	8,422	8,866
Grade	%	0.14	0.14	0.13	0.13	0.13	0.13	0.13	0.14	0.12	0.13	0.14	0.14	0.14
Recovery	%	43	43	43	43	43	43	43	43	43	43	43	43	43
Dump Leach Copper Production	kt	67	8	9	6	6	3	9	1	0	2	6	5	5
Au Payable	koz	724	25	29	30	34	47	32	49	28	45	41	34	36
Revenue														
Copper Price	US$/lb	4.15	4.30	4.40	4.40	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10
Gold Price	US$/oz	1,834	2,200	2,100	2,000	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800
Gross Revenue	US$M	19,364	1,100	1,375	1,466	1,257	1,279	1,192	1,145	736	1,001	1,157	969	1,021
Operating Costs														
Mine Operating Costs	US$M	(3,087)	(154)	(197)	(162)	(171)	(166)	(213)	(116)	(101)	(138)	(196)	(224)	(221)
Mill Processing Costs	US$M	(1,547)	(180)	(151)	(150)	(156)	(144)	(170)	(101)	(27)	(35)	(153)	(134)	(117)
Oxide Processing Costs	US$M	(3,778)	(127)	(157)	(159)	(158)	(158)	(158)	(157)	(157)	(157)	(157)	(157)	(157)
G&A Costs	US$M	(503)	(29)	(31)	(31)	(31)	(31)	(31)	(31)	(31)	(31)	(31)	(27)	(29)
Refining Charges, Treatment Charges, Transportation Cost & Royalties														
Refining	US$M	(426)	(15)	(21)	(26)	(25)	(27)	(22)	(28)	(19)	(25)	(22)	(18)	(21)
Treatment Costs	US$M	(245)	(9)	(13)	(16)	(14)	(15)	(13)	(15)	(11)	(15)	(13)	(11)	(12)
Cathodes Freight & Port Costs	US$M	(40)	(4)	(4)	(5)	(4)	(4)	(5)	(2)	(0)	(1)	(4)	(3)	(3)

	Unit	LOM	1	2	3	4	5	6	7	8	9	10	11	12
			2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Concentrate Freight & Port Costs	US$M	(561)	(36)	(44)	(47)	(30)	(32)	(27)	(33)	(23)	(29)	(26)	(22)	(25)
Royalties (Ad Valorem)	US$M	(168)	(10)	(13)	(14)	(12)	(12)	(11)	(11)	(7)	(9)	(11)	(9)	(10)
Cost Guarantee														
Cost Guarantee	US$M	(17)	(0)	(0)	(0)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Other Income														
Other Income	US$M	(12)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Capital Expenditures														
Initial Capital	US$M	(146)	(103)	(43)	-	-	-	-	-	-	-	-	-	-
Sustaining Capital	US$M	(1,366)	(85)	(87)	(100)	(85)	(77)	(121)	(55)	(57)	(112)	(125)	(76)	(52)
Exploration (Brownfields)	US$M	(57)	(23)	(11)	(11)	(11)	-	-	-	-	-	-	-	-
Deferred Stripping	US$M	(929)	(62)	(53)	(74)	(74)	(81)	(42)	(131)	(144)	(109)	(53)	(22)	(27)
Leasing	US$M	(193)	(37)	(40)	(35)	(30)	(23)	(18)	(7)	(4)	(0)	-	-	-
Closure Cost	US$M	(79)	-	-	-	-	-	-	-	-	-	-	-	-
Change in Working Capital														
Change in Working Capital	US$M	(16)	(16)	-	-	-	-	-	-	-	-	-	-	-
Pre-Tax Unlevered Free Cash Flow	US$M	6,194	210	507	636	453	509	362	457	153	338	364	265	345
Pre-Tax Cumulative Unlevered Free Cash Flow	US$M		210	717	1,353	1,806	2,315	2,677	3,134	3,287	3,625	3,989	4,254	4,599
Taxes														
Unlevered Cash Taxes	US$M	(1,272)	(32)	(52)	(138)	(123)	(139)	(75)	(111)	(44)	(88)	(105)	(41)	(60)
Post-Tax Unlevered Free Cash Flow	US$M	4,922	179	455	498	330	370	286	346	109	250	259	224	285
Post-Tax Cumulative Unlevered Free Cash Flow	US$M		179	634	1,131	1,461	1,831	2,118	2,464	2,573	2,823	3,083	3,307	3,592

	Unit	LOM	13	14	15	16	17	18	19	20	21	22	23	24	25
			2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049
Production Summary															
Mineral Reserve mined	kt	669,794	33,427	28,377	30,078	23,871	19,636	32,705	16,120	-	-	-	-	-	-
Waste Mined	kt	1,545,854	83,540	69,305	52,476	36,020	34,273	16,439	10,846	-	-	-	-	-	-
Rehandle	kt	335,502	8,061	10,729	4,728	16,470	15,936	15,551	11,995	16,470	16,425	16,425	16,425	16,470	3,603
Total Tonnes Moved	kt	2,551,151	125,028	108,411	87,282	76,361	69,845	64,695	38,962	16,470	16,425	16,425	16,425	16,470	3,603
Reserve Sent to Mill	kt	393,596	16,425	16,425	16,425	16,470	16,425	16,425	16,425	16,470	16,425	16,425	16,425	16,470	3,603
Cu Head Grade	%	0.49	0.49	0.37	0.46	0.39	0.28	0.28	0.34	0.32	0.27	0.27	0.27	0.28	0.33
Cu Recovery	%	88	88	88	88	90	88	88	89	90	88	88	88	76	71
Cu Recovered	kt	1,684	71	53	67	58	40	40	49	48	39	39	39	34	8
Cu Payable	Mlb	3,577	150	112	141	123	86	85	104	101	82	82	82	73	18
Oxide Ore to Heap Leach	kt	107,245	-	-	-	-	-	-	-	-	-	-	-	-	-
SCu Head Grade	%	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TCu Head Grade	%	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

	Unit	LOM	13	14	15	16	17	18	19	20	21	22	23	24	25
			2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049
SCu Recovery	%	71	0	0	0	0	0	0	0	0	0	0	0	0	0
TCu	%	68	0	0	0	0	0	0	0	0	0	0	0	0	0
Heap Leach Soluble Copper Production	kt	219	-	-	-	-	-	-	-	-	-	-	-	-	-
Heap Leach Copper Production	kt	280	-	-	-	-	-	-	-	-	-	-	-	-	-
Oxide Ore to Dump Leach	kt	115,917	10,094	-	-	-	-	-	-	-	-	-	-	-	-
Grade	%	0.14	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Recovery	%	43	43	0	0	0	0	0	0	0	0	0	0	0	0
Dump Leach Copper Production	kt	67	6	-	-	-	-	-	-	-	-	-	-	-	-
Au Payable	koz	724	33	25	33	25	21	21	26	26	20	20	20	19	5
Revenue															
Copper Price	US$/lb	4.15	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10
Gold Price	US$/oz	1,834	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800
Gross Revenue	US$M	19,364	729	503	637	548	390	387	473	462	374	374	374	335	81
Operating Costs															
Mine Operating Costs	US$M	(3,087)	(197)	(189)	(162)	(113)	(82)	(112)	(67)	(21)	(20)	(20)	(19)	(20)	(5)
Mill Processing Costs	US$M	(1,547)	(29)	-	-	-	-	-	-	-	-	-	-	-	-
Oxide Processing Costs	US$M	(3,778)	(157)	(157)	(157)	(157)	(157)	(157)	(157)	(157)	(157)	(157)	(157)	(157)	(33)
G&A Costs	US$M	(503)	(20)	(20)	(17)	(15)	(11)	(10)	(10)	(10)	(8)	(8)	(6)	(5)	(1)
Refining Charges, Treatment Charges, Transportation Cost & Royalties															
Refining	US$M	(426)	(19)	(14)	(18)	(16)	(11)	(11)	(13)	(13)	(10)	(10)	(10)	(9)	(2)
Treatment Costs	US$M	(245)	(10)	(8)	(10)	(9)	(6)	(6)	(7)	(7)	(6)	(6)	(6)	(5)	(1)
Cathodes Freight & Port Costs	US$M	(40)	(1)	-	-	-	-	-	-	-	-	-	-	-	-
Concentrate Freight & Port Costs	US$M	(561)	(22)	(17)	(21)	(19)	(13)	(13)	(16)	(15)	(12)	(12)	(12)	(11)	(2)
Royalties (Ad Valorem)	US$M	(168)	(7)	-	(6)	(5)	-	-	(4)	(4)	(3)	(3)	(3)	(3)	-
Cost Guarantee	US$M	(17)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Other Income															
Other Income	US$M	(12)	(1)	(1)	(1)	(1)	(1)	(1)	-	-	-	-	-	-	-
Capital Expenditures															
Initial Capital	US$M	(146)	-	-	-	-	-	-	-	-	-	-	-	-	-
Sustaining Capital	US$M	(1,366)	(65)	(48)	(39)	(37)	(44)	(44)	(27)	(7)	(5)	(6)	(6)	(5)	(1)
Exploration (Brownfields)	US$M	(57)	-	-	-	-	-	-	-	-	-	-	-	-	-
Deferred Stripping	US$M	(929)	(29)	-	-	(4)	(25)	-	-	-	-	-	-	-	-
Leasing	US$M	(193)	-	-	-	-	-	-	-	-	-	-	-	-	-
Closure Cost	US$M	(79)	-	-	-	-	-	-	-	-	-	-	-	-	(79)
Change in Working Capital															
Change in Working Capital	US$M	(16)	-	-	-	-	-	-	-	-	-	-	-	-	-
Pre-Tax Unlevered Free Cash Flow	US$M	6,194	173	48	205	173	39	33	170	227	151	150	153	118	(45)

	Unit	LOM	13	14	15	16	17	18	19	20	21	22	23	24	25
			2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049
Pre-Tax Cumulative Unlevered Free Cash Flow	US$M		4,772	4,820	5,025	5,198	5,238	5,270	5,440	5,666	5,818	5,968	6,121	6,239	6,194
Taxes															
Unlevered Cash Taxes	US$M	(1,272)	(21)	-	(10)	(25)	(7)	-	(29)	(50)	(28)	(33)	(36)	(26)	(1)
Post-Tax Unlevered Free Cash Flow	US$M	4,922	151	48	195	148	33	33	141	177	123	117	117	92	(46)
Post-Tax Cumulative Unlevered Free Cash Flow	US$M		3,743	3,791	3,986	4,135	4,168	4,200	4,341	4,518	4,641	4,759	4,876	4,967	4,922

Note: Totals may not sum due to rounding.

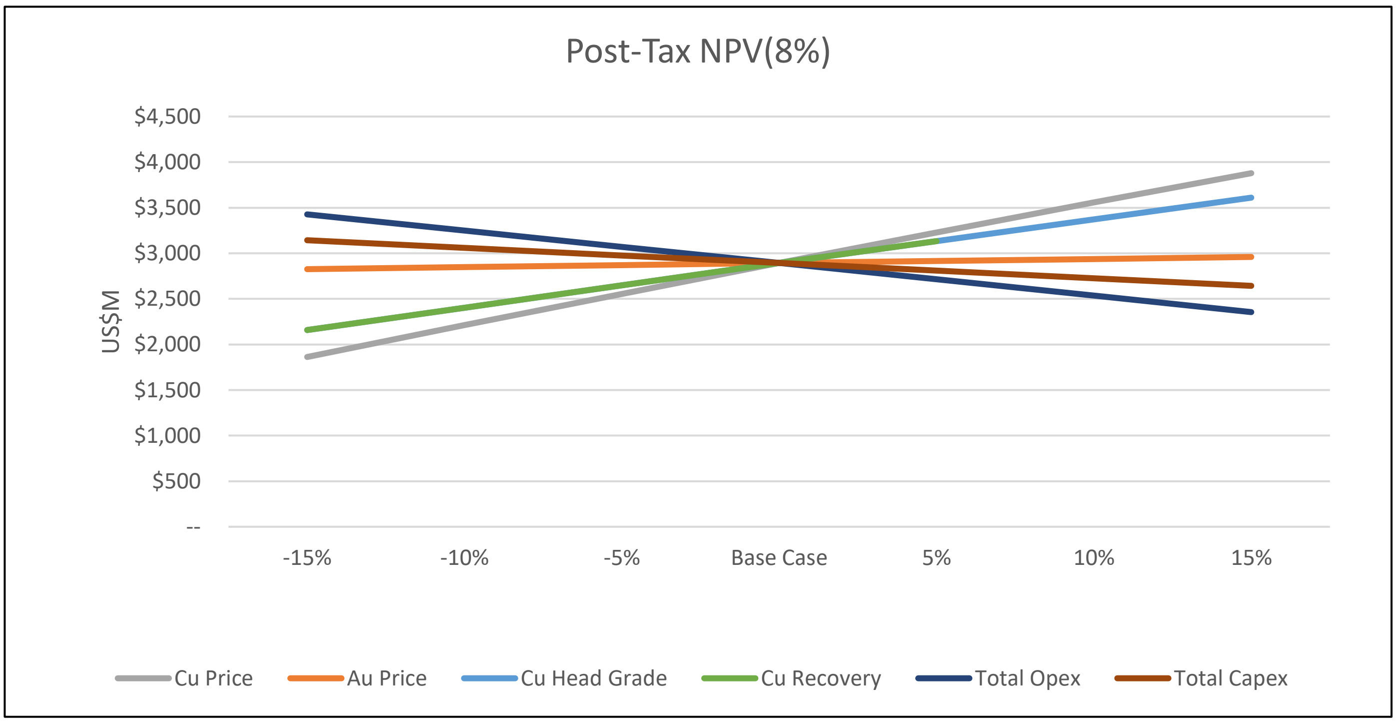
22.5 Sensitivity Analysis

A sensitivity analysis was conducted on the base case pre-tax and post-tax NPV, IRR, and payback of the Project, using the following variables:

- Metal price (copper and gold)
- Operating costs (including power)
- Capital costs
- Cu Recovery
- Cu Head Grade

The analysis shows that the Mantoverde NPV8% is most sensitive to changes in the copper price (copper grade) and capital expenditures. The sensitivity analysis showed that Mantoverde is less sensitive to changes in the gold.

Figure 22-2: Sensitivity of NPV% Post Tax



Source: Capstone Copper, 2024.

Table 22-6: Sensitivity Post Tax

Post-Tax NPV Sensitivity to Discount Rate						
		Copper & Gold Price				
Discount Rate		(10%)	(5%)	--	5%	10%
	6.0%	$2,410	$2,824	$3,234	$3,637	$4,038
	7.0%	$2,278	$2,668	$3,054	$3,434	$3,811
	8.0%	$2,159	$2,528	$2,893	$3,252	$3,608
	9.0%	$2,052	$2,402	$2,748	$3,088	$3,425
	10.0%	$1,956	$2,288	$2,617	$2,940	$3,260
Post-Tax NPV Sensitivity To FX						
		Copper & Gold Price				
FX		(10%)	(5%)	--	5%	10%
	(10.0%)	$2,520	$2,886	$3,249	$3,607	$3,963
	(5.0%)	$2,341	$2,707	$3,071	$3,430	$3,786
	--	$2,159	$2,528	$2,893	$3,252	$3,608
	5.0%	$1,976	$2,348	$2,714	$3,074	$3,430
	10.0%	$1,790	$2,167	$2,535	$2,896	$3,252
Post-Tax NPV Sensitivity to OPEX						
		Copper & Gold Price				
OPEX		(10%)	(5%)	--	5%	10%
	(10.0%)	$2,326	$2,695	$3,060	$3,418	$3,775
	(5.0%)	$2,243	$2,611	$2,976	$3,335	$3,691
	--	$2,159	$2,528	$2,893	$3,252	$3,608
	5.0%	$2,076	$2,445	$2,809	$3,168	$3,524
	10.0%	$1,993	$2,361	$2,726	$3,085	$3,441

22.6 Comments on the Economic Analysis

There are no further comments on the economic analysis.

23 ADJACENT PROPERTIES

This section is not relevant to this Report.

24 OTHER RELEVANT DATA AND INFORMATION

24.1 Mantoverde-Santo Domingo Mining District Integration

After the ramp-up of MVDP at the end of 2024, Capstone's next phase of transformational growth will be a construction decision and integration of the expanded Mantoverde Mine with Santo Domingo development project. Capstone aims to create a 250 kt/a of copper cathode and concentrate (consolidated Mantoverde and Santo Domingo) world-class mining district in the Atacama region of Chile (MV-SD). The combination of key infrastructure already in place alongside an experienced mine build and operating team supports future development of the MV-SD district.

Capstone's base case plan for MV-SD district integration includes completion and ramp-up of MVDP (Capstone, 2024), a sanctioning decision followed by construction of the Santo Domingo Project's copper-iron project, and completion of upgrades to the existing water and power infrastructure proximal to both projects.

Mantoverde Mine is located 35 km southwest of Capstone's Santo Domingo development project, 65 km via public roadways and 16 km northwest of Capstone's Sierra Norte property.

24.1.1.1 Santo Domingo Project

Santo Domingo is a copper-iron project, 100% owned by Capstone, described in the "Santo Domingo Project NI 43-101 Technical Report on Feasibility Study Update/ Atacama Region, Chile", effective June 7, 2024.

Santo Domingo Project contemplates conventional open pit mining, crushing and grinding circuit, copper flotation and magnetic separation to produce an average of 68,000 tons of copper per year and 3.6 Mt/a of iron concentrate. The project is expected to have between 65 kt /d to 72 kt /d processing capacity and a mine life of 19 years and will produce copper concentrate with gold credits from sulphide ore and iron concentrate from magnetite ore. The operation will use desalinated sea water for the processes and both concentrates will be transported by truck and pipeline respectively to a designated port. Santo Domingo Project presents additional opportunities to increase its production treating copper oxides and cobalt.

A district cobalt plant for Mantoverde – Santo Domingo may allow for low-cost by-product cobalt production while producing a by-product of sulphuric acid to be consumed internally to further significantly lower operating costs in the cathode process at Mantoverde.

The cobalt recovery process comprises a pyrite flotation step to recover cobaltiferous pyrite from Mantoverde tails and redirect it to the dynamic heap leach pads, which will be upgraded to a bio-leach configuration through the addition of an aeration system. The pyrite oxidizes in the leach pads and the solubilized cobalt is recovered via an ion exchange plant treating a bleed stream from the copper solvent extraction plant. The approach has been successfully demonstrated at the bench scale, and onsite piloting commenced in January 2024.

Engineering has commenced for a small plant treating only Mantoverde pyrite concentrates to produce up to 1,500 t/a of contained cobalt. In line with this, Santo Domingo has started a study to assess, as part of the copper/iron circuit overall layout optimization being conducted by Ausenco, the optimum process configuration for the pyrite flotation and pumping transportation facilities needed to transport pyrite concentrate to Mantoverde's leach facilities. This information will be part of the MV-SD cobalt study expected by the end of 2024.

At a combined MV-SD target of 4.5 to 6.0 thousand t /a of mined cobalt production, this would be one of the largest and lowest cost cobalt producers in the world, outside of Indonesia and the DRC.

24.1.2 Sierra Norte Property

The Sierra Norte property is an IOCG-type copper deposit and covers over 7,000 ha. Copper mineralization at Sierra Norte occurs in irregular tabular bodies of specularite breccias and stockwork with chalcopyrite and lesser pyrite. Copper oxide mineralization is present above the sulphide orebody. A historical resource estimate, not compliant with NI 43-101, of 100Mt at 0.45% TCu is shown in Table 24-1. Sierra Norte represents an opportunity to potentially become a future sulphide feed source for Santo Domingo, extending its higher-grade copper sulphide life, with additional upside for future exploration for copper oxides and sulphides. Capstone entered into a binding share purchase agreement with Inversiones Alxar S.A. ("Alxar") and Empresas COPEC S.A. ("EC"), collectively the "Sellers" to acquire 100% of Compania Minera Sierra Norte S.A. ("Sierra Norte") on July 17, 2024. Under the terms of the purchase agreement, Capstone paid the Sellers $40 million payable in share consideration.

Table 24-1: Sierra Norte - Historical Mineral Resource

Category	Tonnage (Mt)	Grade		Contained Metal
		TCu (%)	SCuA (%)	Cu (kt)
Carmen-Paulina				
Measured	8	0.47	0.16	35
Indicated	63	0.46	0.10	292
Total Measured + Indicated	**71**	**0.46**	**0.11**	**327**
Inferred	25	0.40	0.04	102
Esther				
Measured	1	0.42	0.26	3
Indicated	3	0.40	0.24	13
Total Measured + Indicated	**4**	**0.40**	**0.24**	**16**
Inferred	0.1	0.35	0.22	0.3

The Historical Mineral Resource was derived from the report "Actualización del Modelo Geológico y de la Estimación de Recursos Minerales del Proyecto Diego de Almagro" completed by Amec Foster Wheeler with an effective date of April 29, 2016, prepared for Alxar S.A. The historical estimates are strictly historical in nature and are not compliant with NI 43-101 and should not be relied upon. A qualified person has not done sufficient work to classify the historical estimates as current "mineral resources", as such term is defined in NI 43-101 and it is uncertain whether, following further evaluation or exploration work, the historical estimates will be able to report as mineral resources in accordance with NI 43-101. Capstone has not done sufficient work to classify the historical estimate as current mineral resources and is not treating the historical estimate as current mineral resources. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability. The historical estimate is reported using a cut-off grade of 0.20% with further economic extraction parameters outlined below. Categories are based on average spacing of drill holes and levels of confidence in the grade estimation. There are no more recent estimates or data available to Capstone. The Sierra Norte deposit will require further evaluation including drilling to verify the historical estimate as current mineral resources. Readers are cautioned not to rely on the historical estimate in this section. Economic Parameters for the historical estimate include the following: Copper price: $3.00 lb; Mining cost: $1.69 /t; Sulphide recovery: 91%; Sulphide processing cost: $7.26 /t; Oxide (heap) recovery: 60%; Oxide (heap) processing cost: $8.12 /t; Oxide (SX-EW) processing cost: $0.30 /lb; Concentrate selling costs: $0.41 /lb; and Cathodes selling costs: $0.04 /lb.

24.2 Additional Information

No additional information or explanation is necessary to make this Technical Report understandable and not misleading.

25 INTERPRETATION AND CONCLUSIONS

25.1 Conclusions and Interpretations

The QP reviewed the data in this Report with the following conclusions and interpretations.

25.1.1 Mineral Resource Estimates

The Mantoverde deposit is an iron oxide–copper–gold (IOCG) deposit from the Chilean Iron Belt located within the Atacama Fault System. The geological setting, mineralization style and controls on mineralization are sufficiently well understood to effectively guide mineral resource estimation. Mantoverde has internal protocols and controls for data capture, QA/QC and management to ensure an adequate level of confidence in the interpretation of a geological model.

Mantoverde Mineral Resources were estimated using appropriate data, geological interpretation and estimation methodology that adequately reflect the current understanding of the deposit. The Mineral Resources were reported as constrained within conceptual pit shells to establish reasonable prospects for eventual economic extraction.

Mineral Resources are classified into Measured, Indicated and Inferred resource categories based on overall estimation error within anticipated annual and monthly mining increments.

Mantoverde Mineral Resource estimates follow industry accepted practices, conform with CIM Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines (November 2019) and are reported in accordance with CIM 2014 Definition Standards.

25.1.2 Mineral Reserve Estimates

Mineral Reserves amenable to open pit mining were constrained by practical pit designs that had been guided by an optimized pit shell (LG) considering assumed prices of US$3.50/lb Cu and US$1,500/oz Au. For flotation ore, a cut-off of 0.20% TCu was applied during Mine Planning and reporting of Mineral Reserve estimates. For leach ore, a cutoff of 0.10% SCu was applied, with the cutoff between dump leach and heap leach varying between 0.16% and 0.21% SCu depending on ore available in each period to maintain the heap leach at capacity. Leach grade material mined after 2037 was scheduled as waste.

Pit optimization and mine planning were performed without introducing any additional factors to account for dilution. Any potential impacts to ore feed that might arise due to ore loss or dilution were not considered material, and no provisions for ore loss or dilution were included in the mine plane. Inferred Mineral Resources were treated as waste in the mine plan.

Proven and Probable Mineral Reserves total 398 Mt of flotation ore grading 0.49% TCu and 0.1 g/t Au, and 236 Mt of leach ore grading 0.28% TCu and 0.21% SCu, with an effective date of June 1, 2024.

The main factors that may affect the Mineral Reserve estimates are metal prices, metallurgical recoveries, operating costs (fuel, energy and labour) and block model accuracy. However, the Mineral Reserves are not considered sensitive to moderate changes in these factors, due in part to the use of a 0.88 Revenue Factor LG shell used to guide pit design. Reserves may be impacted by risks associated with tailings facilities, although the maximum designed capacity exceeds the requirement of the defined Reserve. Other factors that may impact the Reserves include land tenure or permitting, water supply and geotechnical stability of pit walls.

25.1.3 Mine Plan

Pit designs are based on optimized LG shells at a revenue fsactor of 0.88 with variable inter-ramp slope angles according to geotechnical domains ranging from 52° to 59°.

Twenty-one pit phases are planned, including fifteen sulphide-dominant phases and six oxide phases.

MV-O flotation throughput considers expansion of the MVDP plant capacity, and during 2026 the concentrator will reach a nominal capacity of 16.4 Mt /a, and maintain that rate through 2048. Flotation ore will be hauled to the primary crusher for direct tipping. The mine plan employed an elevated cut off grade and stockpiling strategy during years of surplus production, with an average operational cut-off grade of 0.40% TCu from 2026-2035. From 2044 through 2049, 100% of feed will be sourced from stockpiled ore.

The heap leach will be supplied ore at its capacity of 11 Mt /a in most years of the plan, with operations scheduled to cease after 2036. The dump leach will average 8.8 Mt /a from 2025-2037 with peaks up to 15 Mt /a, and operations are scheduled to cease after 2037.

The mining schedule requires an average mine extraction of 155 Mt moved per year from 2025 to 2037. This includes heap leach feed requiring rehandle. The mine movement decreases after 2037 until the mining operations are completed in 2043. The waste mined over the LOM is 1,585Mt and is hauled to one of three waste dump facilities, whose capacity exceeds the mined waste requirement.

The mine is scheduled to operate seven days per week for 365 days per year. Each day will consist of two 12-hour shifts. Four mining crews will rotate to cover the operation.

The primary production from the open pit considers electric shovels, hydraulic excavators, front loaders and trucks with a capacity of 240 t. The fleet will be complemented with blasthole drill rigs that will also be used for ore and waste delineation. Auxiliary equipment will include track dozers, wheel dozers, motor graders and water trucks.

25.1.4 Metallurgy and Processing

Proposed optimization of the Oxide and Sulphide processing facilities are based on review of metallurgical test work and existing infrastructure. Forecast benefits and fixed infrastructure constraints were determined using a dynamic MetSim model for the leach facility and phenomenological model for the flotation facility.

The proposed addition of a bioleach facility, heap aeration and modification to the SX/EW flowsheet at Mantoverde is expected to incrementally increase cathode production by 57.5 kt over the LOM, materially reduce acid consumption by 11.7 kg /t on average and bring forward significant inventory of copper.

The proposed increase to 45 kt /d in the Sulphide Concentrator is expected to produce over 500 kt of copper relative to the previous technical report. Note that this includes the additional reserves developed since 2021.

25.1.5 Environmental Studies, Permitting, and Social or Community Impact

Mining and processing of sulphide and oxide to 2034 and sulphide mining and processing up to 2042 are covered by Exempt Resolution N° 16/2018 issued by the Atacama Region Evaluation Commission (environmental qualification resolution, Resolución de Calificación Ambiental, RCA), issued after the MVDP environmental impact assessment study (EIA) for MVDP.

After the MVDP EIA, Mantoverde submitted an Environmental Impact Declaration (DIA) for the Optimization Supply Autonomy of the Oxides Line (approved by RCA N° 119/2018) and the DIA for the Mantoverde Oxides Optimization Project (approved by RCA 132/2021). In July 2024, a new DIA was submitted regarding the MV-O scenario described in this report, with approval anticipated mid-2025.

Mantoverde's Mine Closure Plan was approved by Chile's Servicio Nacional de Geología y Minería (SERNAGEOMIN) on August 9, 2022, as Exempt Resolution N° 1384/2022. The closure plan follows the provisions of the different Environmental Qualification Resolutions for the Mantoverde operation and describes measures that must be undertaken for closure and reclamation. A revision of the closure plan by SERNAGEOMIN remains underway to incorporate RCA N°132 for the Mantoverde Oxide Optimization Project, submitted on March 7, 2023.

The existing closure plan for Mantoverde has an estimated closure and post-closure cost of 1,460,102 Chilean units of account (UF), $61M, for the existing installations, following the measures described in RCA 16/2018 for the Mantos Copper Mantoverde Development Project. This covers the oxide and sulphide processing operation in production.

Impacts on the local population were ruled out in the MVDP EIA evaluation. The closest town to Mantoverde is El Salado, Chañaral commune, located 19 km from the Mine-Plant and Tailings Dam Area. Other settlements of interest are those in the coastal area near the common use routes, the Desalination Plant and Impulsion System Area such as Barquito, Flamenco, Portofino and Las Piscinas. Communities belonging to Indigenous peoples recognized in Chile's Law No. 19,253 or Indigenous Law were not identified in these areas, within the EIA assessment.

Mantoverde committed to transfer a fraction of the desalinated water produced by the reverse osmosis plant located in Bahía Corral de Los Chanchos, equivalent to an average monthly flow of 2 L/s, increased to 3 L/s in the summer months (December to February). This water resource will be transferred to the Empresa Concesionaria de Servicios Sanitarios S.A. (Econssa Chile S.A.), responsible for delivery to the communities. To allow that, and to fulfill the RCA commitment, Mantoverde signed an agreement with Econssa and the Atacama Regional Government in December 2023 and all the facilities inside the Desalination Plant are finished.

25.2 Risks

25.2.1 Accessibility, Climate, Local Resources, Infrastructure, and Physiography

- The central Andes Mountain range is considered to be one of the most active seismic regions in the world.
- Historically, major rainfall events can result in flooding, interruptions on access roads and power supply.
- Service interruptions at the desalination plant and its pipeline could impact production.

25.2.2 Drilling

With the deepening of the drill holes, the presence of water could increase, potentially leading to an underestimation of the copper grade in RC drill holes due to the dissolution of the mineralized matrix.

25.2.3 Mineral Resource Estimate

Factors that may affect the Mineral Resource Estimates include:

- Metal price assumptions.
- Changes to the assumptions used for the cut-off grade.
- Changes in local interpretations of mineralization, geometry and continuity of mineralized zones.
- Changes in the interpretation and/or definition of the sulphide top surface limit. Currently it uses mineralogy, citric solubility ratio, and geological interpretation.
- Density and domain assignments.
- Geometallurgical and mineral zone assumptions.
- Changes to geotechnical, mining and metallurgical recovery assumptions.
- Changes to input and design parameter assumptions that pertain to the conceptual Whittle pit design constraining the estimate.
- Assumptions as to the continued ability to access the site, retain mineral and surface rights titles, maintain environmental and other regulatory permits, and maintain the social licence to operate.

25.2.4 Mineral Reserve Estimate

As reserve models are an estimate based on certain assumptions and interpretations, they have certain inherent risks. Risks to the MV-O Mineral Reserve as outlined in this Report include, but may not be limited to:

- Changes to the Mineral Resource estimate, potentially resulting from revised interpretation and/or the results of additional drilling and sampling.

- Changes to assumptions in metals prices, operating costs and equipment productivities.
- Adjustment to the Pit Design due to future reinterpretation of Geomechanical parameters in some sectors.
- Changes in the metallurgical recovery factors.
- Changes in the geotechnical assumptions used to determine the overall wall angles.
- Changes to the operating cut-off assumptions for mill feed or stockpile feed.
- Changes to the input assumptions used to derive the open pit outline and the mine plan that is based on that open pit design.
- Ability to maintain social and environmental license to operate.
- Changes to the assumed permitting and regulatory environment under which the mine plan was developed.

There are no other known environmental, legal, title, taxation, socioeconomic, marketing, political or other relevant factors that would materially affect the estimation of Mineral Reserves that are not discussed in this Report.

25.2.5 Mining

While the mine plan considers high-capacity equipment and qualified personnel to achieve the planned productions, future adjustments to the pit design during operations may require a greater amount of material to be removed. Below are the risks identified for the Mining Method and Plan:

- Availability of skilled labor to achieve mine plan
- Increased requirement for ancillary equipment due to slope cleaning, oversize on blasting and mitigation of environmental commitments
- Increase in waste movement from pit design changes resulting from updated technical considerations (geotechnical, cost, etc.).
- Risks associated with climate change such as increased fuel or electricity cost.

25.2.6 Mineral Processing

25.2.6.1 Mantoverde Leach Operation

There are risks associated with the MV-O oxide upgrades that could reduce the potential copper forecast modelled with MetSim. These include:

- Accuracy of baseline data used as inputs into the heap and dump leach models. Historically the solution contents have been steady, and it is assumed this will remain consistent in the future.
- Water balance between the leach solution streams when the PLS and Raffinate lines are split.

- Potential extraction issues when splitting PLS streams based on the higher viscosity of the dump solutions compared to the heap solutions. Site to work with reagent vendors to mitigate this risk.
- Adaptability of select bacteria to the MV leach solutions and time to grow. Site are mitigating this risk by starting a bacteria culture in Q3 of this year and using site raffinate. The bacteria will be grown on site and volume expanded to meet the future requirements of the industrial heap.

25.2.6.2 Mantoverde Sulphide Concentrator Operation

There are risks associated with the MV-O sulphide upgrades that could reduce the potential copper forecast. These include:

- SAG discharge and pumping efficiency. It is recommended that the discharge pulp lifters be changed to a curved system to help discharge rock and slurry from the mill at higher rates. This will be coupled with an update to the open area of the discharge grate.
- Cleaner flotation froth carry rates and cell capacity. Careful consideration must be given to the flowsheet design and froth crowding to ensure no detrimental restrictions.
- Impact of increased rougher feed and cleaner feed grind size on circuit recovery and concentrate grade. Potential impact also on the deportment of pyrite and future cobalt to the final copper concentrate rather than cleaner scavenger tail.
- Impact of equipment upgrades and tie-ins on plant availability. Careful consideration must be given to the planned outages that will be required to upgrade in-situ equipment and minimize downtime.

25.2.7 Environmental Studies, Permitting and Social or Community Impact

As Mantoverde requires additional sectorial and environmental permits to execute parts of the MV-O mine plan, there is a risk that if permits are not received within the expected timelines, the mine plan could require adjustment. Significant permits necessary for execution of the MV-O mine plan described in this report include:

- anticipated mid-2025 approval of the DIA covering the sulphide plant throughput increase to 16.4 Mt/a with updates for management of airborne particulate matter and transport of concentrates to ports in the Mejillones area, submitted in July 2024.
- an approved EIA submission in place for 2035 or sooner to increase the permitted capacity of the TSF, add additional waste rock storage and realign part of a public road to best access planned mining areas.

25.3 Opportunities

25.3.1 Geological

Developing separate alteration, lithological, and mineralization models and contrasting them against the conceptual geological units could be a valuable and effective tool to enhance geological understanding.

Enhance mineralogical and geochemical data using quantitative or semi-quantitative methods and correlate this information with geometallurgical parameters to ensure or improve budget accuracy.

25.3.2 Exploration

Additional exploration including drilling, near and inside the current resource extents, may yield additional mineral resources. The areas north of the resource and along the Santa Clara Corridor have not been fully explored, with mineralization open in various directions.

At the district scale, various targets with similar geological and geophysical features to the Mantoverde deposit have been identified and may provide a satellite mineral resources that may support additional expansions of the mine.

Capstone has embarked on a two-year $25M exploration program to advance these opportunities.

25.3.3 Drilling

The deepening of the mineralization and the geometry of the mine imply that drilling to explore deep sulphides must pass through 250 to 300 m of barren rock. The use of directional drilling from a mother hole could be an opportunity to create a more efficient process.

25.3.4 Sample Preparation

The acQuire database makes it easy to capture information digitally, such as recording sample weights with a barcode reader and importing surveys or collar coordinates directly from contractor certificates. Capstone staff should continue to look for opportunities to capture data digitally to reduce the occurrence of data entry errors.

25.3.5 Data Verification

Capstone operates several mines and projects globally, and implementing peer reviews to standardize criteria could be a beneficial practice.

25.3.6 Mineral Resources

There are several additional opportunities regarding Mineral Resources that could potentially add value to the MV-O project. Some of these initiatives are listed below:

- Addition of cobalt and the acid that would be generated during processing to the estimated Net Smelter Return (NSR) calculation. This would affect both the value of each block, and the pit optimization used in resource reporting.
- Use conditional simulation to better assess the uncertainties in the grade and tonnage in different areas of the deposit. Conditional simulation could also be used to assess the parameters used in classification.
- Evaluate the use of cokriging with copper to estimate gold.
- Evaluate the impact of subdividing the estimation domains by mineral zone.

- Add a post-processing step to soften the resource categorization to avoid inferred blocks being in contact with measured blocks.
- Explore the use of density as weighting in grade interpolation within the primary (sulphide) zone. This would require the use of regression equations to estimate density values in all samples prior to their use in interpolation.

25.3.7 Mineral Reserves

There are opportunities to optimize the ultimate pit limits and Reserves volumes.

- The mineralization within the pit shell that is currently classified as Inferred, and therefore set to zero grade waste for this study, may, with infill and blast hole drilling during the mining process, be upgraded to higher confidence categories. These resource blocks represent a future opportunity for potential incorporation into the mine plan.
- Future studies may be able to demonstrate positive economics from extraction of cobalt, which could have a positive impact on reserves.
- The material falling outside the 0.88 Revenue Factor (RF) pit but within the 1.00 RF pit may represent a future opportunity to add reserves, particularly if commodity prices move favorably.
- Assessment of oxide feed transported from other sources in the district may permit the oxide facilities to operate longer, potentially allowing processing of MV-O leach ore after 2037.

25.3.8 Mining

The mining method must continue to be analyzed and optimised. There may be optimization opportunities related to the equipment selected and production rates, among others. The following potential opportunities have been identified:

- Continue to review the mining fleet to optimize type and size of equipment used
- Continue analyzing the economic optimum of the rate of total mine movement and its impact on stockpiling strategy and the Plant production plan
- Develop a technology strategy for trade-off and implementation of mining methods such as autonomy and other options, including trolley assist to evaluate benefits such as reduced risk from personnel exposure, minimized CO_2 emissions and cost & productivity improvements.

Share equipment for synergies with Santo Domingo and Mantos Blancos, such as critical spares, ancillary equipment easily transported, etc.

25.3.9 Mineral Processing

25.3.9.1 Mantoverde Leach Operation

There are several additional opportunities that could potentially add value to the MV-O project. Some of these initiatives are listed below:

- There are several years where the tonnage to the heap leach is low and could be enhanced by moving ore scheduled for the SDII to the heap. The cutover grade needs to be evaluated for both copper and carbonate before a final decision can be made. Initial modelling indicates that an additional >10 kt of copper would be produced through this alignment. The acid consumption increases due to the higher carbonate content, but the impact is minimal given the reduced acid consumption overall with bio-oxidation.
- Improved heap leach copper recovery and reduced acid usage as a result of the MV-O project would positively impact the cutoff grade for the pit. This could result in a greater ore tonnage available for the heap and dump extending the overall project life.
- There are several initiatives to be analysed for the SDII dump including particle size, lift heights etc. Additionally, the plan is to provide a small inoculum bleed stream to the south dump raffinate. The addition of inoculum to this stream could enhance the sulphide extraction in the SDII. It has been estimated that a sulphide recovery uplift of 15% as well as releasing additional acid from pyrite oxidation. The increase would result in the production of an addition 9 kt of copper over the LOM.
- The pyrite augmentation project involves developing a high pyrite concentrate from the concentrator cleaner scavenger tailings. At MV this concentrate will capture residual copper and cobalt minerals that would otherwise report to the tailings. The concentrate is estimated to have an average grade of 1.0% copper containing an average pyrite concentration >85% with a cobalt grade of >0.65%.

25.3.9.2 Mantoverde Sulphide Concentrator Operation

There are several additional opportunities that could potentially add value to the MV-O project. Some of these initiatives are listed below:

- Install flotation capacity to recover copper and pyrite containing cobalt for downstream processing. Increase global copper recovery by extracting copper from the industrial leach circuit, copper that would otherwise report to tailings. Increase the NPV of the operation by adding a cobalt revenue stream and acid credits from the oxidation of pyrite.
- Net Smelter Return optimization with future cobalt stream. Potential to increase bulk copper concentrate grade and send more copper and cobalt to the cleaner scavenger tailings to be leached and recovered hydrometallurgically. Potential to improve concentrate payables, reduce TC/RC’s, apply a copper cathode premium and increase cobalt revenue.
- Optimize reagent scheme to maximize coarse particle recovery in the roughers and depress pyrite in the cleaners.

Addition of Advanced Process Control instrumentation to maximize production from the key nodes of the processing plant including comminution, flotation and dewatering.

25.3.10 Recovery Methods

There are several additional opportunities that could potentially add value to the MV-O project. The following are the outline of the initiatives:

- Maximize Heap Leach Tonnage
    - There are several years where the tonnage to the heap leach is low and could be enhanced by moving ore scheduled for the SDII to the heap. The cutover grade needs to be evaluated for both copper and carbonate before a final decision can be made.
    - Initial modeling indicates that an additional 10.8 kt of copper would be produced through this alignment. The acid consumption increases due to the higher carbonate content, but the impact is minimal reducing the acid benefits by 29 kt LOM.
- Optimized Mine Plan
    - Improved heap leach copper recovery and reduced acid usage as a result of the MV-O project would positively impact the cutoff grade for the pit. This could result in a greater ore tonnage available for the heap and dump extending the overall project life. Potential SDII Dump Improvements There are several initiatives to be analyzed for the SDII dump including particle size, lift heights etc. Additionally, the plan is to provide a small inoculum bleed stream to the south dump raffinate. The addition of inoculum to this stream could enhance the sulphide extraction in the SDII. It has been estimated that a sulphide recovery uplift of 15% as well as releasing additional acid from pyrite oxidation. The increase would result in the production of an addition 9,000 tonnes of copper over the LOM. Pyrite Augmentation The pyrite augmentation project involves developing a high pyrite concentrate from the concentrator cleaner scavenger tailings. At MV this concentrate will capture residual copper and cobalt minerals that would otherwise report to the tailings. The concentrate is estimated to have an average grade of 1.0% copper containing an average pyrite concentration >85% with a cobalt grade of >0.65%. The project is estimated to produce an average of 1,100 tonnes per year of cobalt or 14,000 tonnes over the LOM. An addition 21,400 tonnes of copper will also be produced over the LOM. Overall acid consumption is expected to decrease to 14 kg/t. Market Studies.

The close proximity of the Mantoverde Mine and Capstone's Santo Domingo project (pending a construction and production decisions) provides economies of scale and shared use of logistic resources that will provide reduced logistics costs for both operations. Land transport, using trucks with containers, can be deployed to either site under a single service agreement that would reduce the unit costs. Port storage facilities would be shared with the product from each mine segregated but could be blended or substituted depending on grades. The increased volume of exports also provides for lower marine freight rates by combining cargos on the same vessel which is attractive to vessel owners and provides some leverage in negotiating lower freight rates in Contracts of Affreightment.

26 RECOMMENDATIONS

Mantoverde is an operating mine and all work supporting the Recommendations is expected to be completed within the operating budgets. The Recommendations can be completed concurrently as part of the Capstone team's ongoing work on the project. No third-party services or costs are required to complete the Recommendations, which are described below.

26.1 Exploration

It is recommended to create a ranking of all exploration targets, considering factors such as tonnage, grade, maturity and uncertainty and their potential economic impact to support future mine expansions.

26.2 Drilling

It is recommended to increase the proportion of DDH drill holes relative to RC drill holes to avoid interaction and sampling issues caused by water.

26.3 Mineral Resource Estimate

The QP has the following recommendations related to resource estimation at MV, to be completed in-house by Capstone:

- Include sulphur and iron as estimated elements within the primary (sulphide) zone in the block model. As a key component of the primary sulphide minerals like chalcopyrite and pyrite, sulphur and iron could play an important role in enhancing geometallurgical analysis and in refining predictive models for mineral processing.

26.4 Mining

The QP has the following recommendations related to the mine plan or mining methods, to be completed in-house by Capstone:

- Analyse the economic optimum of the rate of total mine movement and its impact on the plant production plan.
- Refine cut-off grade between heap leach and other processes to incorporate bio-leach economics, including analysis of 0.5 solubility ratio as the optimum cut-over between leach and flotation in Mixed material.

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